



Financial Stability Report

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This report, aimed at informing the public, is based mainly on September 2013 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 taken based on the information and data provided therein.

Foreword

Turkey has maintained its positive outlook since the release of the previous Financial Stability Report. The Turkish financial system has been sound owing to the effect of structural measures and the steps taken to ensure financial stability. The Central Bank of the Republic of Turkey, in cooperation with the relevant authorities, has been contributing to the strengthening of the macroprudential policy framework.

On behalf of Turkey, the Bank has been actively involved in endeavors regarding the reform of global financial system. The fact that Turkey will assume G20 presidency in 2015 will also increase the Bank's contributions to the field of financial stability. On the other hand, the Bank has taken over the chairmanship of the Financial Stability Board Regional Consultative Group for the Middle East and North Africa since July 2013 for a period of two years; hence, it will continue its endeavors to develop financial stability at regional level, too.

In this context, I hope that the seventeenth volume of this Report examining current financial stability developments in Turkey as well as abroad and including the research studies regarding the financial system, will be of benefit to all readers.



Erdem BAŐCI
Governor

Table of Contents

Overview	i
I. International Developments	1
II. Domestic Economic Outlook	15
III. Developments by Sectors	21
III.1. Banking Sector	21
III.2. Corporate Sector	47
III.3. Households	51
IV. Steps Taken Towards Financial Stability	67
IV.1. CBRT Implementations	67
IV.2. Arrangements Made by the BRSA	76
V. Special Topics	81
V.1. Factors Affecting Banks' Utilization of Reserve Option Mechanism	81
V.2. The Impact of Monetary Policy Shocks on Firm Credit	95
V.3. Net Foreign Exchange Position of Firms and Firm Performance	101
V.4. Firm Leverage and the Financial Crisis	107
V.5. Some Findings and An Assessment of Capital Adequacy and Profitability	112
V.6. "Too-Big-To-Fail" Financial Institutions	120
V.7. Over the Counter Derivatives Markets Reforms	134
V.8. A Closer Look at "Shadow Banking" Concept	144
V.9. New Period in Risk Culture	153
V.10. The Payment Systems Law and Financial Stability	158
List of Charts	161
List of Tables	165
Abbreviations	166

Overview

Volatility in global markets increased during the period after the release of the previous Financial Stability Report. The CBRT and other relevant authorities have continued to take the necessary structural measures to reinforce the strength of the financial system as well as to reduce its vulnerability to cyclical conditions. Accordingly, financing companies have been included in the reserve requirements coverage and regulatory actions have been taken to promote the utilization of export rediscount credits. As announced before, the leverage-based reserve requirement practice, which is currently being monitored, will actually be implemented as of 2014. In this period, the BRSA, in line with its objective of boosting domestic savings and directing them to efficient fields, launched regulations to restrain the growth in consumer loans, which would turn the loan breakdown in favor of corporate loans. The BRSA has continued its endeavors to harmonize national legislation and regulations with Basel III. These regulations are essential for financial stability as they enhance the resilience of the banking system's capital structure against shocks and reduce the cyclical volatility of loans.

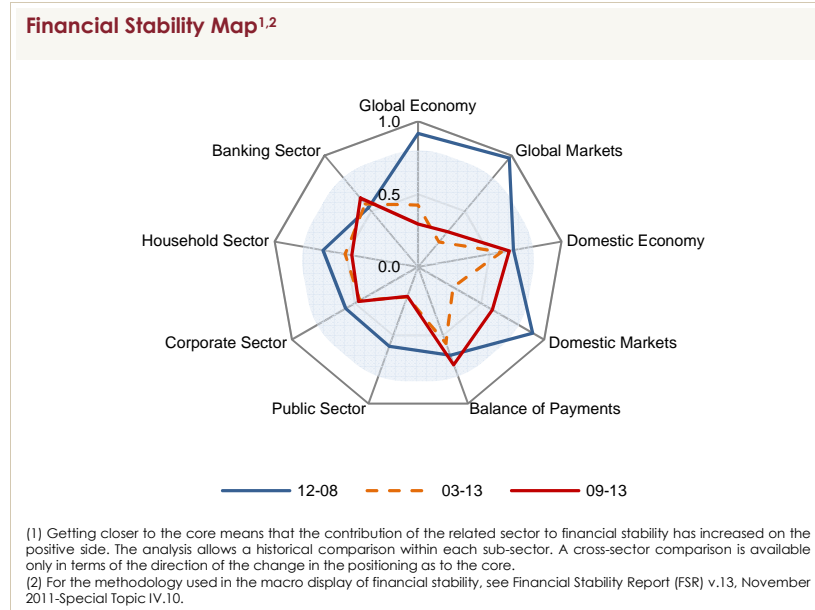
The Turkish banking sector, which has significantly increased the utilization of non-deposit funding sources in the recent period and posted a loan-to-deposit ratio above 110 percent, has been able to renew its external debts at reasonable costs in the period after May 2013. The foreign currency liquid assets of the sector are at a level that can cover almost half of its short-term external debts, implying that its fiscal structure is resilient against short-term external shocks. The banking sector will present an even better outlook if banks maintain a cautious growth strategy without endangering their sound liquidity positions.

Turkey is one of the emerging market economies that have posted the highest rises in loan/GDP ratios since 2009. In addition, Turkey, with a high level of loan growth, has stood out its peers since the final quarter of 2012. Project financing loans extended for privatization and public infrastructure investments had a significant contribution to the underlying loan growth, especially in FX loans. Moreover, the interest rates that reached to their historic lows and the extension of maturities also boosted the demand for loans, particularly for housing and general purpose loans. In the new period when the global volatility is trending up, realization of the credit growth rate at reasonable levels is considered to contribute to the financial stability. In this context, measures taken by the BRSA regarding the growth and composition of loans are considered to be positive.

The banking sector has maintained its sound structure in terms of asset quality and capital adequacy. Non-performing loan ratios remained flat throughout 2013 and the bad cheque ratio that had been on the rise since 2011, gradually decreased during the year. Although capital adequacy ratios declined by almost 200 basis points during the year due to the significant increase in risk-weighted assets, they are high enough to cover losses that might be incurred under various shock scenarios.

The corporate sector's access to loans from abroad or from domestic banks has improved in recent years amid ample liquidity all over the world. In fact, commercial loans have soared since late 2012. The fact that firms did not have difficulty in rolling over external debts in the second half of the year as well, is a positive indicator in terms of risk management.

The increase of household savings is important for financing the Turkish economic growth in a sound way. The data suggest that the household savings rate has continued to decrease, while the ratio of household liabilities to assets has continued to increase. Savings ratios are intended to be boosted with structural measures, primarily the incentives for the individual pension system. On the other hand, consumer loans are not extended in FX and the fixed interest rate is charged upon almost all consumer loans, which enhance the resilience of households' fiscal structure. In addition, the most important parameter for households' financial status and stability of the financial system is that their debt-to-income ratio is at a reasonable level. Therefore, a close monitoring of the debt-income ratio becomes more of an issue for both domestic savings and financial stability. The recent regulations taken by the BRSA on credit cards are expected to contribute to this objective.



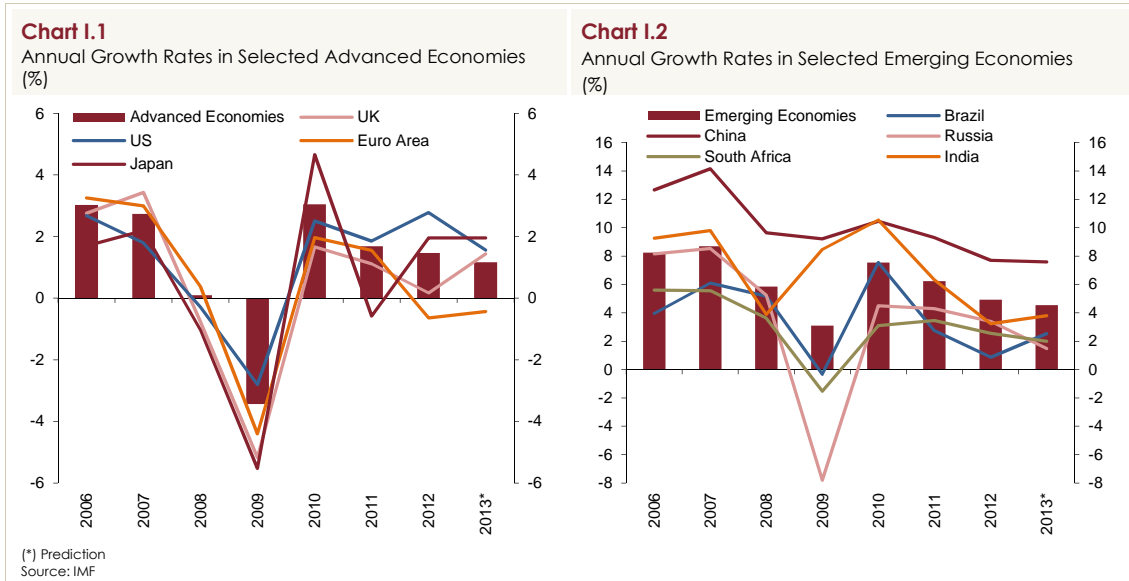
Within the framework of the assessments, the schematic reflection of the developments regarding financial stability in Turkey can be seen on the macro display chart above. Accordingly, for the last six-month-period, while the global economy has developed in a positive direction, global markets have deteriorated slightly. In the same period, the volatility in exchange rates and interest rates has increased in line with the volatility in global capital flows. However, the positive outlook in corporate and banking sectors continued in addition to the economic recovery in households.

I. International Developments¹

Despite the recovery trend observed in the U.S. economy and some favorable signals in the Euro area economies, global economic activity remains weak as a result of the slowdown in the growth rate of emerging economies, which were the driving force of growth in the post-crisis period. Moreover, monetary policies implemented by the advanced countries' central banks continue to be a determinant of the global financial markets. The global risk appetite has recently followed a fluctuating course due to expectations that the Federal Reserve (the Fed) will taper asset purchases in the near future. International capital flows will be driven by the Fed's short term exit strategy and the interest rate hikes in the medium and long term. External financing conditions are likely to follow a fluctuating course in emerging economies in the upcoming period due to the decline in global liquidity as well as new financial regulations to be introduced, which will lead the banks to be more cautious. Therefore, the economic performance of emerging economies will be determined largely by the question of to what extent the adversities arising from the deterioration in external financing conditions may be compensated by the favorable impacts of foreign trade triggered by the recovery in advanced economies. In this respect, it is significant to monitor whether normalization in the Fed's monetary policy will go in tandem with the recovery in economic activity both in the U.S. and the Euro area.

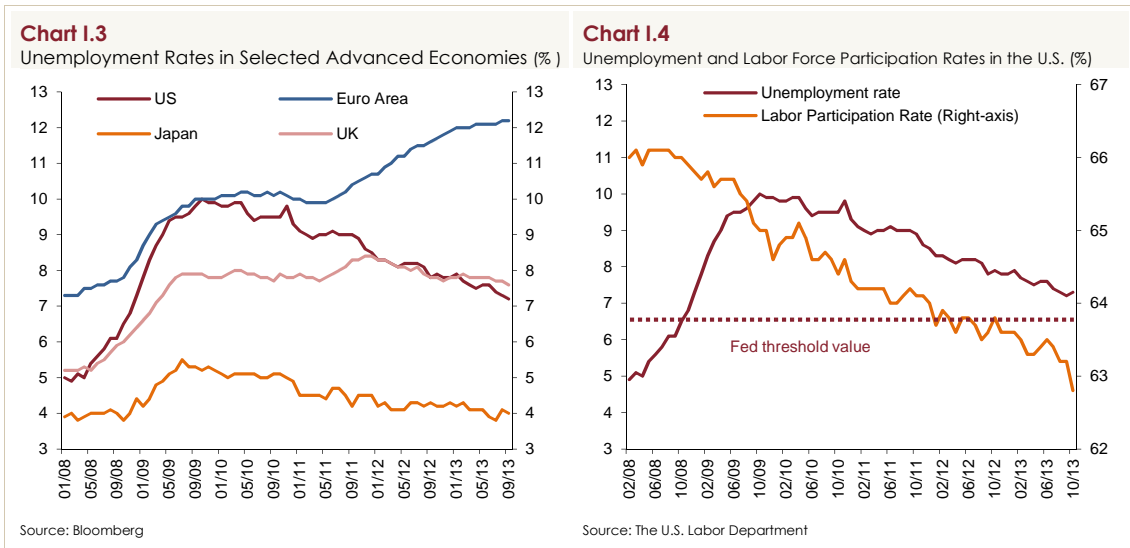
The weak course of global economic activity persists although advanced economies such as the U.S. and Japan have registered a moderate recovery. The U.S. has carried out a strong fiscal consolidation throughout 2013 and its economic growth has been backed by the ongoing accommodative monetary policy, the recovery in financial conditions, the favorable course of the real estate market and finally the increase in consumer demand, although recent data releases suggest that the recovery in the U.S. economy has not stabilized yet. In the Euro area, which still undergoes problems in the functioning of the monetary transmission mechanism and public finance, the slowdown of the contraction in periphery countries and the partial recovery in core countries observed as a result of the supportive monetary policy have facilitated the recovery from recession. The expansionary monetary and fiscal policies implemented in Japan continue to promote economic growth (Chart I.1).

¹ This chapter has been prepared by Mehmet Onay and Ahmet Deryol.

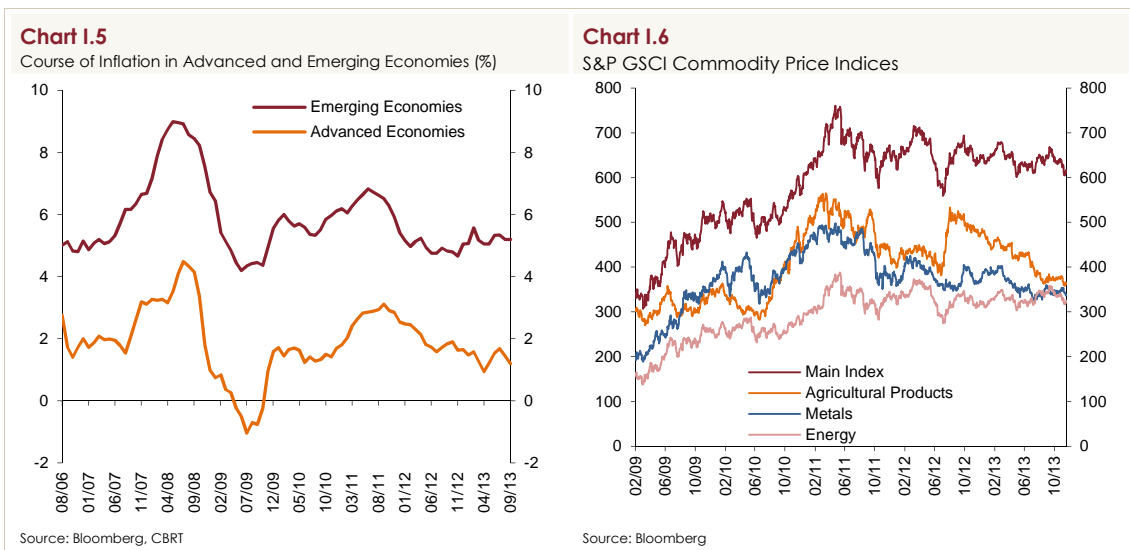


In the post crisis period, the growth rate of emerging economies - the driving force of the world economy – recorded a slowdown, which was triggered by both structural and conjunctural factors. The deceleration in the growth rates of India, Brazil and South Africa, which are classified as emerging economies, is attributed to temporary factors such as the stimulus packages that have been phased out in the post-crisis period and the problems in the regulatory infrastructures of these countries. Conversely, the slowdowns in the growth rates of China and Russia are believed to be permanent due to structural problems in these countries' growth models (Chart I.2).

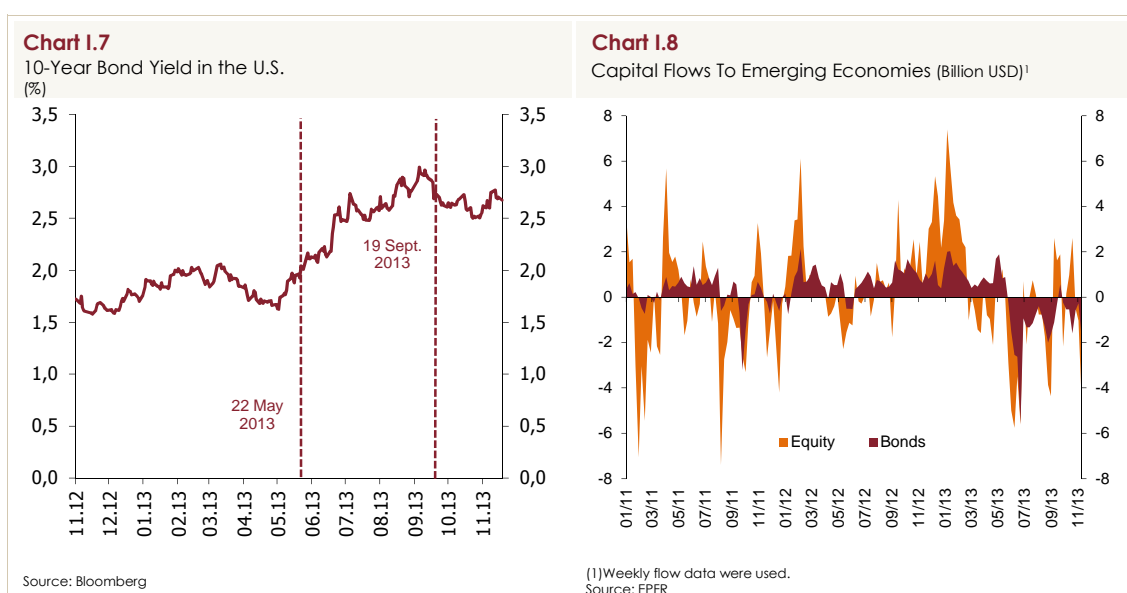
As the economic activity in advanced economies has not adequately accelerated yet, the unemployment rate has remained high in these economies. While the unemployment rate in the Euro area is still at a historically high level, its upward trend has stopped. Yet, the high rate of unemployment especially in peripheral countries is expected to continue in the long term because of the structural problems in the labor market and the weak growth performance. In the UK, unemployment rates maintain a higher but more stable course compared to the figures of the pre-crisis period. The unemployment in Japan is at a modest level as it was in the pre-crisis period. There has been a gradual fall in unemployment rates in the U.S. recently but this fall partially results from the decline in the labor force participation rate (Chart I.3, Chart I.4). Changes in unemployment rates, which constitute one of the variables that the Fed takes into account in addition to the inflation rate when deciding on the timing of monetary tightening, are closely monitored by global markets.



Despite the expansionary monetary policies implemented in advanced economies, there has been no serious inflationary pressure on a global scale. The absence of an inflationary pressure is attributable to the fact that the recovery in advanced economies has not yet led to a significant impact on output gaps and commodity prices have been following a stable course due to the slowdown-driven fall in demand in emerging economies. As a result of slow economic recovery in emerging countries and ongoing downward pressure on costs, inflation is expected to stay below target rates for a long time. Recently, the emergence of the risk of deflation in the Euro area has urged the European Central Bank (ECB) to cut interest rates after a long period of time. In emerging economies, factors such as capacity constraints, pass-through of exchange rates and revival in domestic demand have made it relatively difficult to achieve price stability (Chart I.5, Chart I.6.).

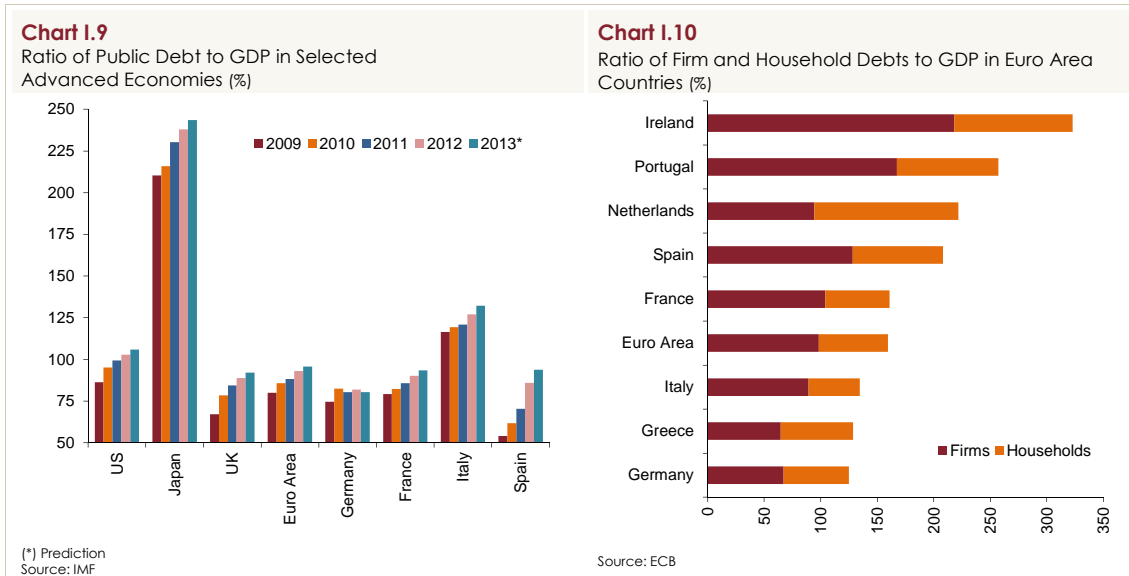


The global risk appetite has followed a fluctuating course in recent months due to the uncertainties regarding the monetary policy of the Fed in the forthcoming period. In May, Ben S. Bernanke, the chairman of the Federal Reserve, stated that the bond buying program could taper in a few months. Bernanke's statement led to a perception in the markets that the accommodative monetary policy implemented by the Fed came to an end and caused a global repricing of financial assets. Hence, long term U.S. Treasury bond yields registered a significant rise and emerging economies experienced capital outflows. While those emerging economies' currencies depreciated, their bond yields increased (Chart I.7, Chart I.8). At the September meeting, contrary to expectations, the Fed decided to maintain the bond buying program and thereby the normalization in the U.S. monetary policy was postponed for a while. Consequently, in the subsequent weeks, volatility in the markets edged down, long term U.S. Treasury bond yields slightly declined although they stayed at high levels compared to the figures in May and the losses from the foreign exchange and bond markets of emerging economies were partially compensated.



Macroeconomic risks originating from advanced economies were alleviated, but they still stand as an important factor. Although budget deficits have posted a decline thanks to recent fiscal consolidation in advanced economies excluding Japan, sovereign debts are still at historically high levels (Chart I.9). Meanwhile, there are significant uncertainties regarding the course of fiscal policies to be carried out by the U.S. and Japan in the upcoming period. In the U.S., disagreements about the budget for the new fiscal year led to the shutdown of the U.S. government on October 1, except for critical public services. As the debt ceiling deadline was 17 October 2013, disagreements on the budget started to pose a greater risk. Finally, with a last-minute agreement on a tentative budget to be effective until mid-January and the suspension of the debt ceiling until early February, the problem was

addressed with a temporary solution but has not been truly resolved yet. In the Euro area, high levels of public and private sector indebtedness, which originated especially from peripheral countries, continue to be an important risk factor (Chart I.10).



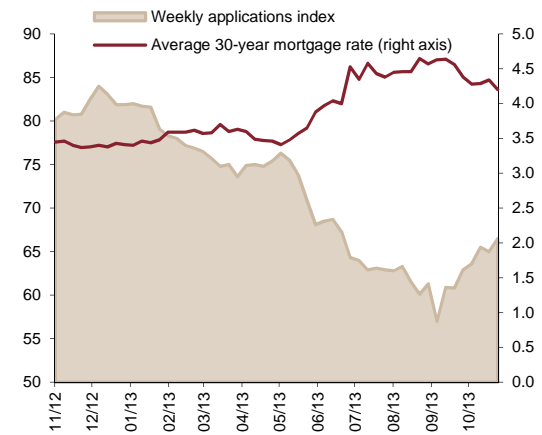
Following a period when global liquidity was abundant and cheap, the Fed will start a normalization process in monetary policy, which raises some risks in the U.S.. Major risks which may emerge in case of a sharp rise in long-term interest rates are the followings: sudden and significant depreciation in investor portfolios, durations of which have increased in recent years; panic sales due to reduced market liquidity and the appearance of weaknesses in some segments of the financial system such as shadow banking activities based on short-term repo financing (Chart I.11) (See Box I.1. Real Estate Investment Trusts Investing in Mortgage Backed Securities). Materialization of these risks will have an unfavorable effect on global markets and hamper the recent economic revival in the U.S.. As of May, when the first signals of a normalization process in monetary policy were received, mortgage loan rates have posted a remarkable increase and loan applications have fallen. These developments clearly show that the housing sector, which is important in terms of economic revival in the U.S., is sensitive to interest rates (Chart I.12).

Chart I.11
Average Duration of Bond Portfolios in the U.S.¹
(Year)



(1) It includes all the bonds issued by private sector firms and the public sector
Source: Bloomberg

Chart I.12
Mortgage Loan Rates in the U.S. and Course of Weekly Loan Applications (Index Value, %)



Source: Bloomberg

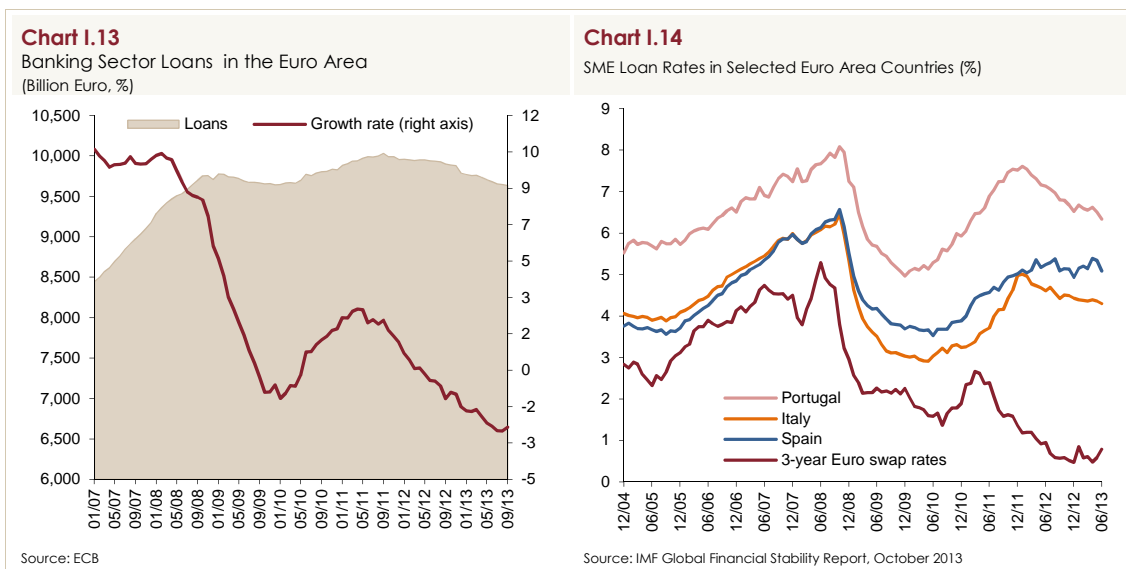
Box
I.1

Real Estate Investment Trusts Investing in Mortgage-Backed Securities (AmREITs)

AmREITs are trusts founded in the U.S. that invest in real estates and mortgage-backed securities. The activities of real estate investment trusts, evaluated within the scope of shadow banking activities, have a potential to create fragility in the economy. These firms obtain funds particularly by borrowing through short-term repo market. Total repo liabilities of these trusts, which make up about 40 percent of their total liabilities, have exceeded USD 300 billion. The fact that repo funding is short-term while mortgage-backed securities are long-term brings about a maturity mismatch and sensitivity to interest rates edges up. The total size of mortgage-backed securities in the U.S. is USD 5.5 trillion, USD 365 billion (7 percent of total) of which is held by AmREITs. According to U.S. regulations, if these trusts distributed at least 90 percent of their total profits as dividend payments, they would get tax advantages. For this reason, investors' demand for Am-REITs has risen and these trusts have developed rapidly. At present, borrowings are made through short-term repo and the size of assets has reached ten times the size of the equity in certain firms. These facts show that a new structure has emerged which may pose a risk to financial stability. Parallel to the increase in interest rates, institutions' funding costs swell while the value of their mortgage-backed securities declines. Any funding problem to be experienced by these institutions would result in rapid disposals of assets and accelerate the downward trend in asset prices.

Consequently, interest rates which have increased due to the expectation for normalization in the U.S. monetary policy may cause depreciation in borrowing instruments such as mortgage-backed securities. The same increased interest rates also expose the Am-REITs, which have a short-term collateralized borrowing structure, to a significant funding risk and threaten financial stability by fueling asset fire sales.

The problems in public finance, the weak banking system and low growth rate continue to be the most significant risk factors in the Euro area. Thanks to steps taken by the authorities in the last two years, the monetary union has been preserved and tension in the markets has fallen relatively. However, the ongoing fragmented financial structure in the area continues to impair the effectiveness of the monetary transmission mechanism and delay the economic recovery particularly in peripheral countries. Although a single currency unit is used in the Euro area, the countries and financial systems are quite different in terms of risk profiles. These differences across countries and systems have led to a shift in savings towards the regions considered to be more reliable and to large gaps among countries in terms of loan rates. Accordingly, loans continue to decline due to both supply-side and demand-side problems (Chart I.13). The leading supply-side problem is high funding costs faced by the banks due to lack of confidence in banks' financial structures. These high funding costs, along with weak economic activity, hamper capital strengthening by unfavorably affecting profitability and restrain their capacity to provide loans. Underlying the demand-side problems are the efforts to reduce indebtedness of households and firms, the debt roll-over ratios of which have edged down due to high credit costs. Due to the problems in the credit mechanism, heavily indebted firms in peripheral countries face bankruptcy risks and particularly small and medium sized enterprises, which have limited alternative funding opportunities, experience financial difficulties. As a result, the economic activity in the Euro area is unfavorably affected (Chart I.14).



Creation of a banking union, which has been on the agenda in Europe for a long time, is of particular importance for the credit mechanism to operate again. In order to terminate the fragmented financial structure in the Euro area, EU governments, which aim to end the negative feedback loop between country finances and banking systems by establishing a strong banking union in addition to a monetary union, have not yet put the relevant reforms

into practice completely. The most important objectives of the banking union to be established are to standardize banking regulations across the EU, centralize the monitoring and supervision activities under the European Central Bank and establish a single resolution mechanism (See Box I.2. Establishing a European Banking Union). In recent months, the Capital Requirements Directive (CRD IV) package was accepted to be in effect as of 1 January 2014 and the bank recovery and resolution directive was approved, which are important steps taken to standardize regulations. The European Central Bank will ensure the relevant centralization by starting its monitoring and supervisory activities in November 2014. While the establishment of a single resolution mechanism has been accepted at the governmental level, work on the legislation has not yet been completed.

Box I.2.

Establishing a European Banking Union

The global crisis revealed deficiencies in financial monitoring and supervision in many countries including EU member states. Following the outbreak of the crisis, in order to meet those deficiencies, the European Commission introduced several new regulations and implemented a significant number thereof. Those regulations include the basic rules which determine the general framework of the activities of the financial services sector in the 28 EU member states.

The outbreak of a debt crisis in the Euro area in 2011 highlighted the need for reforms to strengthen the monetary and economic union for the long-term sustainability of the common currency. The main reason underlying this need is the fact that the unfavorable interaction between country finances and banks increasingly deteriorated as a result of the bailout of many European banks by public resources, and this situation began to threaten the monetary union, disrupting the functioning of the credit transmission mechanism. Although a single currency unit was used in the overall region, the peripheral countries such as Greece, Portugal, Italy and Spain, which were affected the most by the crisis, faced a more severe financial deterioration compared to that of central countries such as Germany and France. As a result, a fragmented financial structure emerged in the region. The EU leaders agreed that they could not overcome this deterioration only with the amelioration in monitoring and supervisory regulations. Therefore, in June 2012, they decided to establish a banking union which primarily aims to strengthen the financial integration in the Euro area but which is also open to non-EU countries. The three main components of this union are as follows:

1) Standardization of Financial Sector Regulations across the EU (Single Rule Book)

In light of the lessons learnt from the financial crisis, four new institutions were founded in 2011 to improve the financial sector regulations in the EU, to remove divergences among country practices in the field of monitoring and supervision, to strengthen the cross-border

cooperation and information sharing and to impede emergence of systemic risks at the EU level. The European Banking Authority (EBA), the European Securities Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA) were in charge of standardizing the monitoring and regulations in banking, securities markets and insurance sectors, respectively. Finally, the European Systemic Risk Board (ESRB) was established to monitor macro financial risks likely to emerge in Europe and develop macroprudential policy measures when required. Foundation of the EBA became the first and most significant step taken in standardizing banking regulations in the EU. In the following period, the EBA prepared the CRD IV package, the backbone of microprudential regulations in the EU, which was based on the Basel III standards that were set in view of the global financial regulations. The package, in line with the G20 commitments, was introduced in June 2013 to become effective from 1 January 2014. Moreover, in line with the G20 commitments again, a consensus was reached on a draft directive prepared for the harmonization of countries' resolution regimes with the relevant principles of the Financial Stability Board (FSB) across the EU. The directive is expected to take effect in 2015. Finally, The EU Commission developed a proposal package in 2010 to improve the deposit guarantee schemes and standardize them within the EU; however consensus is yet to be reached on this package.

2) Centralization of Banks' Monitoring and Supervisory Activities Under the ECB (Single Supervisory Mechanism)

The centralization of monitoring and supervisory activities, one of the components of the banking union, was ensured by the enforcement of the legal regulation on 3 November 2013, which assigned new authorities and responsibilities to the ECB. Accordingly, the ECB, which will *de facto* start its supervisory activities in November 2014, will be directly responsible for monitoring and supervising "significant" banks. Those "significant" banks will be determined according to criteria such as size, importance for any economy within the EU or the banking union and the intensity of cross-border activities. Regulation and supervision activities of banks other than those will be carried out by national authorities. According to the size criteria, "significant" banks will automatically include those:

- i. Having assets of more than €30 billion,
- ii. Having assets constituting at least 20% of their home country's GDP and standing at €5 billion at least;
- iii. Deemed "significant" by the ECB and the relevant national authority.

Non-Euro area countries can also transfer the responsibility of monitoring and supervision of their banks to the ECB. The ECB will become directly responsible for monitoring and supervising 130 banks which are located in eighteen EU countries and determined pursuant to the criteria above. Those banks cover approximately 85 percent of the total Euro area banking assets.

A total of 130 "significant" banks to be supervised next year will first be subjected to a

one-year long comprehensive assessment by the ECB as of November 2013. This assessment, the results of which will be made public in November 2014, primarily aims to build confidence in banks. Hence, first the ECB will ensure transparency by enhancing the quality of information concerning the financial conditions of banks and later determine the steps to be taken for strengthening the banks' financial structures that are found weak.

The assessment to be conducted in cooperation with the national supervisory authorities of the countries will include the following steps:

- i. A quantitative and qualitative analysis of the banks' intrinsic risk profile (leverage, liquidity, etc.).
- ii. Identification of the real values of assets on bank balance sheets, taking into account collateral and provisions by end-2013.
- iii. A stress test to measure the shock absorption capacity of banks' financial structures under different stress scenarios.

In all the analyses, banks will be expected to comply with the minimum core capital requirements of 8 percent (Common Equity Tier 1) according to CRD IV.

Following completion of the assessment, the country-based and bank-based results as well as measures suggested to the authorities will be reported to the public.

3) Establishment of a Single Resolution Mechanism

In July 2013, The European Commission proposed establishment of a single resolution mechanism (SRM) within the banking union for standardization of banking regulations across the EU and considering the fact that centralizing monitoring and supervision would not necessarily remove the difficulties that banks might encounter in the future. According to the proposal, the SRM will be based on the principles of the Bank Recovery and Resolution Directive, which will become effective across the EU and ensure centralized, fast and effective intervention and financing for any ailing bank that is subject to the supervision of the ECB. This mechanism is considered to be useful in reducing uncertainties in times of crises and particularly in assisting banks in resolutions in case of cross-border failures.

If a political agreement can be reached by Member States and if the SRM can be agreed by co-legislators before the end of the mandate of the current EU Parliament, SRM, which is planned to become operational in 2015, is expected to function as follows:

- i. If a bank within the banking union needs to be resolved, the ECB will inform the Single Resolution Board (SRB), in which the European Commission delegates and national authorities participate.
- ii. The SRB will decide upon how to resolve the bank and will make a proposal for the execution of resolution to the European Commission.
- iii. The resolution will be executed by the national authorities under the monitoring and supervision of the SRB. During the resolution, the bank's unsecured loans will be converted into capital if needed and the relevant bank's creditors will be ensured to share the bank's losses (bail-in).

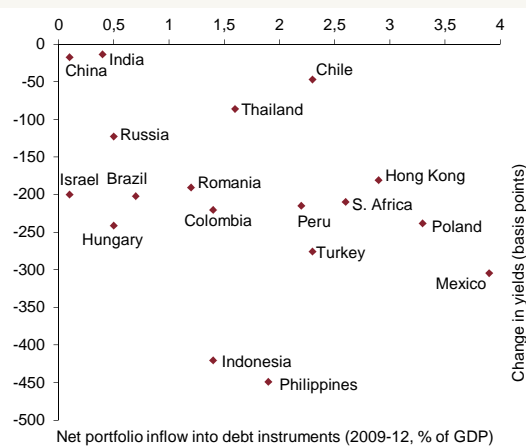
iv. A Single Resolution Fund to be established with resources provided from the banking sector will replace national resolution funds and be used for remedying the banks' capital deficits as envisaged by the SRB.

Asset quality assessment to be carried out by the ECB in 2014 has a critical importance in dissipating concerns over financial structures of the European banks. This assessment, which will be made before ECB's taking over the supervisory responsibility, is expected to clearly exhibit the capital needs of big banks. Yet, how to cover the capital needs to be identified by this assessment continues to be a source of uncertainty. In case this uncertainty is eliminated, it is expected that confidence in markets will be boosted, funding costs will decrease, profitability performance will recover and new capital issuance will be possible. If those expectations come true, the credit mechanism can be made functional again and economic growth can be spurred.

Adverse effects of the uncertainties in the Federal Reserve's monetary policy on capital movements are of importance for emerging economies with sizeable external financing needs. Ample and cheap liquidity emerged as a result of extraordinary monetary policy measures implemented due to the crisis has recently led to a significant increase in capital flows towards emerging economies, which display a stronger growth and higher rates of return compared to advanced economies. While international fund flows reduced yields and extended maturities on the one hand, they increased the sensitivity of these markets to portfolio movements of foreigners, on the other (Chart I.15). At the same time, the debt ratios of the firms, responsible for majority of the bond issues, registered a remarkable increase. Additionally, the policies implemented by some emerging economies to revive domestic demand in a weak global growth environment resulted in extremely rapid increases in loans (Chart I.16). Particularly the pick-up in shadow banking activities in China is considered an important risk factor (See Box I.3. Development of Shadow Banking in China). On the other hand, although the recent international regulations regarding the financial system are considered to contribute to global financial stability, they are expected to have a tightening effect on financial conditions in the short term. Therefore, in the forthcoming period, it is essential for the countries, which run a current account deficit and which have experienced a rapid credit growth in recent years, to give weight to macroprudential policies and make their economies more resilient to potential changes in external financing conditions.

Chart I.15

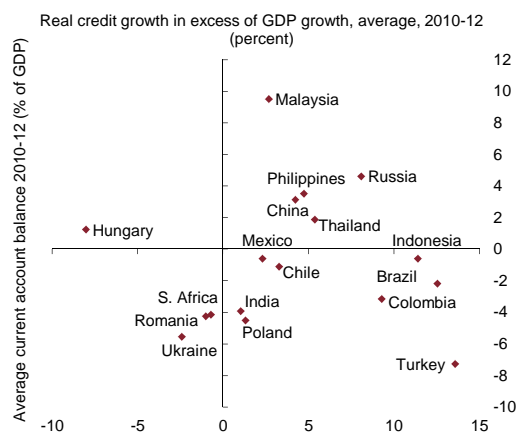
Impact of Portfolio Flows on Local Currency Bond Yields



Source: IMF Global Financial Stability Report, October 2013

Chart I.16

External and Domestic Vulnerabilities in Emerging Market Economies

**Box
I.3****Development of Shadow Banking in China**

In China, loans surge particularly through non-bank sector. Due to strict regulations in the banking sector in the country, financial institutions have appealed to alternative ways to pool funds. Shadow banking, which is defined as a source of funding outside of the banking system, has recently recorded remarkable growth. According to the data of the Financial Stability Board (FSB), the size of shadow banking in China reached USD 2.1 trillion (almost 10 percent of the banking sector). The development of shadow banking is partially driven by restraints such as the 75 percent loan to the deposit ratio ceiling, which is currently applied to banks. Because the banking system is a more strictly regulated sector, the shadow banking activities create an additional funding source in economy, allowing firms to take advantage of regulatory arbitrage. However, the question of whether the system operates properly is controversial.

Shadow banking activities in China primarily rely on trust companies, wealth management products and entrusted loans. Wealth management products are financial instruments issued by trust companies. Banks act as the agencies marketing these products, which provide higher yields than deposits, to individual investors. Entrusted loan products are instruments which allow non-financial institutions to lend to each other in countries where firms are banned to extend loans directly to one another. These short-term products are generally used in funding long-term investments, which is the reason for maturity mismatch. This gap is maintained by borrowing through interbank markets and issuing new wealth management products. In this respect, the system is highly risky and criticized as creating a Ponzi economy. In order for banks to meet the loan to deposit ratio criteria in audits at each quarter-end, the wealth management products are arranged to mature just before the quarter-end and they are not issued again before the quarter actually ends. Thus, funds return to the banks as

deposits and contribute to the fulfilment of the loan to deposit ratio criteria. In this period, investment trusts face significant liquidity risks as they provide funding through interbank monetary markets.

In China, some investment trusts have not been able to fulfil their liabilities in the recent period. As a result, the regulations aimed at those products were accelerated. The China Banking Regulatory Commission introduced regulations in March 2013 to increase transparency, broaden the scope of information made public and develop accounting practices. Thanks to those regulations, asset growth of trust companies edged down to 8.3 percent, whereas it was 16.9 percent in first quarter of 2013. Although regulations decelerate growth, the unhealthy structure which results in loan supplies from non-bank financial institutions has a potential to create an unfavorable impact on the Chinese economy. That is why, in China, actions to be taken with regard to shadow banking are of great importance to achieve financial stability.

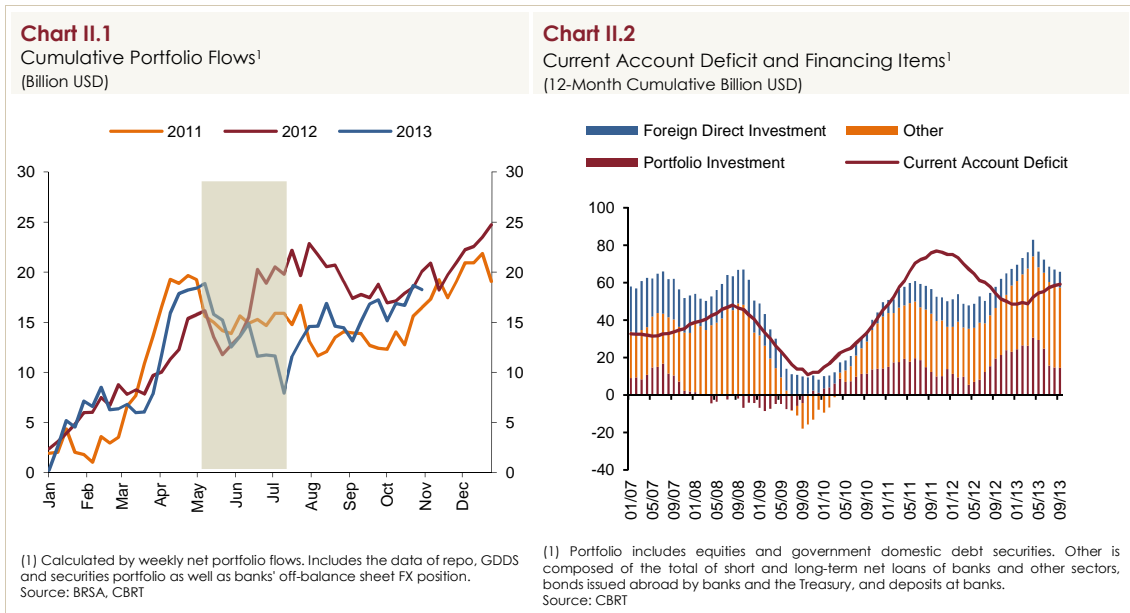
II. Domestic Economic Outlook²

Economic activity presented a more positive outlook in the second quarter of 2013 compared to the first quarter. The revival in domestic demand and the base effect in gold trade led to a slight deterioration in the current account deficit. Increased volatility in global financial markets after May caused fluctuations in capital flows and exchange rates in emerging market economies including Turkey.

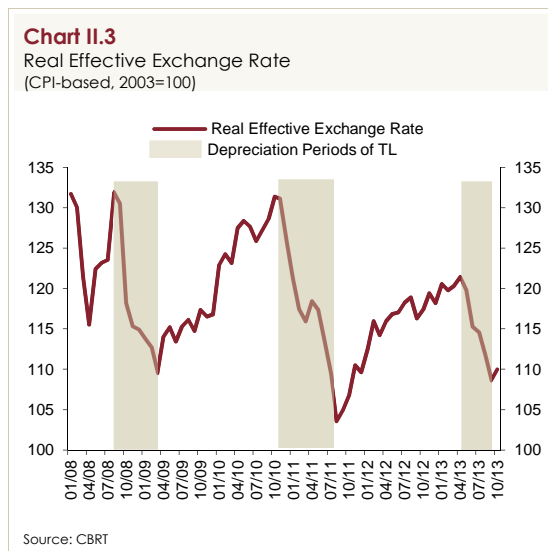
Increased uncertainties over global monetary policies as of the second quarter of 2013 have led to capital outflows from emerging market economies including Turkey. The recent tightening in financial conditions is expected to curb the increase in loans and the current account deficit in the upcoming period. Although financial and non-financial sectors had no trouble in borrowing from abroad, during the period from May to July, Turkey posted a capital outflow of approximately USD 10 billion. However, with the postponement of the expectations over Fed tapering, recovery of global risk appetite made capital flows rebounded again. The recent volatility in portfolio flows to Turkey was higher than that experienced after the Euro area debt crisis in 2011 (Chart II.1).

The current account deficit (CAD) makes the domestic economy more vulnerable to capital flows. Even if a slight deterioration was observed in current account deficit due to the increase in imports demand as a result of revival in domestic demand as of the first quarter of 2013, this deterioration was mainly driven by gold trade. The domestic demand and loans that are expected to display a moderate increase in the upcoming period might restrain the increase of imports. Furthermore, the signs of recovery in the Euro area economic activity also support the positive expectations regarding imports. In light of these developments, the recovery in the CAD excluding gold is expected to continue in the period ahead. Factors other than portfolio flows did not display a notable change in financing the CAD, which alleviates concerns over financing it (Chart II.2).

² This chapter has been prepared by E. Özgü Özen Çavuşoğlu.

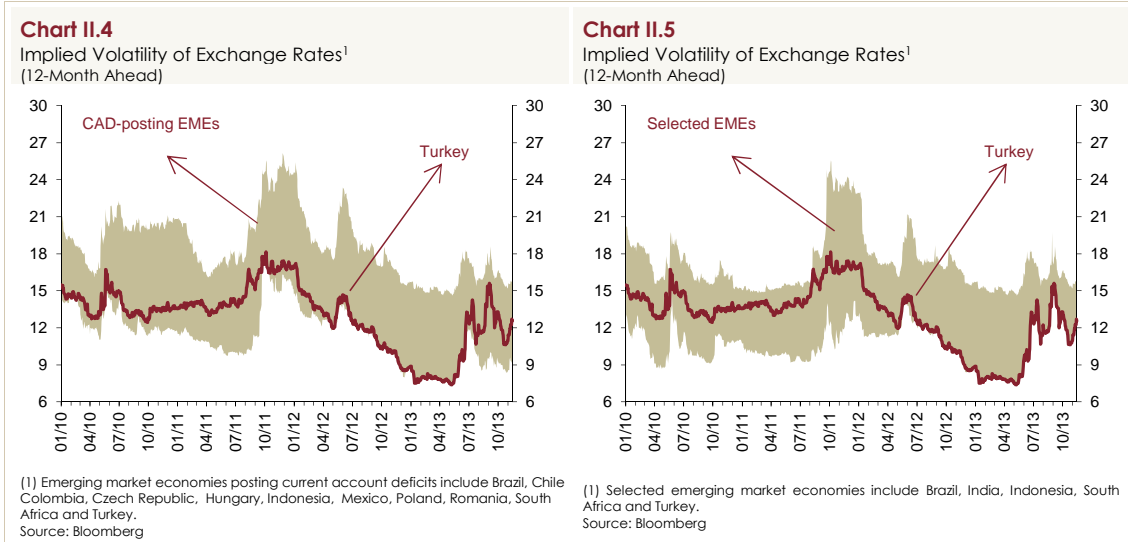


Increased uncertainties over global monetary policies led to repricing of all financial assets including exchange rates. The real effective exchange rate that had gradually increased since mid-2011 depreciated after May 2013 due to nominal exchange rate developments. In September, though, the depreciation in the real effective exchange rate subsided amid developments that reduced concerns in global financial markets (Chart II.3). The course of the real effective exchange rate after May is considered to contribute to the economic rebalancing process.

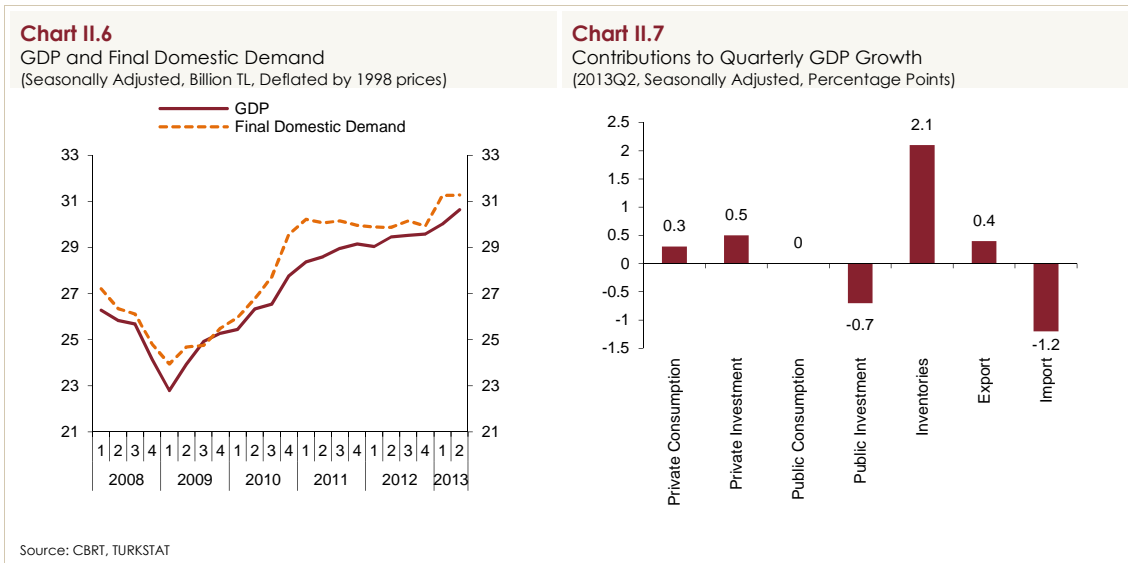


The relative deterioration in the risk outlook of emerging market economies has exacerbated the volatility of exchange rates. The Turkish lira, with the lowest exchange rate volatility among currencies of emerging market economies posting current account deficits, started to display higher volatility in the post-May period (Chart II.4). While Turkey's

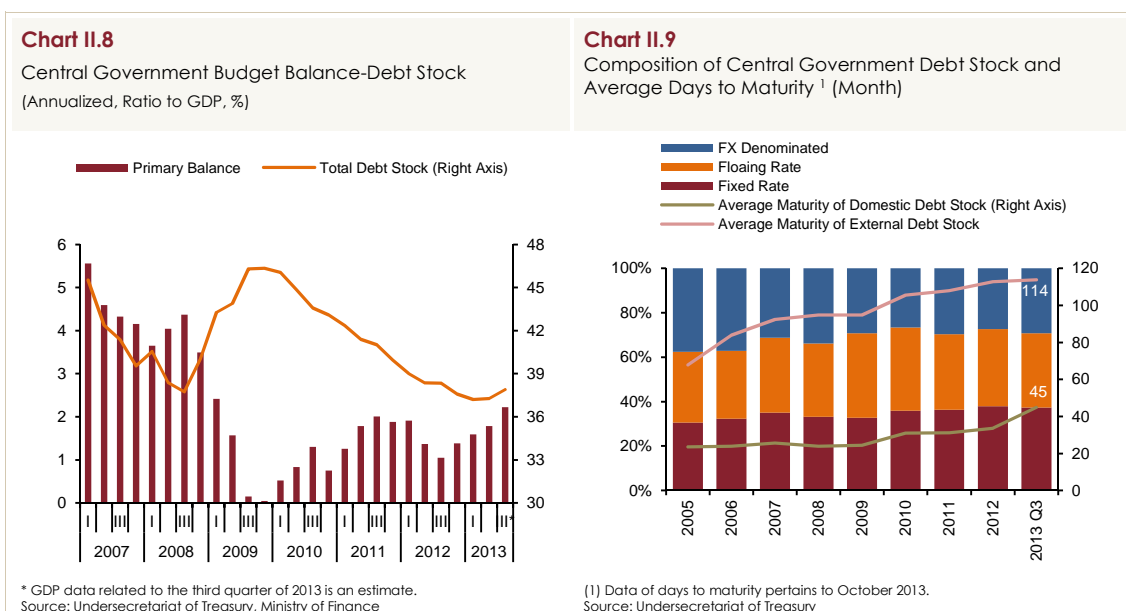
susceptibility to external financing was instrumental in increasing the implied exchange rate volatility relatively further, the Turkish lira displayed the lowest volatility compared to four other emerging market currencies that recorded the highest depreciation in the same period (Chart II.5).



Economic activity gained pace in the second quarter of 2013. After significant growth in the first quarter of 2013, the final demand displayed a limited increase in the second quarter, compared to the previous one. The private sector's investment and consumption demand recorded a moderate increase on a quarterly basis, while the public demand that played an important role in the first quarter growth recorded a decline. On the other hand, the largest contribution to the second quarter growth came from the change in inventories. While net foreign trade had a negative contribution to growth after the boost of the imports demand, the contribution of net imports to growth is expected to increase in view of the recent developments (Chart II.7).



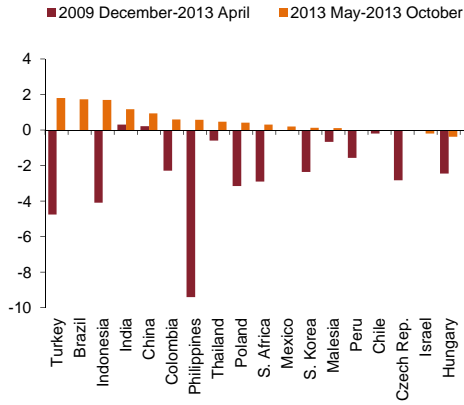
The recovery trend in public debt indicators has been continuing in line with the favorable outlook in the budget performance. The significant increases in tax and non-tax revenues in 2013 became the main determinant of the favorable outlook in the budget performance. The recovery trend in public debt stock indicators that started in 2010 on the back of the improvement in budget performance has continued in 2013 as well (Chart II.2.8). In line with these developments, internal debt rollover ratios have continued to hover below 100 percent throughout the year. Maintenance of the positive outlook of public finance and the fact that its susceptibility to the level of public debt stock as well as to interest rate and exchange rate movements is limited are essential for macroeconomic stability and for the stability of the Turkish banking system that bears significant amounts of GDDS on its balance sheet.



In the repricing process of financial assets, domestic interest rates soared in response to the increase in U.S. bond interest rate and in risk premiums of emerging markets. Interest rates on GDDS that had decreased to historic lows on the back of sovereign rating upgrades increased more than those of other emerging market economies during the post-May fluctuation (Chart II.10). Although the volatility in bond rates declined slightly due to the CBRT's predictability-enhancing actions and the recovery in global risk appetite, it remained above pre-May levels (Chart II.11).

Chart II.10

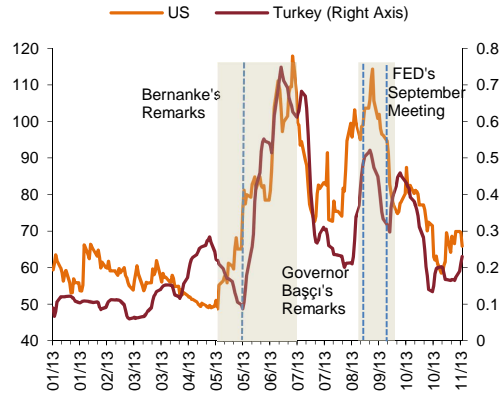
Change in Market Rates of Selected Countries with a 5-Year-Maturity (Percentage Point)



Source: Bloomberg

Chart II.11

Volatility of Interest Rates on U.S. and Turkish Treasury Bonds with a 10-Year-Maturity¹

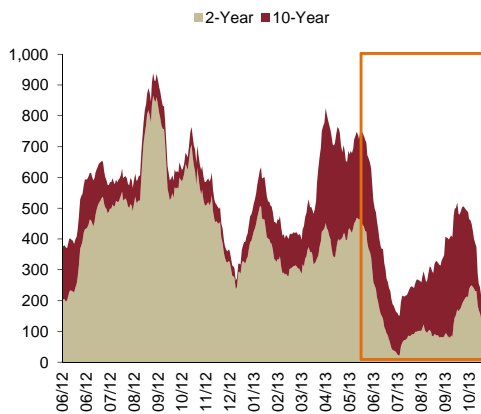


(1) The Move Index has been used for the volatility of US Treasury bond with a 10-year-maturity. A 22-day standard deviation has been calculated for the yields on Turkish Treasury bond with a 10-year-maturity.
Source: Bloomberg

In the bond market, transaction volumes, particularly of bond with a two-year-maturity, declined significantly during the period of intensive sales by foreign investors, hence bond rates drastically moved. Although transaction volumes recovered slightly after July, the bond market could not gain the depth it used to have before the fluctuation (Chart II.12). On the other hand, the GDDS yield curve that flattened out after the fluctuation has returned to normal levels in the recent period (Chart II.13).

Chart II.12

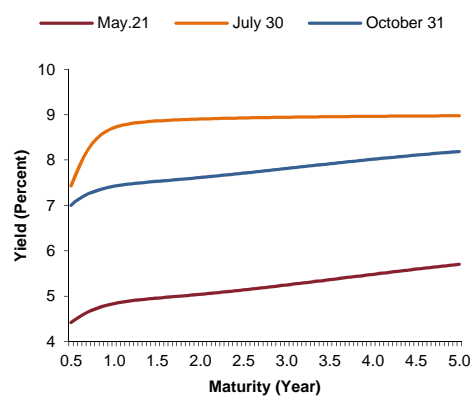
Transaction Volume of Bonds with a Maturity of 2 - 10 Years (Million TL)



Source: Bloomberg

Chart II.13

GDDS Yield Curve¹ (%)



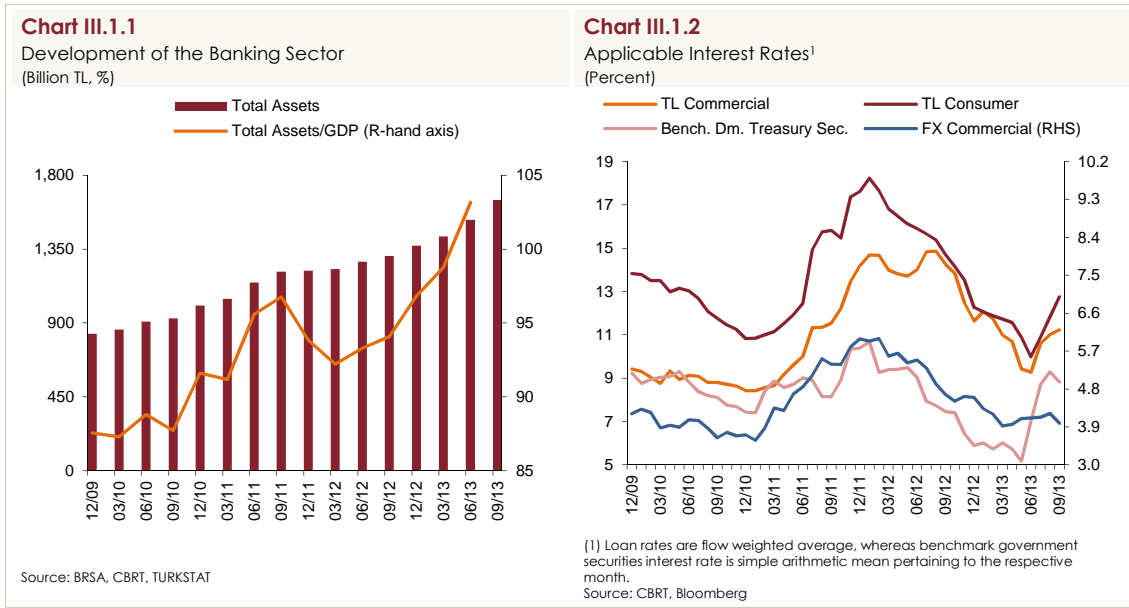
(1) Calculated from the compounded returns on bonds quoted in BIST Bonds and Bills Market by using Extended Nelson-Siegel (ENS) method.
Source: BIST, CBRT

III. Developments by Sectors³

III.1. Banking Sector

Banking sector's rapid growth trend in 2012 continued in the first half of 2013 as well.

Asset size of the banking sector increased by 20.3 percent compared to end-2012 and reached TL 1,649 billion by September 2013; its ratio to GDP became 103.1 percent by June 2013 (Chart III.1.1). The rate cut cycle that started at the end of 2011 continued until the second quarter of 2013 when the loan rates declined to historic lows and constituted a basis for a strong growth in sector assets (Chart III.1.2).



Among similar emerging economies the ratio of banking sector assets to GDP has posted the highest increase in Turkey after Brazil since 2009 (Chart III.1.3). In the same period, Turkey came to the forefront as the country that recorded the highest rise in banking sector assets among developing countries (Chart III.1.4). The Turkish banking sector maintained its strong growth performance in 2013 as well.

³ This chapter has been prepared by Figen Özcan, Hasan Erol, Ayça Topaloğlu Bozkurt, Canan Özkan, Egemen Eroğlu, Fatih Bektaş, Merve Demirbaş and E. Özgü Özen Çavuşoğlu.

Chart III.1.3

Asset/GDP Ratio and Change*
(Point, %)

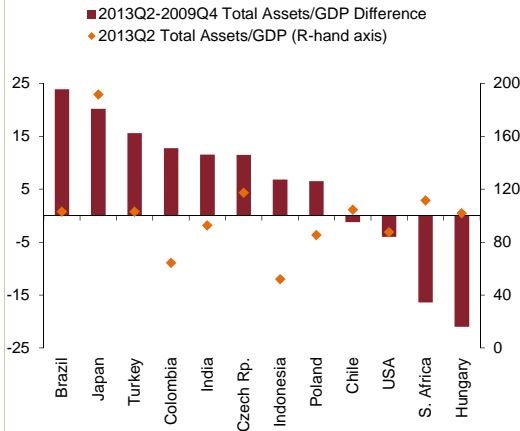
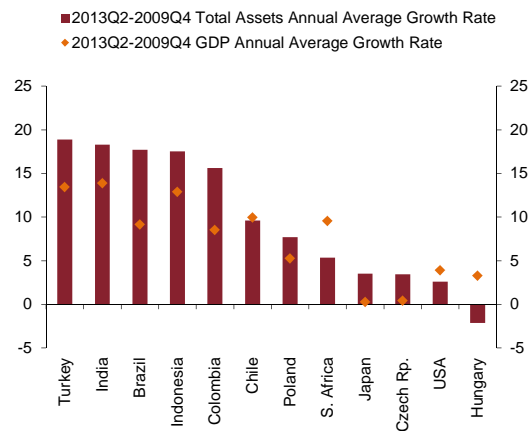


Chart III.1.4

Annual Average Growth Rate of Assets (2009 Q4-2013 Q2)*
(Nominal, %)

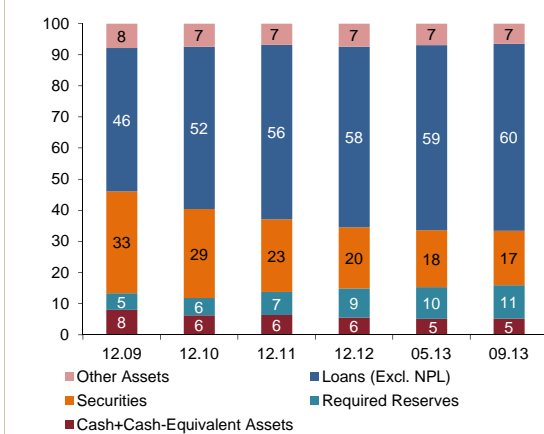


(* Latest data from the IMF – FSI database has been used, most of which are figures pertaining to the second quarter of 2013. Source: IMF)

Since 2009, asset growth of the sector has been driven mainly by loans; the sector's loan-asset ratio reached 60 percent by September 2013. In this period, banks replaced a significant portion of their securities with loans. However, sales of government securities by foreign investors started being covered by banks after May 2013, which led to a moderate increase in the securities portfolio of the banking sector. With the effective use of ROM, banks started to hold more required reserves at the CBRT in 2013 (Chart III.1.6).

Chart III.1.5

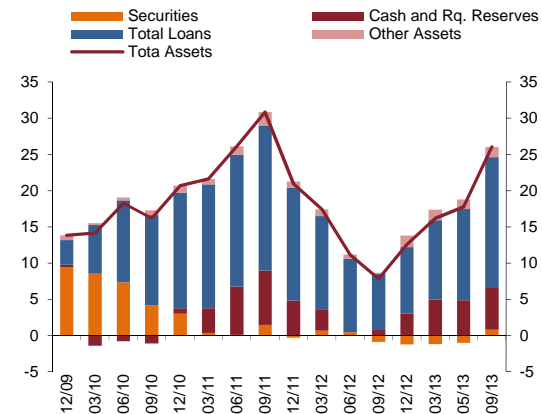
Asset Structure of the Banking Sector¹
(%)



(1) Cash and Cash Equivalent Assets=Cash+ Money Markets +Banks + Reverse Repo Source: BRSA, CBRT

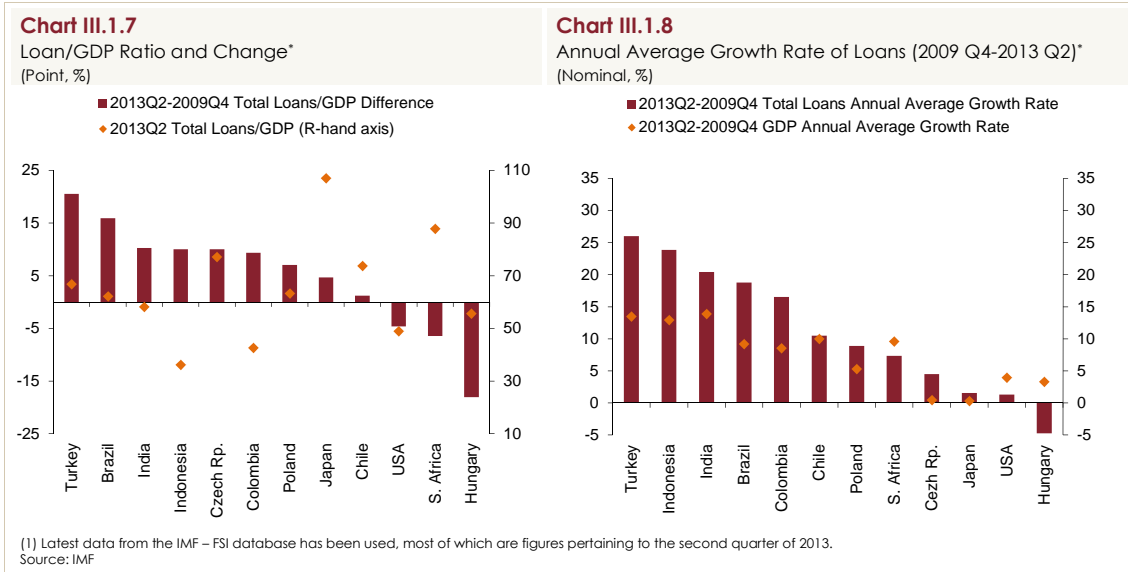
Chart III.1.6

Contribution of Banking Sector's Asset Items to Annual Asset Growth (%)



Source: BRSA, CBRT

Among selected emerging markets, Turkey has posted the highest rise in loan/GDP ratio since 2009. The loan/GDP ratios of countries such as Brazil, India and Indonesia have also posted significant increases in this period (Chart III.1.7). With a loan growth that has accelerated since the final quarter of 2012, Turkey outshines other emerging market economies (Chart III.1.8).

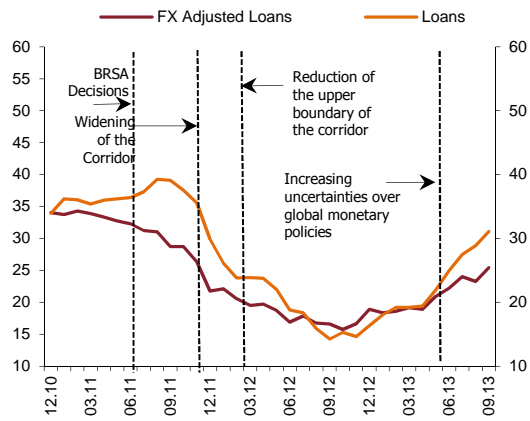


The loan growth that had strengthened since the second half of 2012 started to converge towards previous years' averages in the period following the fluctuation in financial markets. The supportive liquidity policies of the CBRT, the upgrade of Turkey's sovereign credit rating to investment level and the moderate surge in the domestic demand contributed to the credit growth acceleration in 2013. Nevertheless, the loan growth rate started to slow down and converged towards previous years' averages on the back of the fluctuation after May (Chart III.1.10).

Particularly during the May-June period, foreign exchange denominated project financing loans extended mainly to privatization and public infrastructure investments boosted the loan growth in 2013. In fact, while the loans adjusted for the exchange rate effect grew by 20.9 percent year-on-year in May 2013, the annual growth rate rose to 25.4 percent by September 2013 despite the unfavorable outlook in global conditions (Chart III.1.9).

Chart III.1.9

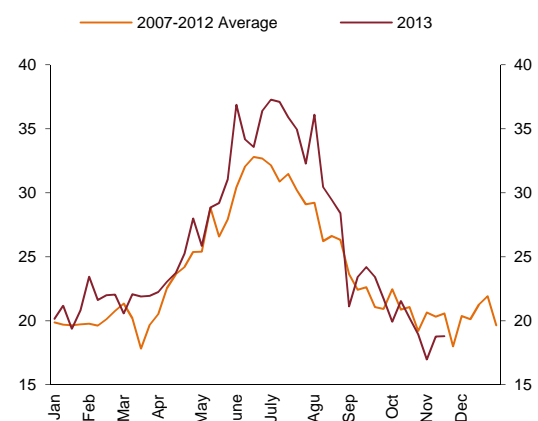
Annual Growth of Loans¹
(%, Excluding NPLs)



(1) The basket value used to adjust for the exchange rate effect is composed of 70 percent USD and 30 percent euro. The average basket rate of December 2007 – September 2013 is used to adjust for the exchange rate effect and FX-indexed loans are included in FX loans.
Source: BRSA, CBRT

Chart III.1.10

Development of Loans Adjusted for Exchange Rate Effect¹
(%)

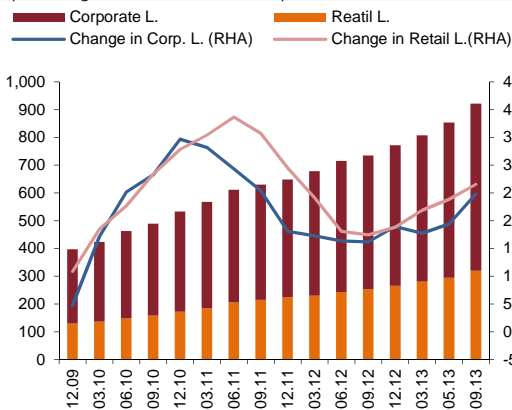


(1) The basket value used to adjust for the exchange rate effect is composed of 70 percent USD and 30 percent euro. FX-indexed loans are included in FX loans. The 13-week-average of weekly changes has been annualized. The latest data belongs to 15 November 2013.
Source: BRSA, CBRT

While total loan growth was mainly driven by retail loans in the first five months of 2013, it has been primarily attributed to the increase in corporate loans since June. By September 2013, corporate, adjusted for the exchange rate effect, and retail loans increased by 24.8 percent and 26.6 percent year-on-year, respectively, thus contributing to the total loan growth by 16.5 points and 9.1 points, respectively (Chart III.1.11). However, in the May-September period, the contribution of corporate loans to total loan growth increased by 3.5 points, while that of retail loans rose only by 1.1 points (Chart III.1.12). The increase in the contribution of retail loans has been almost fully driven by housing and other loans.

Chart III.1.11

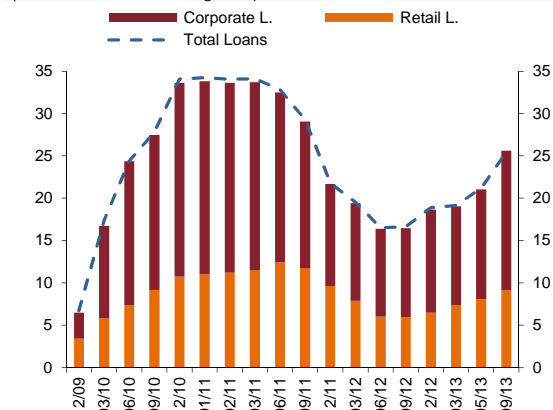
Development of Loans by Type*
(Excluding NPLs, Billion TL, Annual %)



(*) Loans are adjusted for exchange rate effect.
Source: BRSA, CBRT

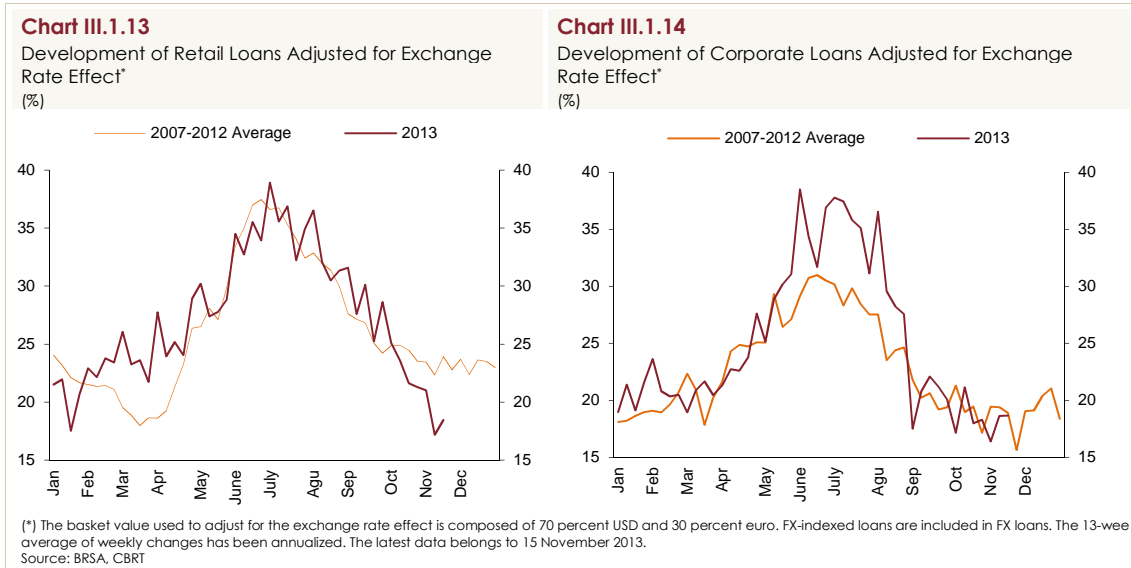
Chart III.1.12

Contribution of Loans to Credit Growth by Type*
(% Contribution, Excluding NPLs)

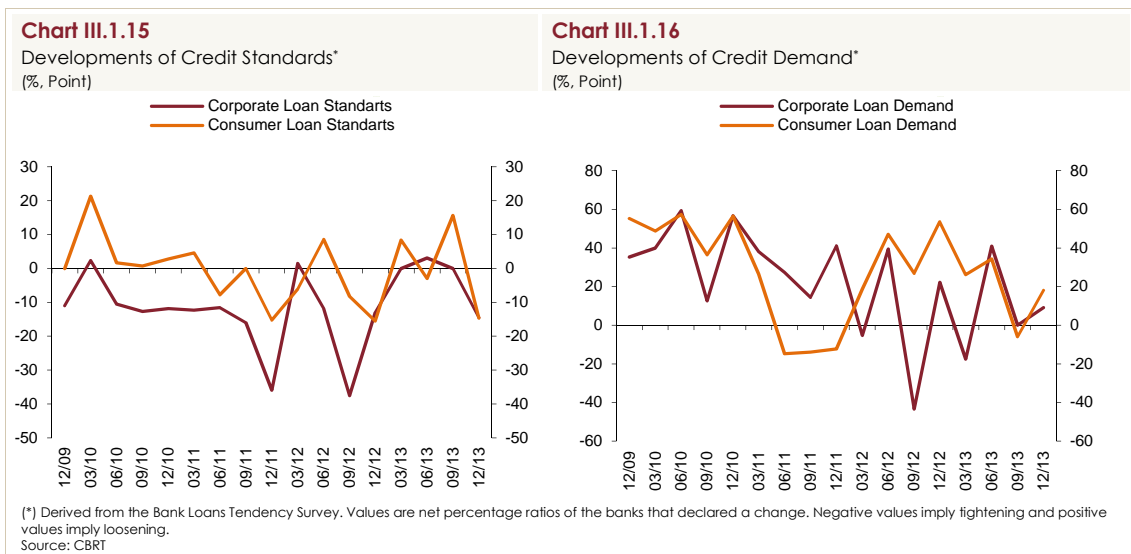


Credit growth trends point to a slight deceleration in loan growth in the upcoming months. At the beginning of the third quarter of 2013, loan growth trends, especially the trend of corporate loans, exceeded previous years' averages. However, this outlook ended

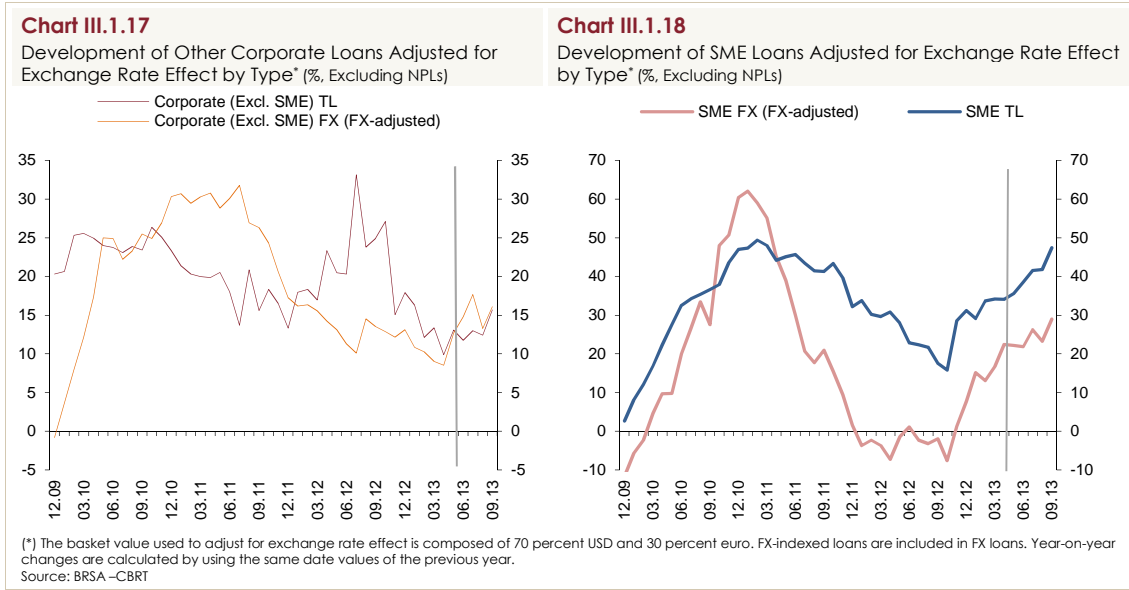
as of September and the trend of increase in both loan groups declined below previous years' averages (Chart III.1.13, Chart III.1.14). The increasing trend in corporate loans tapers off and loans start to hover around previous year averages particularly when the FX-denominated project loans extended in May and June are excluded.



The CBRT Bank Loans Tendency Survey findings on credit supply and demand indicate that the standards on corporate and consumer loans loosened relatively in the first three quarters of 2013, the demand for consumer loans remained strong in the first two quarters of 2013 and the demand held steady in the third quarter (Chart III.1.15). The Survey suggests that the standards on both consumer loans and corporate loans will be tightened in the final quarter of 2013. Although expectations over the demand outlook suggest an increase in this period, the expectation of tightening of the standards on corporate loans implies that corporate loan growth rates might further decline slightly (Chart III.1.16).



Increases in the Turkish lira dominated SME loans and FX-denominated other corporate loans have been instrumental in the growth of corporate loans since the beginning of the third quarter of 2013. With the effect of the new classification based on the revised definition of loans extended to SMEs⁴, the annual increase of corporate loans by type have soared since November 2012, whereas other corporate loans have assumed a declining trend in the same period. However, once the effect of this revision on the change of the composition of firms faded out, loans, mainly the Turkish lira-denominated SME loans and FX-denominated other corporate loans displayed increases by May 2013 (Chart III.1.17, Chart III.1.18).

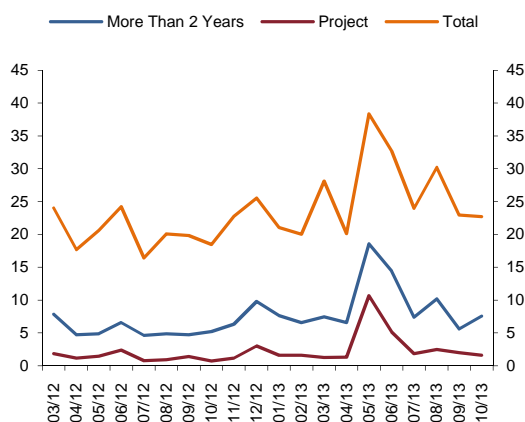


Increase in the annual growth rate of exchange rate adjusted corporate loans in the second half of 2013 mainly stemmed from utilization of long-term loans for project financing. When such loans are excluded, a significant decline is observed in the increase of the growth rate of corporate loans. The amounts of FX-denominated project loans that were lent at a monthly average level of TL 1.2 billion in 2012 materialized as TL 9 and 6 billion in May and June 2013, respectively (Chart III.1.19). The acceleration in the growth of FX-denominated corporate loans adjusted for the exchange rate effect in the first half of 2013 can be attributed to the increase in extension of long-term project loans. Recalculation (according to 2012 averages) of project-based FX-denominated corporate loans that have been extended suggests that the growth of FX-denominated corporate loans will follow a horizontal trend (Chart III.1.20).

⁴ With the regulatory amendment dated 4 November 2012 that led to an increase in the number of firms covered by the SME definition, small enterprises were defined as businesses with either annual net sales revenues or balance sheets at TL 8 million maximum instead of the former threshold of TL 5 million, and medium-sized enterprises were defined as those that do not exceed TL 40 million as opposed to the former threshold of TL 25 million.

Chart III.1.19

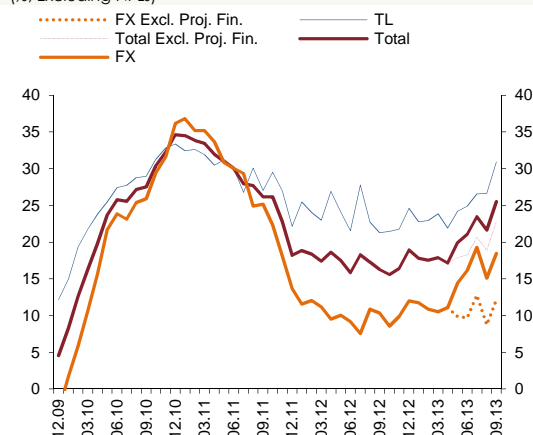
FX-Denominated Project Financing Loans¹
(Flow, Billion TL)



(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

Chart III.1.20

Annual Growth Rates of Corporate Loans Adjusted for Exchange Rate Effect^{1,2}
(%, Excluding NPLs)



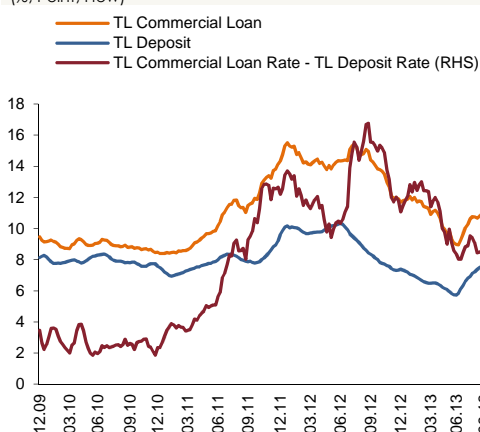
(1) The data of project financing loans is composed of the data of 13 banks that extended the highest amounts of FX corporate loans. The share of these banks in FX corporate loans is 86 percent.

(2) The basket value used to adjust for exchange rate effect is composed of 70 percent USD and 30 percent euro. FX-indexed loans are included in FX loans. Year-on-year changes are calculated by using the same date values of the previous year.
Source: CBRT

Actual TL-FX commercial loan and deposit spread supports the developments in growth rates. TL commercial loan-deposit spreads had declined until the end of the second quarter of 2013 but increased slightly in the third quarter of 2013 (Chart III.1.21). The FX commercial loan-deposit spread moved downward after rising in May and June (Chart III.1.22). The increase in the FX commercial loan rate was driven by FX loans with maturities longer than two years.

Chart III.1.21

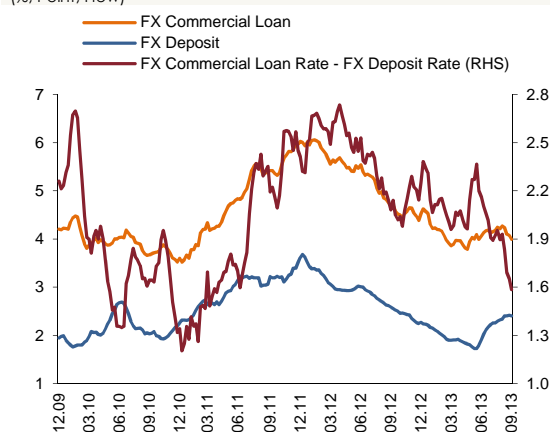
TL Commercial Loan and TL Deposit Rate¹
(%, Point, Flow)



(1) Flow data, 4-week moving average
Source: CBRT

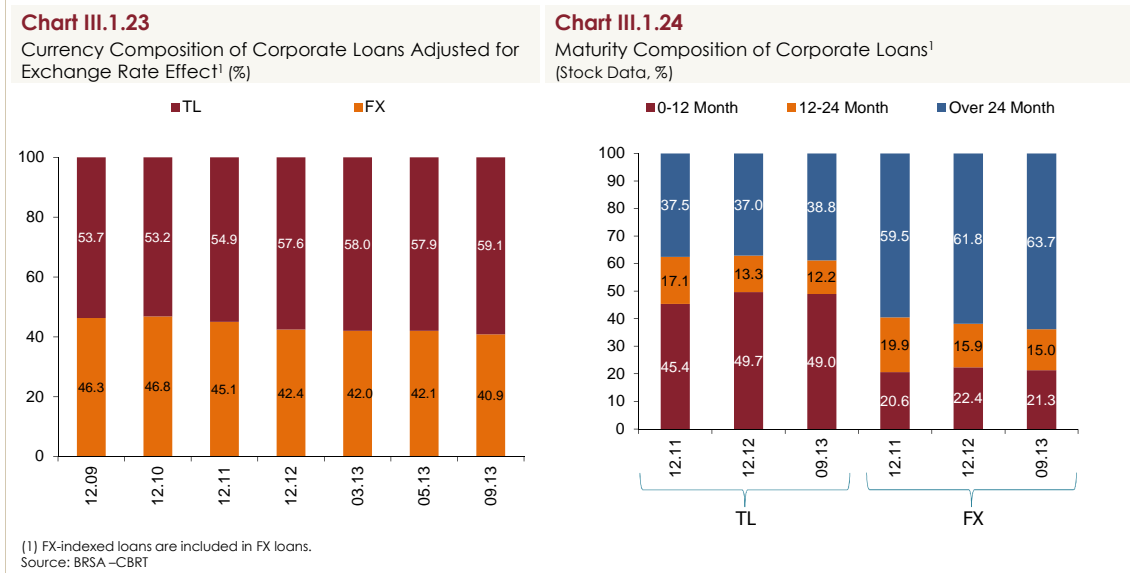
Chart III.1.22

FX Commercial Loan and FX Deposit Rate¹
(%, Point, Flow)

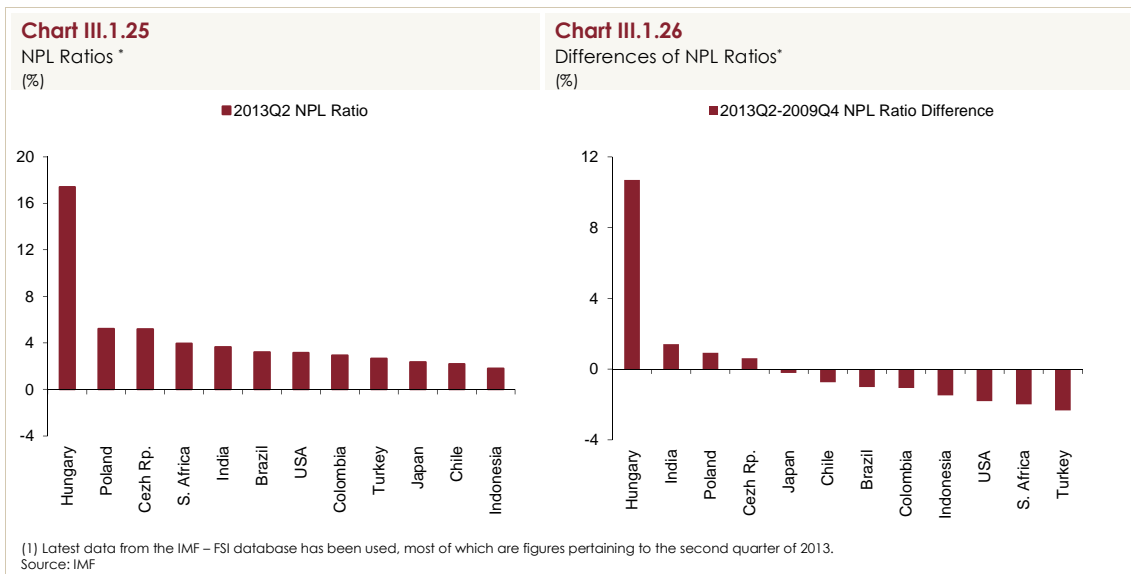


Corporate loans are mainly extended in Turkish lira with maturities longer than one year. While the share of TL loans in corporate loans had been on a constant rise until end-

2012, the TL/FX composition displayed a limited change in 2013 (Chart III.1.23). The share of FX corporate loans with maturities of more than two years in total FX corporate loans increased throughout 2013 and reached 63.7 percent by September (Chart III.1.24).

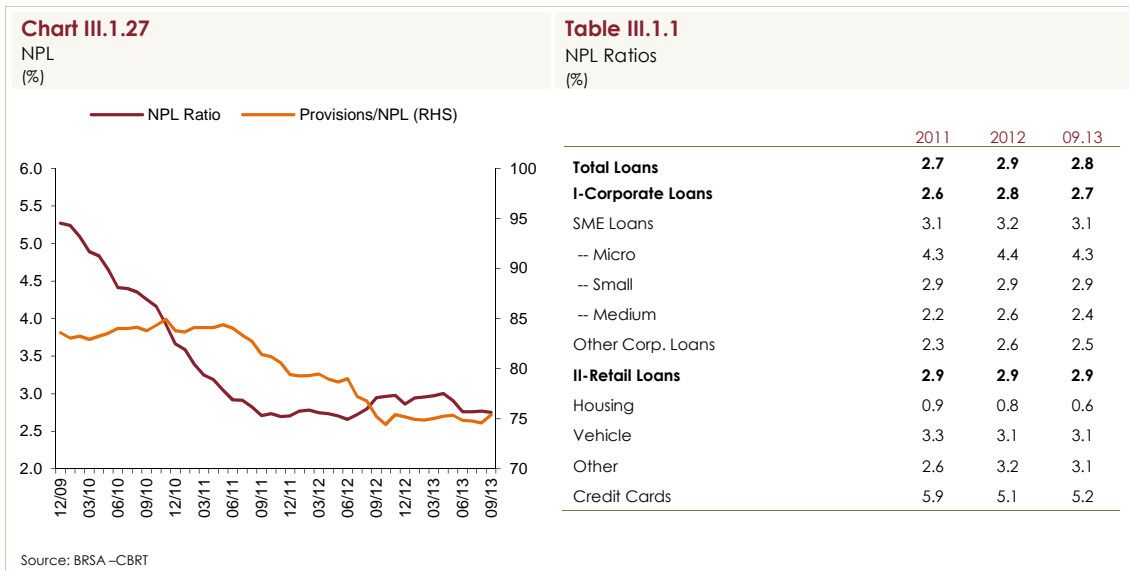


During the 2009-2013 period, non-performing loan (NPL) ratio of the Turkish banking system remained low compared to the countries reviewed. In this period, Turkey, due to NPL sales, became prominent as the country that posted the fastest decline in the NPL ratio. The Turkish banking system's NPL ratio declined by 2.4 points and fell from its end-2009 level of 5 percent to 2.6 percent by the end of the second quarter of 2013 (Chart III.1.25, Chart III.1.26). Even with no asset write-offs, the Turkish banking sector's NPL ratio is estimated to have decreased by 160 basis points to 3.7 percent in that period.

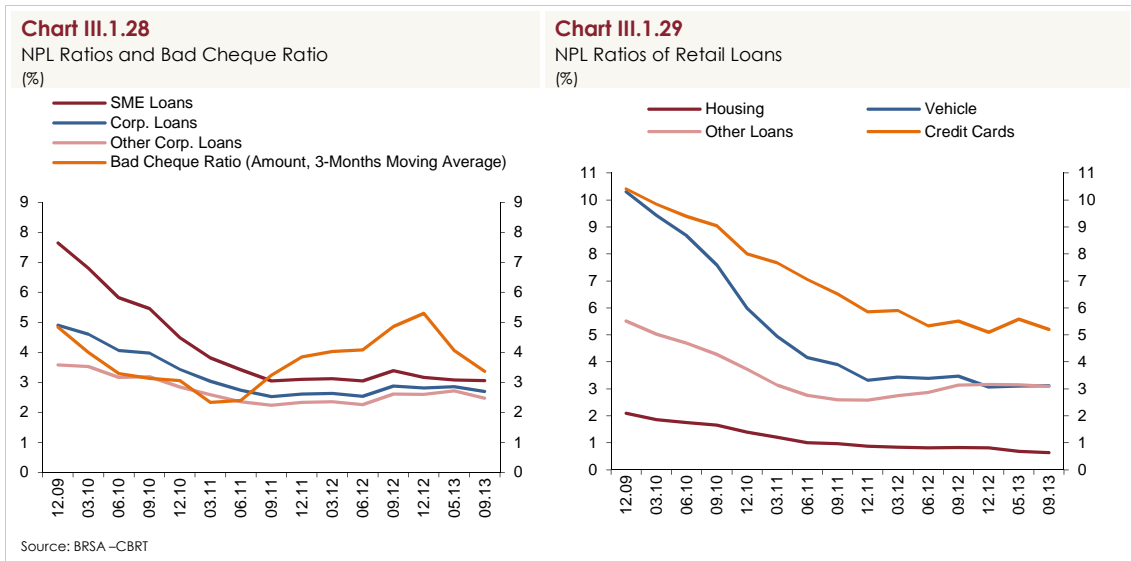


The NPL ratio declined to a limited extent and maintained a flat course by the end of 2013. By September 2013, the gross NPL amount of the sector increased by 22 percent year-on-year to TL 28 billion. NPL ratios on general purpose loans and credit cards, the types of retail loans with the highest NPL ratio, did not display a significant change in 2013. Micro-SME loans that have a relatively higher NPL ratio among corporate loans also presented a similar outlook (Table III.1.1).

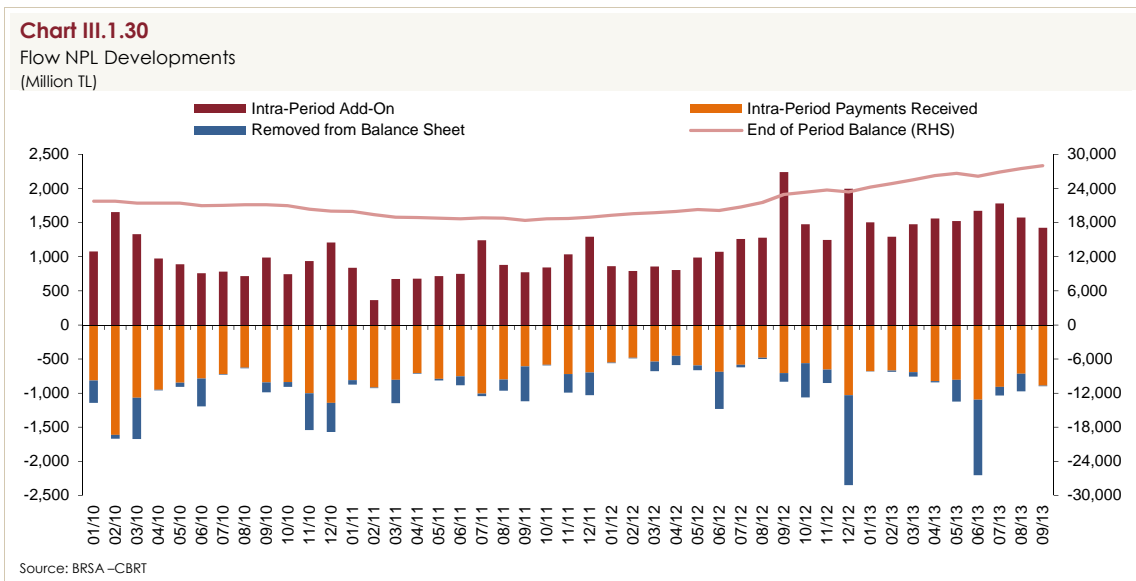
The ratio of special provisions allocated for NPLs to the NPL amount declined by 2.2 points to 75.4 percent over the past one year period (Chart III.1.27). There is no significant concern over the asset quality; yet, it is believed that a cautionary move for the banks will be to hold reserves for non-performing loans in an amount above the legal requirement at times when the economic conjuncture is favorable and the profitability is strong.



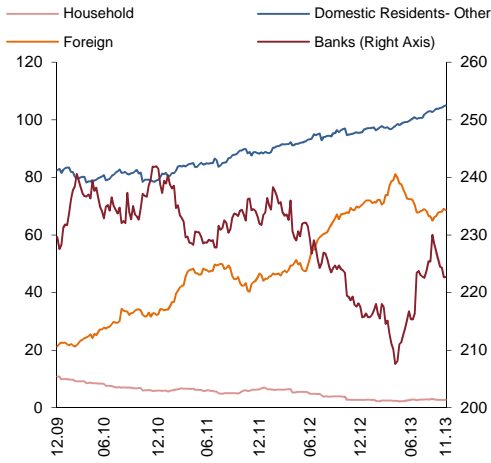
The rise in the ratio of bad cheques presented to the Interbank Cheque Clearing Houses Center (ICH) to the total amount of cheques observed since the second half of 2011 continued until the end of 2012. This ratio started to decline as of early 2013 (Chart III.1.28). NPL ratios in retail loan products also declined slightly in September 2013 (Chart III.1.29).



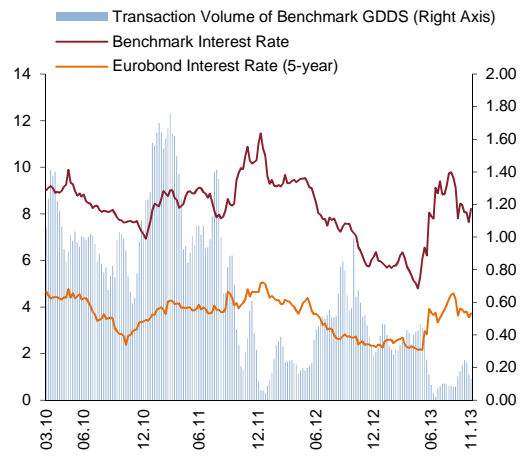
Since September 2012, claims on loans that were added to the NPL amounts during the accounting period have been hovering at high levels compared to 2010 and 2011 averages. The NPLs added during the quarter remained strong in 2013. Persistence of this situation may prevent NPL ratios from declining in upcoming periods (Chart III.1.30).



The securities portfolio, the second largest item on the assets side, has displayed significant fluctuations since the second half of 2012 due to the portfolio inflows from non-residents. Non-residents' GDDS demand that had been on the rise since mid-2012 had been met by resident banks. In this period, interest rates on GDDS decreased and transaction volumes increased. However, after May 2013, this process was reversed on the back of increased expectations that the liquidity in global markets would diminish, and GDDS outflows from non-residents' portfolios has been purchased by the banking sector (Chart III.1.31 and III.1.32).

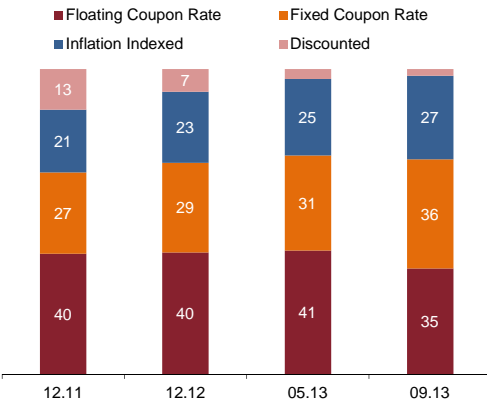
Chart III.1.31GDDS Holdings
(Nominal, Billion TL)

Source: CBRT

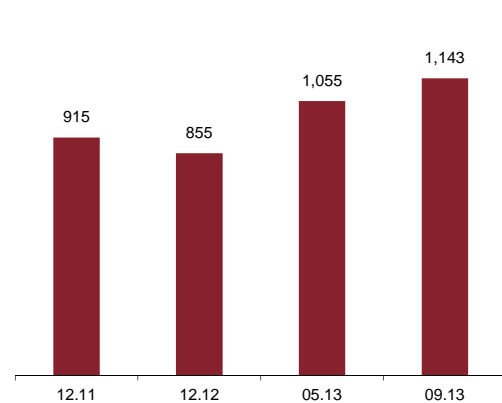
Chart III.1.32Interest Rates on Public Borrowing Securities and
Transaction Volume of Benchmark GDDS (% , Million TL)

Source: Bloomberg

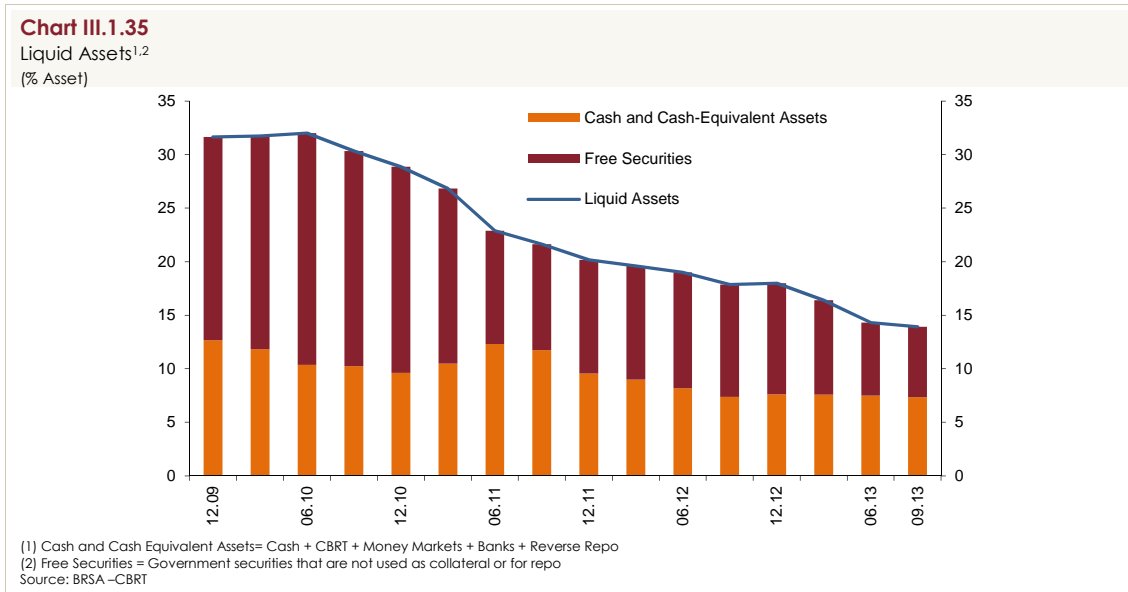
An analysis of the TL-denominated GDDS portfolios by interest rate structure, which account for 82 percent of banks' securities portfolios, reveals that variable-rate securities that are more advantageous in terms of interest rate risk constitute two-thirds of the portfolio (Chart III.1.33). Although fixed-rate securities have relatively low share in the portfolio, their maturities have been on a stable rise in recent years (Chart III.1.34). However, extension of the maturities of fixed-rate GDDS portfolios by banks is attributed to the recent improvement in macroeconomic outlook, rather than the developments in banks' risk appetite. On the other hand, excess volatility in GDDS yields and the decrease in transactions volumes after May 2013 increased banks' demands for variable-rate securities in primary markets.

Chart III.1.33Interest Rate Composition of Banks' GDDS Portfolio
(Nominal, %)

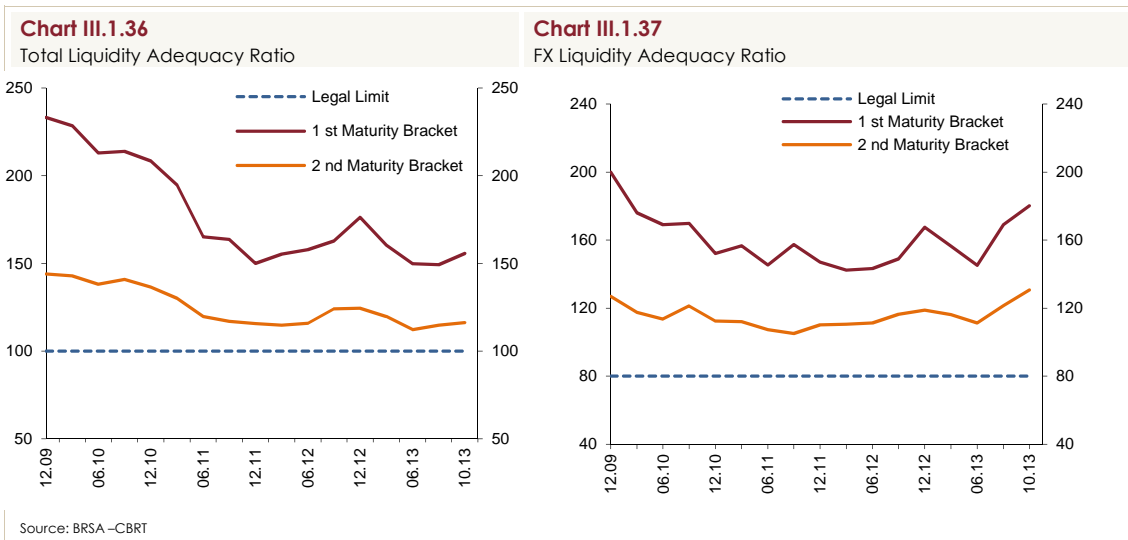
Source: BRSA –CBRT

Chart III.1.34Number of Days to Maturity of Fixed-Rate GDDS Portfolio of
Banks

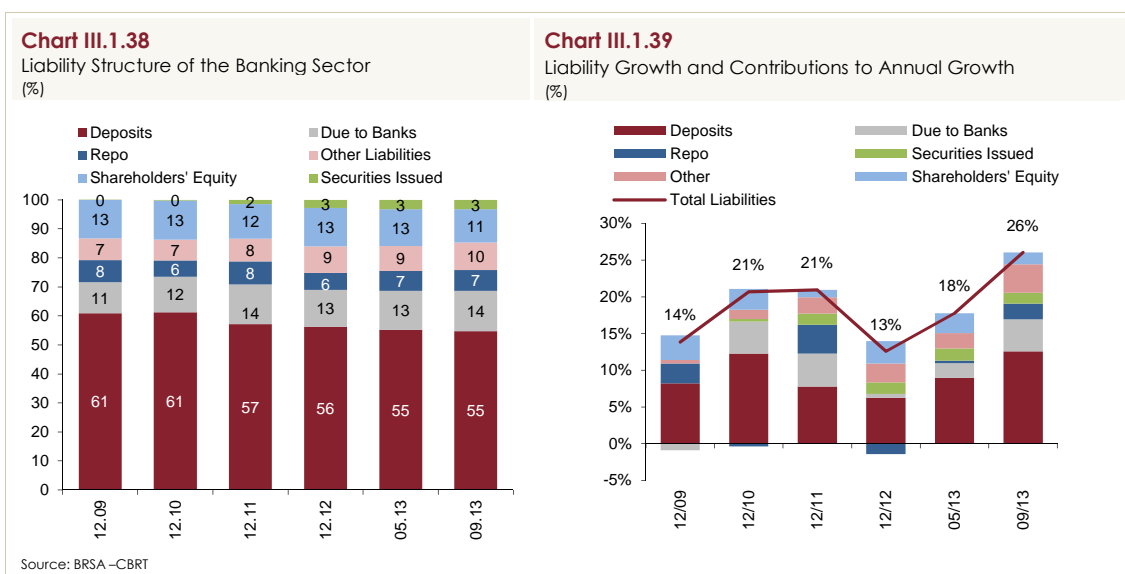
The steady decline in the share of the banking sector's liquid assets in total assets, prevailing since 2010, continued in 2013 as well. By September 2013, the ratio of liquid assets to total assets decreased by 4.1 points compared to end-2012 and materialized as 13.9 percent (Chart III.1.35). The main factor lying behind this trend is that banks have gradually decreased their securities portfolios that have a larger share in their balance sheets compared to banks of other countries. After May 2013, decrease in security prices as a result of the rise in interest rates has also played a supportive role in this trend.



Despite the decline in liquid assets, banks' liquidity adequacy ratios for total and FX liquidity have been hovering above legal ratios of 100 percent and 80 percent (in both the first and second maturity brackets), respectively (Chart III.1.36 and III.1.37).



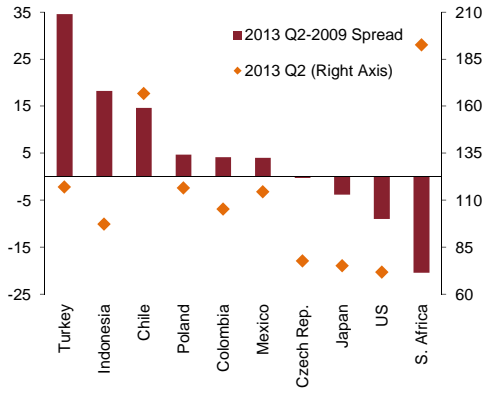
The weight of deposits that have the largest share in the banking sector's liability items decreased slightly on the back of the revival of external funding facilities in the post-crisis period yet did not display a notable change in 2013 (Chart III.1.38). An analysis of the contribution of banks' funding sources to the liability growth indicates that the contribution of repo funding to the liability growth has turned from negative to positive since the beginning of 2013 due to the increase in reserve requirement liabilities and that the deposits have increased, whereas security issues have followed a stable trend (Chart III.1.39).



As access to non-deposit funds became easier and credit demand remained high, the sector's loan/deposit ratio reached historic highs. Compared to other countries, Turkey recorded the most evident increase in the loan/deposit ratio between 2009 and 2012 (Chart III.1.40). In the upcoming period, on account of the effect of macroprudential measures, the credit growth rate is considered to converge towards the deposit growth, thereby curbing the rapid increase in the loan/deposit ratio.

Chart III.1.40

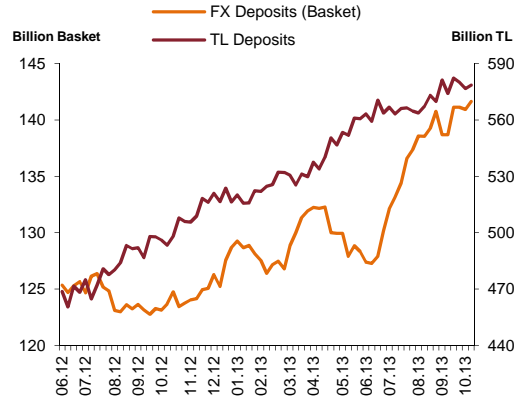
Gross Loan/Deposit Ratios of Selected Countries¹
(%)



(1) For Chile January 2013 data; for Japan, Mexico and Poland, the U.S. 2013 Q1 data; for Colombia, the Czech Republic, Indonesia, South Africa and Turkey, 2013 Q2 data are used.
Source: IMF

Chart III.1.41

Deposits^{1,2}
(Billion TL, Billion Basket)

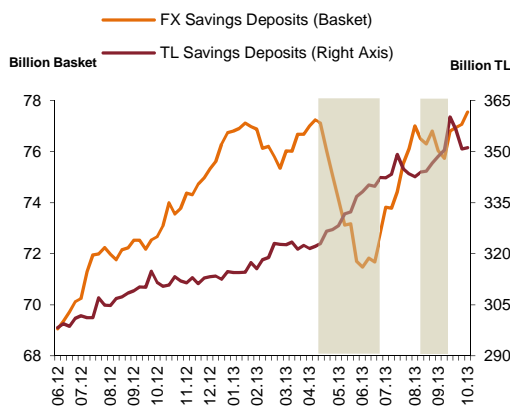


(1) Interbank deposits are excluded.
(2) FX deposits are expressed in terms of the basket composed of 60 percent USD and 40 percent euro.
Source: BRSA –CBRT

Exchange rates followed a stable trend for a long period. This situation led the savings deposit holders to determine their investment preferences (on the basis of the currency of deposits) in the direction of smoothing out exchange rate movements. Also during the period from May to mid-July 2013, marked by a rapid depreciation in the Turkish lira, savings holders shifted their preferences to TL deposits from FX deposits in line with their past behaviors (Table III.1.2). However, with the continuation of the fluctuations in exchange rates and depreciation of the Turkish lira, savings holders opted for FX deposits. In the post-May period, in September, when the Turkish lira displayed the strongest appreciation, savings holders shifted back to TL deposits from FX deposits.

Chart III.1.42

TL-FX Savings Deposits^{1,2}
(Billion TL, Billion Basket)



(1) Interbank deposits are excluded.
(2) FX deposits are expressed in terms of the basket composed of 60 percent USD and 40 percent euro.
Source: BRSA –CBRT

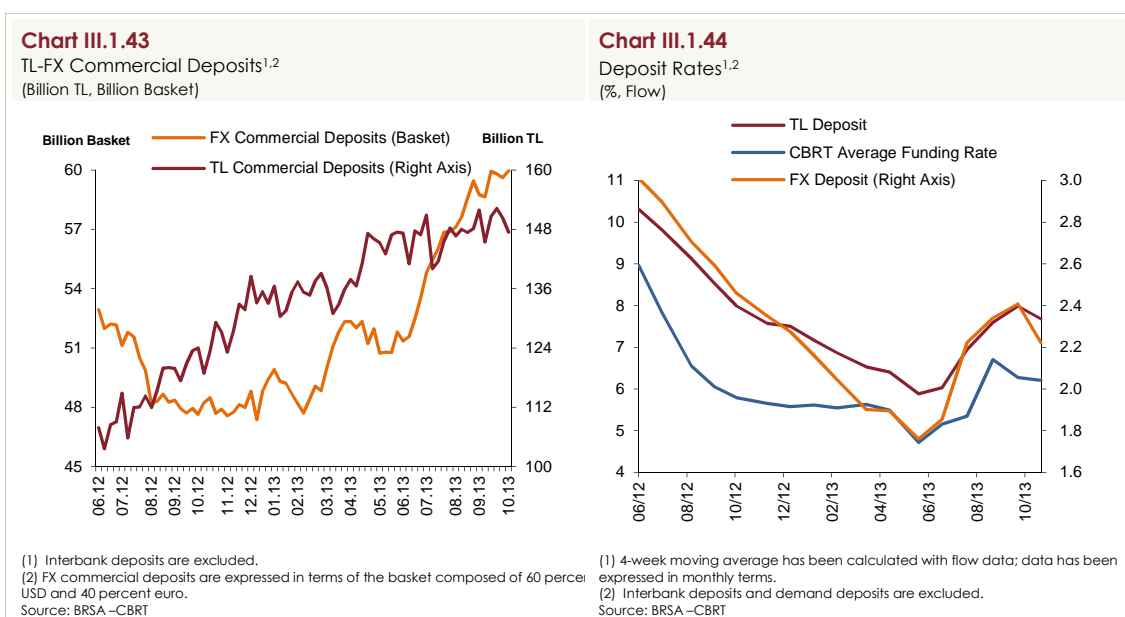
Table III.1.2

Changes in Deposit Amounts During Shifts Between TL-FX¹
(Billion TL, Billion Basket)

	03 May.- 12 Jul.	29 Aug.- 4 Oct.
TL (Billion TL)	17.6	7.9
FX (Billion Basket)	-5.6	-1.3
FX (Billion TL)	-11.6	-2.9
Average Basket (\$0.6+€0.4)	2.1	2.3

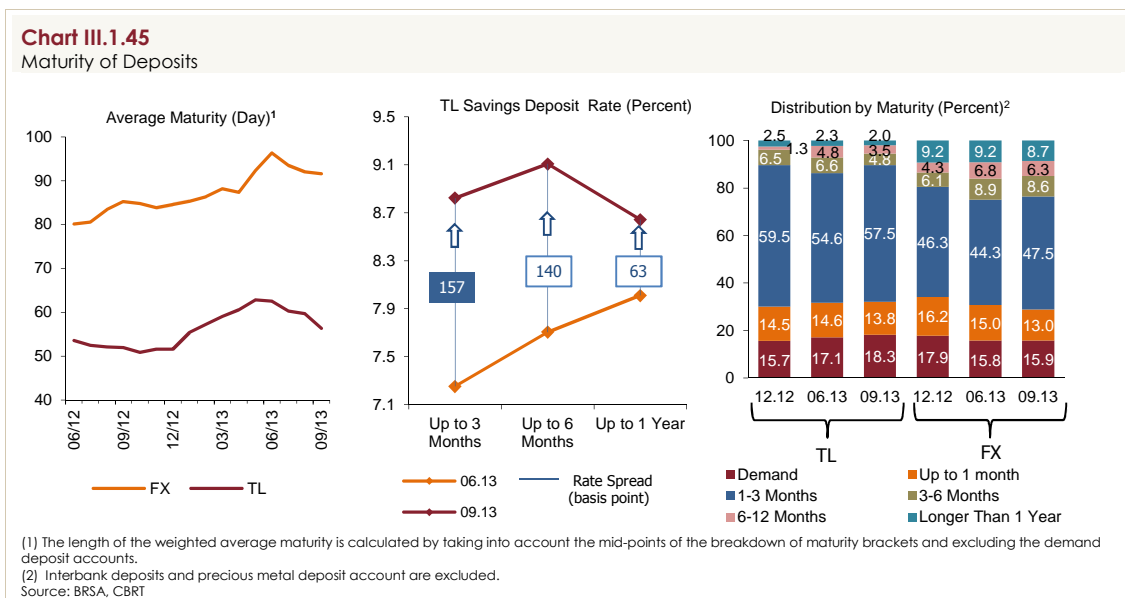
Since mid-2013, while the upward trend in FX commercial deposits has accelerated, TL commercial deposits have followed a fluctuating trend. The corporate sector's move to close its short position in FX is considered to be influential in the increase of FX commercial deposits. With the alleviation of the depreciation of Turkish lira in September, FX commercial deposits decelerated (Chart III.1.43).

Interest rates on TL and FX deposits that had been on a stable decline since the second half of 2012 changed direction in June 2013. Interest rates on TL and FX deposits that declined since mid-2012 have displayed an upward trend in line with the deteriorated risk perceptions in international markets and the CBRT's monetary tightening in July and August (Chart III.1.44). In September, however, market rates started to decline on the back of the CBRT's measures to enhance predictability and the postponement of expectations over the Fed's tapering after its September meeting, whereas the decline in deposit rates remained limited amid expectations over a potential tightening in external funding conditions.



The average maturity of deposits, which increased on the back of the differentiation of the reserve requirement ratio according to the maturity structure and the onset of the rate-cut cycle, has been decreasing since mid-2013. While the weighted average maturity of TL deposits, which was 63 days in May 2013 fell to 56 days in September, that of FX deposits that reached 96 days in June, decreased to 92 days in the same period (Chart III.1.45). With the contribution of the differentiation of withholding rates applied to TL and FX deposits since the beginning of 2013 in a way to promote long-term maturity, the share of demand deposits and deposits with maturities of up to six months in total deposits decreased by 3.3 points in TL accounts and 2.5 points in FX accounts in June, compared to end-2012. Yet, this positive outlook reversed after June. On the TL side, while the share of TL deposits with

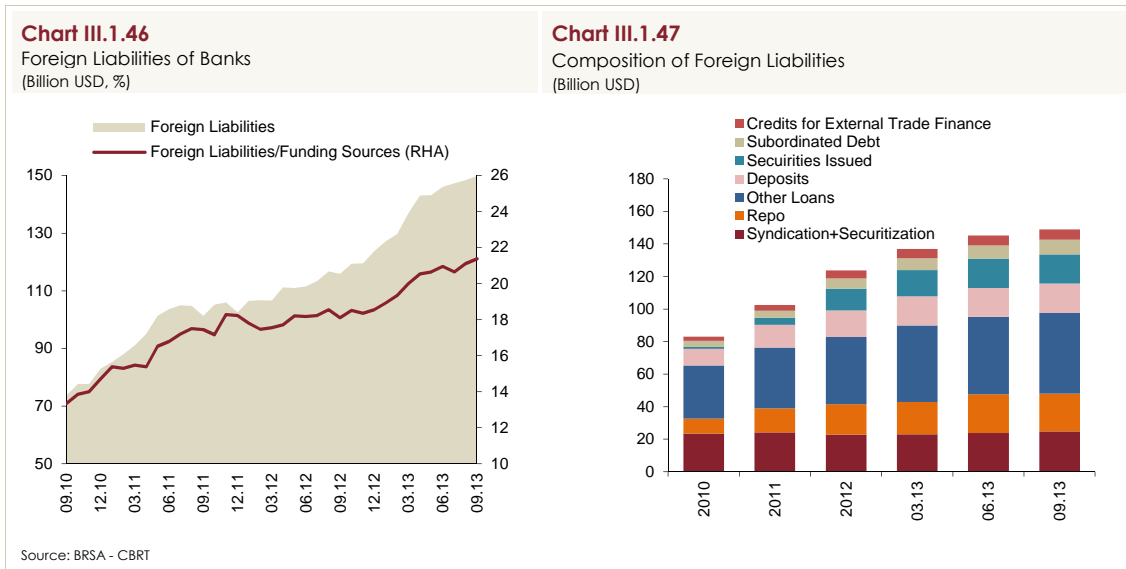
maturities of 1-3 months in total deposits increased, that of deposits with maturities of 3-6 months and 6-12 months in total deposits decreased compared to June. The development of TL savings deposit rates is considered to support this shift between maturity brackets of TL deposits. The increase in short-term deposit rates in the June-September period was particularly instrumental in shortening of the maturity of deposits.



Banks do not have difficulty in obtaining external funding even at times of tightening in global liquidity conditions. Foreign liabilities have risen constantly in times of monetary easing implemented by advanced economies. Funds obtained from abroad by the banking sector continued to increase, albeit with reduced pace. By September 2013, the total foreign liabilities of the banking sector increased by 29.3 percent year-on-year to USD 149.8 billion, and their weight in funding sources rose to 21.4 percent, mainly driven by public banks (Chart III.1.46). Funds provided by financial institutions headquartered in the U.S., the UK and Germany for a long time have been occupying the first three ranks in banks' foreign liabilities, and during the reporting period, the shares of these countries materialized as 18.5 percent, 16.3 percent and 9.2 percent, respectively.

The share of syndication loans in the funds obtained by the banking sector from abroad has continued to remain flat while that of securitization loans has still been on the decline. Banking sector's bill and bond issues have gained importance as a source of funding in recent years. Accordingly, the amounts of syndication and securitization loans have not recorded a significant increase. By September 2013, the total amount of these loans was USD 24.8 billion, with a share in foreign liabilities and total funding sources at 16.5 percent and 3.5 percent, respectively (Chart III.1.47). By the preparation date of this Report, the amount of the banks' foreign liabilities to mature in 2014 was USD 50.1 billion. The

potential persistence of uncertainties over the global monetary policy for an extended period and the weakening of the growth outlook in emerging market economies are considered among the factors that might have an impact on the ongoing decrease in capital flows. Moreover, it should be noted that in the upcoming period, there might be a limited increase in cost of external borrowing facilities that remained robust in 2012 due to Turkey's more favorable outlook compared to its peers, thanks to its growth dynamics and sovereign rating upgrades.



Although the external debt rollover ratio of the banking sector has been declining since the second quarter of 2013, it still remains high. This ratio that displayed a temporary rise in March followed a flat course in April and started to decline in May (Chart III.1.48). These developments were mainly attributable to the continuation of the significant fluctuation in capital flows in the third quarter, as well as the uncertainty in global financial markets over the normalization process of the Fed's monetary policy.

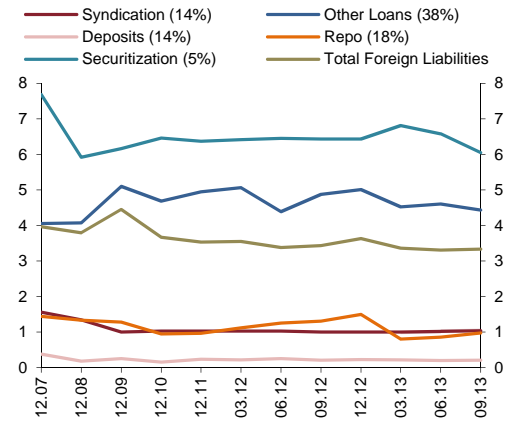
The long-term maturity structure of banks' foreign liabilities, which have an increasing share in the total balance sheet is contributing to the extension of the maturity of banking sector liabilities . The weighted average maturity of foreign liabilities remained stationary by years independent of the global liquidity conditions and materialized as 3.3 years in September 2013. The average maturity of syndication loans has remained unchanged at one year since end-2009 parallel to the preferences of foreign lending banks, considering the maturity-sensitivity of the cost. The average maturity of securitization loans that constitute the loans with the longest maturity in foreign liabilities remained stable at approximately six years in the same period. The largest contribution to the long-term maturity structure of foreign liabilities came from other loans, the average maturity of which is still high at 4.4 years despite an on-going decline since end-2012 (Chart III.1.49).

Chart III.1.48
External Debt Rollover Ratio of Banks¹
(%)



(1) Calculated based on 6-month moving sums of short and long-term borrowings and repayments.
Source: CBRT

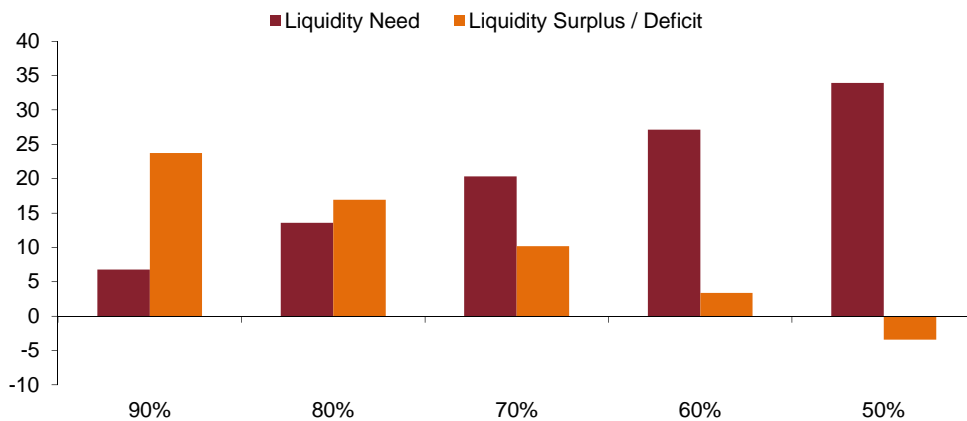
Chart III.1.49
Average Maturity of Foreign Liabilities¹
(By Original Maturity, Year)



(1) Excluding security issues.
Source: BRSA - CBRT

Banks can conveniently meet their short-term external debt with the liquid assets they have at hand. Short-term external debt statistics of the Central Bank reveal that banks' short-term external debt, excluding TL deposits and the deposits at foreign branches and affiliates, amounted to USD 67.8 billion by September 2013. In this period, the total amount of banks' FX liquid assets was high enough to roll over almost half of the short-term external debt (Chart III.1.50).

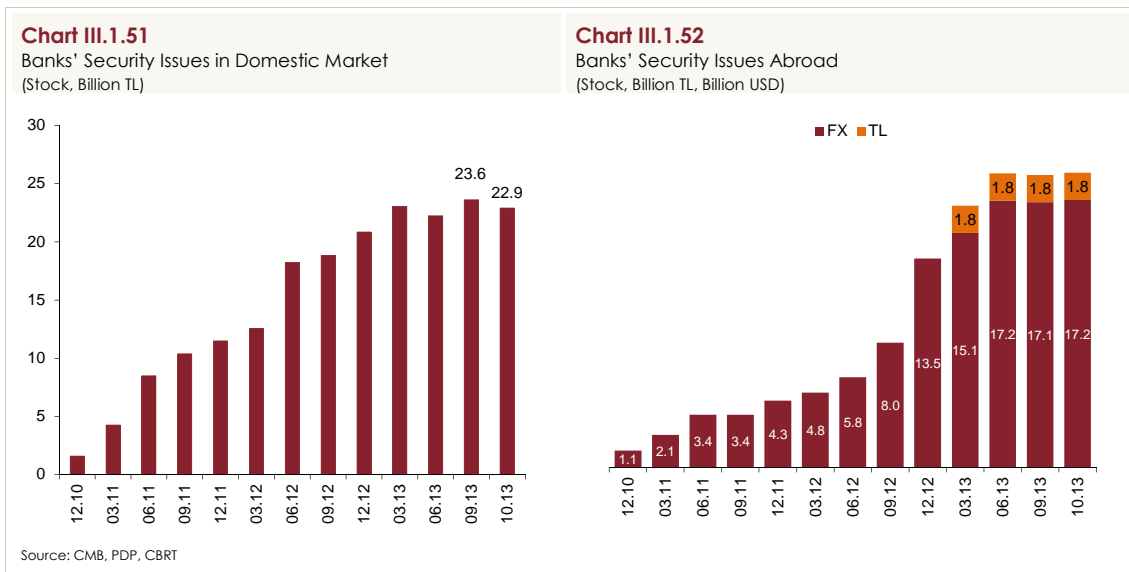
Chart III.1.50
External Debt Roll-Over Ratio¹ and FX Liquidity Need² of Banks
(September 2013, Billion USD, %)



(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

Banks' security issues had trended downward since the emergence of liquidity-based concerns in May; however, they picked up by August. In October 2013, the nominal amount of TL-denominated securities issued by the banking sector in the domestic market

surged by 14 percent to USD 22.9 billion compared to October 2012. The recent horizontal trend in the stock amount of banks' security issues in the domestic market is attributable to the netting effect of matured securities (Chart III.1.51). Banks' FX-denominated security issues abroad, which had been on a rapid rise since 2011 due to the excess liquidity in the international markets, lost pace significantly after May 2013. The nominal amount of TL-denominated securities issued abroad by the banking sector remained flat. Security issues abroad, which have been in a stable course since May, subdue the liquidity-based problems likely to appear in the banking sector's receipt of funds from international markets in the medium-term (Chart III.1.52).



Banks have applied to the CMB for significant amounts of bond and bill issues. In April 2013, the first bond issue was realized in the scope of the Global Medium Term Note (GMTN)⁵, a novel programme in the Turkish banking sector. This program provides flexibility for banks' borrowings from abroad through security issues by addressing investors who may have diverse needs and preferences in terms of maturity, amount and currency. By the end of October 2013, the amount of bonds and bills issued abroad by banks was TL 17 billion while the bond and bills issued in the scope of the GMTN programme had a share of 17.7 percent in total issues (Table III.1.3). As only a certain portion of the legal issue amount permitted in the scope of the GMTN programme was realized by October, the programme will probably continue to contribute to banks' borrowings from abroad.

⁵ The GMTN programme is the generic name for external borrowing programmes, the framework of which has been set with the approval of the CMB. The GMTN programme allows banks to issue bills and bonds within a specific total limit and with a certain maturity, in desired numbers and amounts in different time frames, based on different currency, maturity and interest rate schemes. Currently, the GMTN programme has been set up in five banks, four of which have already started issuing in the scope of this programme.

Table III.1.3Banks' Bond and Bill Issues Abroad
(Stock, Million USD)

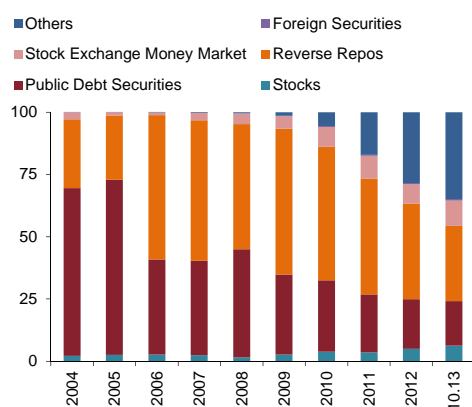
	FX-Denominated
Issues in the scope of the Global Medium Term Note Programme	3,048
Total Bond and Bill Issues by Banks	17,244
GMTN /Total (%)	17.7

Source: PDP, CMB

The share of the “Other” item comprising deposits and banks’ bond/bill issues in the portfolio distribution of mutual and pension funds is growing year by year. As stipulated by the legislation, the amount to be invested in deposit/participation accounts is limited by 10 percent and 25 percent of the overall portfolios of mutual and pension funds, respectively. Therefore, mutual and pension funds seem to have a significant interest in banks’ issues as a good alternative to deposits. In fact, the “other” item comprising deposits and banks’ issues has been expanding since 2010 (Chart III.1.53, Chart III.1.54). The accelerating growth in bond/bill issues since 2010 is believed to be driven by the demand from mutual and pension funds. The steady demand for banks’ security issues will probably play a considerable role in the deepening of these securities.

Chart III.1.53

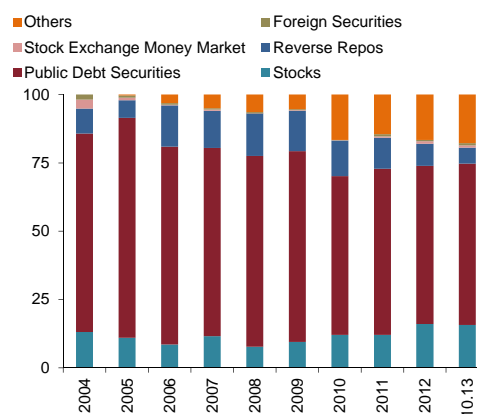
Portfolio Distribution of Mutual Funds



Source: CMB

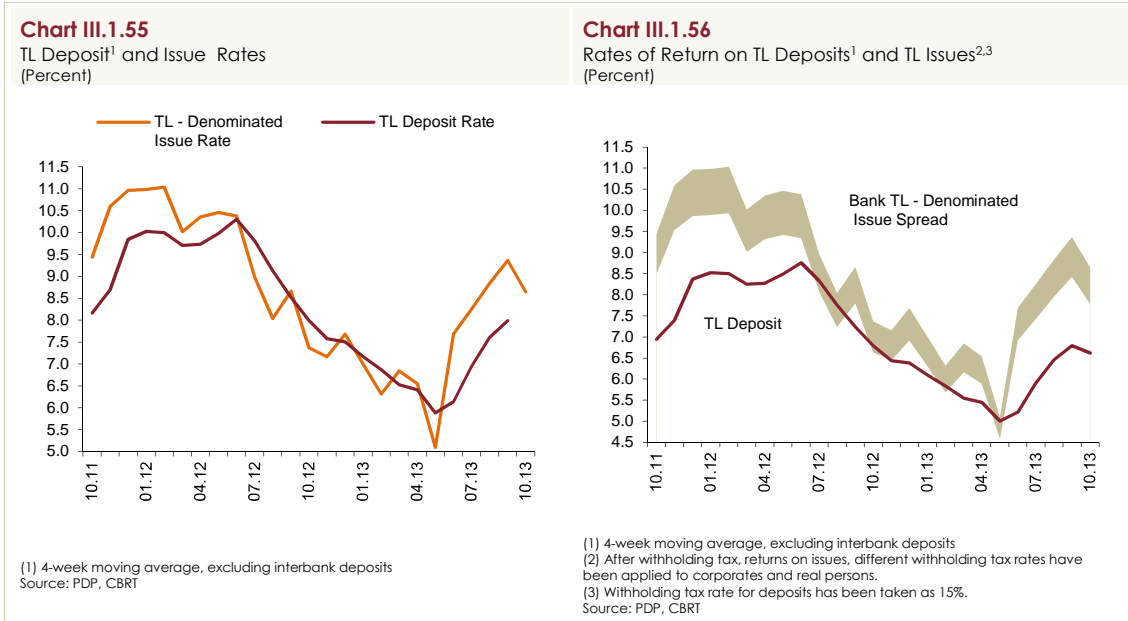
Chart III.1.54

Portfolio Distribution of Pension Funds



In terms of their return, TL-denominated security issues by banks have become a remarkable alternative to deposits for investors. The interest rates for TL-denominated bond/bill issues by banks and TL deposit rates had a parallel course from mid-2012 until May 2013. From May onwards, interest rates for TL-denominated security issues leaped at a more rapid pace than TL deposit rates. The interest difference between TL-denominated security issues and TL deposits, which increased in June, remained flat for a while before assuming a downtrend in October. When the interest rates of TL deposit and TL security issues are

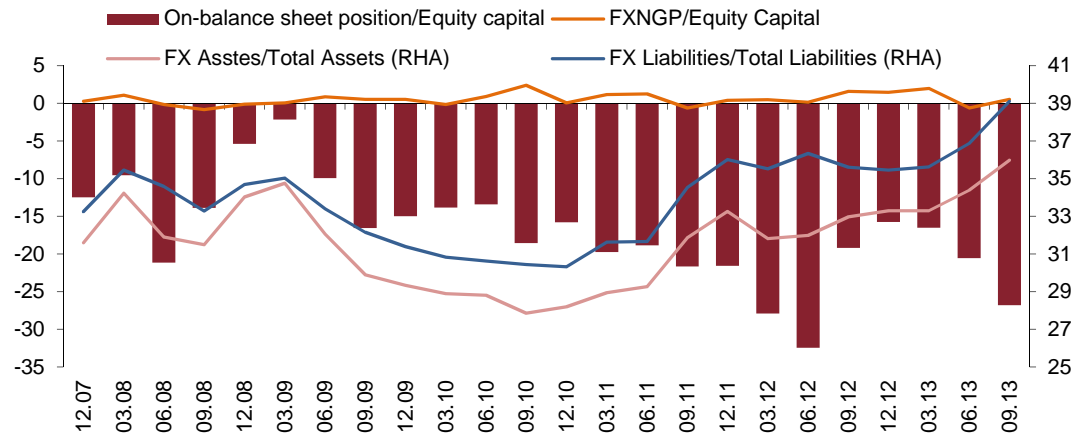
adjusted for the tax/withholding effects, bonds and bills issued by banks are believed to be more advantageous for investors in terms of interest (Chart III.1.55, Chart III.1.56).



Recently, the upswing in exchange rates has triggered a boost in the share of FX assets and liabilities in the balance sheet. By September 2013, the ratio of FX assets, including the FX-indexed ones, to total assets hiked to 36 percent whereas the ratio of FX liabilities to total liabilities escalated to 39.1 percent. The on-balance sheet short position, which is closed by off-balance sheet transactions mostly composed of swap transactions, bounced up after a period of deceleration extending from the third quarter of 2012 to the first quarter of 2013. This recovery trend gained momentum after May due to the impact of the repricing in exchange rates driven by increased uncertainty originating from global monetary policies. By September 2013, the ratio of on-balance sheet short position to equities was 26.8 percent while the ratio of foreign exchange net general position to total equity, calculated by taking into account off-balance sheet transactions as well, stood at 0.5 percent (Chart III.1.57).

Chart III.1.57

Foreign Exchange Position (%)

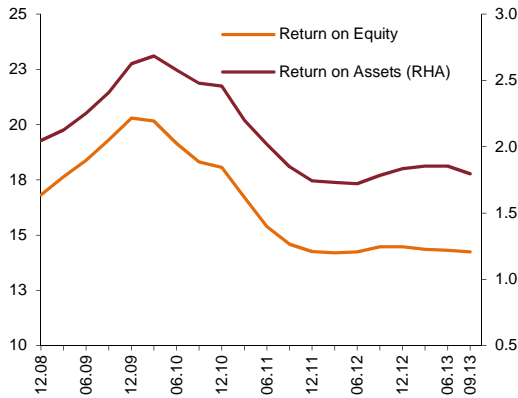


Source: BRSA, CBRT

The banking sector maintains its robust profitability structure. The sector's return on assets and return on equity remained flat for the last two years, standing at 1.8 percent and 14.2 percent in September 2013, respectively (Chart III.1.58). The sector's net interest margin, which increased in 2012 when interest rates were in a downtrend, took a downturn in 2013 and materialized as 4.9 percent in September 2013 following the upsurge in interest rates after May 2013 (Chart III.1.59).

Chart III.1.58

Return on Assets and Return on Equity (%)



Source: BRSA - CBRT

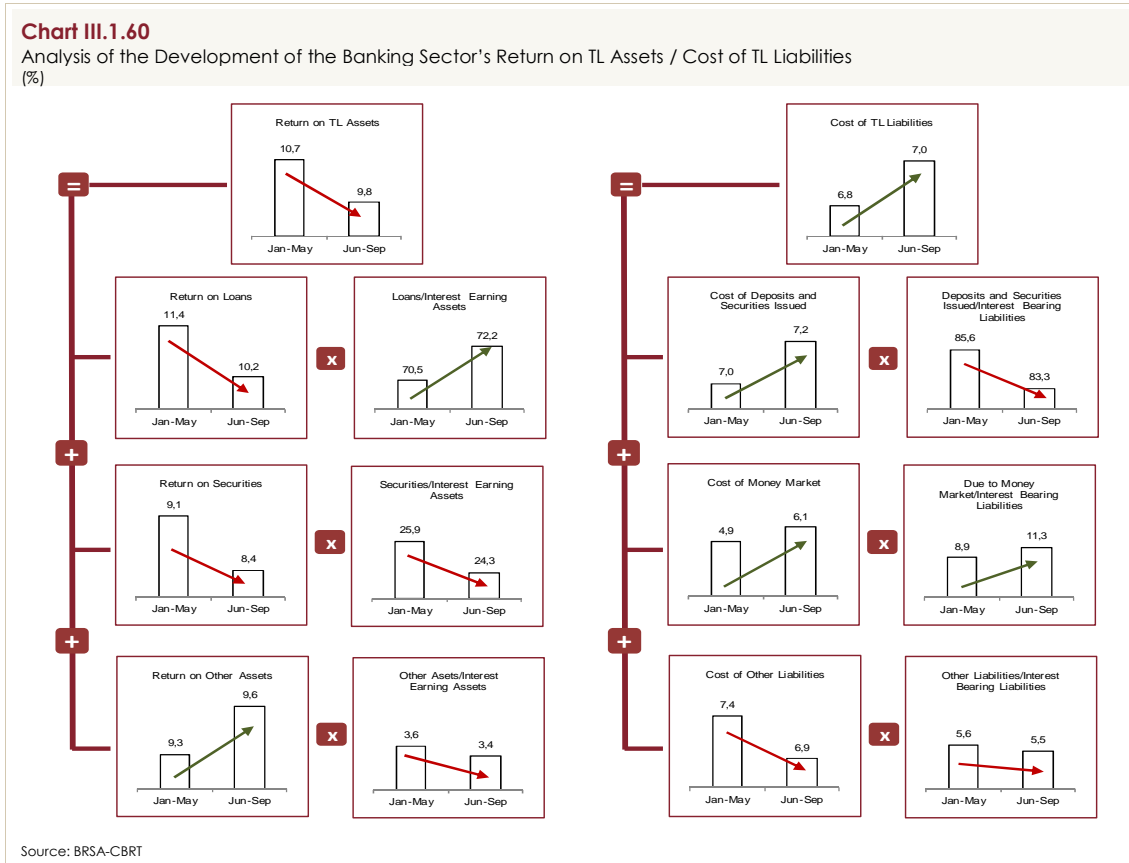
Chart III.1.59

Net Interest Margin¹ (%)



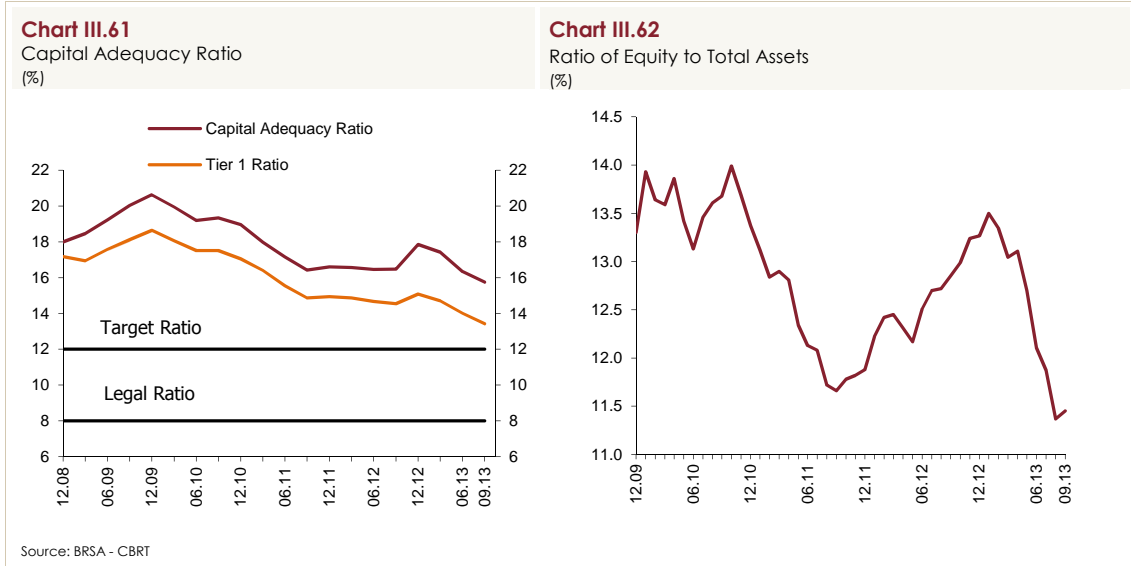
(1) Net Interest Income / Average Interest Earning Assets
Source: BRSA - CBRT

The rapid rise in interest rates in the post-May period has 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 in the periods of January-May and June-September 2013, in which interest rates changed direction, reveals that the spread between the return on TL assets and the cost of TL liabilities closed by approximately 120 basis points and declined to 2.7 percent. This decline was fueled by the fall in returns on loans and securities as well as the impact of interest rate hikes on funding costs (Chart III.1.60). When the securities increment value fund, which is monitored under equities in relation with Available-for-Sale Securities and turned into loss in May, is also projected on interest income, the contraction in the TL return – cost margin inches up to 250 basis points from 120 basis points. However, the spread between the return on FX assets and cost of FX liabilities did not change remarkably in the periods analyzed.

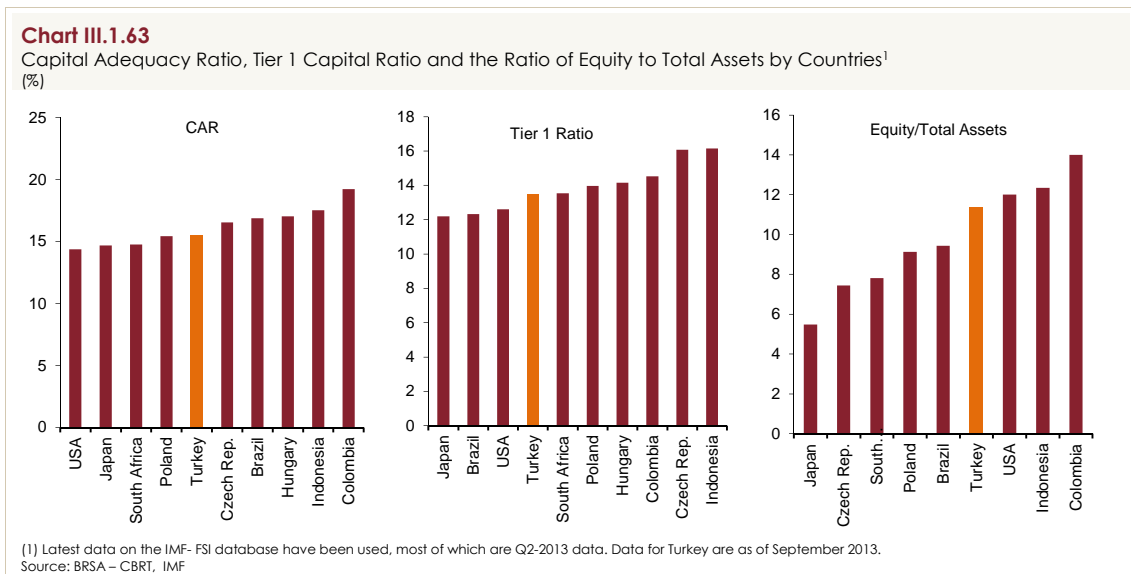


Although the capital adequacy ratios of banks have been on a decline, they are still above the legal and target ratios. By September 2013, as risk-weighted assets grew faster than equity on the back of the strong loan growth, the sector's CAR went down by 2.1 points to 15.7 percent. Meanwhile, the share of Tier 1 capital in own funds, which was 85.3 percent by September 2013, shows that the quality of capital is strong (Chart III.1.61). The

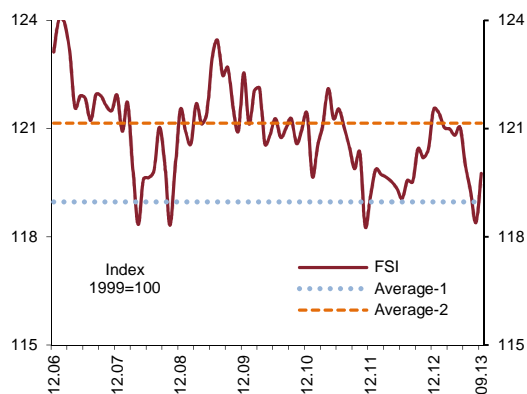
recent downturn in the capital ratios was partly catalyzed by the fact that securities increment value fund, which builds up a component of equity, declined rapidly in the May-August period due to the hike in GDDS interest rates (Chart III.1.62).



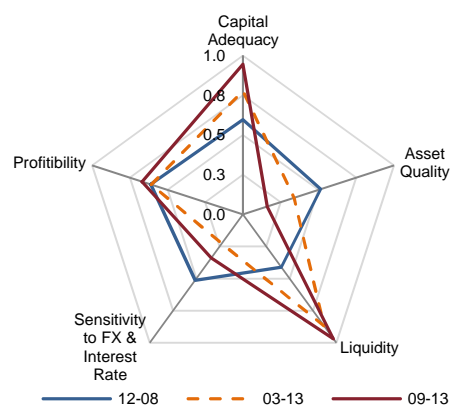
The Turkish banking sector has a high capital adequacy ratio. Compared to other countries, the Turkish banking sector is strong with regard to the capital adequacy ratio and the ratio of equity to total assets (Chart III.1.63). The sector's leverage ratio is well above the minimum ratio of 3 percent set by the Basel III regulation and has a stable course. The current leverage-based reserve requirement implementation of the CBRT is anticipated to help contain the increase in indebtedness and hence contribute to financial stability.



The financial strength index inched down in September 2013 compared to the previous reporting period due to the downtrend in the sub-indices of capital and interest rate risk. Nevertheless, it is still above 100 percent (Chart III.1.64).

Chart III.1.64Financial Strength Index^{1,2}

(1) "Average 1" is the average of December 1999-September 2013 and "Average 2" is the average of January 2004-September 2013.
 (2) Since they have different operating principles, participation banks have been excluded.
 Source: BRSA - CBRT

Chart III.1.65Banking Sector Stability Map¹

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

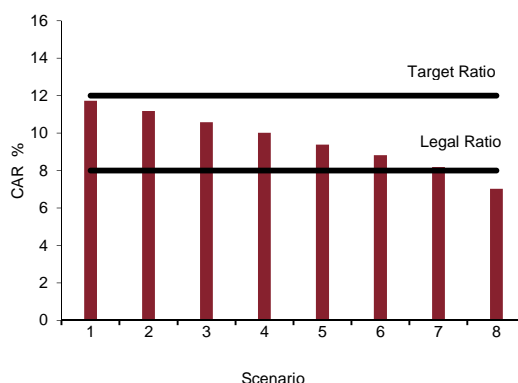
The strong position of the sector's capital level is also confirmed by the scenario analyses that test the resilience of banks against shocks originating from credit and market movements. In only one of the eight different scenario analyses in which simultaneous shocks were applied to exchange rates, Eurobond returns, interest rates and NPLs, did the sector's capital adequacy ratio drop to 7 percent and remain below the legal ratio in September 2013 (Table III.1.4, Chart III.1.66).

Table III.1.4Scenarios Applied¹

Scenario	Exchange Rate (% Increase)	Eurobond (% loss of value)	Interest Rate (point increase) ²	NPL (point increase)
1	30.0	15.0	10.0	3.0
2	31.5	15.8	10.5	4.0
3	33.0	16.5	11.0	5.0
4	34.5	17.3	11.5	6.0
5	36.0	18.0	12.0	7.0
6	37.5	18.8	12.5	8.0
7	39.0	19.5	13.0	9.0
8	40.0	20.0	13.5	11.0

Chart III.1.66

Results of Scenario Analysis



Source: CBRT calculations

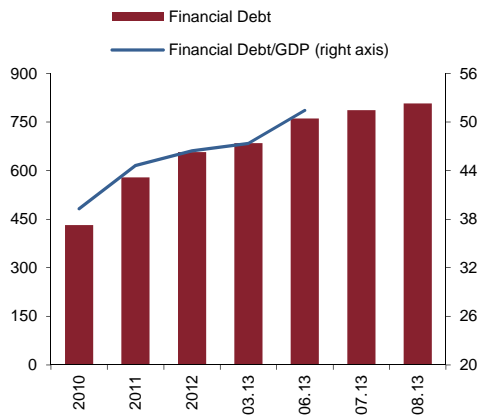
(1) In scenario analysis, also taking into account past crises, shocks are applied to risk factors simultaneously.
 (2) It refers to the Turkish Lira interest rate shock. The FX interest rate shock is about 1/3 of that applied to the Turkish Lira interest rate. In the shocks applied to commercial portfolios, impairment is about 17 percent on sectoral basis. Effective Eurobond shocks are three times the table figures.
 Source: CBRT

III.2. Corporate Sector

Indebtedness of the corporate sector continued increasing in 2013. The total financial debts of the corporate sector increased by 22.8 percent in August 2013 compared to the end of 2012 and reached TL 808 billion. The ratio of firms' financial debts to the GDP stood at 51 percent as of June 2013 (Chart III.2.1). FX loans made up 58 percent of firms' financial debts; the majority of these loans had long maturities. Of the loans extended to the corporate sector, 19.2 percent were obtained from abroad (Chart III.2.2).

Chart III.2.1

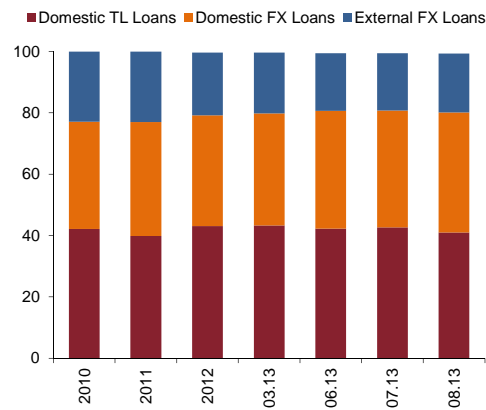
Financial Debt of the Corporate Sector
(Billion TL, Percent)



Source: CBRT

Chart III.2.2

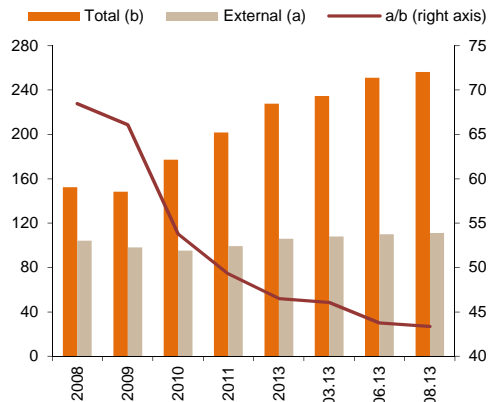
Composition of Financial Debt of the Corporate Sector
(Percent)



The share of external FX liabilities to the total FX liabilities were at 68.5 percent and 66.1 percent in 2008 and 2009, respectively. The share of these liabilities in overall FX liabilities dipped to 43.3 percent in August 2013 (Chart III.2.3).

Chart III.2.3

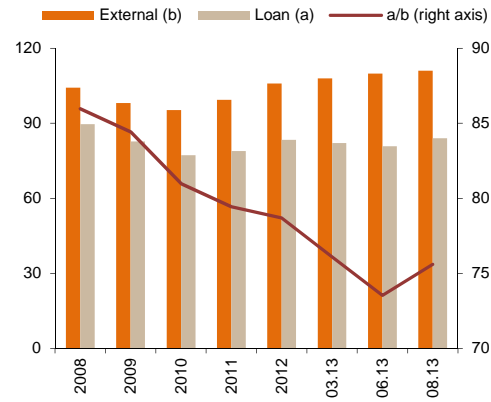
FX Liabilities of the Corporate Sector – Share of External
FX Liabilities (Billion USD, Percent)



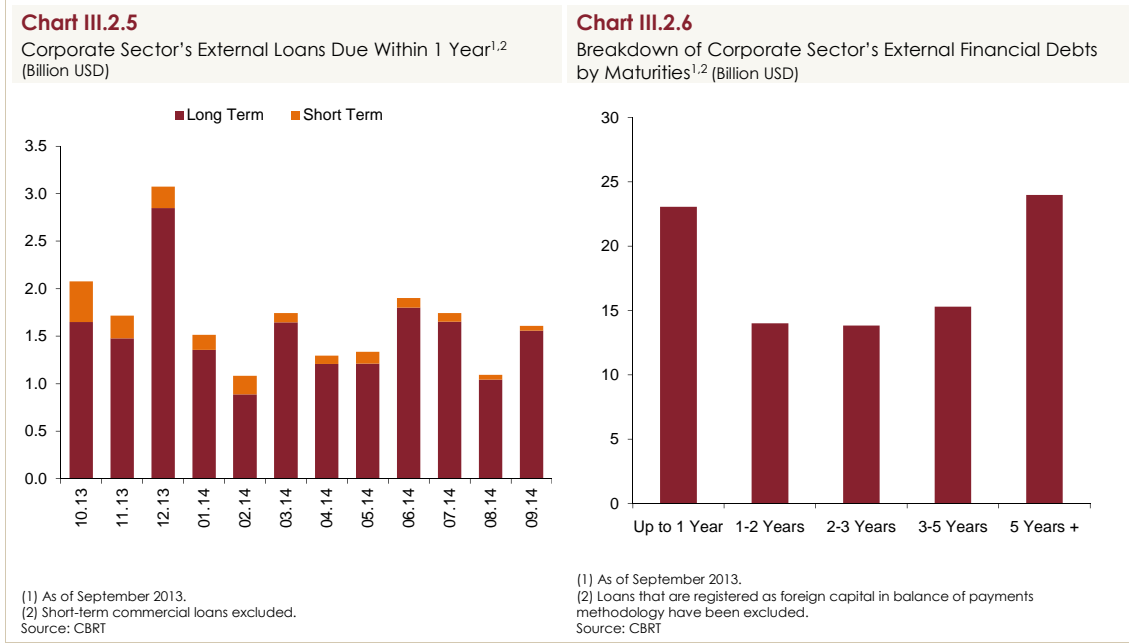
Source: CBRT

Chart III.2.4

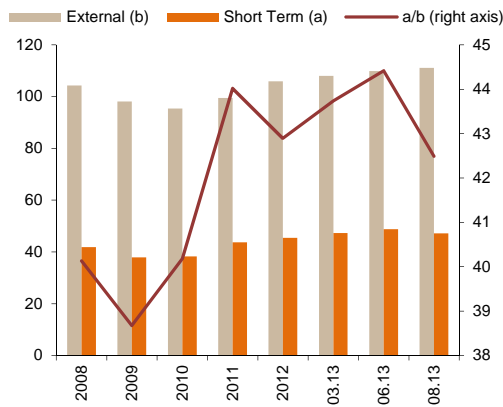
External FX Liabilities of the Corporate Sector – Share of Loans
(Billion USD, Percent)



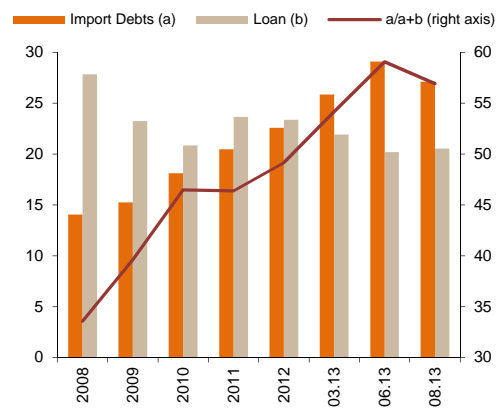
Most of the external loans are long-term loans. By September 2013, firms' external loans that are due within one year amounted to USD 23.1 billion, of which USD 4.8 billion were short-term and USD 18.3 billion were long-term. These loans, which are due within one year, built up 25.6 percent of overall external loans (Chart III.2.5). The residual maturity-based weighted average maturity of long-term external loans is approximately 4.3 years whereas 27 percent of external loans (short and long term) have maturities of 5 years and more (Chart III.2.6).



The share of short-term external loans to the total external loans remained more or less the same. By August 2013, firms' USD 47.2 billion worth of external FX loans, which are due within one year, accounted for 42.5 percent of all external FX loans (Chart III.2.7). With the increases in recent periods, import loans within the external short-term loans jumped to USD 27.1 billion in August 2013 from USD 14.1 billion at the end of 2008 (Chart III.2.8).

Chart III.2.7Corporate Sector's Short-Term External FX Loans¹ (Billion USD, Percent)

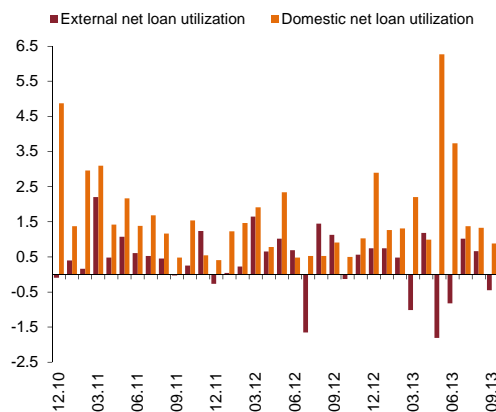
(1) Including short-term commercial loans.
Source: CBRT

Chart III.2.8Composition of Corporate Sector's Short-Term External FX Loans¹ (Billion USD, Percent)

The corporate sector has no problem in rolling over its external debt. The corporate sector external debt roll-over ratio, which declined in the first half of 2013, took an upturn and reached 130 percent in September 2013 (Chart III.2.10).

Chart III.2.9

Non-Bank Sector's Net FX Borrowings (Billion USD)

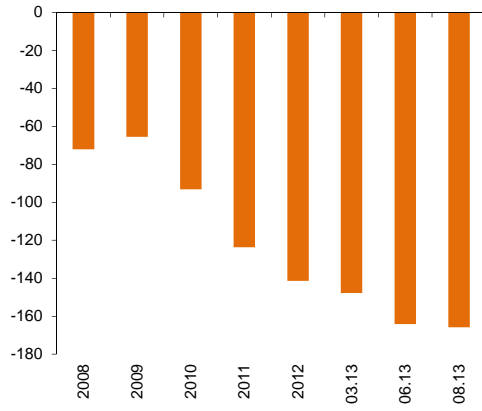
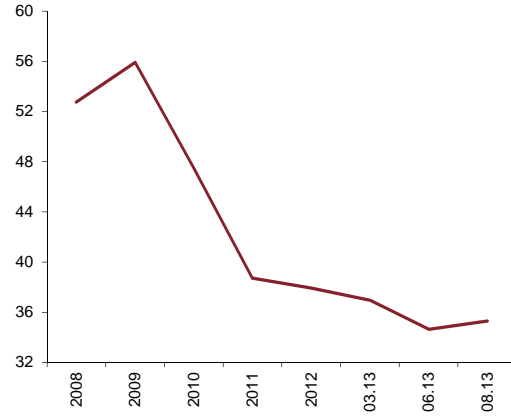


Source: CBRT

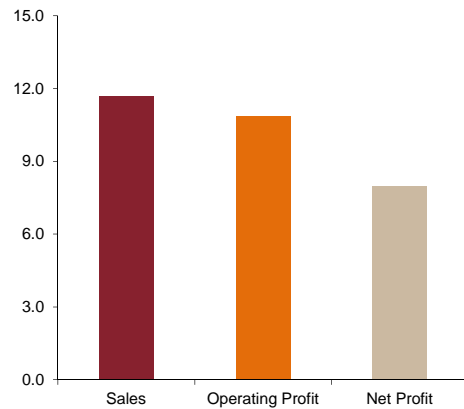
Chart III.2.10Non-Bank Sector's External Debt Roll-Over Ratio¹ (Percent, six-month moving average)

(1) The external debt rollover ratio is computed from the balance of payment statistics, by dividing non-banks' borrowing with repayments. The external debt rollover ratio of non-banks, which decreased after the amendment to Decree No: 32, has been re-calculated taking into account the rise in FX loans extended by domestic branches of Turkish banks and the rise in repayments to those branches.
Source: CBRT

The FX short position of the corporate sector is on the rise mainly as a result of domestic FX loan utilization. The FX short position escalated to USD 165.8 billion in August 2013 from USD 141.4 billion at the end of 2012 (Chart III.2.11). The coverage ratio of FX assets to FX liabilities retreated to 35.3 percent in August 2013 (Chart III.2.12).

Chart III.2.11Foreign Exchange Position of the Corporate Sector*
(Billion USD)(*) Data for August 2013 is provisional.
Source: CBRT**Chart III.2.12**The Ratio of Corporate Sector's FX Assets to FX Liabilities*
(Percent)

The moderate recovery in economic activity had a boosting effect on firms' turnover whereas financial expenditures due to expenses arising from exchange rate revaluations put a downward pressure on profitability. In the first nine months of 2013, the total amount of sales revenues of firms quoted on Borsa İstanbul (BIST) grew by 11.7 percent in nominal terms and 3.5 percent in real terms year-on-year (Chart III.2.13). The exchange rate differential expenses stemming from the depreciation of the Turkish lira had some negative impact on corporate profitability. The return on equity, which was 14.7 percent in 2012, receded to 14.2 percent in September 2013 while the return on assets dropped to 6.3 percent from 7 percent (Table III.2.1).

Chart III.2.13Sales and Profitability of Firms by September 2013¹
(Annual Percentage Change)

(1) Consolidated data of 247 firms quoted on Borsa İstanbul.

Table III.2.1Return on Equity and Its Components¹

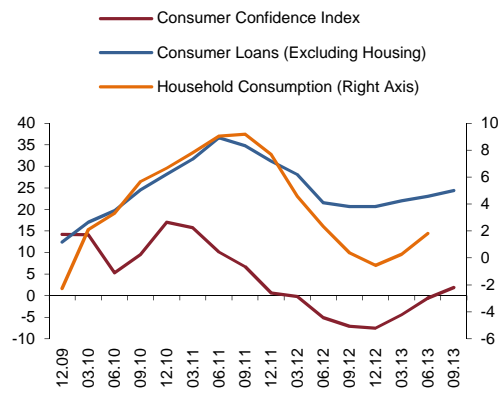
	2011	2012	09.13 ²
Net Profit / Equity (%)	12,5	14,7	14,2
Liabilities / Equity	1,2	1,1	1,2
Net Profit / Assets (%)	5,7	7,0	6,3
Sales / Assets	1,1	1,1	1,0
Net Profitability / Sales (%)	5,4	6,6	6,4
Operating Profit / Sales (%)	8,6	7,8	7,8
Financial Income (Expenditures) / Sales (%)	-2,0	-0,2	-2,1

(1) Consolidated data of 247 firms quoted on Borsa İstanbul.
(2) Annualized data.

III.3. Households

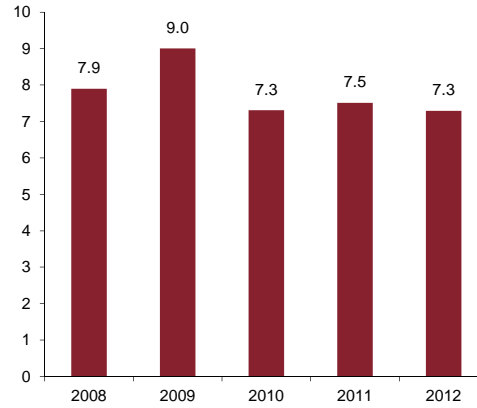
Households' consumption expenditures continue to grow. Measures taken to slow down domestic demand led to a deceleration in the growth of consumption expenditures throughout 2012. However, this deceleration was replaced by an uptrend in March 2013. Yet, the growth in households' consumption expenditures is expected to lose pace slightly in the upcoming period (Chart III.3.1) with the impact of the decline in the growth of consumer loans and the new macroprudential measures put into effect recently (see Chapter IV.2). On the other hand, household savings rates are still on a downtrend and have hit the lowest level of the last five years (Chart III.3.2). New steps towards boosting savings to underpin financial stability may be on the agenda in the forthcoming period.

Chart III.3.1 Annual Percentage Change of Household Real Consumption, Consumer Loans and Consumer Confidence Index^{1,2} (Percent)



(1) Household consumption denotes annual change in resident expenditures calculated by the GDP-expenditures method and in constant prices (1998).
 (2) The Consumer Confidence Index is calculated by quarterly averages.
 Source: CBRT, TURKSTAT

Chart III.3.2 Household Saving Rates¹ (Percent)



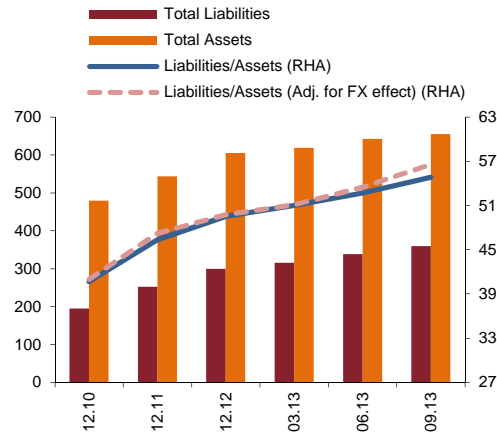
(1) Saving rates show the ratio of household savings to disposable income.
 Source: TURKSTAT, Household Budget Survey

The growth in household financial liabilities outpaced the growth in household assets.

The ratio of household financial liabilities to assets, which had been going upwards for the last five years, assumed a horizontal course in the recent period despite the rise in consumer loans. This flat course is also an outcome of the fact that households, whose FX borrowings have been contained since June 2009, have an FX long position. When adjusted for the exchange rate effect, the ratio of liabilities to assets increased by 3.1 points to 56.6 percent in the third quarter of 2013 compared to the previous quarter (Chart III.3.3).

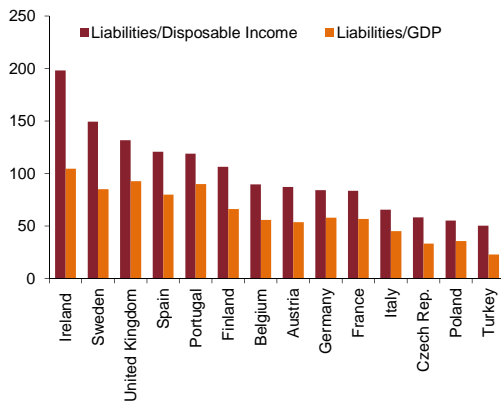
Chart III.3.3

Household Financial Assets and Liabilities (Billion TL, Percent)



Source: BRSA, CRA, CMB, CBRT

Although household liabilities are on the rise, the ratio of liabilities to the GDP and disposable income remain low compared to selected countries. By the end of June 2013, the ratio of liabilities to the GDP and disposable income stood at 22.9 percent and 50.2 percent, respectively (Chart III.3.4). The growth in liabilities pushed up the ratio of interest payments to disposable income, regardless of the falling interest rates since 2009. The fact that consumer loans are predominantly fixed-rate loans helps contain the household interest rate risk exposure. Therefore, the interest rate hikes observed since May 2013 are expected to have a limited impact on household interest payments (Table III.3.1).

Chart III.3.4Ratio of Household Liabilities to Disposable Income and GDP in Selected EU Countries¹ (June 2013, Percent)

¹⁾ Disposable incomes for the EU countries are gross figures.
Source: BRSA - CBRT, TURKSTAT, ECB

Table III.3.1Selected Financial Indicators Pertaining to Households¹ (Billion TL, Percent)

	12.11	12.12	12.13
Household Disposable Income	531,2	613,9	673,6 ²
Household Liabilities	252,0	299,9	372,1
Household Interest Payments	23,1	30,0	36,5
Interest Payments/ Hh. Disposable Income (%)	4,4	4,9	5,4
Liabilities/ Hh. Disposable Income (%)	47,4	48,8	55,2

⁽¹⁾ Household liabilities consist of gross consumer credits (including NPLs) extended by banks and finance companies, credit card balances (including NPLs), credit claims from the frozen consumer loans taken over by asset management companies, and liabilities to TOKI due to TOKI's housing sales with long-term maturity.

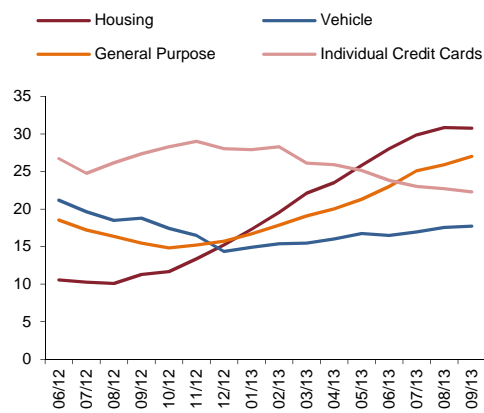
⁽²⁾ Household disposable income for 2013 has been calculated by using the private sector disposable income estimation for 2013 as foreseen in the 2014 Program, under the assumption that the ratio of household disposable income for 2012, which was generated from "the Household Budget Surveys", to private sector disposable income has not changed.
Source: BRSA - CBRT, TURKSTAT, TCKB (Republic of Turkey Ministry of Development)

Housing loans and general purpose loans were influential on the rise of household liabilities in 2013 whereas credit cards had a reduced share in total liabilities. Although households predominantly borrow from banks, vehicle-related liabilities of households are mainly made up of loans obtained from financing companies (Table III.3.2). Housing loans and general purpose loans have registered the most outstanding growth rates whereas the rate of increase in individual credit cards has stabilized. The annual rate of growth in vehicle loans has also been stable (Chart III.3.5). Recently, there has been a marked deceleration in consumer loans due to the upswing in interest rates.

Table III.3.2Composition of Household Liabilities¹
(Percent, Billion TL)

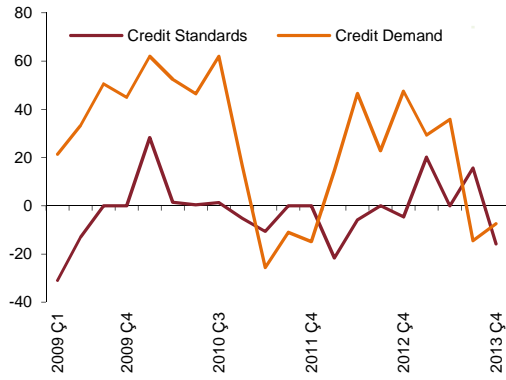
	12.2012		04.2013		09.2013	
	Billion TL	Share	Billion TL	Share	Billion TL	Share
Housing	99	33	107	33	119	33
Vehicle	14	5	14	4	15	4
General Purpose+Other	104	35	112	35	126	35
Individual Credit Cards	75	25	79	25	88	25
Asset Man.Comp.Receiv.	9	3	9	3	11	3
Total Liabilities	300	100	322	100	359	100
Banks	274	91	295	92	330	92
Financing Comp.	6	2	6	2	7	2
TOKİ	11	4	11	4	12	3
Asset Man.Comp.	9	3	9	3	11	3
Total Liabilities	300	100	322	100	359	100

(1) Housing loans include liabilities to TOKİ due to TOKİ's housing sales with long-term maturities.
Source: BRSA-CBRT, TOKİ (Housing Development Administration of Turkey)

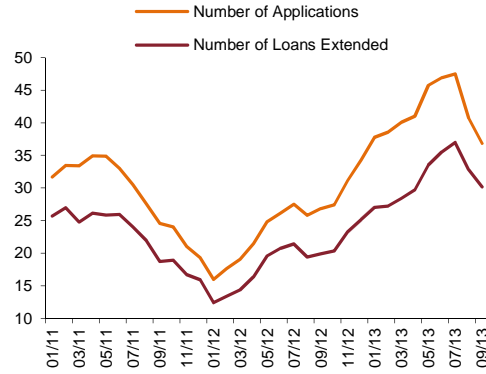
Chart III.3.5Annual Growth of Consumer Loans by Types¹
(Stock data, Percent)

(1) General Purpose loans consist of other loans and overdraft accounts.
Source: CBRT

Favorable demand and supply developments encouraged the growth in housing loans. Tendency surveys have pointed out that the demand for housing loans, which had strengthened since end-2012 due to positive expectations for the housing sector and an improvement in consumer confidence, contracted in the third quarter of 2013 for the first time. Surveys also indicate that the bright outlook of cost of funds and balance sheet conditions since the second half of 2012 stimulated the easing in credit standards by banks while the competition among banks affected the supply of housing loans positively, especially in the first quarter of 2013. Although there were adversities originating from the cost of funds and non-bank financial sector competition in the third quarter of 2013, there was no tightening in competition conditions among banks and credit supply reflected in surveys. Banks anticipate that credit demand will continue shrinking and credit standards will also tighten in the third quarter of 2013 (Chart III.3.6). The trend in the number of housing loan applications and the number of housing loans extended seems coherent with survey results (Chart III.3.7).

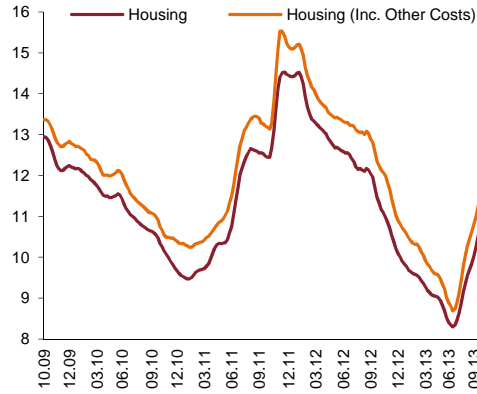
Chart III.3.6Housing Loans Standards and Housing Loans Demand^{1,2}
(Points)

(1) Data pertaining to the fourth quarter of 2013 denotes expectations for the next three months.
 (2) A negative value in loan standards indicates a tightening in standards, whereas a positive value in loan demand indicates an increase in credit demand.
 Source: CBRT Bank Loans Tendency Survey

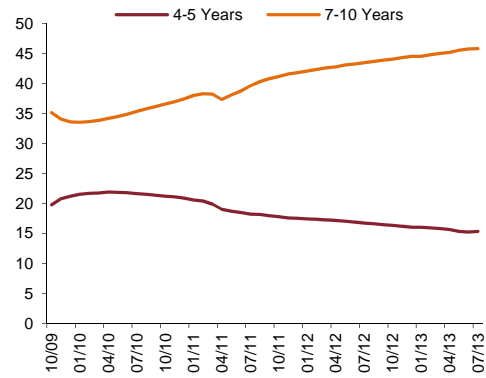
Chart III.3.7Number of Applications for Housing Loans and Number of Housing Loans Extended
(Thousand)

Source: CBRT

Historically low interest rates and the extension of loan maturities boosted the demand for housing loans (Chart III.3.8). A breakdown of housing loans by maturities reveals that the weight of housing loans with maturities of 4 to 5 years has decreased since the last quarter of 2009 whereas the share of loans with maturities of 7 to 10 years has increased at the same rate (Chart III.3.9).

Chart III.3.8Housing Loan Rates¹
(Percent, Flow)

(1) Four-week moving average with flow data
 Source: CBRT

Chart III.3.9Breakdown of Housing Loans Extended Based on Maturities
(Stock, Original Maturity-Based, Percent)

Source: CBRT

Box
III.3.1

The Impact of Developments in Financing Facilities on Households' Demand for Housing Loans

This box offers an evaluation of the impact of housing loan maturities and loan rates as well as housing price developments on the housing purchasing power of households during the period between the last quarter of 2009 and the second quarter of 2013.

Housing loan rates dropped to 9 percent from 12 percent on average in the 2009-2013 period, and the utilization of housing loans with a maturity of 7 to 10 years posted a significant increase. House prices per square meter edged up by 38 percent in this period and jumped to TL 1200 from TL 870. Meanwhile, the minimum wage was raised by 34 percent to TL 978.

As shown in Chart III.3.9, borrowers, who opted for loans with 5-year maturity at end-2009 for various reasons, have diverged to loans with maturities of 7 to 10 years over time. Also, historically low interest rates have encouraged consumers to use long-term loans and banks have been able to offer longer-term housing loans. Hence, housing loan maturities for a typical borrower are considered to have extended to 10 years from 5 years.

In light of these data, the monthly installment amount of a housing loan needed to buy a house of 100 square meters has been calculated to have declined by 21 percent nominally in the last 4.5 years. Under these circumstances, buyers had to have monthly incomes of TL 4000 to buy a house with a monthly loan installment amounting to half of their monthly incomes at end-2009 whereas a monthly income of TL 3000 was enough to buy the same house with the same conditions in June 2013 (Table III.3.1.1). Under the assumption that the monthly income increased parallel to the increase in the minimum wage in the relevant period, if buyers with monthly incomes of TL 3000 today had used a housing loan at end-2009, they would have to allot almost full amount of their incomes for the housing loan installment.

Table III.3.1.1

Change in Monthly Installment of Housing Loans

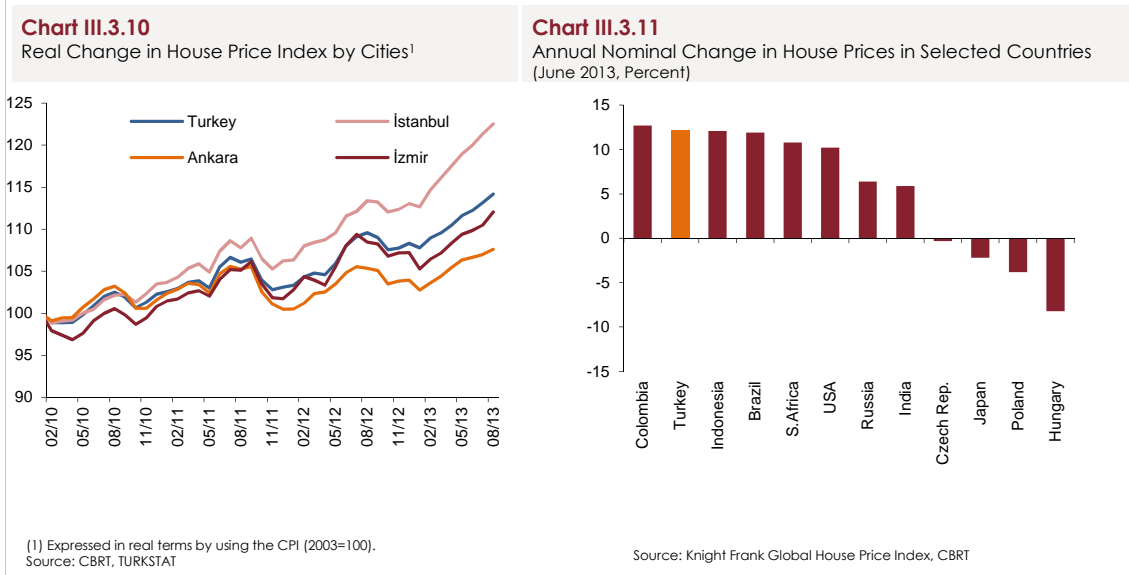
	10.09	06.13	Percentage Change
House Price ¹ (TL)	87.000	120.000	38
Cost-Added Interest (%)	12	9	-25
Maturity (Month)	60	120	100
Monthly Installment (TL)	1.935	1.520	-21
Monthly Income Needed ² (TL)	3.870	3.040	-21

(1) The house price has been calculated using the unit price per square meter for a house of 100 square meters.

(2) The monthly income needed has been calculated based on the assumption that the borrower spends half of his/her income on the monthly installments of the housing loan.

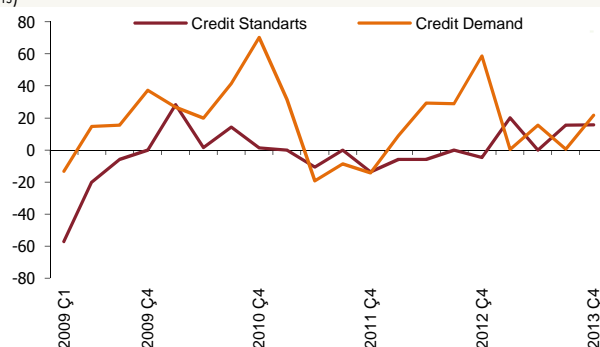
The improvement in housing financing conditions since 2009 has facilitated house purchases for a wider section of the public and hence, the demand for housing loans has increased considerably.

Close monitoring of housing sector developments is very important as changes in house prices are influential on financial stability. The highest increase in house prices was registered in İstanbul where the real rate of increase has exceeded 20 percent since 2010 (Chart III.3.10). A comparison of Turkey with selected countries reveals that the annual nominal rate of increase in house prices is more or less the same (Chart III.3.11).



Urban transformation projects, which are likely to intensify in the forthcoming period, are anticipated to promote the growth in housing loans. The VAT rate for buildings to be reconstructed in the scope of the Urban Transformation Act will be 1 percent until June 2014. Also, the majority instead of unanimity of decision by the house owners will be enough for the reconstruction of a building and the state will subsidize house owners with interest support and rent allowances. Based on these factors, urban transformation is expected to ease the impact of the recent slowdown in the growth of housing loans.

Supply and demand developments in vehicle loans offered a stable and moderate outlook in 2013. As a result of the expectations over the vehicle market, the demand for vehicle loans remained positive throughout 2013, and banks moderately eased loan standards due to favorable developments on the funding front and increased competitiveness. Loan tendency surveys indicate that supply and demand factors will continue to support the rise in vehicle loans in the last quarter of the year as well (Chart III.3.12).

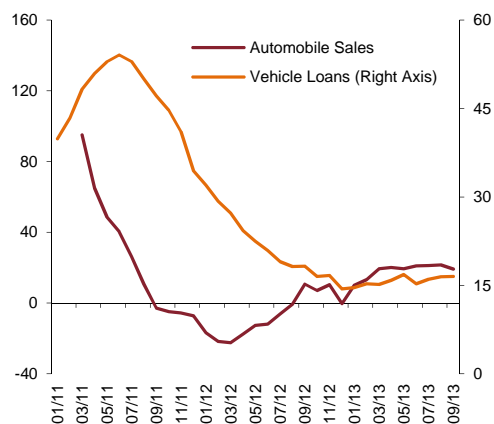
Chart III.3.12Vehicle Loans Standards and Vehicle Loans Demand^{1,2}
(Points)

(1) Data pertaining to the fourth quarter of 2013 denotes expectations for the next three months.

(2) A negative value in loan standards indicates a tightening in standards, whereas a positive value in loan demand indicates an increase in credit demand.

Source: CBRT Bank Loans Tendency Survey

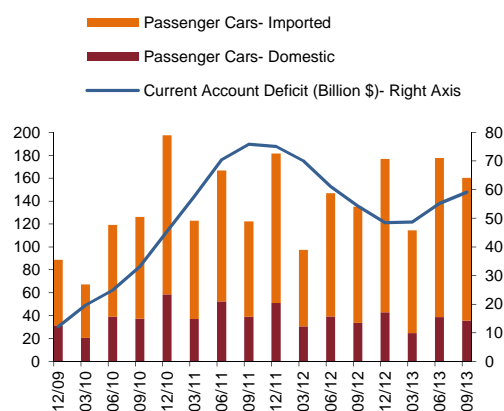
The growth in vehicle loans has remained low in 2013 compared to the growth in other consumer loan types, displaying a flat course (Chart III.3.13). The uptrend in vehicle sales was mainly driven by sales of imported vehicles (Chart III.3.14).

Chart III.3.13Annual Growth of Vehicle Loans and Annual Change in Automobile Sales^{1,2} (Percent)

(1) Automobile sales reflect 3-month moving averages.

(2) Data pertaining to financing firms are also included in vehicle loans.

Source: BRSA-CBRT, ODD (Automotive Distributors Association)

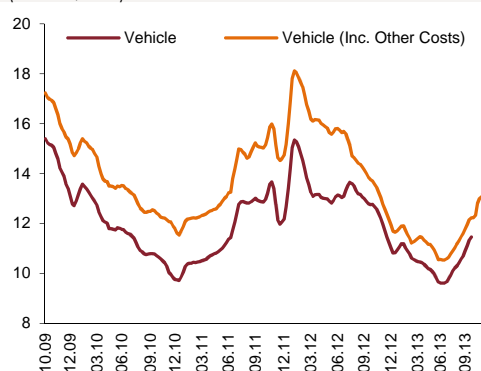
Chart III.3.14Current Account Deficit and Domestic – Imported Automobile Sales
(ThoU.S.nd)

Source: CBRT, ODD (Automotive Distributors Association)

As in the case of housing loans, interest rates for individual vehicle loans were also in a downtrend until mid-2013 and maturities extended (Chart III.3.15 and III.3.16). Improvements in the financing conditions are believed to underpin the demand for vehicle loans. However, the growth in vehicle loans may lose pace in the coming period due to the recent surge in vehicle loan rates, inclusion of financing companies in the scope of required reserve requirements and new regulations put into effect (see Chapter IV).

Chart III.3.15

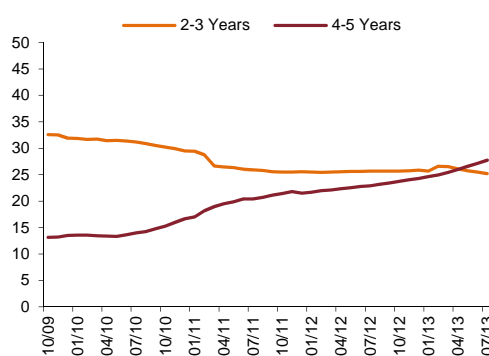
Vehicle Loan Rates¹
(Percent, Flow)



(1) Four-week moving average with flow data
Source: CBRT

Chart III.3.16

Breakdown of Vehicle Loans Extended Based On Maturities
(Stock, Original Maturity-Based, Percent)

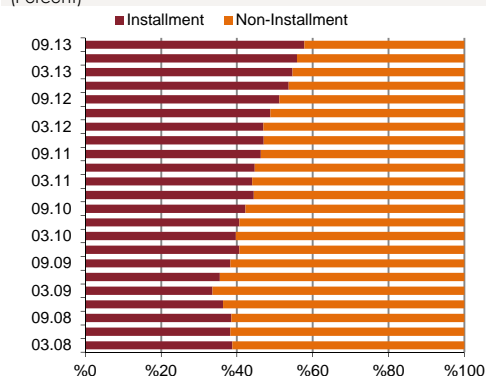


Source: CBRT

Households' use of credit cards continues to bounce up on the back of the escalation in installment transactions but there has been a gradual slowing in the rate of increase. The upward movement in credit card balances since 2009 has been triggered predominantly by the surge in installment transactions (Chart III.3.17). Installment transactions gained new momentum in 2012 but the expansion in total credit card balances assumed a moderate downtrend in 2013 (Chart III.3.18). New measures taken and expected to be taken by the BRSA will possibly back up the reversal in the rapid growth of credit cards in the upcoming period (See Chapter IV.2).

Chart III.3.17

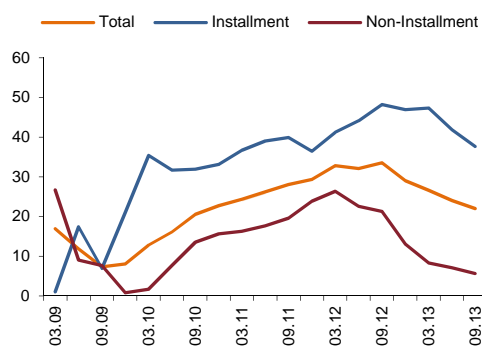
Balances of Individual Credit Cards With and Without Installment Options
(Percent)



Source: CBRT

Chart III.3.18

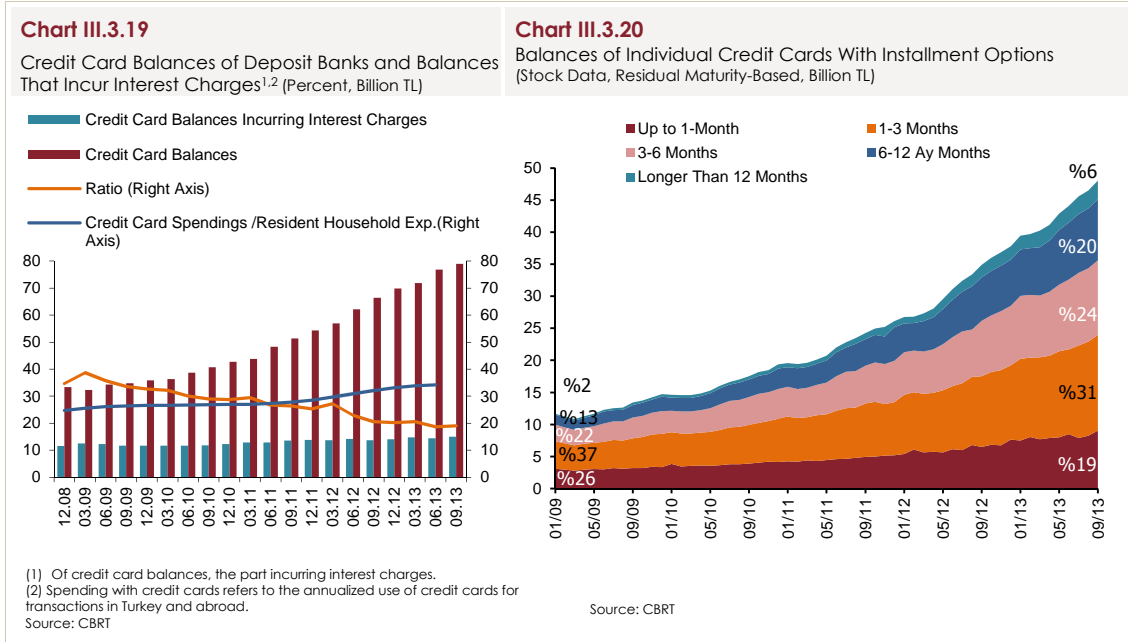
Annual Growth of Individual Credit Card Balances
(Percent)



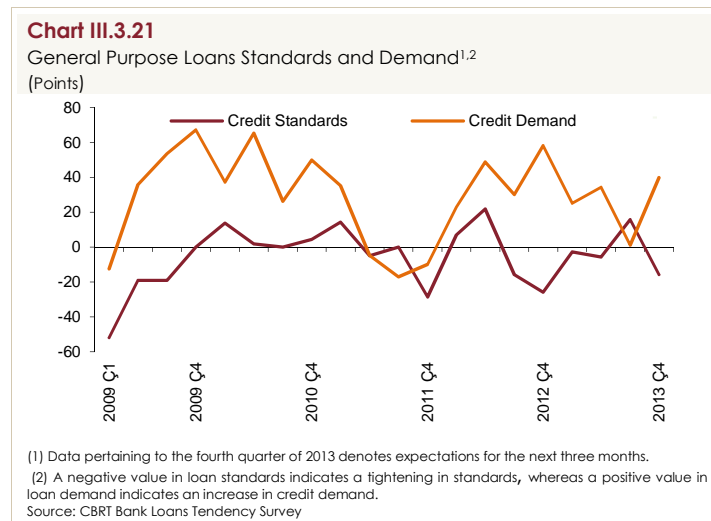
Source: CBRT

The ratio of credit card balances incurring interest charges to total credit card balances continues to decline on the back of the rise in installment transactions (Chart III.3.19). However, installment transactions, which offer easy payment terms, contribute to the boost of consumption expenditures and household indebtedness. Therefore, measures

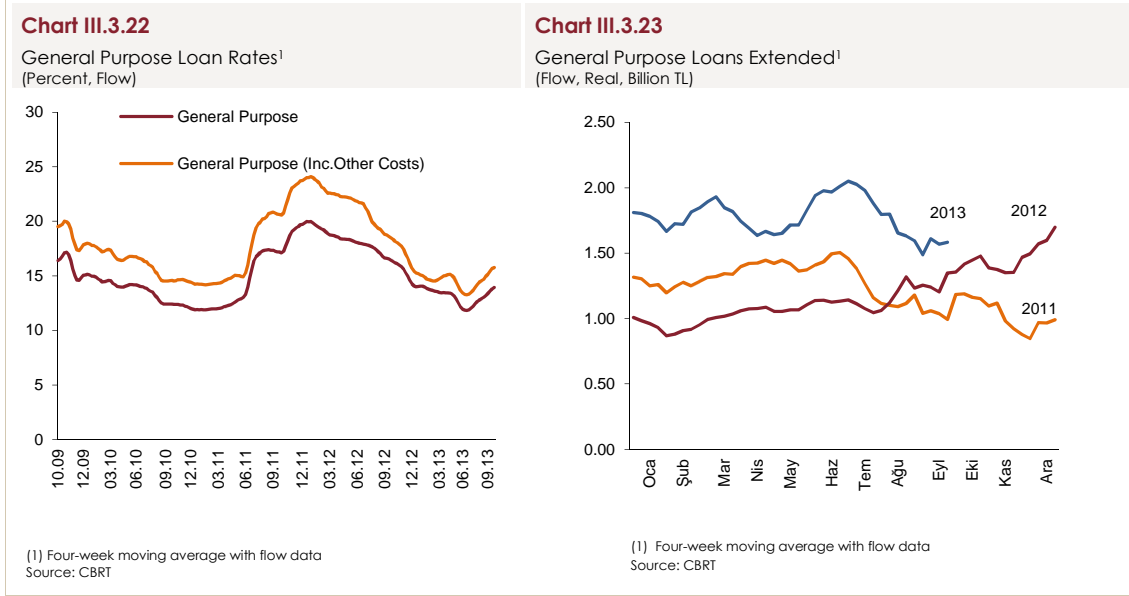
taken to ensure a controlled growth in households' use of credit cards that is compatible with their income will assumingly support financial stability.



The household demand for general purpose loans has been on rise since 2011, pushing up the loan growth. Expenditures on durable goods and consumer confidence had a boosting effect on demand. Although the acceleration in loan demand halted in the third quarter of 2013 due to interest rate hikes and weakened consumer confidence, banks expect a robust increase on the demand side in the last quarter of the year. Banks' general purpose loan supply is mainly affected by the expectations for the overall economic activity and the changes in the creditworthiness of consumers, and has a fluctuating course. There was a competition-driven loosening of loan standards in the third quarter of 2013. Yet, credit standards are expected to tighten again in the last quarter of the year (Chart III.3.21).



The impact of relatively weak capital flows, macroprudential measures in place and the cautious monetary policy stance on the deceleration in loan growth is also visible in general purpose loans. General purpose loan rates assumed an uptrend in the third quarter of 2013 (Chart III.3.22). The real amount of loans extended has been falling since June 2013 (Chart III.3.23).



Notwithstanding the rise in household liabilities, there is no critical deterioration in non-performing loan indicators. The number of credit card and consumer loan defaulters, which skyrocketed in the period between end-2011 and end-2012, registered a subdued increase from end-2012 to August 2013 (Table III.3.3).

Table III.3.3

Number of Credit Card and Consumer Loan Defaulters¹
(Thousand People)

	12.10	12.11	12.12	09.13 ³
Banks	1.319	1.225	1.487	1301
Asset Management Companies	574	688	782	897
Financing Companies	18	11	8	10
Total²	1.689	1.658	1.949	1973

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

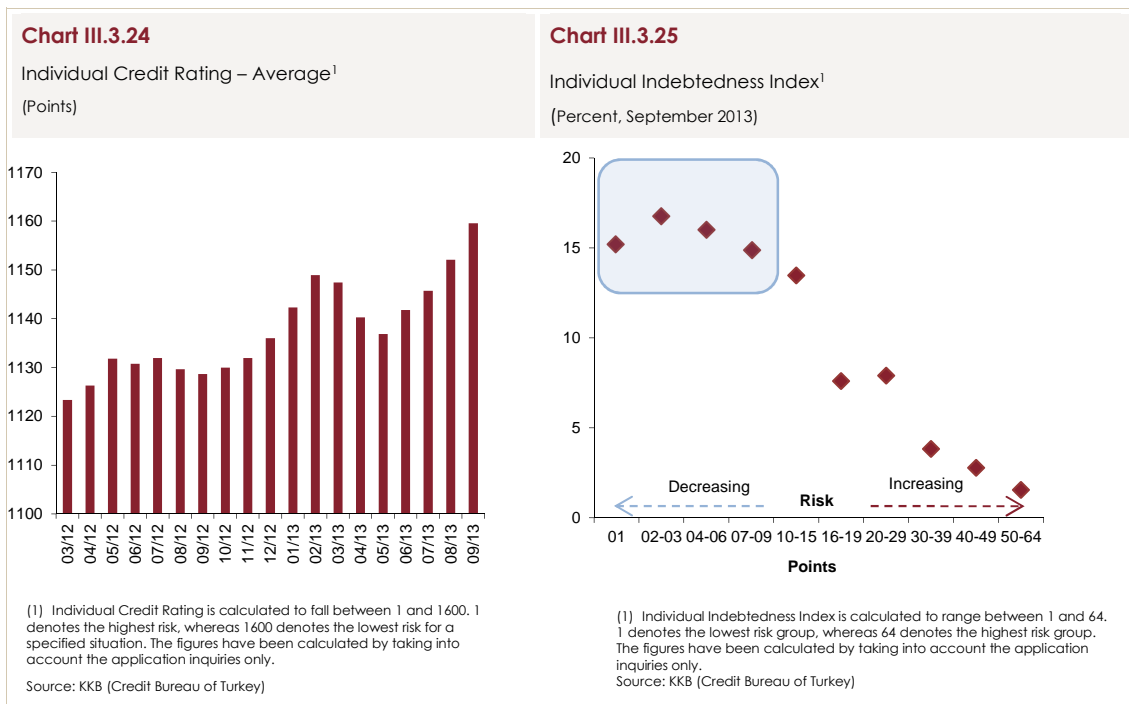
(2) As customers may be registered in more than one financial institution group, the sum of the three rows in the table and grand total are not equal.

(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 been disclosed in bulk since September 2013.

Source: CBRT

The risk status of loan applicants presents a positive outlook in terms of household borrowings in the period ahead. The change in the Individual Credit Rating, which is calculated by taking into account factors such as loan re-payment performance and debt

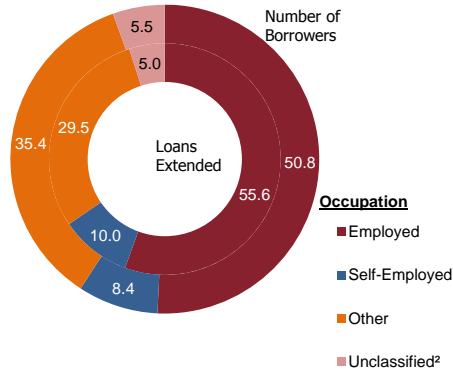
levels of individuals as well as an increase in loan volumes to predict the riskiness of individuals, looks favorable in terms of the household risk status in the forthcoming period (Chart III.3.24). Likewise, the Individual Indebtedness Index, used to predict individuals who are inclined to get into excessive borrowing despite the fact that they are not likely to have payment difficulty and who might potentially become defaulters in more than one year's time, also presented a favorable outlook as of September 2013. In fact, an analysis of the percent distribution of inquiries for loan applications based on their index values reveals that the share of the low-risk group (1-10 points) in total applications, which was 62 percent in March 2013, fell below 60 percent in the second quarter of 2013. However, their share has rebounded to 63 percent in the recent period (Chart III.3.25).



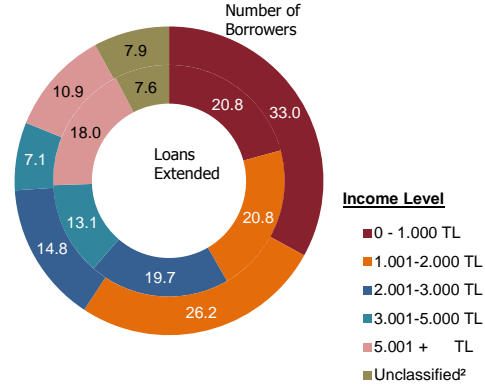
The low-income group and wage-earners build up the majority of people who obtained consumer loans from banks. An analysis of occupation and income groups of the households with consumer loan debts suggests that occupation and a regular income are the determinants of loan access. The distribution of the number of borrowers and the amount of loans according to occupational groups indicates that the majority of the borrowers are composed of wage earners who also borrowed the most in the second quarter of 2013 (Chart III.3.26). The distribution of the borrowers according to income level suggests that borrowers with a monthly income of up to TL 2000 accounted for almost 60 percent of all borrowers but received 42 percent of all loans extended in the analysis period (Chart III.3.27). Compared to the previous period, only the share of borrowers with a monthly income of TL 5000 and more increased in all the loans extended.

Chart III.3.26

Distribution of Borrowers According to Occupation (Loans Extended and Number of People) ¹
(June 2013, Percent)

**Chart III.3.27**

Distribution of Borrowers According to Income (Loans Extended and Number of People) ¹
(June 2013, Percent)



(1) Data of 36 lending banks affiliated to the Banks Association of Turkey.
(2) Unclassified
Source: The Banks Association of Turkey

Deposits continue to be the most preferred investment instrument by households.

Although the share of FX deposit accounts in household financial assets has climbed due to the exchange rate increase, it is observed that the growth in FX deposit accounts in US dollars remained below long-term tendencies and households' FX deposit accounts shifted to TL savings deposits especially after May. As emphasized in the chapter on banking sector developments, the shift to TL savings deposits from FX deposits that started in May extended through mid-July and persisted in September as well (Table III.3.4).

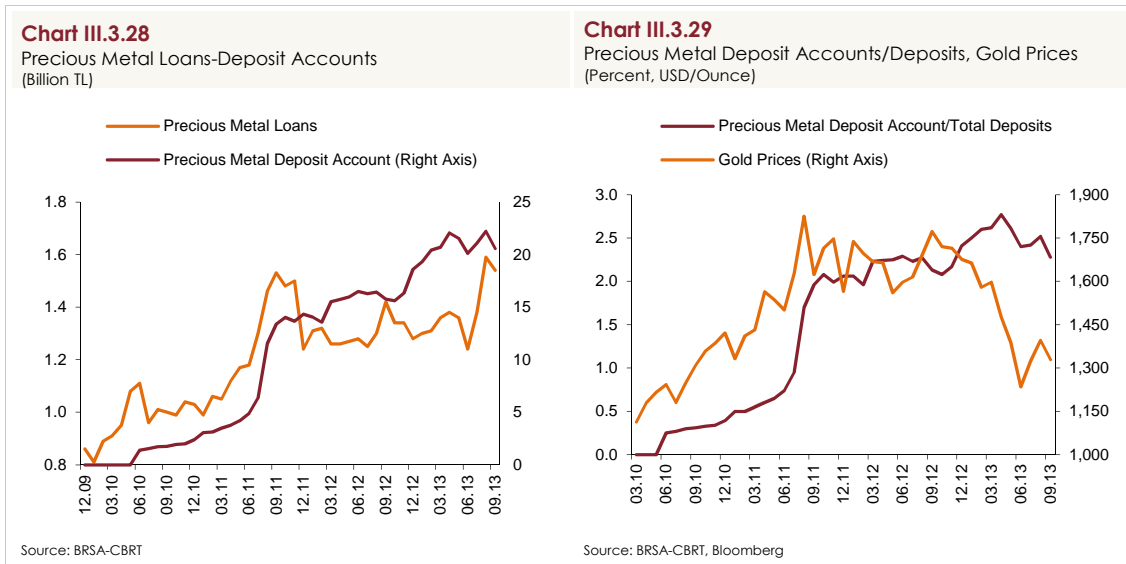
Table III.3.4

Household Financial Assets

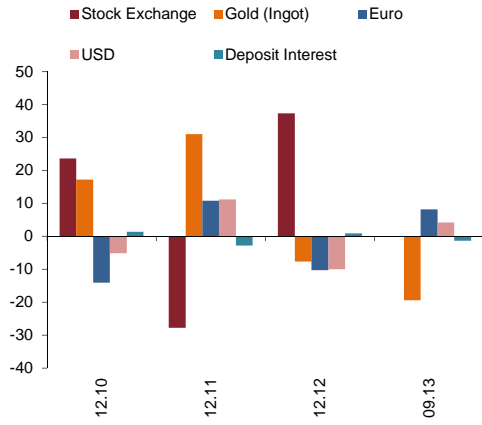
	12.12		04.13		09.13	
	Billion TL	Share	Billion TL	Share	Billion TL	Share
TL Deposits	307.1	50.7	293.8	48.6	317.0	48.4
FX Deposits	121.6	20.1	122.1	20.2	140.6	21.5
- (billion USD)	68.2		67.8		69.9	
Precious Metal Deposits	17.4	2.9	20.7	3.4	19.2	2.9
- (billion USD)	9.7		11.5		9.5	
Bonds and Bills	16.4	2.7	18.0	3.0	17.2	2.6
- Public Sector	5.9	1.0	7.6	1.3	6.3	1.0
- Private Sector	10.4	1.7	10.4	1.7	10.9	1.7
Mutual Funds						
Private Pension Funds	20.3	3.4	22.6	3.7	25.2	3.8
Other Mutual Funds	26.1	4.3	28.2	4.7	26.8	4.1
Stocks	38.0	6.3	40.9	6.8	38.5	5.9
Repos	3.9	0.6	2.6	0.4	2.9	0.4
Currency in Circulation	54.6	9.0	55.7	9.2	68.0	10.4
Total Assets	605.2	100.0	604.7	100	655.4	100

Source: CRA, CMB, CBRT

Banks have been developing gold banking by rapidly expanding their gold product range with regulations in recent years. The number of banks orienting towards gold banking has increased over the years and the growth in precious metal deposit accounts has outpaced that of precious metal loans. By September 2013, the precious metal deposit accounts and gold loans of the banking sector amounted to TL 20.6 billion and TL 1.5 billion, respectively (Chart III.3.28). Booms in gold prices in the post-crisis period and the decision by the CBRT in November 2011 that allows banks to hold part of their Turkish lira reserve requirements in terms of gold have heated up the banking sector's preference for precious metal deposit accounts. In addition, catchy offers such as Gold Days organized by banks in certain periods have encouraged households to bring their tangible gold to banks and thus facilitated gold banking. The share of precious metal deposit accounts in total deposits, which was 0-0.25 percent in early 2012, surged to 2.8 percent in April 2013 as a result of the developments in recent years. However, this ratio dropped to 2.3 percent in September due to the accelerated downtrend in gold prices (Chart III.3.29).



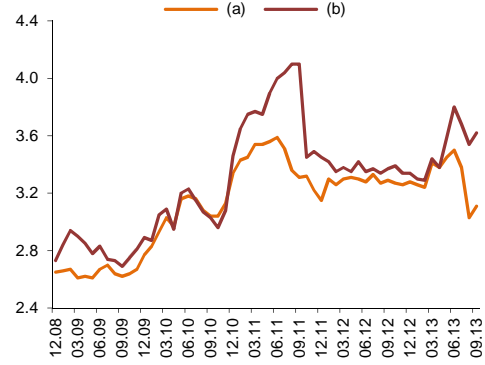
The volatility in returns on investment instruments has made investment preferences of individuals to exhibit variability over time. An analysis of annual real returns on financial investment instruments shows that the return on gold was negative by the end of September 2013 whereas the depreciation of the USD and the Euro turned into gain (Chart III.3.30). As of the same date, the highest depreciation in terms of six-month real returns was recorded in the stock exchange. In fact, households' stock exchange investments regressed in the April-September 2013 period and fell below the end-year level. When FX deposit accounts are adjusted for the exchange rate effect, the households' investments in TL financial instruments exceeded investments in FX financial instruments in the same period (Chart III.3.31).

Chart III.3.30Real Return on Financial Investment Instruments by Types¹ (Percent)

(1) Expressed in real terms by using the CPI.
Source: TÜRKSTAT

Chart III.3.31

Ratio of Household TL Investment Instruments to FX Investment Instruments

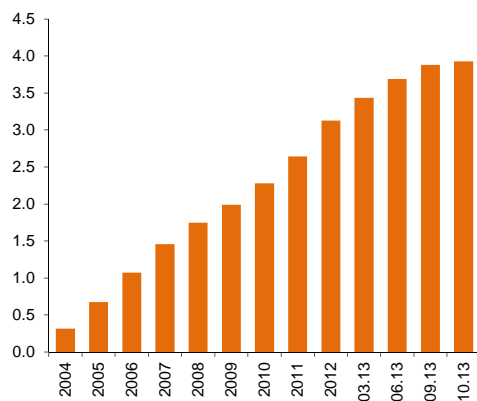


(a) Current TL value of FX deposits and Participation Funds (FX).
(b) For FX deposits and Participation Funds (FX), exchange rate prevailing on 26.12.2008 is used and the parity effect is eliminated.
Source: BRSA-CBRT, CMB, CRA

The Private Pension System, which was put into effect in 2001 and became operational on 27 October 2003, has made a significant contribution to the boost of household savings over the past 10 years. The implementation of the tax advantage by means of a deduction from the tax base was terminated and replaced by the government contribution system as of 1 January 2013. From January to October 2013, the number of participants in the system and the amount of these participants' funds swelled by 26 percent and 24 percent, respectively (Chart III.3.33).

Chart III.3.32

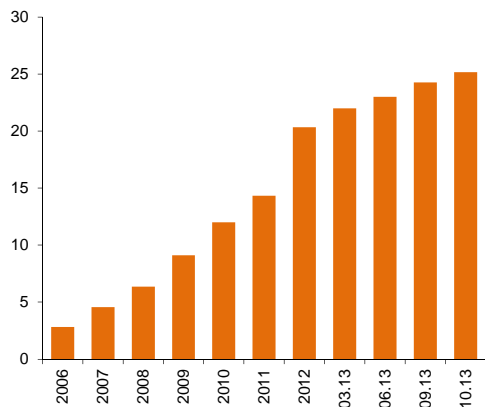
Development of the Number of Private Pension System Participants (Million People)



Source: Pension Monitoring Center

Chart III.3.33

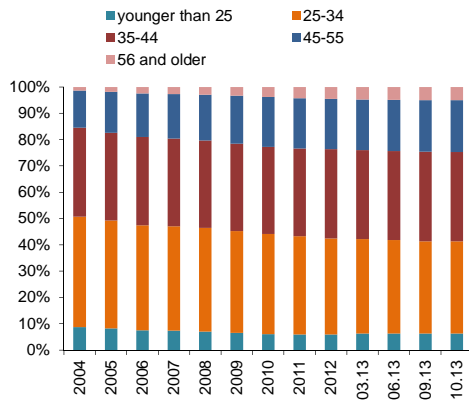
Development of the Amount of Private Pension Funds (Billion TL)



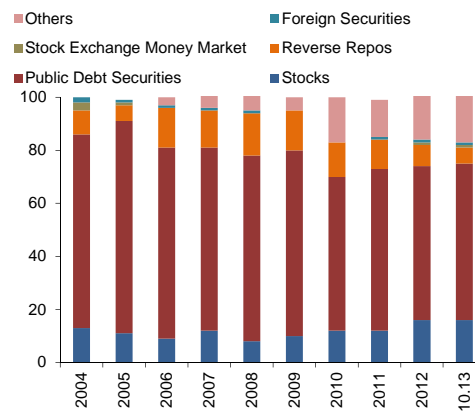
Source: Pension Monitoring Center

People in the 25-44 age group make up 70 percent of the participants in the private pension system (Chart III.3.34). Considering that Turkey has a young population structure, the system is expected to grow further. Public debt securities constitute the largest share in the

private pension funds' assets (Chart III.3.35). However, the asset allocations of funds have diversified over the years. Particularly in recent periods, pension funds have increasingly invested in securities issued by banks and corporate sector firms. As a consequence, the share of the "Other" item that includes these securities in total fund assets expanded to 20 percent.

Chart III.3.34Age Distribution of Participants
(Percent)

Source: EGM (Pension Monitoring Center)

Chart III.3.35Asset Allocation of Private Pension Funds
(Percent)

Source: CMB

IV. Steps Taken Towards Financial Stability⁶

Since the last Report, one of the most important developments with respect to financial stability has been the excessive fluctuations in international financial markets from May 2013 onwards. This chapter discusses the arrangements introduced by the CBRT and the BRSA as well as the policies that the CBRT has implemented since May 2013.

The arrangements and policy implementations put into effect to achieve financial stability can be summarized under three headings:

1. Increasing domestic savings as a healthy and reliable source for financing stable economic growth in the medium and long terms.
2. Putting into practice the structural reforms that are necessary for increasing the financial sector's strength against prospective shocks.
3. Implementing the necessary monetary policy and macroprudential policies to mitigate the adverse effects of cyclical developments that could jeopardize financial stability.

IV.1. CBRT Implementations

Fluctuations in Financial Markets and the Monetary Policy

In the second half of 2013, one of the primary objectives of the CBRT was to increase the financial system's strength in the face of global financial developments. The uncertainty atmosphere triggered by the first signals that the FED might reduce asset purchases became a tough test for developing countries with respect to the soundness of their financial systems and the functionality of their macroprudential policy tool sets. In this process, the significant rise in sovereign risks, excessive volatility in exchange rates and interest rates, loss of debt in bonds and bills market were listed as factors that could trigger macrofinancial risks.

In this period, the CBRT effectively used monetary policy instruments (liquidity management, interest rate corridor and foreign exchange selling auctions) against foreign exchange and interest rate volatility that could threaten financial stability because of their direct and indirect effects on the balance sheets of banks and firms. On 11 June 2013, the CBRT announced that it would implement additional monetary tightening by reducing the amount of liquidity provided to the market at the policy rate temporarily below the lower bound announced for normal days. The Central Bank also announced that it might hold unsterilized intraday foreign exchange selling auctions or foreign exchange interventions to

⁶ This chapter has been prepared by Arzu Tümen, Bekir Eren, Fatih Akça, İsmail Kerem Kemerel, Mehmet Gençay and Yelda Şahin Akdemirci.

support additional monetary tightening when deemed necessary. Accordingly, on 11 June 2013, the CBRT started to hold intraday foreign exchange selling auctions with a daily auction amount of USD 50 million. On 24 June 2013, the Bank announced that an intraday foreign exchange selling auction would be held on the days with regular funding and stated that the auction amount would be minimum USD 150 million. The foreign exchange selling auction amount was decreased to USD 50 million with the Press Release dated 2 July 2013.

In its July meeting, the Monetary Policy Committee decided to raise the upper bound of the interest rate corridor by 75 basis points. Moreover, it was announced that to support the effectiveness of the corridor, there would be no funding to banks via the primary dealer repo facility on additional monetary tightening days. The Monetary Policy Committee raised the interest rate corridor by 50 basis points in its August meeting. As of end-August, the CBRT has taken steps towards increasing the predictability of its liquidity policy to curb the excessive volatility in domestic interest rates on the back of the US economic data.

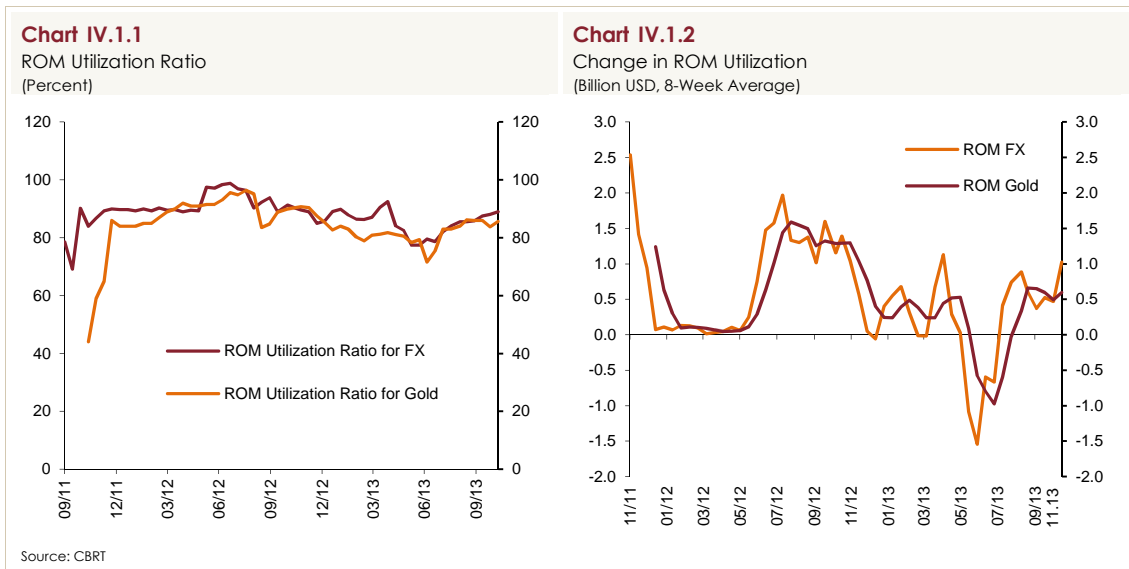
The Monetary Policy Committee kept the interest rates constant at its September meeting. Moreover, on 20 September 2013, the intraday foreign exchange selling auction amount was decreased to minimum USD 20 million. In the October and November MPC meetings, interest rates and foreign exchange selling auctions remained unchanged. However, in line with the decision about enhancing the predictability of interest rates, the one-month repo auctions were terminated in November and it was stated that the interbank money market rates would materialize around 7.75 percent.

Despite the deterioration in sovereign risk perceptions after May 2013, banks did not have any difficulty in rolling over their foreign debts. In a period when foreign investors were trying to decrease their assets denominated in Turkish liras, institutions' demands for foreign exchange (Turkish lira equivalent) that depend on payments in foreign exchange exerted a measured pressure on exchange rates. The CBRT curbed excessive volatility in exchange rates via foreign exchange selling auctions. Meanwhile, the change in the composition of Turkish lira liquidity along with the increase in the effectiveness of the interest rate corridor via extending upward limited the speculative demand for U.S. dollars.

In this process, households became one of the most important economic units. Despite excessive volatility in Turkish lira, only a small portion of household savings was transferred to foreign exchange deposits which was a favorable development for the banking sector. The stability in households' saving preferences can be attributed to the policies implemented as well as to the effective communication strategy.

In September, the steps taken towards enhancing the predictability of interest rates and liquidity were successful in bringing relative stability to market interest rates that displayed excessive volatility upon the announcement of U.S. data. As a result of the policies enhancing predictability, the transaction volume at the GDDS market started to gradually increase.

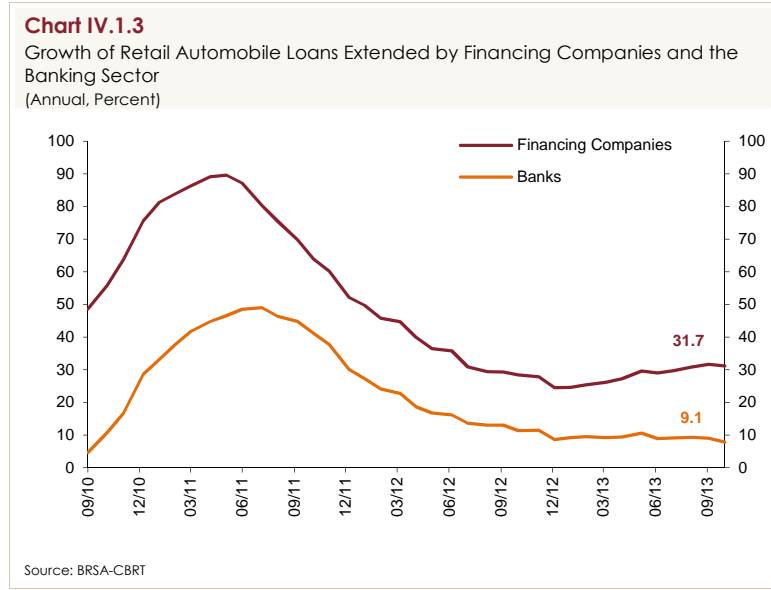
The utilization of the Reserve Options Mechanism (ROM) facility, which was designed by the CBRT as an automatic stabilizer, significantly changed in the May-June period. In this period, banks met their short-term foreign exchange liquidity needs from the ROM facility, as anticipated. In this period, the ROM facility contributed to alleviating the pressure on exchange rates. However, as banks did not have any problems in rolling over their foreign debts in the second half of the year, no significant change was observed in ROM utilization in this period (Chart IV.1.1, Chart IV.1.2).



The Inclusion of Financing Companies in the Reserve Requirements Coverage

According to the "Financial Leasing, Factoring and Financing Companies Law" and related legislation, a financing company is defined as "a company granting loan for each sort of goods and service receiving by making payment directly to the seller by delivering or providing service in the name and account of the real person or legal entity purchasing the good or the service". The financing companies are specifically important because of the high amount of automobile loans that they provide, and it was previously announced that the non-bank financial institutions were monitored with respect to financial stability and could be included in the scope of reserve requirements implementation if deemed necessary.

In June 2013, there were thirteen financing companies in the sector that recorded an annual growth of 31.3 percent when the balance sheet size of the sector was TL 13,2 billion. By the same date, loans accounted for 91 percent of total assets; domestic and external loans accounted for 73.7 percent and securities issued accounted for 12.3 percent of total liabilities. The majority of the loans extended by financing companies, which recorded a year-on-year growth of 29 percent by June 2013, is composed of automobile loans. Retail automobile loans, which account for almost half of the total automobile loans, increased by 32 percent compared to the same period last year (Chart IV.1.3).



With the Communiqué on Reserve Requirements No. 2013/13 that became effective as of the calculation period dated 6 December 2013, financing companies were included in the reserve requirements coverage taking into account the recent rise in credit volume and the credit growth, especially the higher-than-banking sector in retail automobile loans, and with a view to preventing unfair competition and ensuring a sound monitoring of the credit channels of the non-bank sector as a requisite of financial stability. With the Communiqué No.2013/14, the Reserve Options Mechanism facility that allowed banks to keep their Turkish lira required reserves in foreign exchange or in gold became applicable to financing companies as well and financing companies' liabilities dated before 4 October 2013 were excluded from reserve requirements implementation until the end of their maturity.

External loans, which account for approximately 59 percent of total liabilities, securities issued and quasi-capital debts that were not covered in equity capital calculation, stand as the main financing source of the loans extended by financing companies, were included in the reserve requirement coverage; however, domestic loans were not included in the reserve requirement coverage as was the case for banks as these

loans are extended by banks. Inclusion of financing companies in the reserve requirements coverage is expected to support financial stability.

Eased Conditions for Export Rediscount Credits and Their Impacts

Foreign exchange reserves are one of the main instruments that the central banks use to curb the impacts of excessive volatility in capital inflows on local currencies. Actually, in the second half of 2013, when risk appetite in international finance markets fell, the CBRT, like most of the developing countries' central banks, also opted for selling foreign exchange to the market. Via export rediscount credits, the CBRT on the one hand supports exporters who increase the foreign exchange income of the country, on the other hand it increases foreign exchange reserves that provide an important support to macroeconomic policy in volatility periods. The forthcoming part explains the operation principles of export rediscount credits as well as the effects of the amendments made to the regulation governing the implementation.

In the scope of Article 45 of the Central Bank Law, for the financing of their receivables from forward sales or the exports they undertake, exporters can obtain rediscount credits in Turkish lira with a maturity of maximum 240 days, via presenting foreign exchange bills for rediscount. The return on bills is received in foreign exchange on the date of maturity.

While the use of these credits with quite reasonable interest rates based on LIBOR/EURIBOR interest rates and long-term maturities reduces financing costs for exporters, the rise in the number and the enriched sectoral and regional distribution of beneficiary firms contribute to the expansion of Turkey's export markets and to the rebalancing in foreign trade.

Taking into account the contribution of export rediscount credits to the decrease in the current account deficit and the increase in the CBRT's foreign exchange reserves, the credit limits which were set as USD 6 billion on 4 December 2012 were increased to USD 12 billion on 15 August 2013; out of this total limit, USD 11 billion were allocated to Export Credit Bank of Turkey, Inc. (Türk Eximbank) for the financing of preshipment and postshipment export and USD 1 billion to other commercial banks for the financing of post shipment export.

The changes made in export rediscount credits' regulations in August and November 2013 are as follows:

- The maximum maturity of bills to be accepted for rediscount was extended from 120 days to 240 days.

• The credit limit for foreign trade capital companies was increased from USD 120 million to USD 240 million; the limit for other types of companies was raised from USD 90 million to USD 180 million; moreover, the entire limit can be used for credit applications with a maturity up to 120 days and a maximum 50 percent of the limit can be used for credit applications with a maturity of 121-240 days.

• The interest rate to be applied to export rediscount credits with a maximum maturity of 120 days is the monthly LIBOR or EURIBOR interest rate, and the interest rate to be applied to export rediscount credits with a maturity of 121-240 days is the 6-month LIBOR or EURIBOR rate plus 20 basis points.

• In order to decrease the credit costs of exporters, the CBRT has started to accept bills with two signatures provided that a transferable letter of credit is submitted instead of the third signature by a commercial bank as a guarantee.

As a result of these changes, costs were decreased, maturities were extended and limits were raised making export rediscount credits more attractive for companies. The number of companies that applied for these credits and thus the contribution of these credits to CBRT reserves have increased significantly.

As a consequence of eased credit conditions, the amount of export rediscount credits, which was USD 3.1 billion in 2011, became USD 10.5 billion in 2012. By 31 October 2013, the total amount of export rediscount credits extended was USD 12.2 billion and the outstanding balance was USD 6.1 billion (Table IV.1.1, Chart IV.1.4). In 2013, 80 percent of all export rediscount credits were in U.S. dollars and 20 percent was in euros.

Table IV.1.1
Export Rediscount Credits

	2009	2010	2011	2012	2013 ¹
Credit Amount (Million USD, Flow)	1,365	1,227	3,082	10,486	12,248
Outstanding Balance (Million USD, Stock)	325	449	1,612	3,802	6,108
Number of Beneficiary Firms	176	103	281	711	784
Number of Loans	559	416	1,107	4,014	4,922

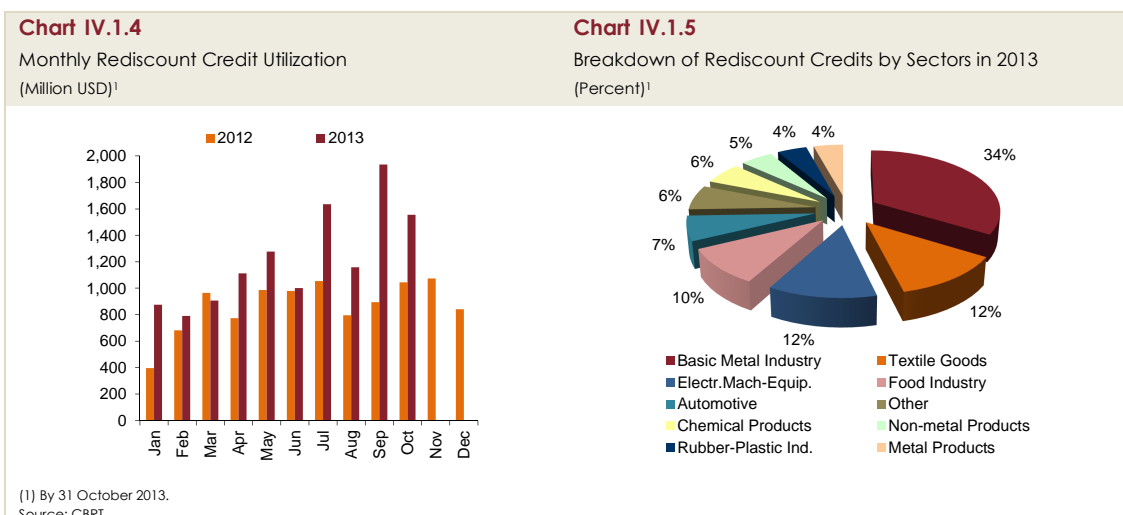
(1) By 31 October 2013.

Source: CBRT

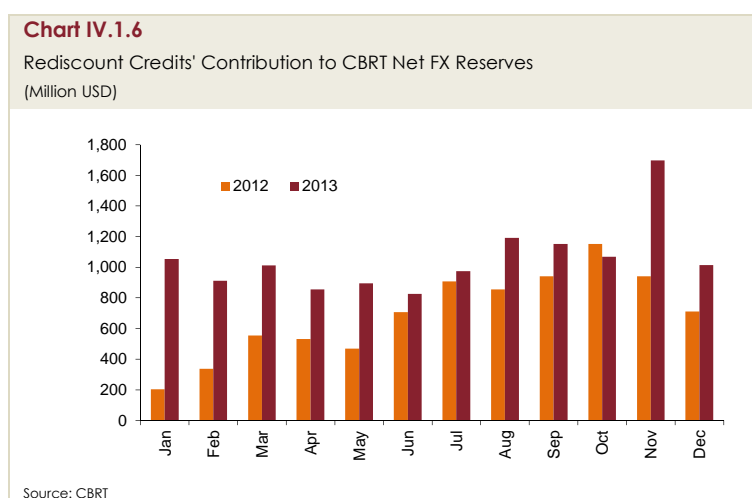
Between 26 August 2013, when credits with a maturity longer than 120 days first started to be extended, and 31 October 2013, USD 3.7 billion of export rediscount credits were extended. Of this total amount, USD 1.1 billion (29 percent) was extended with a maturity of 0-120 days, while USD 2.6 billion (71 percent) was extended with a maturity of 121-240 days. By 31 October 2013, 43 percent of the outstanding balance of export

rediscount credits accounted for credits with a long-term maturity (121-240 days) and 57 percent accounted for short-term credits (0-120 days).

In 2013, export rediscount credits were extended predominantly to finance the exports of basic metal industry, textile industry, electrical machinery and equipment industry products (Chart IV.1.5).



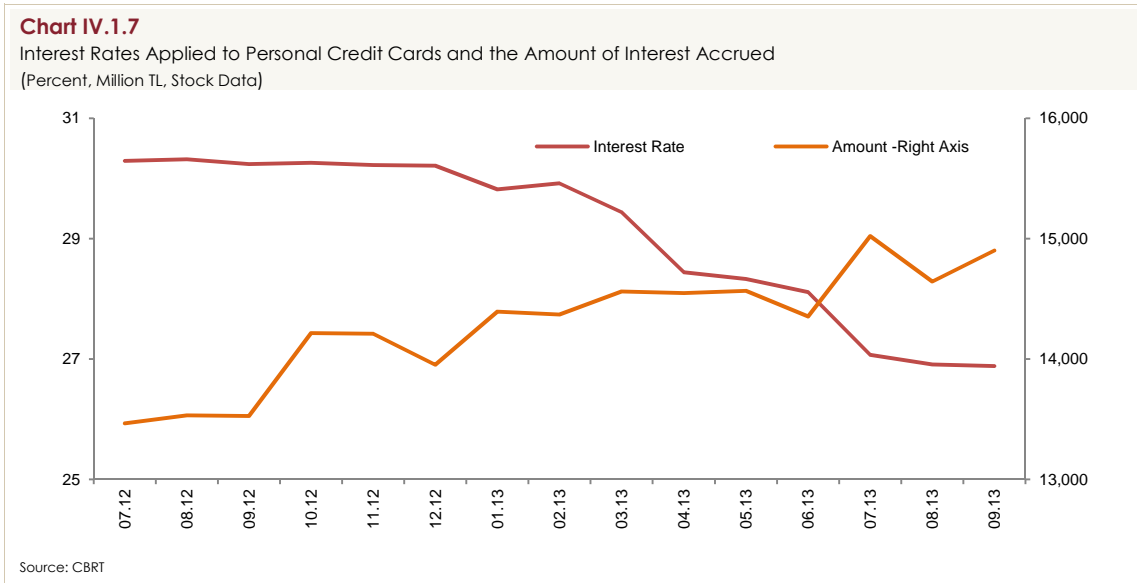
Export rediscount credits, which are extended in Turkish liras and collected in foreign exchange, contributed to the CBRT net foreign exchange reserves by USD 8.3 billion in 2012. This contribution is expected to reach USD 13 billion in 2013 (Chart IV.1.6). Of this amount, USD 9.9 billion was already registered in CBRT reserves between 1 January 2013 – 31 October 2013.



Arrangements on Maximum Interest Rates to be Applied to Corporate Credit Cards and Deposit Accounts with Overdraft Facility

Article 26 of the Bank Cards and Credit Cards Law No. 5464, which took effect after it was published in Official Gazette No. 26095 dated 1 March 2006, stipulates that the maximum contractual and overdue interest rates to be applied to credit cards shall be determined by the CBRT and the rates determined shall be published once every 3 months.

The CBRT Communiqué No. 2013/11 on the Amendment to the Communiqué on Maximum Interest Rates to be Applied to Credit Card Transactions, which is still in force, stipulates that the monthly maximum contractual interest rate and monthly maximum overdue interest rate to be applied to credit card transactions in Turkish lira shall be 2.02 percent and 2.52 percent, respectively. Therefore, the maximum monthly interest rates applied to credit card transactions decreased from 5.75 percent in 2006 to 2.02 percent in 2014. Meanwhile, the annual interest rate for credit cards decreased to 26 percent in October 2013 (Chart IV.1.7).

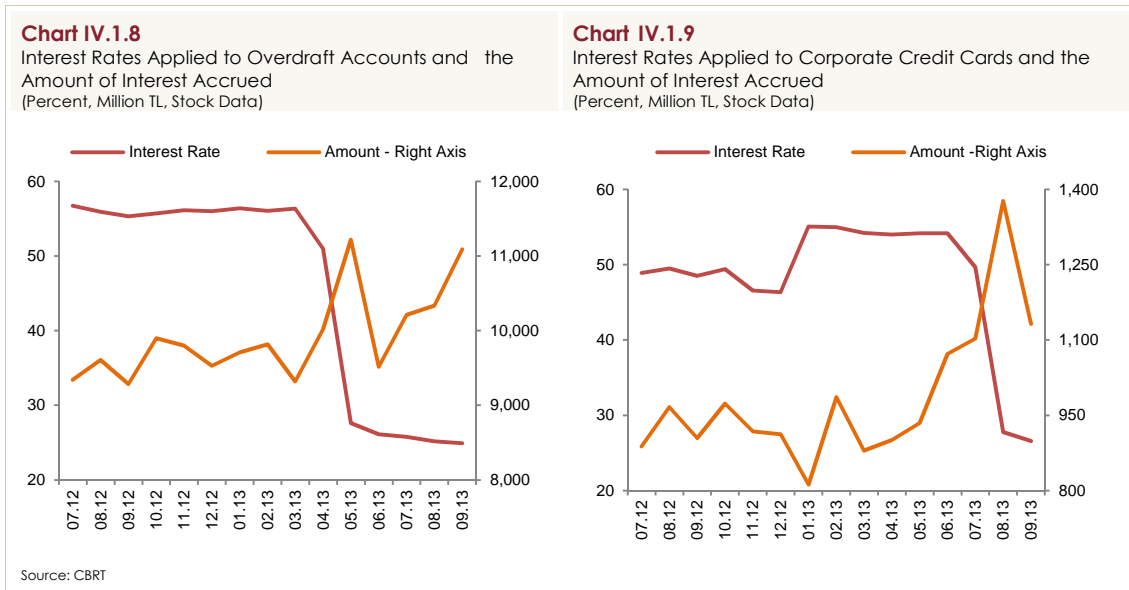


An Overdraft Account (ODA), which is a type of credit that is linked to the account holder's demand deposit account, allows the account holder to draw money or make payments from the account even if the account has an insufficient balance. Having a demand deposit account at a bank is adequate for opening an ODA. While opening a bank account, the client is asked to sign a contract on basic banking services that allows cross-selling. When an ODA is opened, a credit limit is allocated to the account holder and this limit is generally calculated proportionate to the account holder's documented income. For ODAs, interest is accrued during the period of credit utilization, which means the interest

is accrued between the date the account falls below the sufficient balance and the day the account is rebalanced. Currently, the ODA is mostly used via debit cards.

The primary reason for the ODA demand was mainly for emergency cash needs and the interest rates accrued on ODA transactions were quite high. The CBRT concluded that it was necessary to determine the maximum contractual and overdue interest rates to be applied to an ODA in order to support financial stability and reinforce the monetary transmission mechanism. In this regard, the CBRT Communique No. 2006/1 was amended and contractual and overdue interest rates on overdraft deposit accounts became subject to the upper limits of contractual and overdue monthly interest rates on credit card transactions. The regulation became effective as of 27 May 2013.

After the regulation, the interest rates on ODAs, which was 51 percent in April 2013, became 27.6 percent in May 2013, and 24.9 percent in September 2013. The amount of ODA utilization increased from TL 10 billion in April 2013 to TL 11.1 billion in September 2013 (Chart IV.1.8).



Another area in which the CBRT introduced arrangements was **the corporate credit cards**. The interest rates applied to corporate credit cards used by tradesmen were significantly higher than the interest rates applied to similar instruments. An amendment was made to authorize the CBRT to determine and announce the maximum contractual and overdue interest rates to be applied to corporate credit cards in addition to the personal credit cards.

The Law No. 6495 dated 2 August 2013 amending Law No. 5464 expanded the CBRT's scope of duty to include corporate credit cards. Accordingly, the CBRT has started to

determine and announce the maximum contractual and overdue interest rates to be applied to corporate credit cards in addition to personal credit cards. The CBRT Communiqué No. 2013/10 on the Amendment to the Communiqué on Maximum Interest Rates to be Applied to Credit Card Transactions, which was promulgated in the Official Gazette No.28727 dated 3 August 2013, stipulates that as of 5 August 2013, the monthly maximum contractual and overdue interest rates to be applied by banks to corporate credit card transactions shall not exceed the maximum rates applied to personal credit card transactions.

After these regulations, interest rates applied to corporate credit cards, which was 49.6 percent in July 2013, fell to 27.8 percent in August 2013. The amount of corporate credit card transactions, which was TL 1.1 billion in July 2013, remained the same in September 2013 (Chart IV.1.9).

IV.2. Arrangements Made by the BRSA

In the aftermath of the global financial crisis, the Basel Committee on Banking Supervision recommended a set of reform measures to strengthen the banking sector. These measures, which are also known as the Basel III accords, can be roughly summarized as raising the quality and quantity of capital, enhancing risk coverage, establishing a leverage ratio, establishing a capital adequacy framework according to economic cycles and financial indicators and an developing an international framework for liquidity risk measurement, standards and monitoring.

The Basel Committee member states, including Turkey, have decided to phase-in the Basel III accords between 2013 and 2019. In Turkey, the BRSA has issued the following regulations within the framework of the harmonization process for Basel III:

- "The Regulation on Measurement and Assessment of Leverage Level"
- "The Regulation on Capital Conservation and Countercyclical Capital Buffers"
- "The Regulation on Own Funds of Banks"
- "The Regulation Amending the Regulation on Measurement and Assessment of Banks' Capital Adequacy"

The CBRT greets the above regulations favorably as they are expected to contribute to taking under control the risks driven by excessive borrowing and cyclical movements.

The Regulation on Measurement and Assessment Evaluation of Leverage Level was promulgated in the Official Gazette No.28812 dated 5 November 2013 and will take effect as of 1 January 2014. The objective of this Regulation is to help banks operate more effectively and efficiently and to curb bank indebtedness and, thus, banks' risk exposure. The leverage ratios shall be calculated by dividing the banks' tier I capital by the total risk amount. The leverage ratios shall be calculated on a solo and consolidated basis, and the quarterly simple arithmetic average of the ratio shall be equal to and maintained at minimum 3 percent as of 1 January 2015.

The Regulation on Capital Conservation and Countercyclical Capital Buffers, which was published in the same issue of the Official Gazette, will take effect as of 1 January 2014. The Regulation sets forth the principles and procedures regarding the calculation of the additional common equity tier 1 capital amount that the banks are expected to keep as a capital conservation buffer and counter-cyclical capital buffer. The Regulation also establishes the procedures to be followed and measures to be taken in case of a deficiency in the additional common equity tier 1 capital. In this scope, the capital conservation buffer (CCB) is defined as the additional common equity tier 1 capital amount that the banks are expected to keep to avoid any deficiency in their own funds, in case of prospective losses that may stem from a deterioration in economic and financial indicators, compared to the levels stipulated in regulations on capital adequacy. The bank-specific counter-cyclical capital buffer (BSCCB) is defined as the additional common equity tier 1 capital amount that the banks are expected to keep to avoid any deficiency in their own funds -at times of credit expansion levels so high that they might increase the financial sector's riskiness- compared to the levels stipulated in regulations regarding capital adequacy.

The banks' additional common equity tier 1 capital amount is calculated by dividing the sum of bank specific counter-cyclical capital buffer and the capital conservation buffer by the amount of risk-weighted assets. The BSCCB ratios will be calculated by the banks considering their credit portfolio breakdown by countries; and the cyclical buffer ratio to be used in these calculations for Turkey will be determined by the BRSA. At the end of the gradual transition period in 2019, the CCB ratio will be 2.5 percent. Hence, these buffers are not minimum required ratios; their aim is to help banks reach to the level of capital foreseen by imposing certain restrictions on profit distribution in case of inadequacy.

The principles and procedures on calculating own funds and consolidated own funds amounts to be used in calculating the restrictions binding on banks, and the standard ratios have been specified in the Regulation on Own Funds of Banks that was promulgated in Official Gazette No.28753 dated 5 September 2013. The arrangements stipulated in the Regulation will be enacted on 1 January 2014. Accordingly, the banks' equity capital will be calculated by making deductions based on "principles on deductions from equity capital

components" from the sum of tier 1 capital and supplementary capital, while tier 1 capital will be the sum of common equity tier 1 capital plus the additional tier 1 capital. The Regulation introduces tighter rules for the borrowing instruments that will be included in the supplementary capital and changes the principles governing the inclusion of minority shares and the shares of third parties in calculating consolidated own funds. It also introduces a facility so that the borrowing instruments to take place in additional tier 1 capital and supplementary capital can be deleted from the records in case the bank's capital adequacy ratio falls below a determined threshold with the aim of recovering the losses, or making the borrowing instruments transformable to a stock.

The Regulation Amending the Regulation on Measurement and Assessment of Banks' Capital Adequacy, which was promulgated in the same Official Gazette, will take effect on 1 January 2014. With the new arrangement, new ratios have been defined that make up the sub-items of the minimum capital adequacy ratio that is currently at 8 percent. Some new definitions have been added to the Regulation, such as Tier 1 capital, the Tier I capital adequacy standard ratio, common equity, the common equity tier 1 capital adequacy ratio, consolidated tier 1 capital and the consolidated capital adequacy ratio. Moreover, the minimum common equity tier 1 capital adequacy standard ratio and the minimum tier I capital adequacy standard ratio to be calculated on a consolidated and non-consolidated basis and to be attained and maintained by the banks was set as 4.5 percent and 6 percent, respectively. Meanwhile, regarding classification of risks, the excess taxes paid are recorded as current tax assets and listed under risk classification "receivables from the central government".

In the 10th Development Plan spanning 2014-2018, which was promulgated in the repeated issue of Official Gazette No.28699 dated 6 July 2013, the three important pillars of achieving high and sustainable growth were defined as increasing domestic savings, directing increased domestic savings to productive investments and decreasing resource waste. In this framework, the BRSA has introduced regulations on credit cards, loan provisions and techniques for credit risk mitigation, and changed the related risk weights in capital adequacy to keep the rise in consumer loans under control via macroprudential measures, diversify credit costs and increase the share of commercial loans in total loans by other measures taken.

The Regulation Amending the Regulation on Bank Cards and Credit Cards was published in the repeated issue of Official Gazette No.28789 dated 8 October 2013. The Regulation stipulates that the total credit card limit of a first time-credit card-holder for all credit cards issued by several issuers shall not exceed two folds of the average annual income of the credit card holder for the first year, and four folds of his income in the second year. In case the monthly or annual average income of a real first- time credit card holder

cannot be determined, the total credit card limit of this real person's all credit cards from several issuers shall not exceed TL 1,000. Concurrently, the Regulation stipulates that in case the total credit card limit of a credit card-holder's credit cards from several issuers exceeds four folds of the income of the card holder, the limits of the credit cards shall not be raised.

The minimum payment ratio for credit cards was increased from 25 percent of the total debt in the billing cycle to 30 percent for credit cards with a maximum limit of TL 15,000, from 30 percent to 35 percent for those with a maximum limit of TL 15,000-20,000 and to 40 percent for credit cards with a limit of TL 20,000 and more. However, a derogation was cited in the amending Regulation, and accordingly, from 1 January 2014 till 1 January 2015, the minimum payment ratios of credit cards with maximum limits of TL 15,000 and TL 15,000-20,000 will be 27 percent and 32 percent, respectively.

Excluding limits up to TL 1,000, the monthly or annual average income will be determined based on the income sources documented or stated by the card holder and approved by the issuer. The credit card issuer's approval will be based on the evaluation of the documents and statements regarding the credit card holder's credit repayment performance, assets and liabilities, social status, level of education, age and other necessary information.

The Regulation stipulates that if the minimum payment of a credit card is not paid three times in a calendar year, the card shall be closed to cash advances and if the balance is not paid in three consecutive months, the card shall be closed to cash advances and shopping. The credit card shall be kept closed and its limit shall not be raised, until the entire balance is paid off.

Another arrangement introduced in the 10th Development Plan is the amendments made to the Regulation on the Principles and Procedures for the Determination of Qualifications of Loans and Other Receivables by Banks and Provisions to be Set Aside (Regulation on Provisions) that took effect after publication in Official Gazette No.28789 dated 8 October 2013. Accordingly, the scope of the incremental provision ratios, which are applied to consumer loans -excluding automobile and housing loans- extended by banks with a consumer loans / total loans ratio above 20 percent, has been extended to cover automobile loans; and this ratio was increased from 20 percent to 25 percent. Moreover, the consumer loan definition in the Regulation has been extended to cover overdraft deposit accounts that allow real persons to avail credit via their savings accounts, and credits extended to credit card holders as cash advances or payment for goods and services; these types of credits were not previously covered by the consumer loan definition. Finally, the general provision ratios are set as 0 percent for the first group cash and non-cash

export credits; 0.5 percent for cash credits and 0.1 percent for non-cash credits extended to SMEs.

With "The Regulation Amending the Regulation on Measurement and Assessment of Banks' Capital Adequacy", which took effect upon promulgation in the same issue of the Official Gazette, the risk weights of receivables from credit cards and long-term automobile loans that were used in calculating capital adequacy ratios were increased.

The risk weights for credit cards have been changed as follows: the risk weight on installments with a remaining maturity of 1-6 months for credits extended via credit cards as cash advances or payments for goods and services was increased from 75 percent to 100 percent; the risk weight on installments with a remaining maturity of 6-12 months was raised from 150 percent to 200 percent and the risk weight on installments with a remaining maturity longer than 12 months was increased from 200 percent to 250 percent.

For automobile loans, the risk weight for the amount of installments with a remaining maturity longer than 1 year, which was 75 percent, was defined as follows: 150 percent for those with a remaining maturity of 1-2 years and 200 percent for those with a remaining maturity longer than 2 years.

Consequently, the "Regulation Amending the Regulation on Credit Risk Mitigation Techniques" was announced in the same issue of the Official Gazette and went into force. The amendment stipulates that the export credit insurance contracts issued by the Export Credit Bank of Turkey, Inc. (Türk Eximbank) can be used in credit risk mitigation techniques as "other funded credit conservations" provided that they are pledged with the credit issuer bank, and the contracts included in other funded credit conservations shall be deemed like the warranties granted by the Central Government of the Turkish Republic provided that they qualify for the condition.

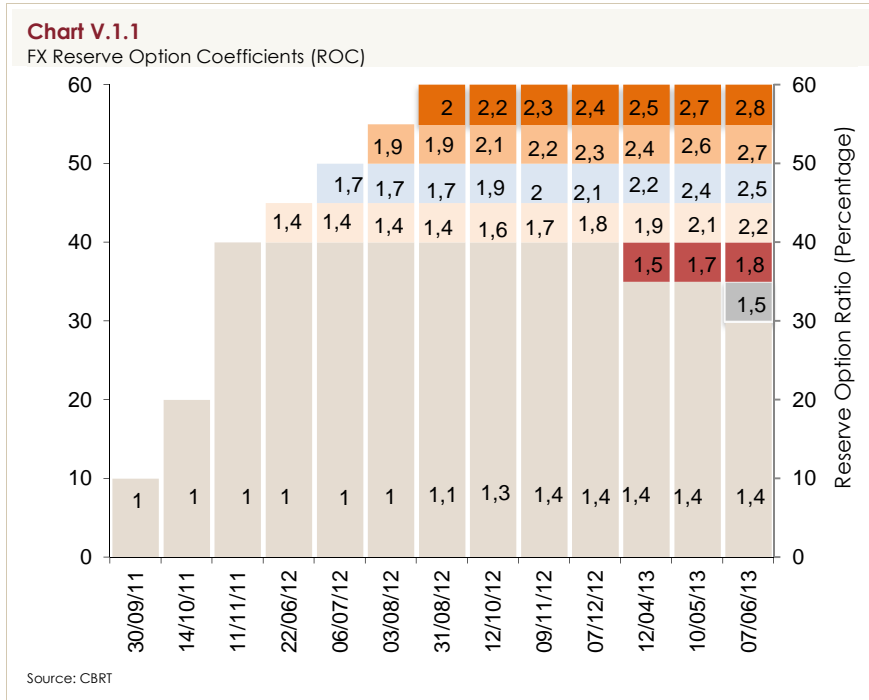
V. Special Topics

V.1. Factors Affecting Banks' Utilization of Reserve Option Mechanism⁷

Introduction

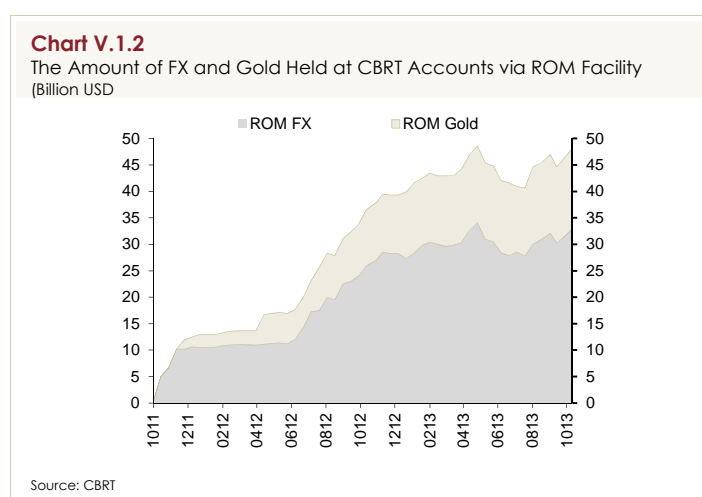
The reserve option mechanism (ROM) is a new monetary policy tool designed by the Central Bank of Turkey to increase the resilience of the economy against external finance shocks. Through the mechanism, banks have the option to hold a fraction (up to the reserve option ratio) of their mandatory required reserves for Turkish lira liabilities in US dollars, euro and gold. The amount of foreign currency/gold towards meeting one unit of TL required reserve is called the reserve options coefficient (ROC) (Alper, Kara and Yörükoğlu 2012; Küçüksaraç and Özel 2012).

In order to observe the ROM's "automatic stabilizer" mechanism, ROCs should be an increasing function of the reserve option ratio and sufficiently large enough. The build-up phase of the ROM is engineered at a gradual pace since the rapid increase in the coefficients might give an additional shock to the banking system. For this reason the CBRT increased the reserve option ratio and reserve option coefficients gradually, also taking into account the course of capital inflows and the pace of credit growth (Chart V.1.1).



⁷ This note summarizes the results of the study conducted by Aslaner, Çıplak, Kara and Küçüksaraç (2013).

Banks accumulated nearly USD 50 billion through the ROM at the CBRT accounts during the last two years (Chart V.1.2). The CBRT's plan was eventually to keep the ROC constant and let the ROM act as an automatic stabilizer against external financing shocks.⁸ In other words, the major aim is to soften the effect of excessive volatility in the capital flows on the domestic economy by allowing banks to decide on their own reserve option utilization, depending on their constraints and objective functions. The main assumption here is that banks will react to the volatility in capital flows by adjusting their ROM utilization. However, this idea is based on theory rather than empirical findings, since the ROM is a new monetary policy tool and thus there is no empirical finding about how the ROM works in case of shifts in capital flows. Our study serves this purpose by investigating the factors affecting the FX ROM utilization rate using panel data.⁹ By doing so, we try to understand how the banks' ROM utilizations respond to changes in financial and economic outlook.

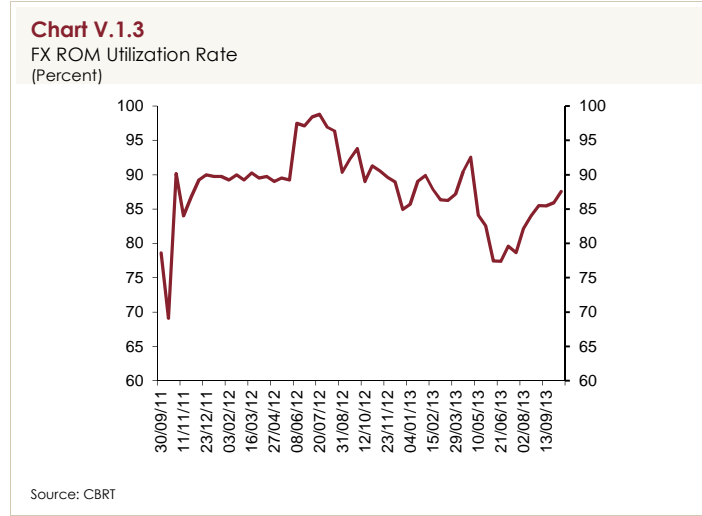


We standardize the ROM utilization rates by dividing the realized utilization rate by the reserve option ratio. Currently, the reserve option ratio is 60 percent (Chart V.1.1). In other words, banks are allowed to hold 60 percent of their mandatory required reserves in Turkish lira in foreign currency. Since the reserve option ratio differs in time, it is more suitable to use the standardized utilization rate, which is over 100 percent. For instance, if a bank keeps 30 percent of its Turkish lira reserve requirements in foreign exchange while the reserve option ratio is 60 percent, the standardized utilization ratio is 50 percent (30/60).

The fact that the ROM utilization rate is mostly below 100 percent indicates some banks do not use the facility fully (Chart V.1.3). Moreover, we observe significant changes in the ROM utilization ratio across time. In order to understand the transmission mechanism of ROM and how it will respond to shocks, it is important to understand why some banks do not fully use the facility or what factors affect the utilization rate.

⁸ See Alper, Kara and Yörükoğlu (2012) for detailed information.

⁹ "ROM" is used for FX ROM in the following parts.



Factors Affecting the ROM Utilization Rate

It is possible to classify the factors which might affect ROM utilization rate as (i) cost related factors and (ii) other factors.

Cost Related Factors

One of the most important factors affecting the banks' ROM utilization rate is the relative cost of FX funding to Turkish lira funding. If the cost of holding Turkish lira required reserves by using the ROM is less than that of holding in Turkish lira, we expect banks to use the ROM provided that other factors such as liquidity constraint or expectations do not change. The CBRT affects the relative cost by changing the reserve option coefficients.

The breakeven ROC, coefficient leaving banks indifferent between using and not using the reserve options facility, is an important parameter in assessing ROM utilization rates. In the calculation of breakeven ROC, we assume that banks use currency forward contracts to compare the cost of Turkish lira and FX funding costs. The approximate breakeven ROC calculated in this context is presented below:¹⁰

$$\text{Breakeven ROC} \sim \frac{(1 - ZK_{FX})r_{TL}}{(1 - ZK_{TL})r_{\$}}$$

The parameters ZK_{FX} and ZK_{TL} in the calculation of breakeven ROC represent foreign currency and Turkish lira reserve requirement ratios and r_{TL} and $r_{\$}$ represents Turkish lira and foreign currency (USD) funding interest rates respectively. Therefore, under the assumption

¹⁰ See Küçüksaraç and Özel (2012) for details.

that reserve requirements are constant in the short run, the main determinant of the breakeven ROC is the relative cost of Turkish lira vs foreign currency funding.

If the breakeven ROC is larger than the ROC level determined by the CBRT, it is expected that banks will prefer using the facility. In other words, the gap between the breakeven ROC and the actual ROC level determined by the CBRT is expected to be the key parameter in determining the ROM utilization rate.

Other Factors Affecting ROM Utilization Rate

There are other factors affecting ROM utilization as well as cost related factors. Since banks need to have foreign currency funds to use the ROM, the foreign currency liquidity condition is expected to affect ROM utilization. In other words, there may be cases where the utilization rate is less than expected because of foreign currency liquidity shortage, although it may otherwise be optimal to utilize the facility. Therefore, the inclusion of a variable representing foreign currency liquidity conditions of banks into the empirical analysis may help to explain the movements in the utilization rate.

In addition to foreign currency liquidity conditions, exchange rate depreciation or appreciation is also expected to affect the utilization rate through a direct but mechanical channel. Since ROM U.S.ge does not necessitate taking a foreign currency position, the exchange rate is not expected to affect breakeven ROC. However, the appreciation or depreciation of the Turkish lira is expected to affect the utilization rate of some banks because of valuation effects. For instance, the Turkish lira depreciation results in an increase in the value of foreign currency funds used for the ROM. Therefore, Turkish lira depreciation would increase the utilization rate of the banks which have foreign currency liquidity constraints.

Furthermore, it would be useful to test the relationship between the volatility in global risk appetite and the ROM utilization rate. At first sight, since global risk appetite is already included into the analysis indirectly through variables such as interest rate, exchange rate and liquidity, it might not be necessary to include this variable separately. However, global risk appetite has become one of the determinants of capital flows after the 2008 financial crises. For that reason, VIX is included in the model directly to test the direct effect of capital flows on the ROM utilization rate.

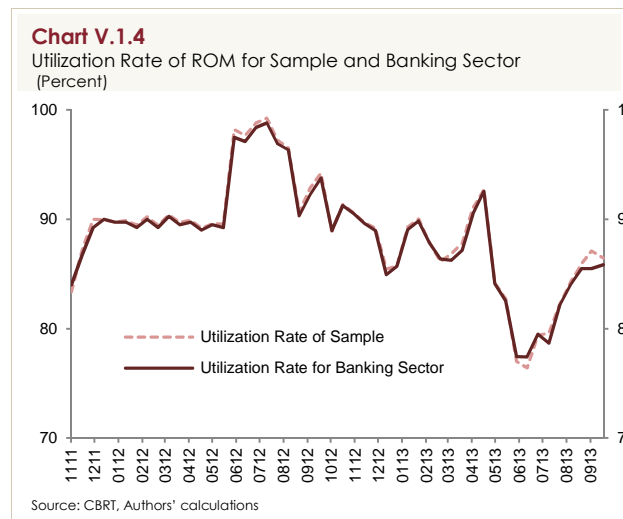
In assessing ROM utilization rates, one should also take into account that banks have the option to use the foreign currency funds in other assets. In the calculation of breakeven ROC, it is assumed that banks do not have any foreign liquidity constraints; therefore, they have sufficient foreign funds to be used for ROM. However, banks could use these foreign

currency funds for extending foreign currency credit or Turkish lira credit using cross currency swaps. For that reason, we include the ratio of credit volume to the balance sheet size as an additional explanatory variable to separate these kinds of effects. We expect this variable to move in the opposite direction from the ROM utilization rate.

Data and Sample

Our sample for empirical analysis starts from 22 June 2012 since reserve option coefficients do not show enough variability before this period. Reflecting the reserve maintenance periods, the data for empirical analysis is at bi-monthly frequency, and covers 37 observations from June 2012 to September 2013.

The panel data analysis covers 18 banks, which constitutes 92 percent of the banking system in terms of reserve requirements. In time series analysis, we calculate the ROM utilization rate for the sample by weighting the utilization rate of each bank by their share in Turkish lira required reserves. Chart V.1.4 shows the utilization rate of 18 banks is a good proxy for the utilization rate of the banking sector.



The Utilization Rate Implied by Breakeven ROC

The fact that breakeven ROC is different for each bank and ROC(s) differ for each reserve option tranche makes it difficult to model the relation between utilization rate and breakeven ROC. Since reserve option coefficients are step functions rather than a continuous function, small movements in breakeven ROCs do not always cause a change in the utilization rate. In order to circumvent this problem, we derive a new index called the "Expected ROM Utilization Rate". This index represents the expected utilization rate implied by the breakeven ROC.

The construction of the Expected ROM Utilization Rate Index rests on the idea that, if the breakeven ROC is higher than the ROC of a tranche determined by the CBRT, we expect that tranche to be utilized. A simple example helps to understand how the expected ROM utilization rate is calculated. Suppose breakeven ROC for a bank is 2.35 and the ROC determined by the CBRT are as in Table V.1.1. In this case, the bank is expected to utilize the tranches whose ROC is below 2.35. In other words, it is not optimal for the bank to utilize tranches between percent 45 and 60. Therefore, the expected ROM utilization rate for the bank would be 45 percent. Through this index, we overcome the difficulty of modeling the breakeven ROC and the utilization rate. The cross sectional variability of the banks helps identify the effects of the variables since the time series dimension of the data is limited.

Table V.1.1

FX Reserve Option Tranches and ROC

FX Reserve Option Tranches	Current ROC
0-30	1,4
30-35	1,5
35-40	1,8
40-45	2,2
45-50	2,5
50-55	2,7
55-60	2,8

The calculation of the expected ROM utilization rate requires knowing which interest rates for foreign currency and Turkish lira funding costs are taken into account by banks in the calculation of breakeven ROCs. There are various financing sources for banks. In this study we try to answer this question through a simple empirical analysis: We first calculate the expected utilization rates implied by the breakeven ROC using alternative funding costs. Next, we try to assess which funding cost better explains the realized ROM utilization rate.

We use the Turkish lira currency swap rate, one-week repo rate, BIST overnight repo rates, overnight lending rate, average funding rate and the deposit rate up to 3 months as alternative Turkish lira funding rates. As for foreign currency funding costs, we use the rate of the foreign currency deposit, which has a high share in the foreign currency funding of the banks. On the other hand, banks have other foreign currency funding sources such as borrowing from abroad in short or long term and security issues. However there is no regular sufficient data for these funding sources. Therefore, we opt to represent the foreign currency funding costs of the banks using the deposit rates. For the foreign currency deposit rate, we use the U.S. dollar and euro deposit rate up to 3 months. The euro based costs are

converted into U.S. dollars and weighted by the ratio of the euro hold for the ROM to the U.S. dollar hold for the ROM.

Empirical Findings

Which Turkish Lira Interest Rate is more important for the ROM Utilization?

In order to find the interest rate that is relevant for banks' ROM utilization, we investigate which interest rate is most successful in forecasting the realized utilization rate of the ROM. For this purpose, using alternative Turkish lira funding sources and foreign currency deposit rates, we calculate the expected ROM utilization rate indexes implied by the breakeven ROC(s). Alternative Turkish lira funding rates are the Turkish lira currency swap rate, one-week repo rate, BIST overnight repo rates¹¹, overnight lending rate, average funding rate and the deposit rate up to 3 months. For each of these alternatives we estimate an expected utilization rate implied by the breakeven ROC and then we calculate the expected utilization rate index for the banking sector by weighting the individual bank's index with their share in the Turkish lira reserve requirement. Then, using an OLS estimation, we ask which index is more successful in explaining the realized utilization rates. The results are presented in Table V.1.2. Each column in the Table represents the expected utilization rate index which is calculated by a different interest rate. Also, we include a constant and a lagged value of the dependent variable.

Table V.1.2

Time Series Results

Explanatory Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Lagged Value of Utilization of ROM	0.480*** (0.002)	0.607*** (0.000)	0.845*** (0.000)	0.736*** (0.000)	0.782*** (0.000)	0.600*** (0.000)	0.852*** (0.000)
CBRT Average Funding Rate	0.249*** (0.001)						
BIST Overnight Repo Rates		0.229*** (0.001)					
Currency Swap Rate			0.271*** (0.002)				
TL Deposit Rate				0.464 (0.144)			
Overnight Lending Rate					0.063 (0.359)		
Policy Rate							0.002 (0.925)
Constant	0.266*** (0.003)	0.164*** (0.009)	-0.131 (0.170)	-0.226 (0.376)	0.131* (0.060)	0.202*** (0.007)	0.127 (0.134)
R-Square	0.865	0.860	0.839	0.806	0.797	0.845	0.791

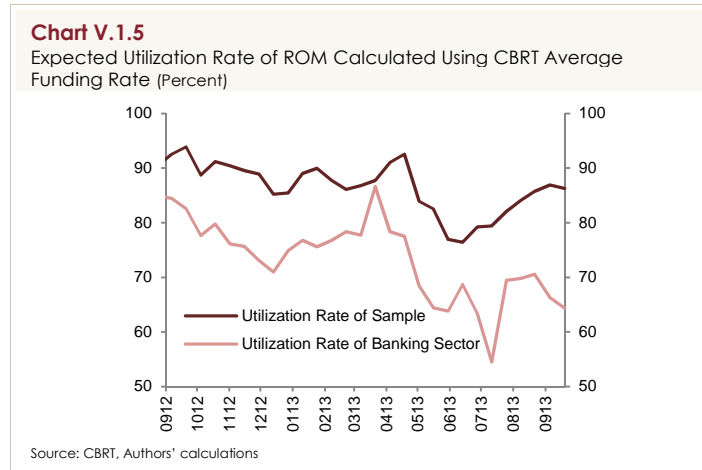
The sample covers the period from 22 June 2012 to 27 September 2013. The first values in the table represent coefficients and the second ones represent p-values.

Results show that the indices calculated with the CBRT average funding rate, BIST overnight repo rates and currency swap rates are statistically significant in explaining the

¹¹ Five day moving averages of overnight repo interest rates in BIST repo and reverse repo have been used.

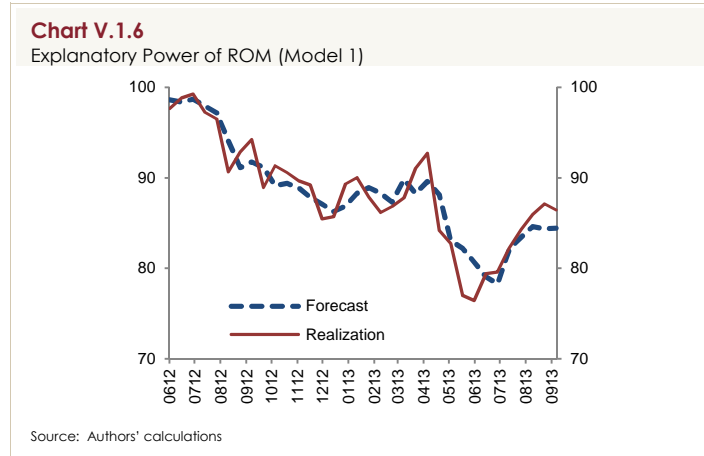
realized utilization rate. The results suggest that banks take into account the CBRT average funding cost and short term money market rates in deciding whether or not use the ROM facility, while the explanatory power of the index calculated by CBRT average funding cost is larger than others. Therefore, in the remainder of the study, we will use the expected ROM utilization rate calculated using the CBRT average funding cost.

The expected ROM utilization rate calculated by the CBRT average funding cost and realized utilization rate is compared in Chart V.1.5. In general, both series move in the same direction. However, the realized utilization rate is consistently higher than the expected one. This situation is because the foreign currency deposit rate used in our calculation of breakeven ROC is higher than the actual cost of short term foreign currency funds in practice.¹²

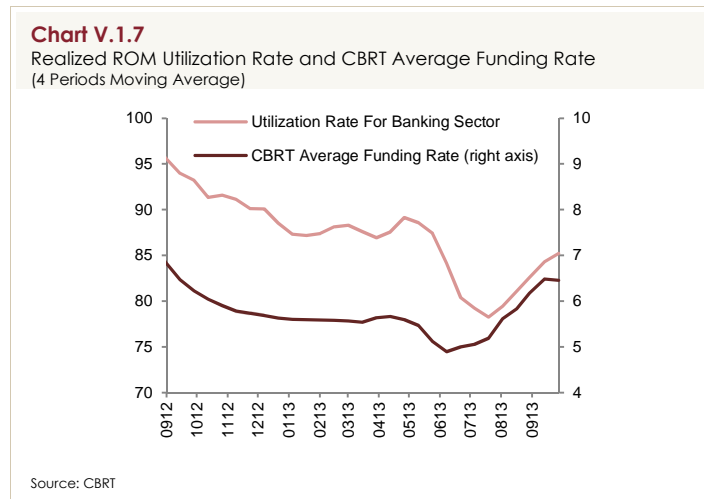


Overall, these results show that the expected ROM utilization rate calculated by using the CBRT average funding cost is an important determinant of ROM utilization. In fact, the explanatory power of a simple OLS model using our expected ROM utilization index as an explanatory variable is quite high (Chart V.1.6).

¹² Since there is no healthy data about the foreign currency borrowing of banks from abroad, foreign currency deposit rate is used in the analysis.



The fact that a relative cost difference between the Turkish lira and foreign currency funds is one of the main determinants of ROM utilization indicates that ROM utilization is sensitive to short term Turkish lira interest rates. Chart V.1.7 shows that the ROM utilization rate and the CBRT average funding rate move together. This observation suggests that a decline in the volatility of short term interest rates will provide more room for the ROM to act as an automatic stabilizer against capital flows. In other words, the wide interest rate corridor causing volatility in short term interest rates might limit the efficiency of the ROM as an automatic stabilizer.



Other Factors Affecting ROM Utilization

Although cost related factors are the main determinants of ROM utilization, there are still significant differences between the expected utilization implied by breakeven ROC and realized utilization in some periods. This observation indicates that other factors are also important for ROM utilization. We conduct a panel data analysis using micro data at the

bank level to evaluate the effect of other variables. To this end, we use the exchange rate, VIX, the share of credit in the banks' balance sheets and foreign currency liquidity ratios. An exchange rate basket is calculated for each bank by using the share of USD and euro which banks hold for the ROM. For instance, if the share of USD in total amount of FX held for the ROM is 60 percent, then the exchange rate basket is calculated by 60 percent USD and 40 percent in euro. Through this calculation the effect of exchange rate on the ROM utilization rate can be conducted more efficiently. Another variable that might affect ROM utilization is global risk appetite, represented by the VIX index, which may also be a direct proxy for capital flows. Moreover, the share of credit in the banks' balance sheets is used as a proxy for the banks' appetite to extend credit. In addition, the foreign currency liquidity ratio of each bank is used as an indicator of the banks' foreign currency liquidity positions.

In terms of timing, we use the most recent data released before the start of each maintenance period. In other words, we use the data set by the time banks claim their ROM utilization. In addition, we used one week lagged data for the foreign currency liquidity position and the share of credits in the balance sheet to reduce the endogeneity problem. For exchange rate basket data, we used the data at the time of obligation date. One day lagged VIX is used for the proxy of global risk appetite.

In this context, we perform a fixed effects panel estimation using the model below with the data from 18 banks between 22 June 2012 and 27 September 2013.

$$ROM_{it} = \alpha_i + \beta_1 ROM_{i,t-1} + \beta_2 EROM_{it} + \beta_3 Credit_{i,t-1} + \beta_4 FCLR_{i,t-1} + \beta_5 Basket_{i,t} + \beta_6 VIX_{t-1} + \varepsilon_{it}$$

In the model, "ROM" represents the realized utilization rate, "EROM" represents the expected ROM utilization rate, "Credit" represents the share of credit in the balance sheet of banks, "FCLR" represents the foreign currency liquidity ratio, "Basket" represents the basket exchange rate which is calculated for each bank and "VIX" represents the volatility index.

Panel data results show that in addition to the expected ROM utilization rate calculated by the CBRT average funding rate, the foreign currency liquidity ratio, the share of credits in the balance sheet and the exchange rate basket are statistically significant and the sign of the coefficients are as expected.

Foreign currency liquidity ratio moves in the same direction with the utilization rate. This result is consistent with the view that liquidity constraints regarding foreign currency affect the ROM utilization rate. The volatility index which is an indicator of global risk appetite does not have a statistically significant effect on ROM utilization rate. This result

does not necessarily indicate that VIX is not important, as the impact of the volatility index on ROM utilization may be seen through other variables included in the regression.

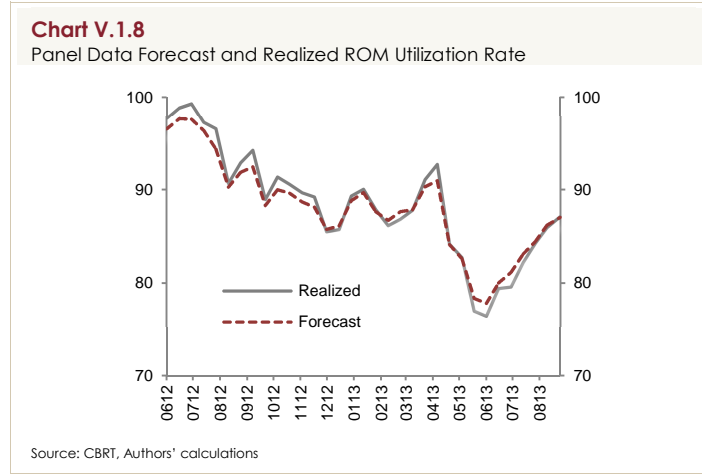
Table V.1.3 also shows that the share of credit in banks' balance sheets moves in the opposite direction from ROM utilization as expected. In other words, banks may tap their resources at the ROM facility when they are more willing to extend new credits. Furthermore, the exchange rate basket is also statistically significant and affects the ROM utilization rate as expected.

Table V.1.3

Panel Data Results About ROM Utilization Rate

Explanatory Variables	Coefficient
Lagged Value of ROM Utilization Rate	0.772*** (0.000)
Expected ROM Utilization Rate Calculated by CBRT Average Funding Rate	0.057*** (0.000)
Share of Credits in the Balance Sheet, Lagged Value	-0.150** (0.012)
Foreign Currency Liquidity Ratio, Lagged Value	0.013 (0.103)
Risk Appetite (VIX)	-0.001 (0.274)
Exchange Rate Basket	0.060** (0.037)
Constant	0.211*** (0.000)
R-Square	0.871

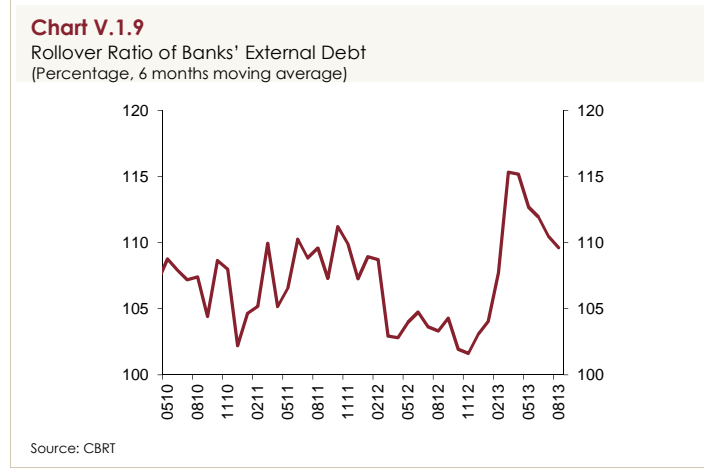
Chart V.1.8 compares the forecast of the model and realizations to evaluate the explanatory power of the model. Using panel estimations, we forecast each bank's ROM utilization and weight them by their share in Turkish lira required reserves to obtain a forecast for the banking sector. This exercise shows that our forecast does a good job in explaining the actual movements in the ROM utilization rate.



Conclusion

Our results show that breakeven ROC is the main determinant of ROM utilization, which depends on the relative cost of foreign currency versus Turkish lira funding as well as reserve option coefficients set by the central bank. Given that during the sample period the most volatile item among these variables was the Turkish lira interest rate, we conclude that the course of the ROM was mainly driven by the Turkish lira interest rate. This may also be explained by the wide interest rate corridor and active liquidity policy adopted by the CBRT during the sample period. In such periods, it will be difficult to observe the automatic stabilizer feature of the ROM. These findings suggest that a decline in the volatility of short term interest rates (for instance an increase in the predictability of CBRT liquidity and interest rate policy) would create a more suitable environment for ROM to act as an automatic stabilizer.

Our findings also provide insights into why banks' ROM utilization increased during the period of capital outflows witnessed in June 2013 following the tapering concerns by the Fed. The results suggest that in this period the increase in the short term interest rate of the CBRT through a tight liquidity policy has made the ROM more profitable for banks, since the cost of Turkish lira funding increased compared to FX borrowing. Moreover, banks did not need to withdraw reserves from their ROM holdings because there was no external borrowing problem for the banks, since the shock in this period was a re-pricing shock rather than a financing shock. Indeed, the rollover ratio for banks' external debt has been at high levels (Chart V.1.9).



Overall, the ROM is designed as a flexible and market friendly mechanism which increases the CBRT reserves with low sterilization cost, and decreases the rollover risks of banks. Our empirical results indicate that these benefits might be observed more significantly if the CBRT implements a less volatile interest rate policy in the following period.

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V.2. The Impact of Monetary Policy Shocks on Firm Credit¹³

After the global financial crisis, the adverse consequences of rapid credit growth for macroeconomics and financial stability have been discussed heavily both in academic studies and among policy makers. In this context, there are many empirical studies about the impact of monetary policy on credit growth dynamics. Although the existing literature mostly focuses on the macroeconomic effects of monetary policy on credit stock, there is still few studies about the microeconomic effects of monetary policy on firm credit growth performance. Using micro-level firm data can be helpful to understand the monetary transmission mechanism and its effects on credit growth. In this special topic, the study about the relation between monetary policy and firm credit growth in Turkey by Altunok, Oduncu and Orman (2013) is summarized.

The monetary policy transmission theory identifies two channels, interest rate and credit channel that influence economic activities as a result of monetary policy shocks. According to the interest rate channel, monetary policy changes directly impact the user cost of capital of firms. Then, firms adjust the level of capital stock till marginal productivity of capital becomes the cost of funding. On the other hand, through the credit channel, monetary policy changes firms' access to credit facilities and credit costs (depending on the information asymmetry problem).¹⁴ Thus, firms with a limited access to financial markets have become more sensitive to the monetary policy shocks as a result of information asymmetries. (Mishkin, 1995; Bernanke and Gertler, 1995). Mojon et al. (2002) investigate the impact of monetary policy on firms' investment by using industry level data from Germany, France, Italy and Spain. They find that the interest rate channel of monetary policy is operative in these countries through the user cost of capital. Nagahata and Sekine (2005) analyze the impact of monetary policy after the collapse of the asset price bubble in Japan by using corporate panel data. They find that monetary policy is effective through the interest rate channel, but its effect through the credit channel is blocked as a result of the deterioration in the balance sheet of Japanese firms. Guariglia and Mateut (2006) investigate transmission of monetary policy by using panel data of UK manufacturing firms. They find that the credit channel is operative since financially constrained firms are affected more from monetary policy shocks.

Altunok, Oduncu and Orman (2013) examine how monetary policy shocks affect the credit growth of the nonfinancial firms listed in Borsa Istanbul. They show that monetary tightening has a significant effect on the decline of the firm credit growth and monetary

¹³ This study has been prepared by Dr. Fatih Altunok and Dr. Arif Oduncu.

¹⁴ In the literature, the credit channel term is used for both the bank lending channel and the balance sheet channel. However, in this study the credit channel only refers the balance sheet channel.

policy shocks have asymmetric effects on firms credit growth. Thus, they conclude that monetary transmission mechanism is operative in Turkey.

The sample consists of panel data for public Turkish nonfinancial firms, about 250 firms, for the period 2003q1–2012q4 and constructed by using consolidated statements obtained from Borsa Istanbul. Moreover, firm loan data including the total real value of credit and credit line as well as firm bank relationship are compiled from the Central Bank of the Republic of Turkey's dataset. This unique and comprehensive dataset enable them to study the effects of monetary policy in micro-firm level. Monetary policy shocks are given from Kılınç and Tunç (2013). The model below is used to investigate the effects of monetary policy shocks on the credit growth of firms.

$$LG_{it} = \beta_0 + \beta_1 MPSt_t + \beta_2 W_{it} + \beta_3 X_{it} + \beta_4 Y_{it} + \beta_5 Z_{it} + \sum_1^3 dquarter + \varepsilon_i,$$

where LG_{it} is the quarterly loan growth of firm i . Our focus variable is $MPSt_t$, which is the quarterly monetary policy shock. The other control variables are represented by the vectors W_{it} , X_{it} , Y_{it} and Z_{it} which are firm characteristics, credit demand, firm financial performance and bank relationship variables. We also include quarter dummies to control seasonal effects. Firm characteristic variables are total assets and age; credit demand variables are sales growth, inventory growth, cash flow, accounts payables and receivables growth. Firm financial performance variables are current assets to total assets, current ratio, liabilities to total assets and tangible assets to total assets; bank relationship variables are bank concentration, credit line and the number of banks from which firm borrows loan. The main variable in the model is the monetary policy shock and it is defined as the unexpected change in the monetary policy. The negative value of monetary policy means a monetary loosening and the positive one is monetary tightening of central bank. The model is estimated by fixed panel data estimation.

The regression results are presented in Table V.2.1. First column presents the effect of monetary policy shocks on firm credit growth without controlling any other variable. The second through fifth columns show the estimation results when control variables are added to model. It can be seen that monetary tightening has a negative effect on firm credit growth at 1% statistically significant level. According to the results, a 25 basis point increase in policy shocks decrease the credit growth of firm by 2.5% points. It is shown that the negative and significant effect of monetary policy shocks on firm credit growth is robust to enclosure of firm-level control variables. According to the standardized beta coefficients, the coefficient of monetary policy shocks is 40% more than the coefficient of cash flow. We re-estimate the effects of monetary policy shocks on firm credit growth by system and difference generalized method of moments (GMM) estimations for robustness check. In

these analyses, the time series effects of monetary policy shocks are examined. The shocks are most effective in the same quarter, the effects of them are declined by 45% in the upcoming quarter and they diminished after the upcoming quarter.

Table V.2.1

Firm Credit Growth and Monetary Policy Shocks

Dependent Variable	Firm Credit Growth				
Independent Variables	(1)	(2)	(3)	(4)	(5)
Monetary Policy Shocks	-0.107*** (0.018)	-0.103*** (0.018)	-0.100*** (0.018)	-0.098*** (0.018)	-0.100*** (0.018)
Firm Specific Variables					
Ln (Total Assets)		0.005 (0.022)	0.000 (0.026)	-0.007 (0.026)	-0.002 (0.028)
Ln (Age)		-0.094 (0.059)	-0.100 (0.095)	-0.096 (0.097)	-0.176* (0.097)
Credit Demand					
Sales Growth			0.039 (0.029)	0.017 (0.028)	0.018 (0.028)
Inventory Growth			0.039 (0.041)	-0.030 (0.042)	-0.026 (0.042)
Cash Flow			-0.261*** (0.073)	-0.304*** (0.068)	-0.292*** (0.068)
Accounts Payables Growth			0.046 (0.040)	0.004 (0.043)	0.003 (0.043)
Accounts Receivables Growth			0.063*** (0.024)	0.048** (0.024)	0.050** (0.024)
Financial Performance					
Current Assets / Total Assets				0.299** (0.128)	0.263** (0.129)
Current Ratio				0.028** (0.012)	0.028** (0.012)
Leverage				0.268*** (0.092)	0.220** (0.093)
Tangible Assets/Total Assets				0.049** (0.021)	0.058*** (0.021)
Bank Relationship Variables					
Bank Concentration					1.481*** (0.318)
Credit Limit					0.070*** (0.025)
Number of Banks Borrowed					-0.002 (0.007)
Quarter Dummies					
1st quarter	0.075*** (0.028)	0.076*** (0.028)	0.078*** (0.029)	0.069** (0.029)	0.068** (0.029)
2nd quarter	0.192*** (0.028)	0.192*** (0.028)	0.186*** (0.027)	0.191*** (0.026)	0.191*** (0.026)
3rd quarter	-0.039* (0.021)	-0.038* (0.021)	-0.029 (0.022)	-0.035* (0.021)	-0.034 (0.021)
Constant	0.037** (0.016)	0.287 (0.327)	0.371 (0.442)	0.096 (0.486)	0.205 (0.524)
Observations	8,237	8,237	7,647	7,647	7,647
R ²	0.019	0.019	0.025	0.031	0.035
Adjusted-R ²	0.02	0.02	0.02	0.03	0.03

The estimated coefficients for control variables are consistent with theoretical predictions. For example, while the increase in the firm's cash flow reduces the credit growth, increase in trade receivables increases the credit growth. Financial performance indicators show that firms with a more robust financial structure have easier access to credit and this situation has the positive effect on the credit growth of firms. Finally, our finding that decreasing competition in the banking sector has a positive impact on credit growth is

consistent with the results found by Mayer (1988), Rajan (1992) and Petersen and Rajan (1994).¹⁵

Table V.2.2

Firm Credit Growth and Asymmetric Monetary Policy Shocks

Dependent Variable	Firm Credit Growth				
Independent Variables	(1)	(2)	(3)	(4)	(5)
Negative Mon. Policy Shocks	-0.062*	-0.077**	-0.070*	-0.073*	-0.063
	(0.037)	(0.038)	(0.040)	(0.040)	(0.041)
Positive Mon. Policy Shocks	-0.133***	-0.110***	-0.109***	-0.103***	-0.118***
	(0.024)	(0.028)	(0.030)	(0.030)	(0.031)
Firm Specific Variables					
Ln (Total Assets)		0.001	-0.005	-0.010	0.001
		(0.016)	(0.019)	(0.021)	(0.020)
Ln (Age)		-0.110**	-0.123*	-0.084	-0.181**
		(0.052)	(0.072)	(0.073)	(0.077)
Credit Demand					
Sales Growth			0.043	0.017	0.016
			(0.026)	(0.025)	(0.025)
Inventory Growth			0.060	-0.005	-0.002
			(0.042)	(0.041)	(0.041)
Cash Flow			-0.176***	-0.200***	-0.199***
			(0.067)	(0.066)	(0.067)
Accounts Payables Growth			0.026	-0.009	-0.008
			(0.035)	(0.035)	(0.035)
Accounts Receivables Growth			0.074***	0.057**	0.058**
			(0.025)	(0.023)	(0.024)
Financial Performance					
Current Assets / Total Assets				0.322***	0.281**
				(0.110)	(0.109)
Current Ratio				0.019	0.020*
				(0.012)	(0.012)
Leverage				0.247***	0.191***
				(0.066)	(0.067)
Tangible Assets/Total Assets				0.053***	0.055***
				(0.019)	(0.019)
Bank Relationship Variables					
Bank Concentration					1.301***
					(0.334)
Credit Limit					0.084***
					(0.027)
Number of Banks Borrowed					0.006
					(0.008)
Quarter Dummies					
1st quarter	0.121***	0.122***	0.123***	0.118***	0.115***
	(0.025)	(0.025)	(0.027)	(0.026)	(0.026)
2nd quarter	0.195***	0.195***	0.183***	0.189***	0.188***
	(0.025)	(0.025)	(0.024)	(0.023)	(0.023)
3rd quarter	0.045*	0.047*	0.053**	0.046*	0.045*
	(0.025)	(0.026)	(0.027)	(0.026)	(0.026)
Constant	0.025	0.375	0.505	0.094	0.171
	(0.018)	(0.253)	(0.324)	(0.348)	(0.343)
Observations	10,048	10,048	9,407	9,407	9,407
R ²	0.011	0.012	0.016	0.021	0.025
Adjusted-R ²	0.01	0.01	0.01	0.02	0.02

Moreover, it is possible that these two different types of shocks have asymmetric effects on firms' loan growth decision. We perform the same regression analysis by using negative and positive monetary policy shocks separately. Obtained results are shown in Table 2. We find that while negative shocks increase the firm credit growth, positive shocks decrease it, as expected. More importantly, positive monetary policy shocks are more

¹⁵In the cited articles, it is argued that increasing competition in financial markets hinder the development of the bank and firm relations and this situation decreases the return benefit of banks by giving to the long-term credit to firms. Therefore, the banks start to give less credit to firms.

effective since the absolute magnitude of the positive coefficient of monetary policy shock and its significance are higher than of the negative monetary policy shock's. Moreover, according to the standardized beta coefficients, the coefficient of positive monetary policy shocks is two times larger than the coefficient of negative one. Therefore, it can be said that there is an asymmetric effect of monetary policy shock on firm credit growth.

Furthermore, the regression analysis is repeated for 3 different samples in order to test the robustness of the results. First, regressions are run separately for manufacturing and non-manufacturing firms and similar results are obtained for these two different data sets. Second, the data is divided into two by less creditworthy and more creditworthy firms and the asymmetric effect of monetary policy is examined. Results suggest that less creditworthy firms are more sensitive to monetary policy shocks. Lastly, the firms are divided into two according to the leverage levels and it is found that the less leveraged firms are more sensitive to monetary policy shocks.

Understanding the transmission mechanism of monetary policy is crucial especially for central banks since they have to know precisely the effects of their policy when they are formulating them. Moreover, the impact of the monetary policy on the credit growth dynamics is an essential topic since rapid credit growth poses risks to macroeconomic and financial stability. We investigate how monetary policy shocks affect the credit growth of firms by using micro firm-level data. We show that firms significantly decrease their credit growth as a response to monetary tightening. Thus, it can be said that monetary policy is operative in Turkey. Furthermore, the evidence shows that the finding of monetary policy shocks have a negative and significant effect on firm credit growth is robust when firm-level control variables are added to model.

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V.3. Net Foreign Exchange Position of Firms and Firm Performance¹⁶

Turkish firms have become more global especially after the 2000s and the volume of exports and imports has increased substantially as a consequence. In addition to this, Turkish firms have been able to borrow easily from international markets due to the implementation of financial and economic stability policies. However, Turkish firms have become more vulnerable to foreign exchange shocks since they cannot balance off foreign liabilities with foreign exchange position. Therefore, foreign exchange shocks might have negative effects on firms. Especially, from an academic and policy-making perspectives, it is important to understand how different types of firms are affected by foreign exchange shocks. In order to find an answer to this question, the effect of foreign exchange shocks on firms should be investigated using micro-level panel data. This section will review the study by Altunok, Aytug and Oduncu (2013), which investigate the effect of foreign exchange position on firm performance.

While theoretical studies argue that foreign exchange shocks can influence firms through various channels including imports and exports, empirical studies find both significant and insignificant results. Horion (1990) argues that foreign exchange shocks have a significant impact on American firms and emphasizes that the main determinant of this effect is exports. On the other hand, Bartov and Bodnar (1994) claim that the impact for the American firms does not occur simultaneously and the effect can be seen after a quarter lag. He and Ng (1998) find that Japanese firms are affected simultaneously however they underlined that there is lagged impact. Pritamani, Shome and Singal (2004) employ American firm level data and find that the effect is insignificant for the exporters but significant for the importers. Doidge, Griffin and Williamson (2006) use panel data of firms from 18 different countries and argue that the effect of foreign exchange shocks on firms is significant. Another finding of this paper is that firms with high level of exports are affected more than firms with low level of exports.

Altunok, Aytug and Oduncu (2013) investigate the effect of foreign exchange position on firm return on assets, particularly using non-financial firm data from Borsa Istanbul. They find that the effect of foreign exchange position on firm performance is negative and the effect increases when there is a foreign exchange shock. In addition to this, the effect gets larger during a financial turmoil.

In this paper, the data of 291 manufacturing firms between 2000-Q1 and 2013-Q2 is used. The data is obtained from the balance sheet and income statements of the firms. However, foreign exchange position data is derived from footnotes of the balance sheet

¹⁶ This study has been prepared by Dr. Fatih Altunok, Dr. Hüseyin Aytuğ and Dr. Arif Oduncu.

statements and this makes the data set to be unique. The model below is used to understand how firm profitability is affected.

$$ROA_{it} = \beta_0 + \beta_1 FXP_{it} + \beta_2 FX_t + \beta_3 (FX_t * FXP_{it}) + \beta_4 EX_{it} + \sum \beta_k X_{it} + \sum_1^3 kq + \varepsilon_i$$

$$ROA_{it} = \beta_0 + \beta_1 FXP_{it} + \beta_2 CR_t + \beta_3 (CR_t * FXP_{it}) + \beta_4 \Delta FX_t + \sum \beta_k X_{it} + \sum_1^3 kq + \varepsilon_i$$

where

ROA_{it} = return on asset of firm i

FXP_{it} = foreign exchange position of firm i

FX_t = change in foreign exchange between Turkish lira and the american dollar¹⁷

EX_{it} = exports of firm i

CR_t = crisis dummy variable

X_{it} = firm specific control variables

kq = dummy variable for 1st, 2nd and 3rd quarters.

The firm specific control variables include firm size, firm age, the leverage as the ratio of liabilities to total assets, investments of the firms, the growth of inventories and the growth of trade credit. Five different specifications of the model are estimated. In all models, the dependent variable is defined as the return on asset (ROA) and the Fixed-Effect model is used in the estimations.

The estimation results are presented in Table 1. There is a negative and significant relationship between foreign exchange position and ROA for all specifications of the model. The first column shows that foreign exchange position has a negative impact on ROA when it is the only independent variable. In this case, a 10 percent increase in foreign exchange position of an average firm causes ROA to fall by 5.2 percent. Starting from the second column to the fifth, some control variables are added to the regressions that may affect ROA. In the second column, the effect of a foreign exchange shock is analyzed and it is found that the depreciation of Turkish lira has a negative impact on ROA. Moreover, the negative effect of foreign exchange position increases when there is a foreign exchange shock. In the third and fourth columns, the effect of exports is analyzed. Although the effect of exports on ROA is positive, the firms are not able to balance off the negative impact of foreign exchange position in the case of a foreign exchange shock. In the last column, the firm specific control variables are included in the model, however the estimated coefficients of the focus variables are not affected and the coefficients of the control variables are in line with current literature.

¹⁷ Foreign exchange is defined as euro and euro-usd basket and similar results have been reached.

Table V.3.1
Return on Asset and Foreign Exchange Position

	ROA				
	(1)	(2)	(3)	(4)	(5)
FXP	-0.110*** (0.011)	-0.085*** (0.011)	-0.083*** (0.011)	-0.062*** (0.013)	-0.026** (0.012)
FXP x FX		-0.354*** (0.040)	-0.354*** (0.040)	-0.355*** (0.040)	-0.378*** (0.038)
FX		0.031*** (0.008)	0.029*** (0.009)	0.027*** (0.009)	0.024*** (0.009)
Exports/Total Assets			0.031*** (0.010)	0.040*** (0.011)	0.043*** (0.010)
Exports/ (Total Assets)x FX			0.017 (0.040)	0.026 (0.040)	0.054 (0.040)
Exports/ (Total Assets) x FXP				-0.127*** (0.042)	-0.144*** (0.039)
LN(Total Assets)					0.020*** (0.004)
LN(Firm Age)					-0.000 (0.017)
Leverage					-0.086*** (0.010)
Investments					0.012*** (0.003)
Inventory Growth					0.159*** (0.025)
Trade Debt/Total Assets					0.050** (0.020)
1st quarter	-0.026*** (0.003)	-0.025*** (0.003)	-0.020*** (0.004)	-0.020*** (0.004)	-0.018*** (0.004)
2nd quarter	-0.015*** (0.002)	-0.015*** (0.002)	-0.012*** (0.002)	-0.012*** (0.002)	-0.007*** (0.002)
3rd quarter	-0.000 (0.001)	-0.000 (0.001)	0.001 (0.001)	0.001 (0.001)	0.004*** (0.001)
Constant	0.039*** (0.003)	0.036*** (0.003)	0.030*** (0.003)	0.029*** (0.003)	-0.226*** (0.083)
Observations	9,590	9,590	9,590	9,590	9,559
R ²	0.136	0.156	0.160	0.164	0.210
Adjusted-R ²	0.13	0.15	0.16	0.16	0.21

In order to understand how the crisis played a role, the model is re-estimated using the crisis dummy variable. The dummy variable takes 1 for the quarters of 2008, 2009 and 2011, while it takes 0 otherwise. The new estimation results are presented in Table 2. The effect of foreign exchange position is still negative and significant in all columns except the last column. If an average firm experiences a financial crisis with a 9 percent of foreign exchange position (the average foreign exchange position), ROA falls by 57 percent. Another worthwhile result is that when the crisis dummy variable is included in the model, the coefficient of exchange rate growth becomes insignificant. Moreover, a foreign exchange shock only influences firms through foreign exchange position.

Table V.3.2

Return on Asset and the Crisis

	(1)	(2)	ROA (3)	(4)	(5)
FXP	-0.069*** (0.011)	-0.060*** (0.011)	-0.058*** (0.011)	-0.038*** (0.013)	-0.005 (0.012)
Crisis Dummy	-0.010*** (0.003)	-0.011*** (0.002)	-0.011*** (0.002)	-0.012*** (0.003)	-0.009*** (0.003)
FXP x Crisis Dummy	-0.125*** (0.015)	-0.095*** (0.015)	-0.096*** (0.015)	-0.096*** (0.019)	-0.095*** (0.018)
FXP x FX		-0.230*** (0.039)	-0.230*** (0.039)	-0.233*** (0.039)	-0.248*** (0.037)
FX		0.006 (0.008)	0.000 (0.010)	0.000 (0.010)	0.006 (0.008)
Exports/Total Assets			0.036*** (0.010)	0.043*** (0.011)	0.049*** (0.011)
Exports/ (Total Assets) x FX			0.030 (0.040)	0.029 (0.036)	0.052 (0.034)
Exports/ (Total Assets) x FXP				-0.125*** (0.040)	-0.144*** (0.038)
Exports/ (Total Assets) x FXP X Crisis				0.010 (0.070)	0.017 (0.067)
Exports/(Total Assets) X Crisis				0.005 (0.010)	0.006 (0.010)
LN(Total Assets)					0.015*** (0.004)
LN(Firm age)					-0.026** (0.011)
Leverage					-0.073*** (0.010)
Investment					0.015*** (0.003)
Inventory Growth					0.150*** (0.025)
Trade Debt/Total Assets					0.052** (0.021)
1st quarter	-0.027*** (0.003)	-0.026*** (0.003)	-0.020*** (0.004)	-0.020*** (0.004)	-0.017*** (0.004)
2nd quarter	-0.016*** (0.002)	-0.015*** (0.002)	-0.011*** (0.002)	-0.012*** (0.002)	-0.008*** (0.002)
3rd quarter	-0.000 (0.001)	-0.000 (0.001)	0.002 (0.001)	0.001 (0.001)	0.004*** (0.002)
Constant	0.043*** (0.002)	0.042*** (0.002)	0.034*** (0.003)	0.033*** (0.003)	-0.071 (0.054)
Observations	9,590	9,590	9,590	9,590	9,582
R ²	0.146	0.154	0.159	0.163	0.202
Adjusted-R ²	0.15	0.15	0.16	0.16	0.20

As a robustness check, firms with high and low leverage, firms with high and low fixed assets to total assets ratio and firms in the services and manufacturing industries are investigated separately. Our results indicate that the effect of foreign exchange position is smaller on firms with low leverage compared to firms with high leverage. On the other hand, the effect of foreign exchange position is smaller on firms with high fixed assets to total assets ratio compared to firms with low fixed assets to total assets ratio. However, the effect of foreign exchange position does not vary for firms in different industries.

In conclusion, the question of which firms are influenced the most due to a foreign exchange shock is very crucial for financial stability. In this study, we find that a foreign exchange shock affects the firms, which have the higher level of a foreign exchange position. We also demonstrate that exports have a positive effect on ROA. However, the negative effect of a foreign exchange position with a foreign exchange shock is not balanced off by exports. Based on these results, it is shown that foreign exchange position

matters for financial stability. It is suggested that policy makers pay close attention to this case in order to mitigate the risks that can affect financial stability.

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V.4. Firm Leverage and the Financial Crisis¹⁸

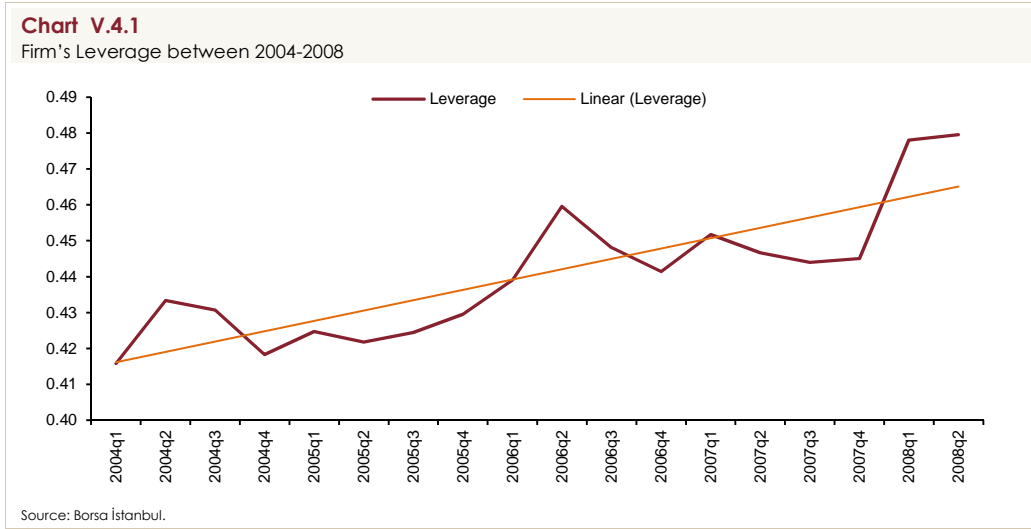
The growth performance of firms is one of the main determinants of the macroeconomic growth. Thus, the firm growth dynamics is an important issue of economics. Financial structure of firms, especially the level of leverage and change in its level may play a crucial role on the growth of the firms. In other words, a sharp increase in the leverage may dampen their performance in terms of accessing new finance especially during a Financial crisis.

There is a growing literature, especially after the global financial crisis of 2007-2008, on the relation between economic crisis and high growth of leverage. Leamer (2007) argues that most of the U.S recessions after World War II have been related with the increase in leverage. Mendoza and Terrones (2008) claim that excessive leverage growth has increased the fragility of banking sector especially in emerging markets and this situation has been associated with economic and financial crisis. Glick and Lansing (2010) find evidence that the countries with lower leverage ratios had better economic performance after the global financial crisis of 2008. Mian and Sufi (2010) examine the relation between household leverage and economic downturn across the U.S counties and they show that a sharp increase in household leverage before the global financial crisis is closely linked to the economic recession of 2007 in U.S.

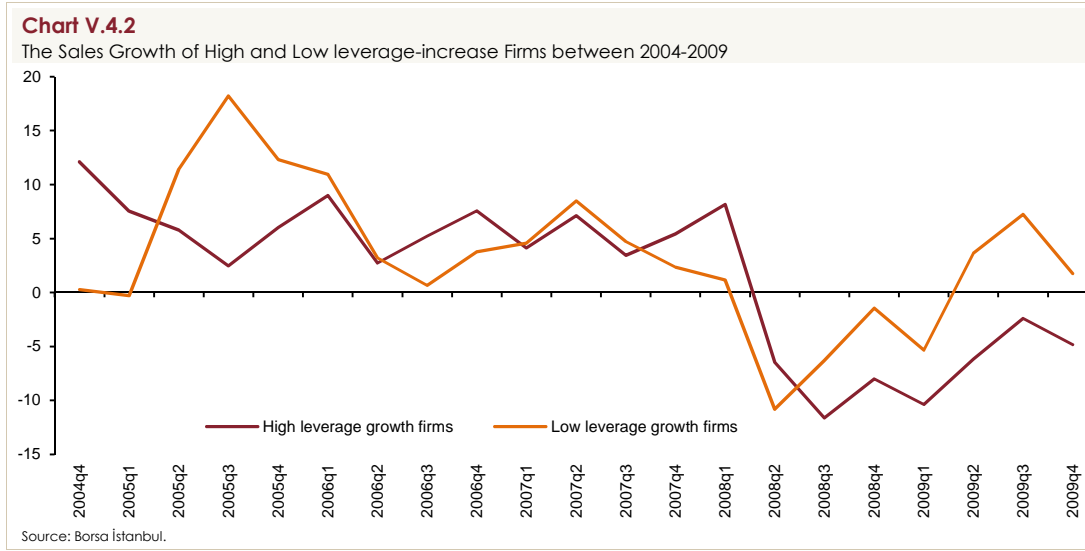
Most of the studies (except Mian ve Sufi, 2010) focus on the aggregate debt of the counties using aggregate data and majority of the studies are cross-country analysis. There is no study exploring the impact of fast growing leverage on the growth of firm during the recent crisis. The study by Altunok and Oduncu (2013) aims to void this gap. In this study, it is investigated how the fast growth of leverage before the crisis affects the growth of firms during the crisis by using Turkish firms listed at Borsa İstanbul. The summary of this study is presented here.

This study's sample consists of panel data for 200 hundred public Turkish nonfinancial firms for the period 2003q4–2009q4 and is constructed by using consolidated statements obtained from Borsa İstanbul. The panel dataset is converted to a cross-section dataset to overcome the very possible endogeneity problem due to the huge correlation and reverse causality problem between sales growth and leverage of the firms.

¹⁸ This study has been prepared by Dr. Fatih Altunok and Dr. Arif Oduncu.



There is a drastic increase in the leverage of the firms between the period of 2004 and 2007 as seen in Chart V.4.1. Thus, we select this period to determine the high and low-leverage growth firms in order to examine their growth performance during the period 2007-2009. The distinct patterns for sales growth performance of low and high-leverage-increase firms are displayed in Chart V.4.2. The firms that experienced a large increase in their debt-to-asset ratio from 2004 to 2007 have inferior sales growth performance in the period 2007-2009. By the last quarter of 2009, sales declined for firms experiencing a sharp increase in leverage by 13% compared to 2007 q4. Quite the opposite, there is an increase in sales growth by 12% compared to 2007 q4 for low-leverage-increase firms at the last quarter of 2009. Moreover, in the third quarter of 2008, although sales growth declines for both low and high-leverage-increase firms, the decline is less severe for low-leverage-increase firms. In this case, it can be said that the firms with low leverage growth rate eliminated the risks arising from the crisis better. The rapid leverage growth before the crisis affected adversely the growth of the firms through increasing the fragility of firms' financial structure.



The model below is used to examine how the high growth of leverage before the crisis affects the growth of firms during the crisis.

$$\Delta SG_i = \beta_0 + \beta_1 \Delta Leverage_i + \sum_k \beta_k X_i + \varepsilon_i;$$

where ΔSG_i is the change in sales growth of firm i from 2007q4 to 2009q4. Our focus variable is $\Delta Leverage_i$ which represents the change in leverage from 2004q4 to 2007q4 of firm i . The other control variables are represented by the vector X_i which includes log of assets, log of age, fixed assets to assets ratio, inventories to assets ratio, liquid assets to assets ratio, return on assets, gross margin, total sales to assets and exports share in total sales.

The regression analysis is done for 4 different base models. In all models, the dependent variable is the sales growth from 2007q4-2009q4. In the first model, only the change in leverage is used as an independent variable and then the other variables are added to regression analysis in model 3 and 4. Industry dummies are used in model 2 and 4 in order to control the different growth performances of the industries. The regression results are presented in Table 1.

According to the results obtained from 4 models, there is a negative and statistically significant relation between leverage growth and sales growth. First column presents that the change of debt-to-asset ratio from 2004 to 2007 is significantly negatively correlated with the sales growth performance of 2007 to 2009. The second through fourth columns show that the coefficient of leverage increases with the addition of control variables. According to the results in the fourth column, a 20 percent increase in the leverage of an average firm between 2004 and 2007 will result in 12.4 percent points decline in the change of sales

growth between the period of 2007 and 2009. The explanatory power of the change in the leverage ratio is increased when firm-specific variables and industry dummies are added to the model. These results show that we successfully control the effects that may result from the difference between sectors and firm-specific factors.

Table V.4.1

Leverage Increase and Sales Growth Performance

Dependent Variable: Independent Variables	Change in sales growth, 2007q4-2009q4			
	(1)	(2)	(3)	(4)
Change in leverage , 2004q4-2007q4	-0.340* (0.187)	-0.433** (0.204)	-0.543*** (0.197)	-0.621*** (0.200)
Leverage, 2003q4			-0.178* (0.096)	-0.198** (0.088)
Ln(Assets)			0.007 (0.019)	-0.016 (0.021)
Ln(Age)			-0.012 (0.076)	0.015 (0.072)
Fixed assets/ Assets, 2007q4			-0.341 (0.302)	-0.269 (0.282)
Fixed assets/ Assets, 2004q4			-0.028 (0.240)	-0.088 (0.234)
Inventories/ Assets, 2007q4			0.078 (0.428)	0.175 (0.394)
Inventories/ Assets, 2004q4			-0.361 (0.424)	-0.392 (0.386)
Liquid assets/ Assets, 2007q4			-0.743* (0.377)	-0.787** (0.365)
Liquid assets/ Assets, 2004q4			0.228 (0.435)	0.181 (0.418)
Return on assets, 2007q4			0.005 (0.433)	0.173 (0.429)
Return on assets, 2004q4			-0.696 (0.482)	-0.779* (0.444)
Gross margin, 2007q4			-0.229 (0.388)	-0.345 (0.390)
Gross margin, 2004q4			-0.038 (0.370)	0.140 (0.432)
Sales/ Assets, 2007q4			-0.133*** (0.044)	-0.135*** (0.045)
Sales/ Assets, 2004q4			0.042 (0.062)	0.060 (0.071)
Changes in sales growth, 2004q			0.043 (0.062)	0.129* (0.076)
Exports/ Sales, 2007q4			-0.022 (0.184)	0.147 (0.157)
Exports/ Sales, 2004q4			-0.011 (0.179)	-0.113 (0.166)
Industry dummies	no	yes	no	yes
Constant	-0.127*** (0.025)	0.138** (0.058)	0.304 (0.448)	0.698* (0.371)
Observations	202	202	183	183
R-squared	0.025	0.082	0.188	0.274
Adj. R-squared	0.02	0.03	0.09	0.14

The regression analysis is repeated for two different samples in order to test the robustness of the results. First, we perform the same analysis excluding the distressed firms which have negative profit and sales growth in 2007. We investigate this scenario since the distressed firms may drive our results due to their poor performance during the financial crisis. By doing so, we overcome some structural problems and the problems related with the poor management of those firms.

Second, we also exclude the most leveraged firms right before the crisis since their high level of leverage might cause their poor performance during the crisis. For this analysis, we exclude the most leveraged quintile of the firms, thus we perform the analysis for remaining 155 firms. We still obtain consistent robust results. This results show that there is a very strong negative correlation between leverage increase and change in sales growth. These results are provided in Table V.4.2.

Table V.4.2

Leverage Increase and Sales Growth Performance (Non-distressed and Less Leveraged Firms)

Variables	Change in sales growth, 2007q4-2009q4			
	(1)	Non-distressed (2)	(3)	Less Leveraged Firms (4)
Change in leverage , (2004q4-2007q4)	-0.409** (0.190)	-0.488*** (0.189)	-0.581** (0.270)	-0.699** (0.294)
Industry dummies	no	yes	no	yes
Constant	-0.226*** (0.253)	0.751 (0.729)	-0.138*** (0.029)	0.098 (0.079)
Observations	96	96	155	155
R-squared	0.048	0.279	0.047	0.153
Adj. R-squared	0.040	0.190	0.04	0.09

In conclusion, understanding the firm growth dynamics is crucial in order to commentate the economic fluctuations. This paper focuses on the role of firm leverage on the growth performance of the firm during the global financial crisis. It is shown that the firms that experienced a large increase in leverage before the global financial crisis has a worse growth performance during 2007-2009 crisis than firms that didn't experience the increase in leverage. Fast growth of the firm leverage might deepen the crisis and increase the severity of the crisis. Moreover, fast growth of the firm leverage might give some clues about an upcoming crisis. Therefore, it is worthwhile to understand the reasons and results of rapid leverage growth for financial stability. It can be said that macro-prudential policies can be implemented to avoid rapid leverage growth and these policies can contribute positively to financial stability.

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V.5. Some Findings and An Assessment of Capital Adequacy and Profitability¹⁹

The claim that financial markets can reach a harmonious balance compatible with economical base without intervention has weakened significantly after the global crisis. If a financial system, on which dynamics disconnected with economical base are dominant, is not regulated and inspected as it should be, it can be a significant source of instability not only for the soundness of financial sector but also for the overall economy. Today, it is understood that it is necessary for central banks and other institutions to help the markets be ready for large negative shocks with policies they apply in normal times. Extraordinarily strong credit growth, high asset prices, low risk premium and low volatilities can indicate that risk taking has reached to a dangerous extend. (Borio and Drehmann, 2009). At such times, it is more difficult as well as extremely necessary to intervene in the vulnerabilities in the financial system in a balancing way. The fact that financial institutions intervene in the financial markets only at the time of the crisis, enlarges the extent of the crisis.

Macroprudential precautions designed to enforce the soundness of financial system take place on the top of both academic and financial sector's agenda. Central banks and other regulatory institutions have given priority to macroprudential precautions with the aim of decreasing the fluctuation seen in the business cycles. For example, global financial crisis has increased the importance of capital adequacy in the banking sector. Both macroprudential precautions and other reforms about the regulations targeting financial institutions aim a higher quality and stronger capital form. Thus, it is of crucial importance to better analyse the several indicators such as capital adequacy and banking profitability for the precautions in question to take effect. Capital is of high importance for banks and financial systems due to its functioning as a financial buffer in compensating losses. For this reason, capital adequacy and additional capital buffers have contributed much to the sound functioning of the economy in terms of reflecting the risk outlook of financial institutions and resistance of the sector at the times of financial stress.

According to the widely accepted traditional approach in the banking sector literature, it is supposed that there is a negative correlation between capital adequacy ratio and return on equity. As a consequence of high capital adequacy ratio, riskiness decreases and thus, return on equity demanded by investors decreases. According to the hierarchy theory in finance literature²⁰, a company's capital adequacy is determined by available domestic funding and investment opportunities. If a company with a high profitability aims at spending a great deal of its gain for the financing of its investments, it can prefer relatively low capital adequacy in the long term. But, data indicates that there is not always

¹⁹ This chapter has been prepared by Mahir Binici, Yasin Mimir, Canan Özkan and Pinar Özlü.

²⁰ See Myers and Majluf (1984)

a negative correlation between capital adequacy ratio and return on equity . On the contrary there is a positive correlation between those at times. For example, in their study covering 1970-2010 term, Osborne and others (2012) have found out that there is a negative correlation on average between capital and profitability for the U.S. banks. But, it has been found out that the correlation in question was positive at such times when financial stress was high such as savings and credit crisis in the 1980s and recent global financial crisis. The correlation between capital adequacy and profitability can be positive or negative under certain situations and assumptions as explained above.²¹

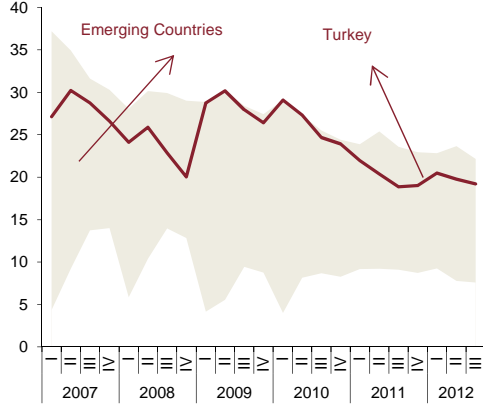
The correlation between return on equity, return on asset and capital adequacy ratio has been analysed on this special topic for several developed and developing countries and a comparative assessment has been made with Turkey. According to the findings, capital adequacy ratio and return on asset and return on equity in our country compared to other sample countries have been materialized at higher levels recently. There is a positive correlation between profitability indicators and capital adequacy ratio and it is expected that precautionary regulations put into effect recently might be effective in determining the way of this correlation.

Comparison of Other Countries with Turkey

The gap between the lowest and the highest levels of return on equity and return on asset decreases in time in developing countries, and return on equity and return on assets get closer among the related country groups. Based on the comparison made after 2009 period, it was observed that return on equity and return on asset have relatively wide range and sometimes lower values in the developed countries affected by global financial crisis and Europe debt crisis. In Turkish banking sector, both return on equity and return on assets are over the average of the country sample used for the observation period and decrease with the overall trend recently. (Chart V.5.1-Chart V.5.4).

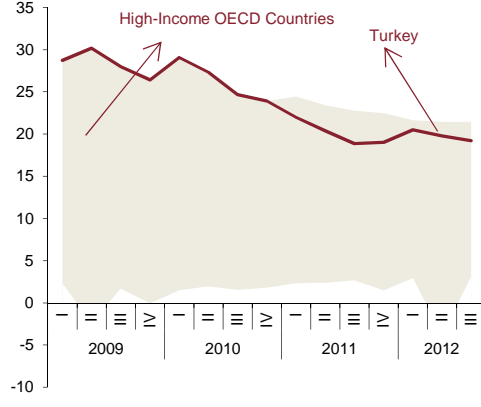
²¹ For a detailed analysis of capital adequacy and profitability, see Berger (1995).

Chart V.5.1
Emerging Countries and Turkey ROE Comparison



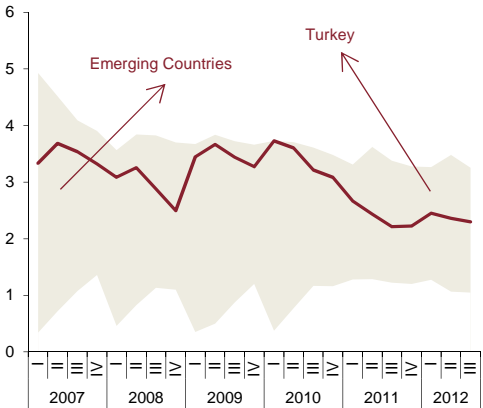
(1) Brazil, Chili, Colombia, Croatia, Czech Rep., Malaysia, Mexico data have been used.
Source: CBRT, IMF, Financial Soundness Indicators

Chart V.5.2
High-Income OECD Countries¹ and Turkey ROE Comparison



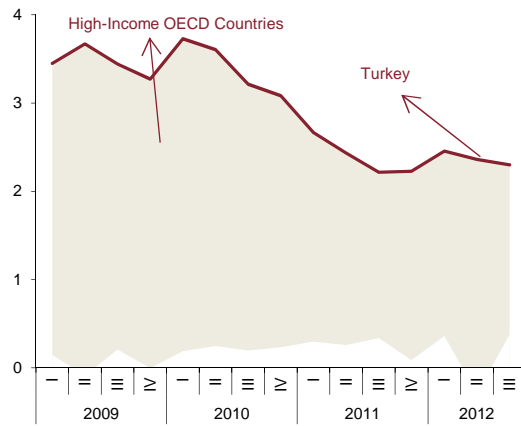
(1) Australia, Canada, Finland, Israel, Korea, Spain, UK, U.S. data have been used.

Chart V.5.3
Emerging Countries and Turkey ROA Comparison



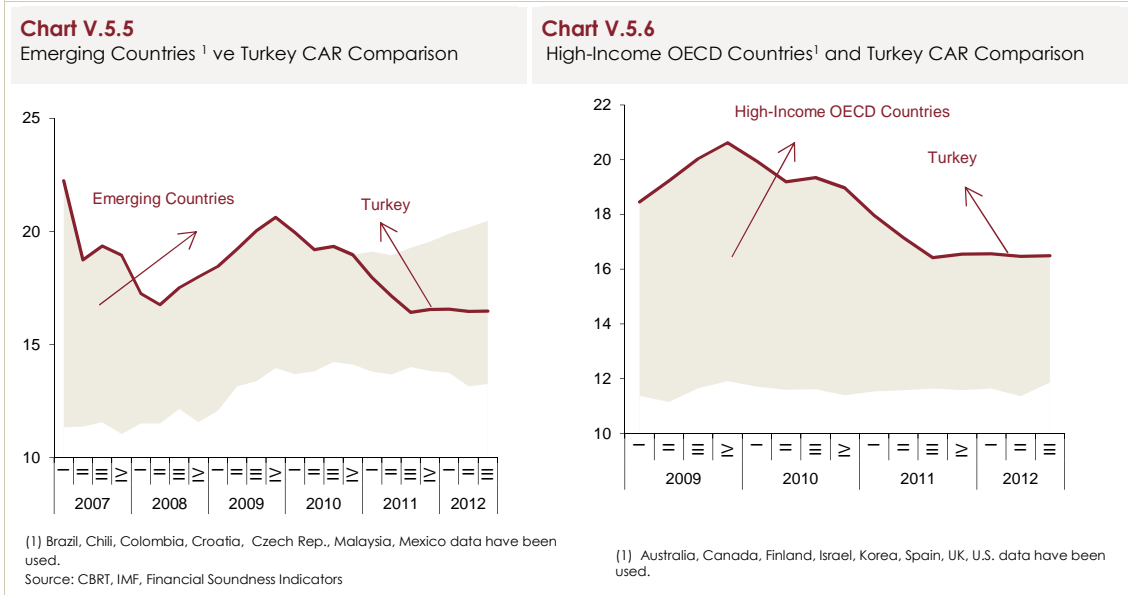
(1) Brazil, Chili, Colombia, Croatia, Czech Rep., Malaysia, Mexico data have been used.
Source: CBRT, IMF, Financial Soundness Indicators

Chart V.5.4
High-Income OECD Countries¹ and Turkey ROA Comparison



(1) Australia, Canada, Finland, Israel, Korea, Spain, UK, U.S. data have been used.

Capital adequacy ratio keeps its usual trend for the sample countries because of the regulatory framework and legal restrictions. While Turkish banking sector has the highest capital adequacy ratio during a considerable part of the observation period, recently it has converged to the middle of the range among the developing countries (Chart V.5.5). Compared to developed countries, Turkish banking sector capital adequacy ratio has kept its place on the top during the observation period (Chart V.5.6). It is believed that regulations applied for the capital ratio increase for the enhancement of financial soundness in Turkish banking sector are effective in this situation.



Country-specific summary statistics of indicators displayed between the Chart V.5.1 and V.5.6 are shown in Table V.5.1. Developed and developing countries are similar in capital adequacy with the effect of international regulations but, indicators of profitability can vary significantly among countries and country groups. When correlations between indicators of profitability and capital adequacy are studied, the result is incompatible with the theory for the sample period and sample countries but compatible with earlier empirical studies. For example, while some countries have statistically significant, high and positive profitability and equity correlation as expected in theory, it is observed that some countries have negative equity and profitability correlation. This situation requires a more comprehensive study investigating the causation side between equity and profitability and the relation between these two variables could be led by other variables as discussed in Berger (1995).

The findings in question are compatible with earlier studies that find a positive relation (Demirguc-Kunt and Huizinga, 1999; Vennet, 2002; Nier and Baumann, 2006; Flannery and Rangan, 2008). The relation between capital and profitability might also be associated with hierarchy theory. Because prior period profits enforce the current capital as mentioned above, if capital buffer approach is considered, firms wishing a high profitability in the long-term might prefer low capital adequacy relatively (Osborne and others, 2012). On the other hand, the negative relation between capital and profitability is coherent with the results of the studies conducted by Berger (1995) and Gropp and Heider (2010), that examine US and EU banks. Meanwhile, Gropp and Heider (2010) came to the conclusion that there is no significant relationship between profitability and capital at the point that the capital adequacy ratio reached to minimum legal levels.

Table V.5.1

Summary Statistics

	Capital Adequacy Ratio				Return on Assets				Return on Equity			
	NO ¹	Mean	Min	Max	NO	Mean	Min	Max	NO	Mean	Min	Max
High-Income Countries												
U.S.	17	14.41	13.14	15.01	17	0.29	0.18	0.45	17	2.40	1.46	4.39
UK	8	15.05	12.92	16.42	8	0.18	-0.09	0.48	8	3.72	-2.45	10.57
Spain	15	11.74	11.27	12.22	15	0.57	-1.45	1.15	15	9.88	-22.17	20.90
Canada	34	14.88	12.22	16.33	34	1.00	0.27	1.53	34	22.93	7.16	37.06
Australia	31	11.13	10.11	11.92	30	1.30	0.84	1.78	30	22.77	16.35	31.17
Finland	23	14.58	13.26	16.98	30	0.85	0.45	1.82	30	12.50	8.97	21.04
Israel	27	12.97	10.66	14.93	34	0.84	-0.61	1.40	34	13.70	-9.94	22.76
Korea	17	14.12	12.94	14.70	17	0.82	0.15	1.51	17	10.79	2.31	18.97
Emerging Countries												
Turkey	31	18.75	16.34	23.73	31	3.00	2.21	3.73	31	24.38	18.88	30.22
Ukraine	31	16.57	13.29	20.83	31	-0.08	-4.38	1.34	31	-0.19	-32.25	11.38
Mexico	31	15.79	13.89	17.44	32	1.99	1.32	2.77	32	20.95	13.96	31.30
Czech Republic	26	13.85	11.05	16.55	26	1.34	1.10	1.55	26	22.76	17.95	27.80
Colombia	31	17.30	15.49	19.59	32	3.81	3.08	4.93	32	27.98	21.44	37.19
Chili	31	13.38	12.10	14.66	31	1.57	1.13	1.91	31	21.00	14.99	25.24
Brazil	34	17.14	15.53	18.65	34	2.03	1.33	2.74	34	19.04	13.02	25.55
Malaysia	31	16.13	14.30	18.21	31	1.12	0.32	1.79	31	12.88	3.99	19.68

Source: CBRT, IMF

(1) NO, denotes number of observations. The period of observations differs between countries and the longest period extends from first quarter of 2005 to second quarter of 2013.

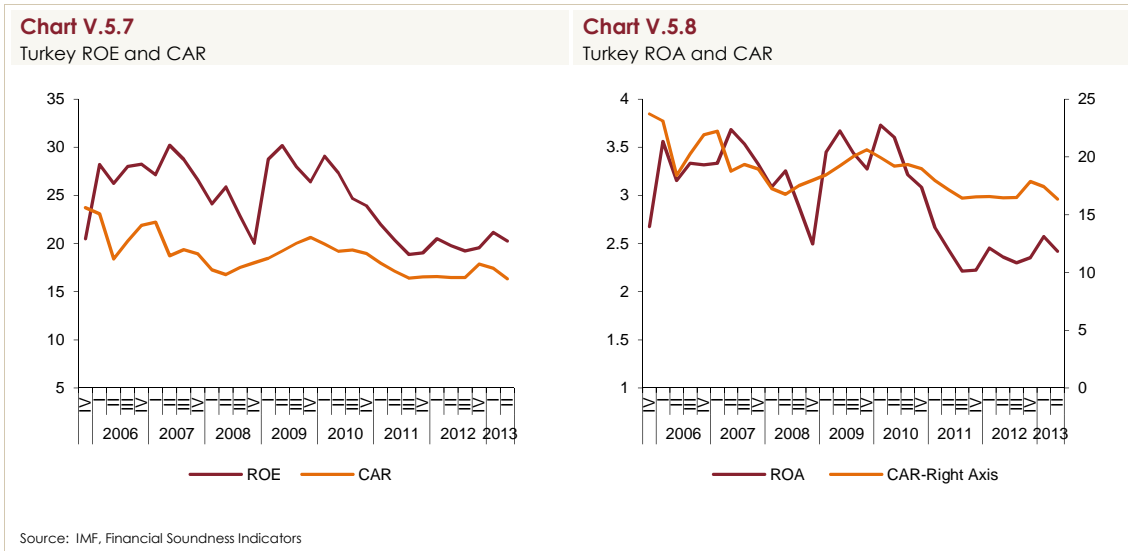
Table V.5.2Correlations Between Capital Adequacy and Profitability¹

	Return on Equity		Return on Assets	
	Correlation	p-value	Correlation	p-value
High-Income Countries				
U.S.	-0.113	0.67	0.063	0.81
UK	0.762	0.03	0.766	0.03
Spain	0.222	0.43	0.226	0.42
Canada	0.7222*	0.00	0.8568*	0.00
Australia	-0.8640*	0.00	-0.8240*	0.00
Finland	-0.104	0.64	-0.307	0.15
Israel	0.191	0.34	0.255	0.20
Korea	0.568	0.02	0.509	0.04
Emerging Countries				
Turkey	0.5530*	0.00	0.5839*	0.00
Ukraine	-0.4803*	0.01	-0.4661*	0.01
Mexico	-0.4575*	0.01	-0.242	0.19
Czech Republic	-0.7576*	0.00	0.130	0.53
Colombia	-0.336	0.06	-0.132	0.48
Chili	0.273	0.14	0.5970*	0.00
Brazil	-0.046	0.80	-0.011	0.95
Malaysia	0.156	0.40	0.266	0.15

Source: CBRT, IMF

(1) Left panel of the table denotes the correlation between ROE and CAR, whereas right panel denotes the correlation between ROA and CAR, and (*) shows the significance of correlation under 10 percent.

In a detailed look to Turkish banking sector, there is a positive correlation between capital adequacy ratio and return on equity as well as return on assets (Chart V.5.7, Chart V.5.8). Due to the regulations that bring a cap to distribution of dividends, current period net income is added to equity at the end of balance sheet calendar year and this causes a higher capital adequacy ratio. Despite the opportunity cost of this situation in which capital cannot be directed to investments that could potentially bring positive cash flows and profitability, in the long term a strong capital structure helps return on equity of banks to increase. At the second quarter of 2013, the capital adequacy ratio was 16,3 percent in Turkey and made up the upper bound of high-income OECD country banks' capital adequacy ratio levels.



Conclusion and Policy Implications

Within the framework of different regulations aiming to strengthen the banking sector and enhance financial stability, additional capital requirements are put into effect. For example, the analysis of the effect of leverage, being systemically important, countercyclicality, and similar regulations are of crucial importance to improve macroprudential policies. At the time of financial expansion, the cost of extending new credits is expected to increase, on the other hand, extension of credits would be incentivized at the time of financial contraction. How the reflection of the relationship of this policy tool with banking profitability will be on financial cycles will also be important in developing macroprudential policies.

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V.6. "Too-Big-To-Fail" Financial Institutions²²

Too-Big-To-Fail Problem

Considering their size, complexity and inter-linkages with the rest of the financial system, the failure of a too-big-to-fail financial institution often creates huge costs for the economy. Therefore, authorities approach the failure of such institutions unlike other financial institutions and provide capital support for them by using taxpayers' money. Thanks to the measures against these institutions, it is possible to avoid the costs due to the failures of large and systemically important banks. However, such measures result in considerable cost to taxpayers by using public resources.

The too-big-to fail problem also causes a moral hazard issue. Investors often have an expectation that public authorities will rescue distressed large banks. This encourages big banks to behave differently from other banks to some extent. In general, big banks tend to undertake more risks, borrow more and reach financial funds at lower costs (Box V.6.1 summarizes the behaviors of big banks in Turkey). Hence, such institutions may hamper the efficient and effective functioning of financial markets through creating negative externalities. As a result, the tendency toward excessive risk taking increases, market discipline diminishes and competition conditions deteriorate²³.

²² This special topic is prepared by Nihal Değirmenci and Bahadır Çakmak.

²³ Negative externalities in a financial system may stem from the failure of a large and complex financial institution as well as excessive risk taking and the inter-linkages with the rest of the financial system. For detailed information on negative externalities and related policy measures see De Nicolò, G., Giovanni Favara and Lev Ratnovski (2012): Externalities and Macroprudential Policy, IMF, SDN/12/05 and Flannery, M.J. (2010) What to Do about TBTF?, presented at the Federal Reserve Bank of Atlanta 2010 Financial Markets Conference.

Box
V.6.1

The Behavioral Pattern of Big Banks in the Turkish Banking System

Banks in Turkey differentiate in their conduct of businesses. This box compares the banks with shares of more than 5 percent in the totals assets of the sector (big banks) with other banks in terms of the structure of the balance sheets and profitability.

Accordingly,

- For big banks, the share of the securities portfolio in the balance sheet is larger.
- The deposit base of big banks is wider due to their widespread branch networks.
- Big banks operate with less shareholders' equity and more debt.
- With the high share of deposits in total liabilities, big banks mainly finance the loans they grant by deposits. However, other banks often rely on funding sources other than deposits in financing the loans.

Chart V.6.1.1 Asset Structure of the Banks
(As of September 2013, % of assets)

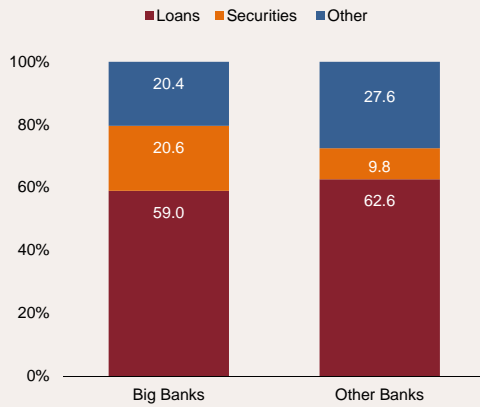
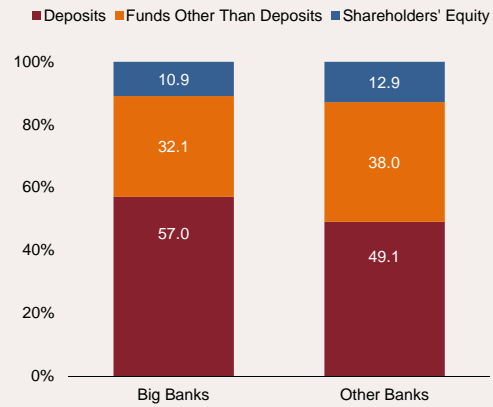


Chart V.6.1.2 Liability Structure of the Banks
(As of September 2013, % of liabilities)



Source: BRSA-CBRT

- Big banks operate with higher profit margins. The low operational cost due to economies of scale is the main factor for high profitability rates.

Chart V.6.1.3 Return on Equity(ROE)
(As of September 2013, annualized,%)

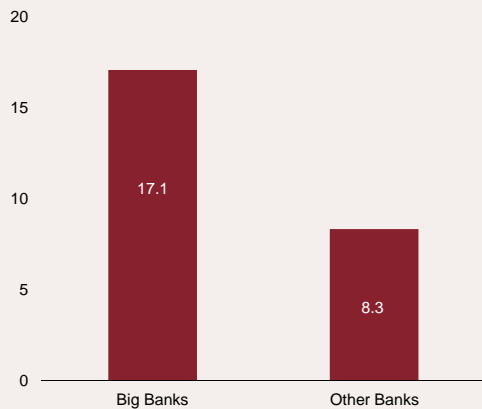
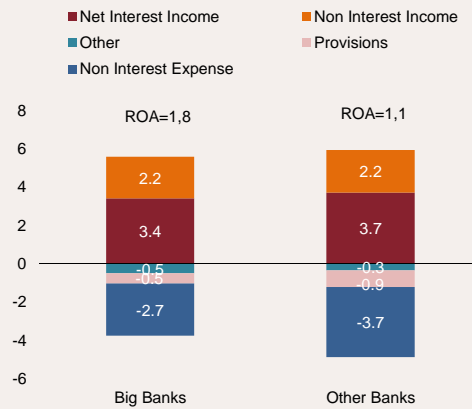


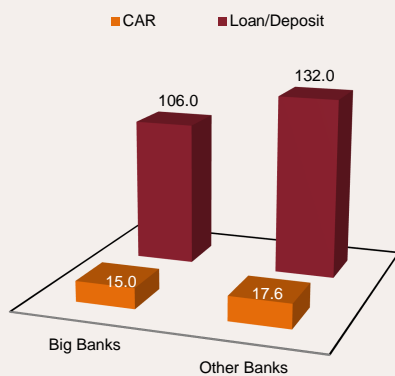
Chart V.6.1.4 Return on Assets (ROA)
(As of September 2013, annualized,% of assets)



Source: BRSA-CBRT

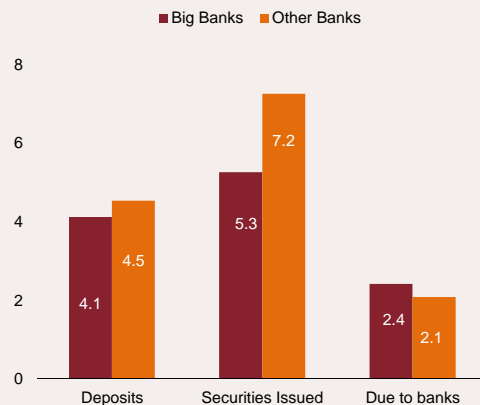
- Loan to deposit ratio is smaller for big banks.
- Capital adequacy ratios of big banks are lower.
- Big banks can have lower cost of funds.

Chart V.6.1.5 Capital Adequacy and Loan-to-Deposit Ratios (As of September 2013, %)



Source: BRSA-CBRT

Chart V.6.1.6 Borrowing Costs (As of September 2013, %)



Several policy measures have been designed on a global scale under the leadership of the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) to end the too-big-to-fail problem. Within this framework, too-big-to-fail financial institutions are expected to have a higher loss absorbency capacity and be subject to recovery/resolution planning to reduce the probability and impact of such institutions failing.

Systemically Important Financial Institutions (SIFI)

The global crisis has revealed that large and complex systemically important financial institutions lie behind the too-big-to fail problem. At the Pittsburgh Summit in 2009, G-20 leaders called on the FSB to propose possible measures to address the too-big-to-fail problem associated with SIFIs. At the Seoul Summit in 2010 the G-20 leaders endorsed the FSB framework for SIFIs. FSB and BCBS developed a methodology for determining SIFIs and proposed three main policy measures. The SIFI methodology is based on an indicator-based measurement approach. This approach focuses on a global loss-given-default concept rather than a probability of default concept. For each bank, a score is calculated using the indicators that measure systemic risk. Depending on this score that reflects systemic importance, a financial institution is designated as a SIFI or not.

The main policy measures on global and national scale for SIFIs are as follows

- (i) Higher loss absorbency capacity (additional capital requirement)
- (ii) Enhanced supervision
- (iii) Effective resolution without resorting to public resources.

Following the efforts of the FSB to address SIFIs, the details of the policy measures towards SIFIs were unveiled at the Cannes Summit in 2011 and the initial group of global systemically important financial institutions was publicly announced. At the Los Cabos Summit in 2012, the G-20 countries rehearsed their commitment to implement the policy measures and called on the FSB to prepare a progress report to be presented at the St. Petersburg Summit in 2013. In September 2013 FSB made the report publicly available.

G-SIFI Assessment Methodology

Global Systemically Important Banks (G-SIBs)

The banks in the category of G-SIFIs are called G-SIBs. In November 2011 the Basel Committee published the G-SIB assessment methodology and the additional loss absorbency requirement. In July 2013 the Basel Committee updated the methodology and published the latest version. Accordingly, the banks are assessed based on the twelve indicators that are classified under the main categories of size, cross-jurisdictional activity, interconnectedness, substitutability and complexity. Equal weights are given to both the categories and the indicators (Table V.6.1). One significant issue is that a cap is placed on the substitutability category in line with the quantitative impact study of the BCBS avoid a bias in total scores. Hence, the BCBS curbs the increase in the systemic importance of the banks due to a hike in one specific score.

For each subsequent financial year-end, all banks with a leverage ratio exposure measure exceeding 200 billion euro should be required to present the twelve indicators used in the assessment methodology to national authorities. The FSB expects national authorities to work on the disclosure requirements. Banks below this threshold that have been added to the sample by supervisory judgment or as a result of being classified as a G-SIB in the previous year will also be required to comply with the disclosure requirements. Publication of the twelve indicators is the minimum requirement. National authorities may also wish to require that banks disclose the full breakdown of the indicators.

Table V.6.1
G-SIB indicators

Category	Individual indicator	Indicator weighting
Cross-jurisdictional activity (% 20)	Cross-jurisdictional claims	%10
	Cross-jurisdictional liabilities	%10
Size (% 20)	Total exposures as defined for use in the Basel III leverage ratio	%20
Interconnectedness (% 20)	Intra-financial system assets	%6.67
	Intra-financial system liabilities	%6.67
	Securities outstanding	%6.67
Substitutability (%20)	Assets under custody	%6.67
	Payments activity	%6.67
	Underwritten transactions in debt and equity markets	%6.67
Complexity (% 20)	Notional amount of over-the-counter (OTC) derivatives	%6.67
	Level 3 assets	%6.67
	Trading and available-for-sale securities	%6.67

Source: BIS

Based on this methodology, in November 2011, for the first time, 29 banks were designated as G-SIB and the list was made publicly available. Each year in November the G-SIB list is updated²⁴.

Domestic Systemically Important Banks (D-SIBs)

Considering the fact that a bank that is not global systemically important may cause systemic risk domestically. In October 2012, the BCBS published a document to assess domestic systemically important banks. The document draws a principle-based framework. The framework is composed of 12 principles. The first seven principles focus mainly on the assessment methodology for D-SIBs while the other five principles are related to high loss absorbency capacity.

²⁴ The G-SIB lists dated November 4, 2011, November 1, 2012 and November 11, 2013 can be reached at: http://www.financialstabilityboard.org/publications/r_111104bb.pdf http://www.financialstabilityboard.org/publications/r_121031ac.pdf http://www.financialstabilityboard.org/publications/r_131111.htm respectively.

The methodology is consistent with the assessment methodology for G-SIBs, but the main categories do not include cross-jurisdictional activity since the main reference point is domestic economic activity. Hence, any assessment by national authorities should mainly be dependent on the categories of size, interconnectedness, substitutability and complexity. On the other hand, national authorities are encouraged to choose additional indicators. For instance, they may employ additional indicators such as the size of a bank relative to domestic GDP. National authorities also have national discretion as to the appropriate relative weights they place on these indicators.

Australia, Austria, Canada, China, Denmark, the Netherlands, Singapore, Sweden, Switzerland, the United Kingdom and the U.S. have already designated their D-SIBs. In 2015 the BCBS will implement an international peer review program on the adoption D-SIB principles by member countries.

Global Systemically Important Insurers (G-SIIs)

Financial institutions other than banks can also create systemic risk, which is why studies to determine non-bank SIFIs are being conducted. Insurers are one group of these financial institutions. The source of systemic risk of insurers is mainly their non-traditional insurance activities. Studies on this issue are being conducted by the International Association of Insurance Supervisors (IAIS). The assessment methodology of and policy measures for G-SIIs were published in July 2013. The methodology used to determine G-SIIs is parallel to the one for G-SIBs. Categories of the methodology are size, global activities, interconnectedness, substitutability and non-traditional and non-insurance activities. The weights for non-traditional and non-insurance activities and interconnectedness are higher than other categories (Table V.6.2).

Table V.6.2
G-SII indicators

Category	Individual indicator	Indicator weighting
Size (% 5)	Total assets	%2.5
	Total revenues	%2.5
Global Activity (% 5)	Revenues derived outside of home country	%2.5
	Number of countries	%2.5
Interconnectedness (% 40)	Intra-financial assets	%5.7
	Intra-financial liabilities	%5.7
	Reinsurance	%5.7
	Derivatives	%5.7
	Large exposures	%5.7
	Turnover	%5.7
	Level 3 assets	%5.7
Non-traditional insurance and non-insurance activities (% 45)	Non-policy holder liabilities and non-insurance revenues	%6.4
	Derivatives trading	%6.4
	Short term funding	%6.4
	Financial guarantees	%6.4
	Minimum guarantee on variable insurance products	%6.4
	Intra-group commitments	%6.4
	Liability liquidity	%6.4
Substitutability (% 5)	Premiums for specific business lines	%5

Source: IAIS

As of July 2013, FSB, in coordination with IAIS, determined nine G-SIIs by using this methodology²⁵. Starting from 2014, the list of G-SIIs will be updated every November.

Other SIFIs

The International Organization of Securities Commissions (IOSCO) will finalize methodologies for identifying systemically important non-bank non-insurance financial institutions (NBNI G-SIFI) by the end of 2013. In this framework, the financial institutions listed below are considered as NBNI G-SIFI.

- (i) Finance companies,
- (ii) Securities broker-dealers,
- (iii) Investment funds (including hedge funds).

The other systemically important financial institutions are financial market infrastructures (FIMs). FSB studies propose that all standardized over-the-counter derivatives to be subject to central clearance will reinforce the importance of these institutions. The Committee on Payment and Settlement Systems (CPSS) and the IOSCO published a

²⁵ For the list of G-SII published at 18 Temmuz 2013: http://www.financialstabilityboard.org/publications/r_130718.pdf

document in April 2012 on the principles for FMIs. In this document, as a rule, all FMIs are accepted as systemically important. Countries that do not share this approach and think that their FMIs are not systemically important should provide justification for this view.

Policy Measures for SIFIs

At the Seoul Summit in 2010, G20 leaders endorsed the policy measures for SIFIs prepared by the FSB. These policy measures involve creating a higher loss absorbency capacity (additional capital requirements) for SIFIs, more intensive supervisory oversight of SIFIs and resolution of SIFIs without exposing public resources.

Higher Loss Absorbency Capacity (Additional Capital Requirements)

The score for each bank is calculated by using an indicator-based measurement approach of BCBS for G-SIBs. Banks are ranged on their scores from the highest to the lowest. Banks that have scores over the minimum score level (threshold) are designated as G-SIB. BCBS further classified the G-SIBs as five buckets. The systemic importance of banks increases from the first bucket to the fifth one. The fifth bucket is empty as a disincentive precaution for limiting the systemic risk of banks. The buckets are constructed above the threshold and equal in size.

As one of the policy measures, the BCBS proposed imposing higher capital adequacy requirements to G-SIBs compared to other banks. Accordingly, banks will be subject to additional capital requirements depending on their buckets. The level of these additional requirements imposed on G-SIBs are 1 percent, 1.5 percent, 2 percent and 2.5 percent according to their systemic importance degree (Table V.6.3). The additional capital requirement that G-SIBs are subject to is to be met with common equity Tier 1 capital which has high loss absorbency capacity.

Table V.6.3
Higher loss absorbency requirements for G-SIBs

Bucket	Score range	Higher loss absorbency requirements (common equity as a percentage of risk-weighted assets)
5	D-E	% 3.5
4	C-D	% 2.5
3	B-C	% 2.0
2	A-B	% 1.5
1	Cutoff point -A	% 1.0

Source: BIS

When one of the banks' scores increases and this bank moves to the fifth (empty) bucket, a new empty bucket will be created to protect the disincentive precaution and 1 percent more of previous bucket's additional capital requirement will be applied to this new bucket. This procedure continues to make certain that there is always an empty bucket.

The BCBS, proposed an implementation period for additional capital requirements for G-SIBs parallel to capital buffers. Accordingly, starting from 2016, additional capital ratios will increase gradually, becoming fully effective by 2019.

The FSB-BCBS Macroeconomic Assessment Group (MAG), predicts that a 1 percentage addition to capital requirements of G-SIBs will cause a 5 to 6 basis points increase in the interest rate spread. Moreover, the annual GDP will decrease 0.06 percent. It is proposed that in the long run, the benefit provided by the SIFI framework by limiting systemic risk will be greater than the cost it brings.

The insurance sector does not have a capital adequacy regulation like the Basel capital adequacy framework. For this reason, the capital adequacy framework should be designed for G-SIIs before defining a high loss absorbency capacity. The IAIS has been working on the development of the Common Framework for the Supervision of Internationally Active Insurance Groups (ComFrame) since 2010. The risk based capital adequacy ratio will also be completed by the end of 2016. The implementation of this ratio will be effective by 2019 after a 2 year testing period.

During this transition period, the IAIS will conduct studies on the development of "Basic Capital Requirements" for G-SIIs. These studies will be finalized at the end of 2014. Accordingly, additional capital requirements that applied to G-SIIs will be calculated by adding simple capital requirements until the risk based capital requirements are determined. The implementation date for additional capital requirements is 2019.

Strengthening SIFI Supervision

After the financial crisis, the determination of a more effective and more intensive supervisory framework for financial institutions, especially for SIFI, was defined as a primary topic by FSB and leaders of G-20. The FSB published recommendations on this subject in November 2010. The FSB expects international standard setters (BCBS, IAIS and IOSCO) to update their core principles to align with these recommendations. These institutions should focus on covering SIFI supervision while updating their principles.

The FSB's recommendations cover the aspects outlined below:

- Mandate, independence and resources of supervisory authorities and also the techniques that authorities use
- Group-wide and consolidated supervision, continuousness and comprehensiveness of supervision, supervisory colleges, home/host information sharing
- Macro-prudential surveillance and use of third parties

Recommendations for updating core principles aim to strengthen the scope and efficiency of the approaches of, the techniques used by and the solutions produced by supervisory authorities. In this framework, the FSB expects its members to review their current supervisory systems in light of the recommendations and prepare a plan to overcome the deficiencies.

International institutions like the BCBS, IAIS and IOSCO reconfigured their core principles in light of the recommendations. In October 2012, the BCBS updated core principles which were published in 2006 and comprised of eighteen principles. New core principles for effective banking supervision comprised of twenty nine core principles. The first thirteen principles define the aim, mandate and responsibilities of supervisory authorities while the rest determine the aspects of prudential regulations.

Besides the development of the supervisory framework for SIFIs, the adequacy of supervisors' qualifications to analyze the risk culture of financial institutions that are under their responsibilities is important. Accordingly, the FSB determined core principles for risk appetite and compensation. On the other hand, the thematic peer review of the FSB on risk management provides a framework to increase efficiency in this area.

Resolution Regimes

The financial crisis revealed that there are no effective resolution regimes for large systemically important financial institutions, related authorities do not have necessary power and tools for resolution of financial institutions and there are inconsistencies in resolution

regimes among jurisdictions. To resolve a financial institution in an orderly manner without exposing public resources, the FSB published “Key Attributes of Effective Resolution Regimes for Financial Institutions” The principles of this document were endorsed at the 2011 G20 Cannes Summit.

The main aim of an effective resolution regime is to resolve any financial institution without creating systemic disruption and without exposing taxpayers to the loss. The most important aspects of this process are to protect critical functions of financial institutions and to impose losses to shareholders and unsecured (bail-in) creditors.

Four of the FSB (8, 9, 10 and 11) principles are directly related to G-SIFIs. These are:

- (i) Establishing crisis management groups
- (ii) Signing of institutions-specific cross border cooperation agreements
- (iii) Assessing resolvability
- (iv) Preparing recovery and resolution plans.

Crisis management groups are established for each G-SIFI and consist of representatives of home and key host authorities. Institutions-specific cross border cooperation agreements are binary cooperation and information sharing agreements signed among home and host authorities for each G-SIFI. Recovery plans are plans of G-SIFIs that answer the question of how will the G-SIFI continue their operations under the financial crisis? On the other hand, resolution plans are plans of authorities that answer the question of how will insolvent G-SIFIs be resolved? Resolvability Assessments are studies of international institutions like the FSB and World Bank/IMF that aimed to test the soundness of the resolution plans of G-SIFIs.

The actions displayed in Table V.6.4 should be taken in the recommended time intervals after a financial institution is designated as a G-SIFI.

Table V.6.4
Timetable for implementation of resolution planning

	Deadline for completion following date of G-SIFI designation
Establishment of crisis management group (CMG)	6 months
Development of recovery plan	12 months
Development of a resolution strategy and review within CMG	12 months
Agreement of institution specific cross-border cooperation plan	18 months
Development of operational resolution plan	18 months
Conduct of resolvability assessment by CMG and resolvability assessment process	24 months
Source: FSB	

The FSB published the report on the results of thematic peer review on the adherence of jurisdictions to Key Attributes in April 2013. According to the report, although the U.S. and some European countries completed their reforms on resolution regimes, the level of implementation of Key Attributes on many jurisdictions is still inadequate and there are differences among the implementation of jurisdictions.

The FSB expects its members to constitute their resolution regimes to align with Key Attributes by the end of 2015. There are some areas of resolution that are determined as primarily important for 2014 by FSB. The first is to develop a proposal for loss absorbency during resolution. The second is to prepare a framework for the international validity of the decision of resolution. In this framework, specifically two topics are presented. The first is the imposing of losses occurred during resolution to the shareholders and unsecured (bail-in) creditors of financial institutions and the second is early termination of contracts. The last important area is the starting of the resolvability assessment process.

An annex about the resolution of non-bank financial institutions will be added to Key Attributes by the end of 2013. On the other hand, members of the FSB should prepare their resolution regimes including the one for financial market infrastructures by the end of 2015.

Turkey

International regulations for SIFIs may affect Turkey from two perspectives. Firstly, some of the banks operated in Turkey are on the FSB's list of G-SIFIs. Secondly, authorities in Turkey should develop methodologies for determination of domestic systemically important banks and the policy measures in align with the FSB framework.

The eleven banks from the G-SIB list determined by the FSB in November 2013 operate in Turkey in a form of bank, branch or partnership. The share of these banks' assets to total assets is 12.6 percent. According to their systemic importance, these banks are HSBC, JP

Morgan Chase, BNP Paribas, Citigroup, Deutsche Bank, Royal Bank of Scotland, BBVA, ING Bank, Société Générale, Standard Chartered and Unicredit Group respectively. The four insurers that are designated as G-SII by FSB operate in Turkey. These are Allianz, AIG, Aviva and Axa. National authorities will start to apply additional capital requirements gradually to D-SIB at the beginning of 2016. Full implementation will take place in 2019. In Turkey, studies on D-SIB determination methodology parallel to the FSB methodology is still going on by using Turkish banking sector dynamics.

Another policy measure proposed by FSB is the development of resolution regimes for SIFIs. Turkey participated in the thematic peer review of the FSB on the adherence of jurisdictions to Key Attributes in 2012. Additional measures are needed for the full adherence to Key Attributes.

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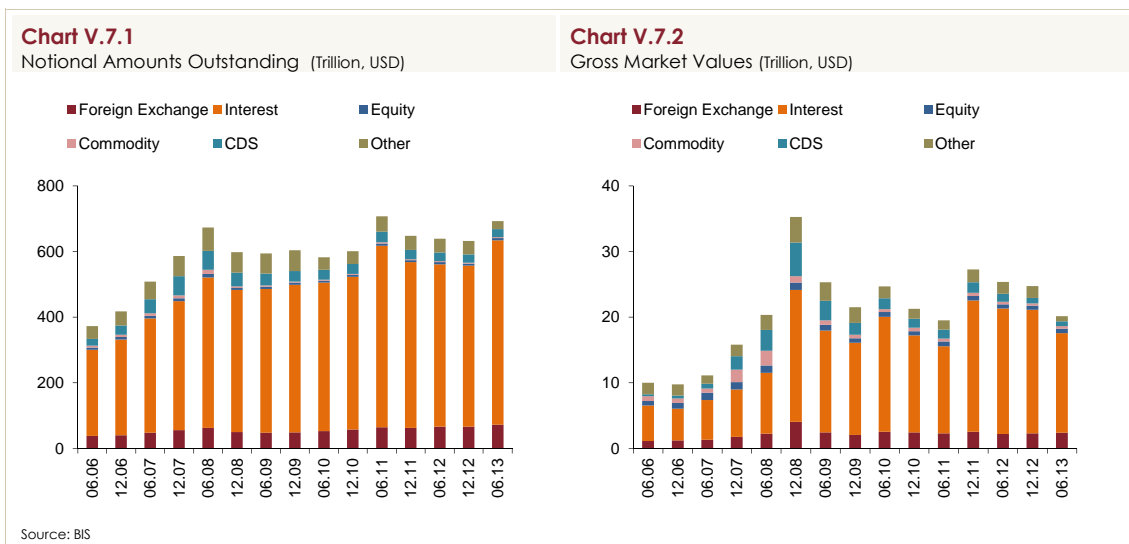
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V.7. Over the Counter Derivatives Markets Reforms²⁶

The variety of tools used in today's financial markets is increasing rapidly. Derivative instruments which take their value from underlying assets also occupy an important place in financial markets. While derivatives can be traded on organized markets which have pre-determined contract conditions, they can also be traded in over the counter (OTC) markets that enable parties to define contract terms flexibly. As of June 2013, the total notional amount of OTC derivatives transactions was 693 trillion USD, while the market value was 20 trillion USD. Derivative transactions consist mainly of interest rate derivatives (Chart V.7.1, Chart V.7.2). The notional value of transactions executed on OTC derivatives markets constitutes 91% of the total notional amount of derivatives²⁷. OTC derivatives markets are used extensively since they allow parties to enjoy high leverage and define contract terms flexibly.



In case one party is unable to fulfill its contractual obligations arising from OTC derivatives, the risks may spread to the entire financial system and create negative consequences. In addition, since the transactions are not executed on an organized trading platform and most parts of the trades are not reported to competent authorities, it is difficult to determine the exact risks that may arise from OTC derivatives transactions. In fact, OTC derivatives markets, which had no efficient supervision mechanism before the global financial crisis, are considered as one of the reasons for the deepening and spreading of the crisis. Lack of awareness of the risks arising from OTC derivatives markets had a great impact on the Lehman Brothers bankruptcy which was regarded as the beginning of the crisis and the financial stress that AIG experienced. Therefore, the necessity to regulate OTC

²⁶ This special topic is prepared by Ayşe Aydoğan ve Ahmet Deryol.

²⁷ BIS, organized and OTC derivatives markets statistics.

derivatives markets and minimize risks has emerged. In the 2009 Pittsburgh Summit, G20 Leaders agreed to regulate the OTC derivatives markets to increase transparency, minimize systemic risk and protect market participants from market abuse. As a result, derivatives markets transactions are to be:

- Reported to trade repositories,
- Subject to central counterparty (CCP) clearing if possible
- Subject to higher capital requirements if CCP clearing not possible,
- Standardized and exchanged on electronic platforms

Later, at the G20 Cannes Summit in 2011, the leaders decided that

- If contracts are not centrally cleared, they should be subject to margin requirements.

At the G20 Summit in 2009, the leaders had expressed that reforms should be finalized by the end of 2012. Despite significant progress, the reforms have not yet been completed. Studies are being carried out by the Financial Stability Board (FSB), the Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO) and the Committee on Payment and Settlement Systems (CPSS). These studies fall under five headings.

Reporting to Trade Repositories

It has become necessary to aggregate the transaction records in a center in order to reveal the risks arising from OTC derivatives markets. Therefore, it is recommended that trade repositories should be established to record trade data and share the data between jurisdictions when needed. Trade repositories will provide a better measurement of risks and help regulate and supervise OTC derivatives markets.

The most progress has been achieved in trade reporting reform. Currently, 18 trade repositories have been authorized to operate in 10 different countries. However, market participants are also required to make their infrastructure suitable to report trade repositories for the reform to be fully implemented. According to the study conducted by FSB, 56%²⁸ of market participants will make their infrastructure suitable for trade reporting by the end of 2013. According to BIS data, most progress has been achieved in reporting interest rate and credit derivatives among other asset classes. Currently, almost all the interest rate and credit transactions of 15 dealers that have the highest share in OTC trading are reported to trade repositories.

²⁸ FSB, Sixth Progress Report on OTC derivatives reform implementation

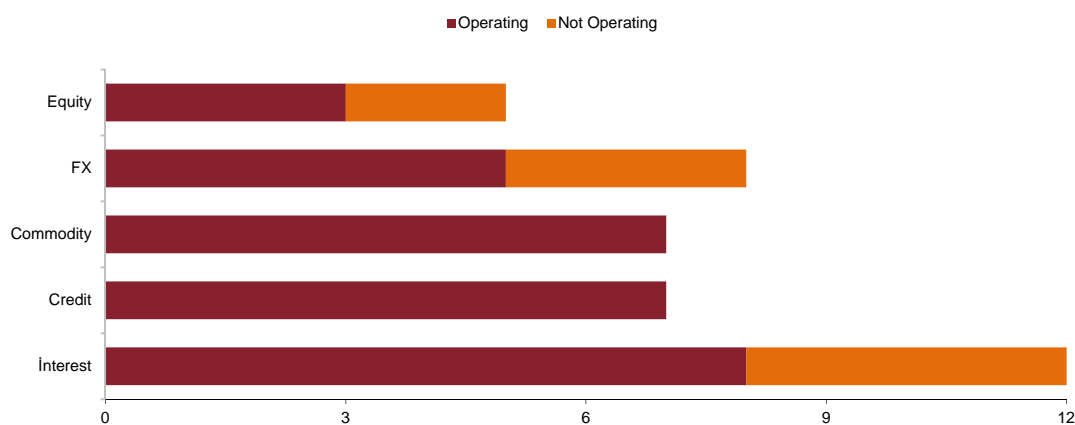
On the other hand, there are legal and technical problems in the information sharing collected by trade repositories between jurisdictions. It is emphasized that authorities should elaborate on data confidentiality to solve legal problems.

Central Clearing

The aim of the reform is to clear transactions in OTC derivatives markets via central counterparties. Central counterparties are the clearing institutions that act as buyers to the sellers and sellers to the buyers. With this method, in case one of the parties fails to fulfill its obligation arising from contracts, the central counterparties undertake the obligation. Thus, transactions will be carried out in a safer manner and risks will be minimized. By the end of 2012, the total OTC derivatives notional value was 633 trillion USD, 173 trillion USD of which was centrally cleared²⁹. The majority of central clearing transactions consists of credit and interest rate derivatives. According to the FSB's sixth progress report on OTC derivatives reform implementation, as of June 2013, 42% of the interest rate transactions of 15 dealers who have highest share on OTC derivatives were centrally cleared. Globally, 14% of credit derivatives transactions were centrally cleared. As of April 2013, in 12 countries, 19 institutions were authorized as central counterparties (Chart V.7.3). Efforts to increase the amount of transactions centrally cleared and increase the number of central counterparties continue.

Chart V.7.3

Number of Central Counterparties by Underlying Assets, April 2013



Source: FSB, OTC Derivatives Market Reforms, 5th progress Report

Even though central clearing is a limiting mechanism for risks arising from counterparties, it brings additional burdens to the system. Since a large portion of OTC derivatives transactions will be carried out by central counterparties, risks will concentrate on those institutions. From this perspective, the risk management process of financial market

²⁹ <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD426.pdf>

infrastructures³⁰ needs additional attention. Also, the costs might increase since central counterparties require commissions and default fund contributions.

Margin Requirements

OTC derivatives contracts cannot be centrally cleared under the lack of standard contracts and unfavorable liquidity conditions. In addition, contracts may exist that central counterparties refrain from clearing. In 2011, G20 commitments were extended by introducing margin requirements for non-centrally cleared contracts. Margin requirements contribute to mitigate systemic risk and promote central clearing. In case one of the parties fails to fulfill its obligations, collaterals are converted to cash, claims of the counterparty are paid and spillover effects will decline. At the same time, since margin requirements for non-centrally cleared contracts lead to additional costs for counterparties, central clearing is indirectly encouraged.

The BCBS and IOSCO published the final rules regarding margin requirements for non-centrally cleared contracts in September 2013³¹. In the final framework, two types of margins, namely, the initial margin and the variation margin³² were defined. Moreover, liquid instruments³³ that can be used as collateral and minimum haircuts were identified. The rules also enabled national authorities to determine the assets that will be accepted as collateral. Even though margin requirements will be mandatory for non-centrally cleared contracts, there are some exceptions. The framework exempts physically settled foreign exchange forwards and swaps from initial margin requirements. Some measures were also taken to protect the deposited collateral. While re-hypothecation of variation margin collateral is permitted, re-hypothecation of initial margin is subject to a number of restrictions.

Discussions of the benefits of margin requirements cannot ignore the effects on liquidity. This implies that parties are expected to turn to liquid and high-quality assets to meet their requirements. This increase in the demand for collateral might alter the functioning of the market. In addition, financial institutions might need additional liquidity sources. Ways to implement margin requirements in cross-border transactions is also an issue that should be considered. Compatibility of regulations in jurisdictions is important in the sense of which country's regulations will be applied to subsidiaries and branches in a country. At this point, the authorities in jurisdictions need to collaborate in determining incompatible and repetitive regulations to avoid regulatory arbitrage.

³⁰ Central Counterparties, Trade Repositories, Securities and Settlement Systems, Payment Systems

³¹ <http://www.bis.org/publ/bcbst261.pdf>

³² Initial margin is requested to protect transacting parties from potential future exposure that could arise from future changes in the mark to market value of the contract during the time it takes to close out in the event that one or more counterparties default. Variation margin is needed to protect the transacting parties from the current exposure of changes in mark to market value of the contract after the transaction has been executed.

³³ Cash, government and central bank securities, corporate bonds, covered bonds, equities included in major stock indices and gold.

Capital Requirements

During the global financial crisis, the capital that a bank needed to keep for counterparty credit risk was insufficient to cover losses. Thus, a reform in this area is necessary to make the capital structure more risk sensitive. The main aim of the reform is the requirement to hold more capital for non-centrally cleared contracts compared to centrally cleared contracts. Thus, market participants involved in transactions that might cause systemic risk have to bear additional costs, while standardized and centrally cleared contracts are promoted.

Capital requirements for centrally cleared contracts are based on two types of exposures. Banks acting as clearing members keep capital for trade exposures and default fund exposures separately. While trade exposure reflects the risk of default of a central counterparty, default fund exposure involves risks associated with any clearing member defaults. Capital requirements for these exposures are differentiated for qualifying and non-qualifying central counterparties (Table V.7.1). Banks' capital requirements for exposures to qualifying central counterparties are kept lower. Compatibility with the CPSS-IOSCO principles will be determined to identify the qualifying central counterparties³⁴.

Table V.7.1

Risk Weights for Centrally Cleared Transactions

	Trade Exposures	Default Fund Exposures
Qualifying Central Counterparty*	2%	1250%**
Non-Qualifying Central Counterparty	20% or 100%***	1250%

* Subject to an overall cap on the risk weighted assets of all exposures to the CCP (including trade exposures) equal to 20% times the trade exposures to the CCP.

** Risk weights for standardized approach. Banks may use internal ratings based approach.

***Risk weight is 20% if NQCCP is a bank, 100% if NQCCP is a corporate financial institution.

Interim rules were published in July 2012 by BCBS³⁵. The BCBS, CPSS and IOSCO have been working on new methods to calculate the capital requirements for banks' exposures to qualifying central counterparties to improve the current framework.

Trading on exchanges or electronic platforms

Standardization is a prerequisite for OTC derivatives to be traded on exchanges or electronic trading platforms. There are also a number of other benefits of standardization in the OTC derivatives market beyond increasing suitability for organized trading platforms. The following benefits can be achieved in the market with standardized OTC derivative instruments:

³⁴ <http://www.bis.org/publ/cpss101a.pdf>

³⁵ <http://www.bis.org/publ/bcbs227.pdf>

- Central clearing
- Automated processing of transactions
- Greater market liquidity
- Improvement in risk management
- Increase in transparency and reliability of information
- Effective reporting to trade repositories

The objective of the reform that all standardized contracts should be traded on exchanges or electronic trading platforms is to promote central clearing and effective oversight. Limited progress has been achieved in this area since steps related to this reform have not been presented clearly. However, it is hard to achieve trading of all contracts in organized platforms as it is not possible to satisfy sufficient standardization of all contracts. According to a survey that the FSB conducted with market participants, trading volume will not change significantly by moving transactions to organized trading platforms. At present, electronic platforms are used more widely for FX and credit derivatives compared to commodity, interest rate and equity derivatives. Efforts related to this area are underway at the international and national levels.

Conclusion

To summarize, the G20's underlying objectives to implement the reforms is to make the derivatives markets safer and more resilient. Even though significant progress has been made in regulatory reforms, there are some challenges that slow down the implementation. Jurisdictions apply regulations according to their understanding and thus there are certain differences in regulations of jurisdictions in the current framework. In this regard, with a collaboration of jurisdictions in implementing the rules, the aim is to prevent conflicts of laws, inconsistencies and legal uncertainty and increase compliance with international rules. While central clearing of transaction reduces counterparty credit risk, it may also result in a concentration of risk in central counterparties. Therefore, recovery and resolution plans for financial market infrastructures will be established to decrease the default risk during a crisis. The CPSS and IOSCO continue to work on this issue.

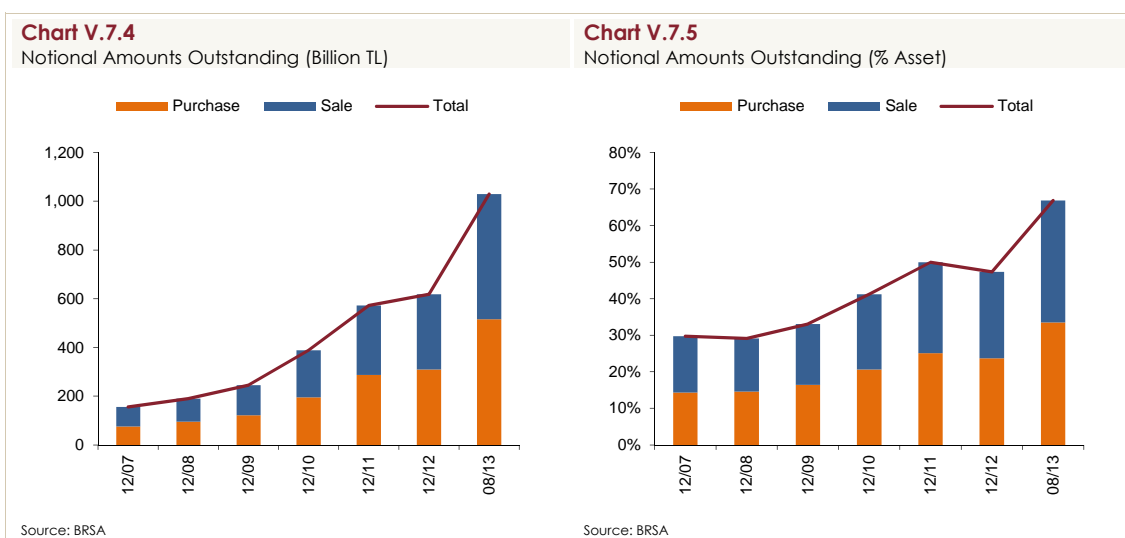
There is no doubt that these reforms will bring additional costs to economies of jurisdictions and the financial sector. However, it is expected that the benefits of reforms are likely to outweigh the costs in the long run. The Macroeconomic Assessment Group on Derivatives conducted a macroeconomic impact assessment of OTC derivatives regulatory reforms to see the effects on global GDP³⁶. The study indicates that reforms lower the probability of a financial crisis. With the decrease in the probability of a financial crisis, the benefit from reforms is equal to 0.16 percent of global GDP. The costs related to holding

³⁶ <https://www.bis.org/publ/othp20.pdf>

more capital and collateral is estimated to be 0.04 percent of global GDP. As a result, the net benefit of the reforms is expected to be 0.12 percent of global GDP per year.

Overview of Derivative Transactions in the Turkish Banking Sector

In Turkey, 99.45 percent of the derivative transactions of the banking sector is traded on the OTC derivatives market³⁷. As of August 2013, while notional amounts outstanding of banks' derivative transactions was 1.1 trillion Turkish lira, the ratio of this amount to total assets was 66.8 percent³⁸. Derivative transactions have shown a rapid growth with an average annual growth rate of 35 percent since 2007 (Chart V.7.4, Chart V.7.5).



A closer look at the distribution of derivative contracts shows that the largest segment belongs to the FX contracts with 71 percent, followed by interest rate contracts with 20 percent (Chart V.7.6). Although interest rate derivatives have the largest share in the global derivatives markets, FX derivatives have a higher proportion in the Turkish banking sector. An assessment of the distribution of types of derivative transactions shows that the banking sector heavily trades swaps contracts (Chart V.7.7). Moreover, a significant portion of transactions are short term. Almost 76 percent of derivative transactions have a maturity of less than 1 year (Table V.7.2). The short term structure of derivative transaction exposes banks to liquidity and re-pricing risks.

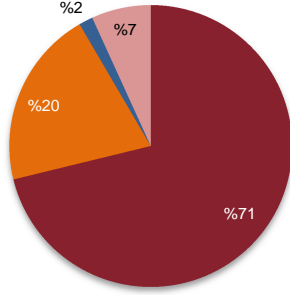
³⁷ Financial Markets Report, December 2012, BRSA

³⁸ The majority of derivative transactions are double recorded in terms of accounting techniques in accordance with the legislation in force. All data in this section are double recorded and the data are as of August 2013.

Chart V.7.6

Distribution of Derivative Transaction by Underlying Assets

■ FX ■ Interest ■ Commodity ■ Other

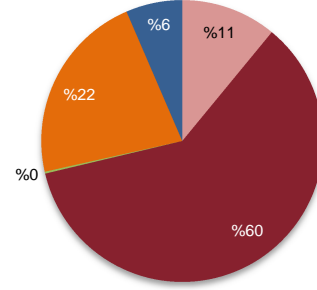


Source: BRSA

Chart V.7.7

Distribution of Derivative Contract Types

■ Forward ■ Swap ■ Future ■ Option ■ Other

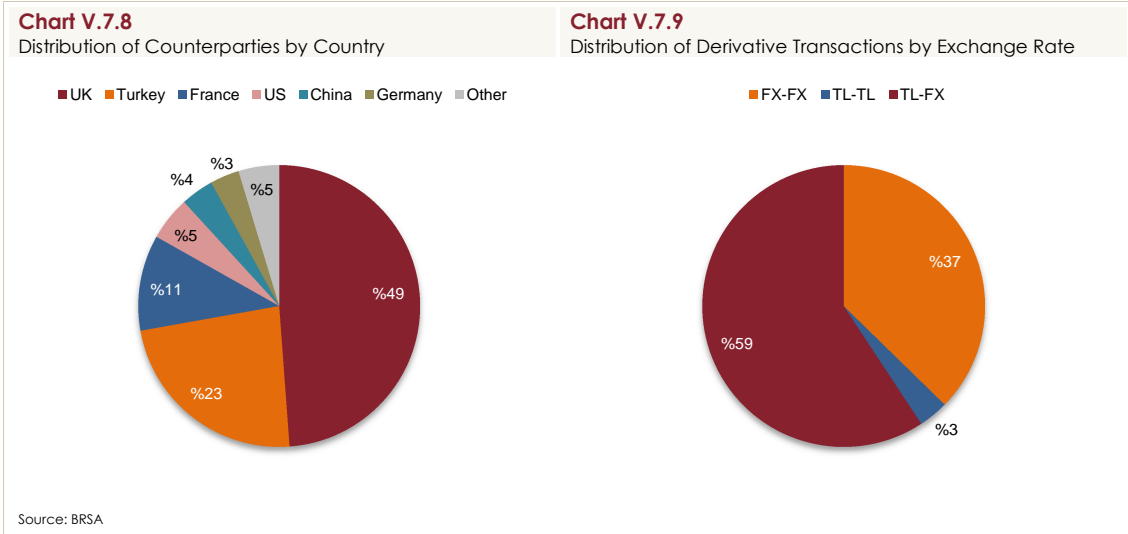
**Table V.7.2**

Distribution of Derivative Transactions by Maturity

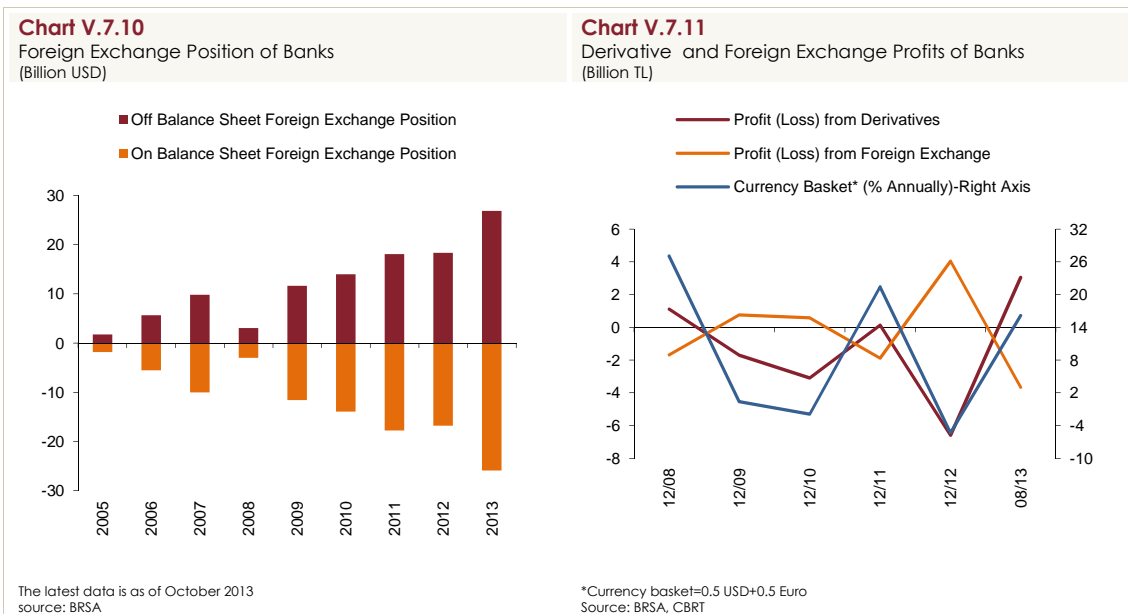
Less than 1 Month	1-3 Month	3-6 Month	6-12 Month	1-5 Years	5-10 Years	More than 10 Years
39.61%	12.81%	11.32%	12.38%	16.47%	7.17%	0.23%

Source BRSA

When derivative transactions are classified according to counterparties, 77 percent of transactions are traded with foreign counterparties (Chart V.7.8). Of these transactions, 49 percent are made with foreign counterparties in the UK. Differentiating according to exchange rate reveals that 59 percent of transactions are based on TL-FX, while 37 percent are based on FX-FX contracts (Chart V.7.9). Five banks with the highest share in derivative markets have approximately 58 percent of total transactions whereas the share of the top ten banks reaches almost 84 percent. In this respect, operations are concentrated on certain banks.



Given the distribution of transactions in the banking sector, derivatives are traded to manage the exchange rate and interest rate risk. Banks convert the foreign exchange source with low rates, which they find especially to benefit from the difference between domestic and foreign interest rates, to Turkish lira and then provide higher rates in Turkey. Risks in the banking sector resulting from FX open positions on balance sheets are compensated with off balance sheet derivative trades (Chart V.7.10). Even though 93 percent of transactions are recorded for trading purposes due to the accounting standards, it can be concluded that trades are carried out with the aim of hedging. Indeed, while foreign exchange loss occurs due to the on balance sheet FX open position during the periods of Turkish lira depreciation, the loss is compensated by gains in derivative trades (Chart V.7.11).



In summary, in the banking sector of Turkey, derivatives are traded mainly to manage the exchange rate and interest rate risk instead of speculation. Nearly all of the transactions are carried out on OTC markets. The fact that derivatives are traded with counterparties in developed economies is a factor reducing counterparty credit risk. On the other hand, the short term structure of trades makes the banking sector exposed to liquidity and re-pricing risks. Although mandatory central clearing of OTC derivatives reduces counterparty risk, it is expected that transaction cost will rise by a certain amount.

As a member of the G20 countries, Turkey is committed to implement the derivative market reforms, and effort in this area has recently accelerated. The Central Clearing and Settlement Regulation and the Central Counterparty Regulation were published in the Official Gazette in 18 July 2013 and 14 August 2013, respectively. The Istanbul Settlement and Custody Bank Incorporation (Takasbank) will undertake the clearing and settlement service with regulations. In the first stage, Takasbank has started to act as a central counterparty in the Stock Lending and Borrowing Market. Endeavors also continue for Takasbank to be the central counterparty in the Futures and Options Market and the Stock Market. Thus, the implementation of a central counterparty is firstly planned to be experienced in organized markets, then in OTC markets, making progress in other reform areas as well. Considering the fact that a significant portion of transactions are made with foreign counterparties, it is important that Takasbank is compatible with the CPSS-IOSCO principles. In addition, consistency of capital and collateral requirements in trades with international regulations has become an important issue for Takasbank to act as a central counterparty in transactions with foreign counterparties. Reporting to trade repositories and standardizing contracts are other areas that will gain momentum.

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V.8. A Closer Look at “Shadow Banking” Concept³⁹

Shadow banking includes non-bank credit intermediation activities. Shadow banks create leverage as they borrow as in a regular banking sector, and are exposed to maturity mismatch by transforming their raised funds to long-terms investments. Securitization and securities financing transactions including securities lending and repurchase (repo) agreements are important activities for shadow banking as well. However, these activities are not subject to capital and liquidity requirements like in the banking sector. Thus, shadow banking might create certain risks to financial stability while contributing to financial deepening. On the other hand, in times of regulatory tightening in the regular banking sector, regulatory arbitrage arises and shadow banking grows at a rapid pace. Therefore, monitoring and developing policy measures for shadow banking activities have been among the FSB's important duties.

According to the FSB's calculation, the total size of the shadow banking sector in 2012 reached 71 trillion USD, representing 117% of total global GDP. This magnitude constitutes half of the global banking assets. Shadow banking grew at a rapid pace especially prior to the global financial crisis. The ratio of the shadow banking sector to the global GDP increased by 30 percentage point in the last decade, exceeding the banking sector assets in developed economies. Among the FSB member countries, the U.S. had the largest shadow banking system followed by the Euro area, England and Japan. The vigorous growth trend in the shadow banking system has continued in developing economies while losing momentum in developed countries after the financial crisis. The growth rates of the system in China, Argentina, India and South Africa are above 20%.

The work done by the FSB are two-fold. The first is to monitor shadow banking developments. The magnitude of shadow banking intermediaries, their risks and relevance with the regular banking sector are detected via monitoring reports published yearly. The second part of the work comprises regulatory initiatives associated with shadow banking activities. Five different working groups were formed to develop policy measures. The reform areas assigned to the working groups are outlined below:

1. Mitigating the spill-over effect between the regular banking system and the shadow banking system and contagion risk;
2. Reducing risks that stem from money market funds (MMFs) to “runs”;
3. Having transparent and standardized securitization activities;
4. Mitigating risks associated with repo and securities lending transactions;

³⁹ This special topic is prepared by Sinem Uçarkaya and Erhan Akkaya.

5. Assessing and mitigating risks posed by other shadow banking entities and activities.

The aim of the reform agenda implemented by the FSB is to monitor risks posed by the shadow banking system continuously, to make these risks manageable and to avoid regulatory arbitrages which might arise from regulatory tightening.

Mitigating the Contagion Effect

Shadow banking intermediaries are largely funded by the banking sector. Banks place their resources in mutual funds and grant direct credit limits to special purpose vehicles by intermediating as a sponsorship in issuances of asset backed securities. On the other hand, banks particularly provide funds to shadow banking activities by means of reverse repo transactions and are exposed to counterparty risk.

To avoid risks in the banking sector exposed by shadow banking activities, policy recommendations have been developing regarding capital requirements which take the scope of consolidation, large exposures of banks to shadow banking activities and banks' investments in equity of funds into consideration.

Preventing Money Market Funds (MMFs) to "runs"

The MMFs' vulnerability to run-like behavior is an important risk factor on financial stability. MMFs invest in short-term borrowing instruments. These funds are similar to bank deposits in terms of being short-term and having a stable net asset value; however, they are not covered by deposit-insurance systems. Therefore, MMFs' investors have an incentive to run in case of experiencing turmoil in the markets. In response to runs on MMFs that occurred in the U.S. in 2008, the FED, for a one year period, expanded emergency lending to finance purchases of asset-backed paper from money market funds to curb risks on financial stability. Nonetheless, as of 2012, the bank and non-bank sector in developed countries have obtained a considerable amount of funds through MMFs. In the U.S. alone, repo and MMFs related borrowings from banks and broker-dealers have reached nearly 2 trillion U.S. dollars.

Work on a set of regulatory reforms to reduce MMFs to runs in stressed market conditions and avoid disturbing effects of these funds on financial stability has been ongoing. For example, the IOSCO issued 15 policy recommendations in October 2012 in response to a request from the FSB⁴⁰. The reform recommendations on switching from a stable net asset value to a floating net asset value and MMFs' retention requirements, among other things, particularly stand out. It is expected that measures such as a floating

⁴⁰ <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD392.pdf>

net asset value and liquidity retention requirement will reduce the susceptibility of MMFs to runs.

Securitization

Securitization transactions are among the shadow banking activities. Long-term and risky credits could be transformed to short-term and liquid securities and later could be used as collateral in repo markets.

The problems arising from sub-prime mortgages in the U.S. in 2008 spread to the asset backed commercial paper markets and caused difficulty in accessing liquidity in the repo markets where these commercial papers were traded as collateral. The financial institutions which carried such securities in their balance sheets incurred losses and suffered losses in accessing liquidity by using their collateral. At the same time, a fire sale in asset backed securities was used as collateral and increased value losses.

The prospect that the risks borne by securitization disrupt financial markets during the global financial crisis has necessitated making regulations. In response to a request from the FSB, the IOSCO issued principles in November 2012 that aimed to mitigate the securitization related risks and to enable a more transparent and standardized securitization process⁴¹. The report includes recommendations to enhance transparency and standardization in the securitization process, to inform investors in a more detailed manner, and to avoid conflict of interest by selling credits and wiping it away from balance sheets.

Repo and Securities Lending Transactions

The non-bank financial institutions that rely on collateralized short-term funding might encounter significant difficulty in liquidity and interest rate risk. On the other hand, the borrowing facility might change depending on the value of the collateral, intensifying pro-cyclicality and bringing about instability.

In this context, the FSB has developed policy recommendations to ensure efficient management of the risks arising from securities lending and repo transactions, and to limit their disrupting effects on financial stability⁴². The recommendations include, among other things, cash collateral reinvestment by securities lenders and re-hypothecation of client assets, collateral valuation and management, and haircut floors to be implemented for securities. In addition, work has been on-going to introduce minimum haircut rates to the repo and reverse repo transactions except those that are sovereign and are not subject to clearing in central counterparties (CCPs).

⁴¹ <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD382.pdf>

⁴² http://www.financialstabilityboard.org/publications/r_130829b.pdf

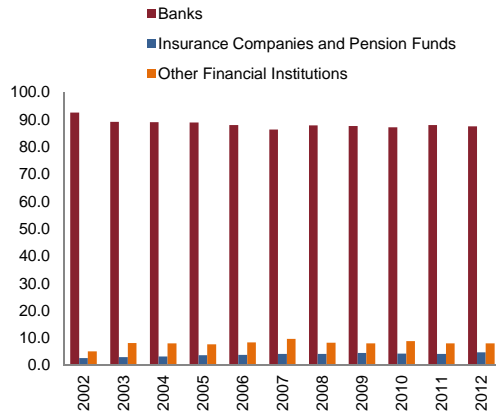
Regulation of Other Shadow Banking Activities

The financial institutions which deal with activities accepted as shadow banking might differ among countries. Since the global financial crisis, it has become necessary to monitor those risks that these entities carry and include them in the regulatory scope and prevent capital and liquidity arrangements introduced for banks in the post crisis period that cause regulatory arbitrage.

Within the scope of regulation of shadow banking activities, because shadow banking entities and activities might appear under different legal entities among different countries, categorization based on economic functions of shadow banks, rather than their legal identity or form, is preferred. According to this option, collective investment vehicles, intermediation activities, credit insurance, credit facilitation and securitization based credit intermediation were determined as the five different economic activities and policy measures were developed for each one.

The Outlook for Non-bank and Non-insurance Financial Institutions in Turkey

The size of the financial sector as of end-2012 was 1.568 billion TL in Turkey. Of this amount, 87.4 percent of the financial sector was composed of bank assets, 4.7 percent of insurance companies and pension funds' assets and 8 percent was composed of other financial institutions' (OFI) assets (Chart V.8.1). OFI stands for non-bank, non-insurance financial institutions that are engaged in credit intermediation activities and is used as proxy for determining the size of the shadow banking system in a country. According to this definition, the total assets of the shadow banking system is 125 billion TL in Turkey and makes up 8 percent of the financial sector. The ratio of OFI assets to bank assets is 9.1 percent. The ratio of OFI assets to GDP which was 3.3 percent in 2002 increased to 8.8 percent in 2012 (Chart V.8.2). Shadow banking activities are rather limited in Turkey when compared to global figures.

Chart V.8.1Balance Sheet Size of the Financial Sector
(Percent)^{1,2}

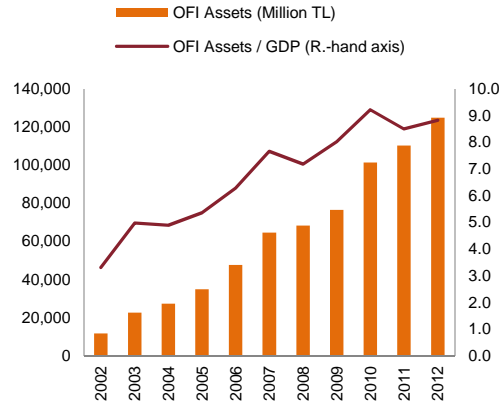
(1) The figures for consumer finance companies, factoring and leasing companies were included starting from 2006 and the figures for asset management companies, portfolio management companies and financial holding companies were included starting from 2007.

(2) For real estate investment trusts portfolio value was used before 2011 and total assets were used for 2011 and 2012.

Source: BRSA – CBRT, ACMIIT, CMB, AIRCT, CGAT

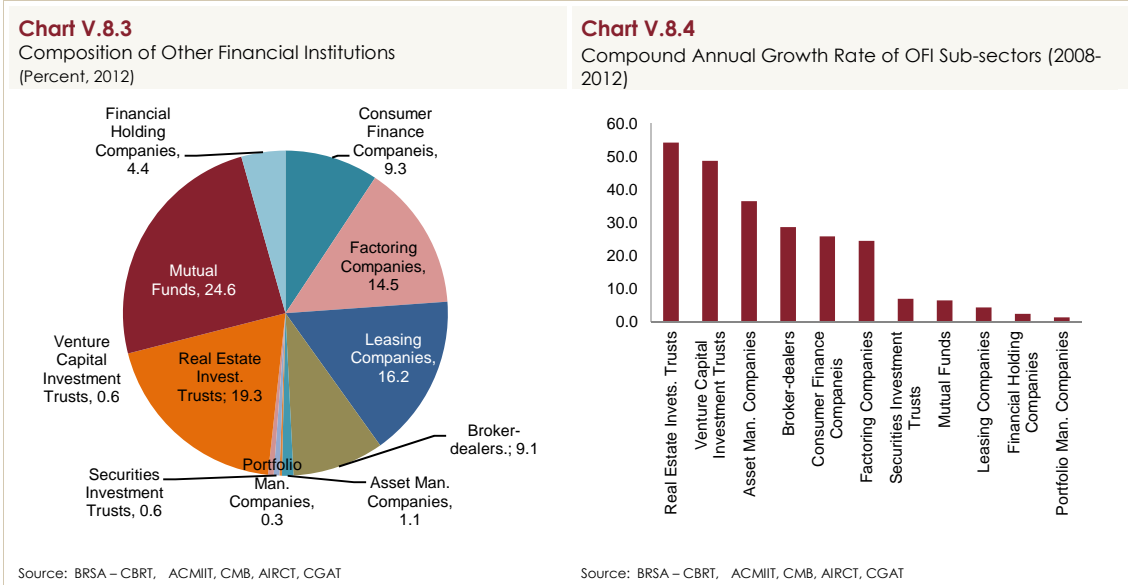
Chart V.8.2

Assets of Other Financial Institutions

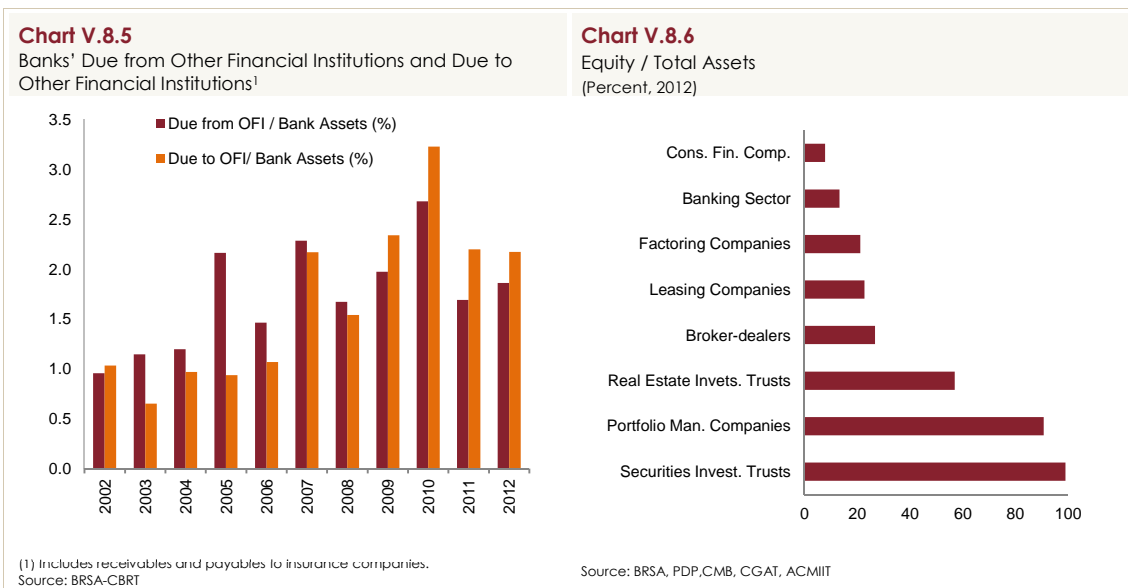


Source: BRSA – CBRT, ACMIIT, CMB, AIRCT, CGAT, TÜRKSTAT

As of 2012, 24.6 percent of OFI assets belongs to mutual funds having the largest share, 19.3 percent to real estate investment trusts, 16.2 percent to leasing companies, 14.5 percent to factoring companies and 9.3 percent to consumer finance companies. The share of securities investment trusts, asset management companies and portfolio management companies on the other hand is rather limited (Chart V.8.3). In the 2008-2012 period, the compound annual growth rate of OFI assets was 16.3 percent. The compound annual growth rate of bank assets in the same period was 17 percent. With the contribution of the low base, real estate investment trusts grew fastest by 54.1 percent, followed by venture capital investment trusts, asset management companies, broker-dealers, consumer finance companies and factoring companies. The growth of portfolio management companies, financial holding companies, leasing companies, securities investment trusts and mutual funds was rather slow (Chart V.8.4).



The interconnectedness between the banking sector and OFI can lead to systemic risks and take several forms. Banks can directly own OFI, they can fund OFI or be funded by OFI or the two sectors may invest in similar assets or be exposed to the same counterparty risks. Interconnectedness might lead to contagion effects from one sector to the other during stress periods. Therefore, it is important to monitor the interconnectedness between banks and OFI. In Turkey as of end-2012, the banks' due from OFI and due to OFI as a percentage of banks' assets was 1.9 and 2.2 respectively. These figures reveal that the interconnectedness between banks and OFI is low (Chart V.8.5). Moreover, the ratio of equity to total assets shows that, except for consumer finance companies, OFI operate with less leverage compared to the banking sector (Chart V.8.6).

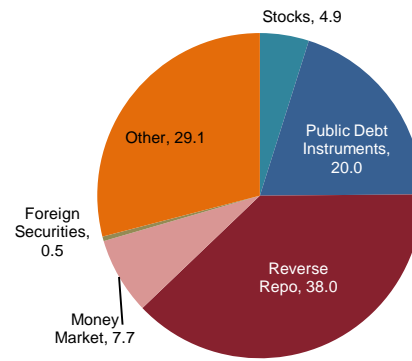


As of end-2012, the current ratio of broker-dealers, portfolio management companies, real estate investment trusts and securities investment trusts was above 100 percent (Table V.8.1).

As of end-2012, 65.7 percent of mutual funds' portfolio consisted of public debt instruments, reverse repo and money market investments. This indicates that the assets of these funds were mainly composed of short-term, low credit risk assets (Chart V.8.7).

Table V.8.1Current Assets to Short-term Liabilities^{1,2}
(2012)

	Current Assets / Short-term Liabilities (%)	Current Assets (Million TL)	Short-term Liab. (Million TL)
Broker-dealers	126	10,335	8,215
Portfolio Man. Comp.	1,087	290	27
Real Estate Invest. Trusts	147	4,419	3,007
Securities Investment Trusts	10,547	667	6
Banks	128	966,773	753,793

Chart V.8.7Portfolio Composition of Mutual Funds
(Percent, 2012)

(1) Except for banks, on-balance sheet figures are used.
(2) Bank figures were weighted in accordance with Regulation on Measurement and Evaluation of Liquidity Adequacy of Banks provisions, figures were allocated depending on whether their maturity is taken into account or not and off-balance sheet data was included as well.

Source: BRSA, ACMIIT, PDP, CGAT

Source: CMB

Leasing, factoring and consumer finance companies established in Turkey are subject to the "Financial Leasing, Factoring and Financing Companies Law" and are regulated by the BRSA. According to the "Regulation on the Establishment and Operation Principles of Financial Leasing, Factoring and Financing Companies" the ratio of these companies' equity to total assets must be 3 percent, minimum. Any company failing to meet this requirement may not engage in a new leasing, factoring or financing contract. The "Communique On Procedures And Principles For The Provisions To Be Set Aside By Financial Leasing, Factoring and Financing Companies For Their Receivables" regulates provisions to be set aside by these companies for their receivables.

Broker-dealers, portfolio management companies and other financial institutions categorised under OFI are regulated and monitored by the CMB. These institutions are subject to the "Capital Markets Law No: 6362" and the operations of these institutions are regulated by separate communiques. There are provisions in these communiques which limit these institutions' risks and in accordance with the communiques regarding broker-dealers

and portfolio management companies, the minimum equity, capital adequacy base and liquidity requirements of these institutions are regulated.

In Turkey, the shadow banking sector comprises a limited share of the total financial sector. The interconnectedness between banks and OFI is low and the leverage of OFI is not high. However, the on and off-balance sheet exposures of OFI should be closely monitored and data deficiencies should be overcome considering the fact that the share of OFI in the financial sector has been rising. Necessary regulations should be enacted for risky areas taking into account international developments on this issue. The effects of the banking sector regulations on the shadow banking sector development should be monitored as well.

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V.9. New Period in Risk Culture⁴³

Many articles emphasize that risk management, firms and individuals have become increasingly important for the finance sector after the declaration of Lehman Brother's bankruptcy on the 15th of September, 2008 in the U.S.. Especially beginning from 2005, the period of increase of lower quality subprime loans in the U.S. housing market, which led to the housing bubble, followed by the mortgage subprime crisis and the period of "liquidity excess", "default credits", "uncontrolled of mortgage-backed securities" and "inadequacy of banking audit" combined with the ongoing macroeconomic problems in Europe has led to the global crisis.

Because collecting diversified and detailed information about a loan applicant's profile has gained more importance for lenders to examine an applicant's ability to pay, the traditional loan process begins with a "status inquiry" and the "loan assesment" process, then continues with the loan monitoring stage.

Turkey adapted the rules from Basel II's consensus on international standards for financial system soundness into the finance system and all components of loan risk have been taken into account for the real risk level of borrowers. Hence, many criteria which display the repayment capacity of borrowers like loan type, maturity, collateral, borrower's (individual or firm) credit scores are taken into the loan price assesment.

Although an individual's or firm's historical "ability to pay" is the most significant criteria to approve a loan for many lenders, other criteria like the number of payment delayed days, positive and negative events in the current income level, performance of historical ability to pay bills are also important supporting decisions to determine a loan applicant's custom of repayment. In this respect, financial institutions have to take into consideration all expressive information which shows a client's historical habits of repayment to determine the real risk level.

Because credit institutions are mostly limited to collecting information about a borrower's financial history by themselves, specialized institutions on datawarehouse and datamining have emerged and produced informative products about borrowers' (individuals or firms) profiles for credit institutions' use. Credit institutions are members of these specialized institutions, which is why contributing to a database by sending their clients' credit information through these institutions allows them the right to access these joint databases whenever needed. In this way, the excessive cost of forming a complicated database is shared by credit institutions and the need for information technology investment and specialized human resources are fulfilled by these specialized institutions. These

⁴³ This section is prepared by Dr. Derya Sürmen.

institutions work on producing new products and tools to ensure supportive information determining the real riskness of individuals, firms and financial institutions. Controlling the riskness of economic agents will help to sustain economic activities properly and contribute to economic progress as well.

Two institutions in Turkey serve as credit registries to banks and other financial institutions to determine a customer's credit worthiness. The first one is the "Risk Center-RM" division in the Central Bank of Turkey which performed from 1952 to June 2013. Its activities are transferred according to Banking Law, No.6111 to The Banks Association Of Turkey (TBB). The other is the Credit Bureau (KKB) which was established by a partnership of 11 major banks in 1995. KKB operates their own activities and undertook the duties on behalf of the TBB-Risk Center after June, 2013.

The Banks Association of Turkey- Risk Center System and Vision

TBB-RM offers new scores, models and products for the growing needs of the finance sector to manage risks effectively. The TBB-RM database will collect over-drawn cheque information, past cheque payment information, protested bills and bills paid on time information, credit accounts of public service companies and private retail chain companies' term receivables. This comprehensive database will allow economic agents to make the right assessment about third parties' risk levels and have a chance to assess their own risk level from the point of real and financial perspectives.

Followings are the reports and tools needed by the financial sector and real sector offered by KKB on behalf of TBB-RM.

- **Loan Limit, Risk and Non-Performing Loan Report:** This report provides information about Risk Center members which are banks, leasing companies, factoring companies, finance institutions and asset management companies, clients' loan limit, risk and non-performing loan information.

- **Protested Bills Report:** This report provides information about protested bills in the last five years. It includes the drawing bank and branch code, notification record (protested or withdrawn protested bill), the amount of the bill, period of protested bill and withdrawal of a bill and reason for withdrawal of protest.

- **Cheque Report:** This report provides information about over-drawn cheques since 2007, paid information on a later date related with over-drawn cheques and cheques paid at sight information. the report also includes the number and amount of cheques, banks holding the client's cheque accounts and information about the last fifty endorsed cheques.

• **Non-Performing Consumer Credits Report:** This report provides information on identification of individuals who defaulted on their consumer loans/credit cards but paid back at a later stage. This report also covers loan type, bank and branch code, credit card number, term of follow-up (month/year), term of later payment (month/year) information.

Credit Bureau of Turkey (KKB) and Services

KKB admits organizations as members which get permission from BRSA (Banking Regulation and Supervision Agency) and produce the following reports which contain collected detailed information of members' clients accounts:

• **Credit Reference System (CRS):** The members can access this database online to get information about all a loan applicants' open account details where the applicant is a debtor or guarantor, closed account details during the last five years, application details during the last six months and credit repayment performance for the last thirty-six months.

• **Credit Bureau Score:** This product is defined as a decision supporting product calculated by using a statistical model. This model is a numerical indicator calculated for foreseeing the repayment performance of customer compared to another for the credit received or will be received from a KKB member institution. It is also defined as the summary of information obtained related to the customer through the CRS.

• **Risk Report:** This report provides information of historical repayment performance of individuals' and firms' loans used from the banks. KKB was previously sharing the report only with banks as of September, 2012. The report is now shared with individuals and organizations as well as third parties approved by these individuals and organizations through bank branches. It is now possible for individuals and firms (legal entities) to access all financial information related to their outstanding and closed debts by applying through bank branches or alternative distribution channels. This report contains not only credit accounts in default and non-performing credit information but also positive payment performance information (on time paid credit information). This report is available on mobile devices and the internet by using an e-report infrastructure.

• **Consumer Indebtness Index:** This is a score based risk index that identifies individuals who have a tendency toward overindebtedness. The focal point is the individual who has an inability to repay a recent loan or in the past but has a tendency of getting credit exceeding his/her ability to pay. This index is developed for determining the individuals who are approved for new credit by closing existing debts and not defaulting but getting into more debt in time.

This index provides a new risk perception to the banking and finance sector. Beneath the Credit Bureau Score and other prediction models which try to anticipate the "non-performing loans" definition, the index adds an "overindebtedness" definition (used for individuals who didn't make three consecutive payments, are subject to legal proceedings

and moved into loss accounts). This index takes into consideration individuals with an unsecured debt balance of more than 250 Turkish Lira and for estimating overindebtedness.

- **Limit Control System:** This system is an information exchange for credit card accounts according to the Bank Card and Credit Cards Law. According to the law, the total credit limit of all credit cards from all bank limits to a customer who starts using credit cards for the first time cannot exceed two times the monthly average net income level for the first year, and cannot exceed four times the monthly average net income level for the second and subsequent (latter) years. This system ensures that credit card limits collected from all institutions granting credit card in the sector are combined on a customer basis and managed by the institutions offering a single limit practice.

- **Commercial Bureau System:** This system was launched in 2005 and offers a rich information set that might be needed to evaluate the risk of a legal entity customer. This system shares company and real entity identity information, capital based relationship information, credit accounts and repayment information, collateral, import and export information as well as bad cheque information.

- **Cheque Report:** This service provides past cheque payment information of the cheque drawers to enable the cheque holders to make sound decisions on whether to accept the cheque.

- **Fraudulent Information/Document/Declaration/Application Detection System (SABAS):** SABAS was developed by KKB as an information sharing platform to protect consumer information, documentation and estates against fraud. With this system, KKB members are able to seamlessly exchange facts, findings and evidence related to crimes such as counterfeiting, fraud, personal information theft and money laundering.

- **Internet Fraud Alarm System:** This system establishes communication between the member institutions related to fraudulent acts performed on the internet. The requests for blocking accounts in fraudulent money transfer are submitted through this system. This system enables more effective communication between institutions and keeps any kind of information related to transactions in the IT environment. Another substantial feature of this system is that it works in harmony with SABAS. Fraudsters usually open saving accounts with fake information to draw money transferred from customer accounts. Such account information is shared within SABAS and, in case of internet fraud, all relevant units of member institutions can access this platform.

Conclusion

The TBB-RM system was established to effectively use financial resources in the economy and to meet the needs of the finance sector more dynamically. The system is growing under the supervision of CBRT and BRSA. TBB-RM facilities will cover new products

and tools served by KKB for the real sector and individuals under finance sector products and will serve new products and tools in the new period by detailing the database.

In the new system financial institutions, real sector institutions and individuals will have a chance to monitor their own risk levels more closely and this new constitution will make a contribution to the finance sector by producing new products and tools.

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V.10. The Payment Systems Law and Financial Stability

The use of non-traditional channels for funds transfer and goods and services purchases has been proliferating parallel to technological developments. Likewise, the importance of payments and securities settlement systems and electronic payment methods have been increasing in financial markets and commerce.

Safe and efficient-functioning payment and securities settlement systems are among the most important factors needed for the successful implementation of monetary policy and for a sound financial system. A problem arising from payment and securities settlement systems might spread to other areas of the financial system, thereby threatening financial stability. Because of the contribution of efficient payment systems to financial stability, Central Banks act as operator, regulator and overseer in this area. Article 4, 1/f of the Law on the Central Bank of the Republic of Turkey (CBRT) (Law no.1211) states the following among the fundamental duties of the Bank: 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. On the other hand, CBRT had a leading role in preparing a new Law on the payments area considering the necessity of strengthening the legal infrastructure in this area.

Law Nr. 6493

The draft proposal of "The Law on Payments and Securities Settlement Systems, Payment Services and Electronic Money Institutions" was prepared in accordance with the EU Acquis and international standards and by taking into account the opinions of relevant stakeholders. The Law entered into force on the 27th of June, 2013 by being published in the Official Gazette No. 28690.

The aim of this Law is to regulate the procedures and principles regarding the payment and securities settlement systems, payment services, payment institutions and electronic money institutions. Thanks to this law, the regulations in this area which were dispersed previously, are gathered under a single framework.

The Law regulates the establishment, licensing, operating conditions, oversight, measures regarding payment and securities settlement systems and settlement finality of payments in these systems.

The Law draws the general framework of payment services and empowers the Banking Regulation and Supervision Agency (BRSA) to prepare secondary legislation that

specifies the rules to be obeyed by payment service providers. Based on this power, the BRSA will regulate relations between service providers and beneficiaries, specify rights and obligations of both parties and take appropriate measures against possible problems in the payment services area.

The law gives the responsibility and power of licensing and oversight of payment and securities settlement systems to the CBRT while other authorities' powers granted by other regulations continue. In this framework, CBRT takes responsibility for:

1. Preparing secondary legislation regarding establishment, operations, acquisition and transfers of share and oversight of payment and securities settlement systems within a year,
2. Designating and publishing in the Official Gazette payment and securities settlement systems that are subject to the protection provisions of the Law regarding settlement finality of the transactions realized through these systems,
3. Carrying out operations regarding licensing of payment and securities settlement systems,
4. Monitoring of licenses of payment and securities settlement systems and revocation of licenses in certain situations established by the Law,
5. Overseeing all the payment and securities settlement systems that operate in Turkey,
6. Imposing administrative fines to be applied to system operators that do not obey the regulations of the Law and secondary regulations.

According to the Law, the entities that have been authorized to provide services in the payments area are classified as banks, payment institutions and electronic money institutions. Banks are given the right to provide payment services and to issue electronic money within the scope of this law without further approval.

With this Law, "payment institutions" and "electronic money institutions" are legally defined for the first time. These institutions are required to be established as joint stock companies and forced to hold a certain amount of assets. The Law gives responsibility and power to the BRSA in issues such as licensing, operating areas and supervision of these institutions.

As well as licensing and supervising payment institutions and electronic money institutions, provisions regarding consumer protection like safeguarding collected funds are also described in the Law.

Consequently, the "Law on Payments and Securities Settlement Systems, Payment Services and Electronic Money Institutions" provides legal support to developments in the payments area and also strengthens financial stability by supporting the efficient and

uninterrupted operation of these systems. With the framework of the financial architecture set up by this Law, the CBRT, the BRSA and the Capital Markets Board, all of which have the responsibility in the area of financial infrastructure, are expected to increase their support to financial stability by improving their existing cooperation.

List of Charts

I. International Developments

Chart I.1	Annual Growth Rates in Selected Advanced Economies.....	4
Chart I.2	Annual Growth Rates in Selected Emerging Economies	4
Chart I.3	Unemployment Rates in Selected Advanced Economies.....	5
Chart I.4	Unemployment and Labor Force Participation Rates in the U.S.	5
Chart I.5	Course of Inflation in Advanced and Emerging Economies	5
Chart I.6	S&P GSCI Commodity Price Indices	5
Chart I.7	10-Year Bond Yield in the U.S.....	6
Chart I.8	Capital Flows To Emerging Economies	6
Chart I.9	Ratio of Public Debt to GDP in Selected Advanced Economies	7
Chart I.10	Ratio of Firm and Household Debts to GDP in Euro Area Countries	7
Chart I.11	Average Duration of Bond Portfolios in the U.S.....	8
Chart I.12	Mortgage Loan Rates in the U.S. and Course of Weekly Loan Applications.....	8
Chart I.13	Banking Sector Loans in the Euro Area	9
Chart I.14	SME Loan Rates in Selected Euro Area Countries	9
Chart I.15	Impact of Portfolio Flows on Local Currency Bond Yields	14
Chart I.16	External and Domestic Vulnerabilities in Emerging Market Economies.....	14

II. Domestic Economic Outlook

Chart II.1	Cumulative Portfolio Flows.....	18
Chart II.2	Current Account Deficit and Financing Items	18
Chart II.3	Real Effective Exchange Rate	18
Chart II.4	Implied Volatility of Exchange Rates.....	19
Chart II.5	Implied Volatility of Exchange Rates.....	19
Chart II.6	GDP and Final Domestic Demand	19
Chart II.7	Contributions to Quarterly GDP Growth	19
Chart II.8	Central Government Budget Balance-Debt Stock.....	20
Chart II.9	Composition of Central Government Debt Stock and Average Days to Maturity	20
Chart II.10	Change in Market Rates of Selected Countries with a 5-Year-Maturity	21
Chart II.11	Volatility of Interest Rates on U.S. and Turkish Treasury Bonds with a 10-Year-Maturity	21
Chart II.12	Transaction Volume of Bonds with a Maturity of 2 - 10 Years	21
Chart II.13	GDDS Yield Curve	21

III. Developments by Sectors

III.1. Banking Sector

Chart III.1.1	Development of the Banking Sector.....	23
Chart III.1.2	Applicable Interest Rates.....	23
Chart III.1.3	Asset/GDP Ratio and Change	24
Chart III.1.4	Annual Average Growth Rate of Assets	24
Chart III.1.5	Asset Structure of the Banking Sector	24
Chart III.1.6	Contribution of Banking Sector's Asset Items to Annual Asset Growth.....	24
Chart III.1.7	Loan/GDP Ratio and Change	25
Chart III.1.8	Annual Average Growth Rate of Loans	25
Chart III.1.9	Annual Growth of Loans	26
Chart III.1.10	Development of Loans Adjusted for Exchange Rate Effect.....	26
Chart III.1.11	Development of Loans by Type.....	26
Chart III.1.12	Contribution of Loans to Credit Growth by Type.....	26
Chart III.1.13	Development of Retail Loans Adjusted for Exchange Rate Effect	27
Chart III.1.14	Development of Corporate Loans Adjusted for Exchange Rate Effect	27
Chart III.1.15	Developments of Credit Standards.....	27
Chart III.1.16	Developments of Credit Demand.....	27

Chart III.1.17	Development of Other Corporate Loans Adjusted for Exchange Rate Effect by Type	28
Chart III.1.18	Development of SME Loans Adjusted for Exchange Rate Effect by Type	28
Chart III.1.19	FX-Denominated Project Financing Loans	29
Chart III.1.20	Annual Growth Rates of Corporate Loans Adjusted for Exchange Rate Effect	29
Chart III.1.21	TL Commercial Loan and TL Deposit Rate	29
Chart III.1.22	TL Commercial Loan and TL Deposit Rate	29
Chart III.1.23	Currency Composition of Corporate Loans Adjusted for Exchange Rate Effect	30
Chart III.1.24	Maturity Composition of Corporate Loans	30
Chart III.1.25	NPL Ratios.....	30
Chart III.1.26	Differences of NPL Ratios	30
Chart III.1.27	NPL	31
Chart III.1.28	NPL Ratios and Bad Cheque Ratio.....	32
Chart III.1.29	NPL Ratios of Retail Loans	32
Chart III.1.30	Flow NPL Developments.....	32
Chart III.1.31	GDDS Holdings	33
Chart III.1.32	Interest Rates on Public Borrowing Securities and Transaction Volume of Benchmark GDDS	33
Chart III.1.33	Interest Rate Composition of Banks' GDDS Portfolio	33
Chart III.1.34	Number of Days to Maturity of Fixed-Rate GDDS Portfolio of Banks	33
Chart III.1.35	Liquid Assets.....	34
Chart III.1.36	Total Liquidity Adequacy Ratio	34
Chart III.1.37	FX Liquidity Adequacy Ratio	34
Chart III.1.38	Liability Structure of the Banking Sector.....	35
Chart III.1.39	Liability Growth and Contributions to Annual Growth.....	35
Chart III.1.40	Gross Loan/Deposit Ratios of Selected Countries	36
Chart III.1.41	Deposits	36
Chart III.1.42	TL-FX Savings Deposits	36
Chart III.1.43	TL-FX Commercial Deposits.....	37
Chart III.1.44	Deposit Rates.....	37
Chart III.1.45	Maturity of Deposits	38
Chart III.1.46	Foreign Liabilities of Banks.....	39
Chart III.1.47	Composition of Foreign Liabilities	39
Chart III.1.48	External Debt Rollover Ratio of Banks	40
Chart III.1.49	Average Maturity of Foreign Liabilities	40
Chart III.1.50	External Debt Rollover Ratio and FX Liquidity Need of Banks	40
Chart III.1.51	Banks' Securities Issues in Domestic Market	41
Chart III.1.52	Banks' Securities Issues Abroad.....	41
Chart III.1.53	Portfolio Distribution of Mutual Funds	42
Chart III.1.54	Portfolio Distribution of Pension Funds	42
Chart III.1.55	TL Deposit Rates and Interest Rates on TL Issues.....	43
Chart III.1.56	Rates of Return on TL Deposits and TL Issues.....	43
Chart III.1.57	Foreign Exchange Position.....	44
Chart III.1.58	Return on Assets and Return on Equity	44
Chart III.1.59	Net Interest Margin	44
Chart III.1.60	Analysis of the Changes in the Banking Sector's Return on TL Assets / Cost of TL Liabilities	45
Chart III.1.61	Capital Adequacy Ratio	46
Chart III.1.62	Ratio of Equity to Total Assets	46
Chart III.1.63	Capital Adequacy Ratio, Tier 1 Capital Ratio and the Ratio of Equity to Total Assets by Countries	46
Chart III.1.64	Financial Strength Index.....	47
Chart III.1.65	Banking Sector Stability Map.....	47
Chart III.1.66	Results of Scenario Analysis	47

III.2. Corporate Sector

Chart III.2.1	Financial Debt of the Corporate Sector	49
Chart III.2.2	Composition of Financial Debt of the Corporate Sector	49
Chart III.2.3	FX Liabilities of the Corporate Sector – Share of External FX Liabilities	49

Chart III.2.4	External FX Liabilities of the Corporate Sector – Share of Loans.....	49
Chart III.2.5	Corporate Sector's External Loans Due Within 1 Year	50
Chart III.2.6	Breakdown of Corporate Sector's External Financial Debts by Maturities.....	50
Chart III.2.7	Corporate Sector's Short-Term External FX Loans.....	51
Chart III.2.8	Composition of Corporate Sector's Short-Term External FX Loans.....	51
Chart III.2.9	Non-Bank Sector's Net FX Borrowings	51
Chart III.2.10	Non-Bank Sector's External Debt Roll-Over Ratio	51
Chart III.2.11	Foreign Exchange Position of the Corporate Sector	52
Chart III.2.12	The Ratio of Corporate Sector's FX Assets to FX Liabilities	52
Chart III.2.13	Sales and Profitability of Firms by September 2013	52

III.3. Households

Chart III.3.1	Annual Percentage Change of Household Real Consumption, Consumer Loans and Consumer Confidence Index	53
Chart III.3.2	Household Savings Rates	53
Chart III.3.3	Household Financial Assets and Liabilities	54
Chart III.3.4	Ratio of Household Liabilities to Disposable Income and GDP in Selected EU Countries.....	54
Chart III.3.5	Annual Growth of Consumer Loans by Types.....	55
Chart III.3.6	Housing Loan Standards and Housing Loan Demand.....	56
Chart III.3.7	Number of Applications for Housing Loans and Number of Housing Loans Extended	56
Chart III.3.8	Housing Loan Rates	56
Chart III.3.9	Breakdown of Housing Loans Extended Based on Maturities.....	56
Chart III.3.10	Real Change in House Price Index by Cities	58
Chart III.3.11	Annual Nominal Change in House Prices in Selected Countries	58
Chart III.3.12	Vehicle Loan Standards and Vehicle Loan Demand.....	59
Chart III.3.13	Annual Growth of Vehicle Loans and Annual Change in Automobile Sales.....	59
Chart III.3.14	Current Account Deficit and Domestic – Imported Automobile Sales	59
Chart III.3.15	Vehicle Loan Rates.....	60
Chart III.3.16	Breakdown of Vehicle Loans Extended Based On Maturities	60
Chart III.3.17	Balances of Individual Credit Cards With and Without Installment Options.....	60
Chart III.3.18	Annual Growth of Individual Credit Card Balances	60
Chart III.3.19	Credit Card Balances of Deposit Banks and Balances That Incur Interest Charges	61
Chart III.3.20	Balances of Individual Credit Cards With Installment Options	61
Chart III.3.21	General Purpose Loan Standards and Demand.....	61
Chart III.3.22	General Purpose Loan Rates.....	62
Chart III.3.23	General Purpose Loans Extended	62
Chart III.3.24	Individual Credit Rating – Average	63
Chart III.3.25	Individual Indebtedness Index	63
Chart III.3.26	Distribution of Borrowers According to Occupation (Loans Extended and Number of People)	64
Chart III.3.27	Distribution of Borrowers According to Income (Loans Extended and Number of People)	64
Chart III.3.28	Precious Metal Loans-Deposit Accounts	65
Chart III.3.29	Precious Metal Deposit Accounts/Deposits, Gold Prices	65
Chart III.3.30	Real Return on Financial Investment Instruments by Types	66
Chart III.3.31	Ratio of Household TL Investment Instruments to FX Investment Instruments	66
Chart III.3.32	Development of the Number of Private Pension System Participants.....	66
Chart III.3.33	Development of the Amount of Private Pension Funds.....	66
Chart III.3.34	Age Distribution of Participants.....	67
Chart III.3.35	Asset Allocation of Private Pension Funds	67

IV. Steps Taken Towards Financial Stability

Chart IV.1.1	ROM Utilization Ratio	71
Chart IV.1.2	Change in ROM Utilization Ratio.....	71
Chart IV.1.3	Growth of Retail Automobile Loans Extended by Financing Companies and the Banking Sector.....	72
Chart IV.1.4	Monthly Rediscount Credit Utilization.....	75
Chart IV.1.5	Breakdown of Rediscount Credits by Sectors in 2013.....	75

Chart IV.1.6	Rediscount Credits' Contribution to CBRT's Net FX Reserves	75
Chart IV.1.7	Interest Rates Applied to Personal Credit Cards and the Amount of Interest Accrued	76
Chart IV.1.8	Interest Rates Applied to Overdraft Deposit Accounts and the Amount of Interest Accrued	77
Chart IV.1.9	Interest Rates Applied to Corporate Credit Cards and the Amount of Interest Accrued.....	77

V. Special Topics

Chart V.1.1	FX Reserve Option Coefficients.....	83
Chart V.1.2	The Amount of FX and Gold Held at CBRT Accounts via ROM Facility	84
Chart V.1.3	FX ROM Utilization Rate	85
Chart V.1.4	Utilization Rate of ROM for Sample and Banking Sector	87
Chart V.1.5	Expected Utilization Rate of ROM Calculated Using CBRT Average Funding Rate.....	90
Chart V.1.6	Explanatory Power of ROM.....	91
Chart V.1.7	Realized ROM Utilization Rate and CBRT Average Funding Rate	91
Chart V.1.8	Panel Data Forecast and Realized ROM Utilization Rate	94
Chart V.1.9	Rollover Ratio of Banks' External Debt	95
Chart V.4.1	Firm's Leverage between 2004-2008.....	110
Chart V.4.2	The Sales Growth of High and Low Leverage-increase Firms between 2004-2009.....	111
Chart V.5.1	Emerging Countries and Turkey ROE Comparison	116
Chart V.5.2	High-Income OECD Countries ¹ and Turkey ROE Comparison	116
Chart V.5.3	Emerging Countries and Turkey ROA Comparison	116
Chart V.5.4	High-Income OECD Countries ¹ and Turkey ROA Comparison	116
Chart V.5.5	Emerging Countries ¹ ve Turkey CAR Comparison	117
Chart V.5.6	High-Income OECD Countries ¹ and Turkey CAR Comparison.....	117
Chart V.5.7	Turkey ROE and CAR	119
Chart V.5.8	Turkey ROA and CAR.....	119
Chart V.6.1.1	Asset Structure of the Banks	123
Chart V.6.1.2	Liability Structure of the Banks.....	123
Chart V.6.1.3	Return on Equity	124
Chart V.6.1.4	Return on Assets	124
Chart V.6.1.5	Capital Adequacy and Loan-to-Deposit Ratios.....	124
Chart V.6.1.6	Borrowing Costs.....	124
Chart V.7.1	Notional Amounts Outstanding	136
Chart V.7.2	Gross Market Values	136
Chart V.7.3	Number of Central Counterparties by Underlying Assets	138
Chart V.7.4	Notional Amounts Outstanding	142
Chart V.7.5	Notional Amounts Outstanding	142
Chart V.7.6	Distribution of Derivative Transaction by Underlying Assets	143
Chart V.7.7	Distribution of Derivative Contract Types	143
Chart V.7.8	Distribution of Counterparties by Country	144
Chart V.7.9	Distribution of Derivative Transactions by Exchange Rate	144
Chart V.7.10	Foreign Exchange Position of Banks	144
Chart V.7.11	Derivative and Foreign Exchange Profits of Banks	144
Chart V.8.1	Balance Sheet Size of the Financial Sector	150
Chart V.8.2	Assets of Other Financial Institutions	150
Chart V.8.3	Composition of Other Financial Institutions	151
Chart V.8.4	Compound Annual Growth Rate of OFI Sub-sectors.....	151
Chart V.8.5	Banks' Due From Other Financial Institutions and Due to Other Financial Institutions.....	151
Chart V.8.6	Equity / Total Assets.....	151
Chart V.8.7	Portfolio Composition of Mutual Funds	152

List of Tables

III. Developments by Sectors

III.1. Banking Sector

Table III.1.1	NPL Ratios.....	31
Table III.1.2	Changes in Deposit Amounts During Shifts Between TL-FX	36
Table III.1.3	Banks' Bond and Bill Issues Abroad	42
Table III.1.4	Scenarios Applied.....	47

III.2. Corporate Sector

Table III.2.1	Return on Equity and Its Components	52
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III.3. Households

Table III.3.1	Selected Financial Indicators Pertaining to Households	54
Table III.3.2	Composition of Household Liabilities.....	55
Table III.3.1.1	Change in Monthly Installment of Housing Loans	57
Table III.3.3	Number of Credit Card and Consumer Loan Defaulters	62
Table III.3.4	Household Financial Assets.....	64

IV. Towards Financial Stability

Table IV.1	Export Rediscount Credits.....	74
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V. Special Topics

Table V.1.1	FX Reserve Option Tranches and ROC	88
Table V.1.2	Time Series Results	89
Table V.1.3	Panel Data Results About ROM Utilization Rate.....	93
Table V.2.1	Firm Credit Growth and Monetary Policy Shocks	99
Table V.2.2	Firm Credit Growth and Asymmetric Monetary Policy Shocks	100
Table V.3.1	Return on Asset and Foreign Exchange Position	105
Table V.3.2	Return on Asset and the Crisis	106
Table V.4.1	Leverage Increase and Sales Growth Performance	112
Table V.4.2	Leverage Increase and Sales Growth Performance (Non-distressed and Less Leveraged Firms)	113
Table V.5.1	Summary Statistics.....	118
Table V.5.2	Correlations Between Capital Adequacy and Profitability	118
Table V.6.1	G-SIB indicators	126
Table V.6.2	G-SII indicators.....	128
Table V.6.3	Higher loss absorbency requirements for G-SIBs	130
Table V.6.4	Timetable for implementation of resolution planning.....	133
Table V.7.1	Risk Weights for Centrally Cleared Transactions	140
Table V.7.2	Distribution of Derivative Transactions by Maturity	143
Table V.8.1	Current Assets to Short-term Liabilities.....	152

Abbreviations

ACMIIT	The Association of Capital Market Intermediary Institutions of Turkey
AIRCT	The Association of the Insurance and Reinsurance Companies of Turkey
AMT	Additional Monetary Tightening
BBE	Individual Indebtedness Index
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BIST	Borsa İstanbul A.Ş.
BIP	On-Balance Sheet Position
BRSA	Banking Regulation and Supervision Agency
BSCCB	Bank-specific Counter-cyclical Capital Buffer
CAR	Capital Adequacy Ratio
CBRT	Central Bank of the Republic of Turkey
CC	Credit Card
CCB	Capital Conservation Buffer
CMB	Capital Markets Board
CPI	Consumer Price Index
CPSS	Committee for Payment and Settlement Systems
CRA	Central Registry Agency
CRD	Capital Requirements Directive (European Union)
D-SIB	Domestic Systemically Important Banks
D-SIB	Domestic Systemically Important Banks
DTF	Foreign Trade Financing
DTH	FX Deposit Account
EBA	European Banking Authority
ECB	European Central Bank
EGM	Pension Monitoring Center
EIOPA	European Insurance and Occupational Pensions Authority
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
EURIBOR	Euro Interbank Offered Rate
Fed	Federal Reserve System
FSB	Financial Stability Board
FSI	Financial Strength Index
FSI	Financial Strength Indicators
FSR	Financial Stability Report
FX	Foreign Exchange

FXNGP	Foreign Exchange Net General Position
FXNP	Foreign Exchange Net Position
G20	Group of 19 Countries and the EU
GDDS	Government Domestic Debt Security
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GMTN	Global Medium Term Note
G-SII	Global Systemically Important Insurers
IAIS	International Association of Insurance Supervisors
ICH	Interbank Cheque Clearing Houses Center
IFAS	Internet Fraud Alert System
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
KEA	Adjusted for Exchange Rate
KKB	Credit Bureau of Turkey
KMH	Overdraft Accounts
KYG	Crisis Management Group
LIBOR	London Interbank Offered Rate
LKS	Limit Kontrol Sistemi
MAG	Macroeconomic Assessment Group
MPC	Monetary Policy Committee
NBNI	Non-Bank Non-Insurance
NPLs	Non-performing loans
ODD	Automotive Distributors Association
OECD	Organisation for Economic Co-operation and Development
OFI	Other Financial Institutions
OTC	Over-The-Counter
ÖSK	The Law on Payment and Securities Settlement Systems, Payment Services and Electronic Money Institutions
PDP	Public Disclosure Platform
RC	Risk Center
REITIMBS	Real Estate Investment Trusts Investing in Mortgage-Backed Securities
ROA	Return on Assets
ROC	Reserve Option Coefficient
ROE	Return on Equity
ROM	Reserve Options Mechanism
RR	Reserve Requirements
S&P GSCI	Standard & Poor's Goldman Sachs Commodity Index
SABAS	Fraudulent Information / Document / Declaration / Application Detection System
SIFI	Systemically Important Financial Institutions

SME	Small and Medium-Sized Enterprises
SRB	Single Resolution Board
SRM	Single Resolution Mechanism
ST	Short Term
TBB	Banks Association of Turkey
TBTF	Too Big To Fail
TCKB	Republic of Turkey Ministry of Development
TKYD	Turkish Institutional Investment Managers' Association
TL	Turkish lira
TOKI	Housing Development Administration of Turkey
TURKSTAT	Turkish Statistical Institute
U.S.	United States of America
VAT	Value Added Tax
VIX	Volatility Index