

# Financial Stability Report

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THE CENTRAL BANK OF THE REPUBLIC OF TURKEY

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This report, which is aimed at informing the public, is based mainly on September 2016 data. Nevertheless, the Report includes developments and evaluations up to its date of publication in Turkish. The full version of this text is available on the CBRT website. The CBRT cannot be held accountable for any decisions made based on the information and data provided therein.

## Foreword

The Turkish financial system maintained its sound outlook with the support of strong economic fundamentals, despite the heightened global volatility and various types of shocks experienced in 2016.

In this period, the Central Bank of the Republic of Turkey bolstered the resilience of our economy by effectively using its set of tools focusing on its objective of achieving price stability and supporting the financial stability.

It is my hope that the 23rd volume of the Financial Stability Report, which presents a discussion of the global and domestic macroeconomic outlook as well as the most recent developments regarding financial stability, and elaborates on a variety of topics related to financial stability, will be of benefit to all readers.

Murat ÇETİNKAYA

Governor





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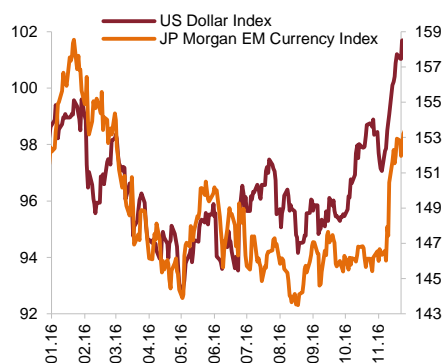




# Overview

Global markets followed a relatively calm path from the beginning of the second half of 2016 leading up to the US presidential elections. The Bank of Japan and the ECB continued quantitative easing, which supported global liquidity during this period. While the markets reacted negatively to the results of the UK referendum, the after effects were short-lived. The moderate outlook of international investors' risk appetite supported portfolio flows to emerging countries up until the announcement of the US election results. However, the election results led to a perception of uncertainty pertaining to US economic policies, which in turn increased the volatility of financial markets remarkably. Following this period, the US dollar appreciated against developed and emerging country currencies substantially (Chart 1). Consequently, emerging economies have faced intensive capital outflows (Chart 2).

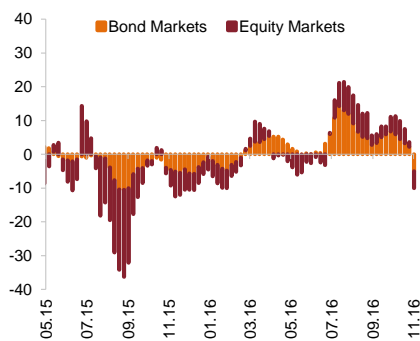
**Chart 1**  
Exchange Rate Indices



(1) JP Morgan EM Currency Index is inverted.

Source: Bloomberg (Latest Data: 22.11.16)

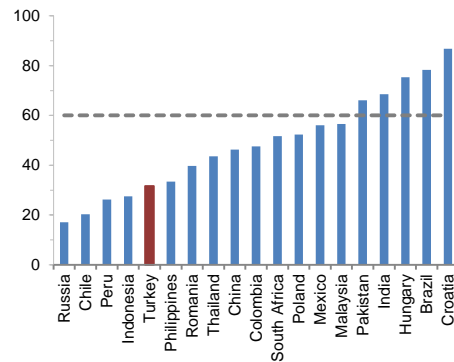
**Chart 2**  
Weekly Capital Flows to EMs  
(Billion US Dollar, 4-Week Cumulative)



Source: EPFR (Latest Data: 16.11.16)

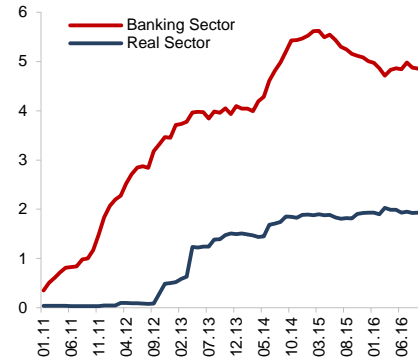
The strengthening view that expansionary fiscal policies will take precedence in the US economy has increased inflation expectations and has put upward pressure on bond market rates. The rise in the US bond market rates and escalating global uncertainty resulted in a decline in the demand for emerging market assets. Interest rates in emerging countries have risen sharply as liquidity in bond markets declined. This implies a significant deterioration in terms of funding for borrowers in emerging countries that are highly dependent on bond markets. It is anticipated that in Turkey, where the public debt stock is at a low level and the share of bank and firm issuances in total resources is extremely small; the impact of negative developments in the global bond market will be limited in terms of access to financing (Chart 3, 4). Nevertheless, it is expected that financing costs will increase moderately as a result of the rise in global interest rates.

**Chart 3**  
Public Debt Stock/GDP: Cross-Country Comparison  
(Percent)



Source: IMF (Latest Data: 2016)

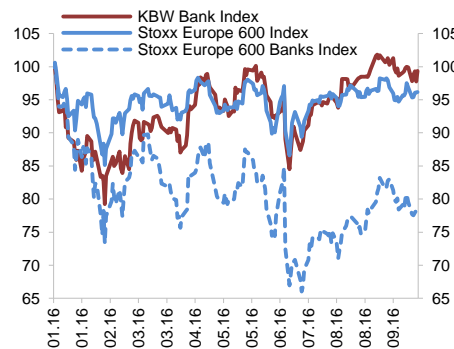
**Chart 4**  
Bond Issuance/External Liabilities  
(Percent)



Source: CBRT-CSDI (Latest Data: 09.16)

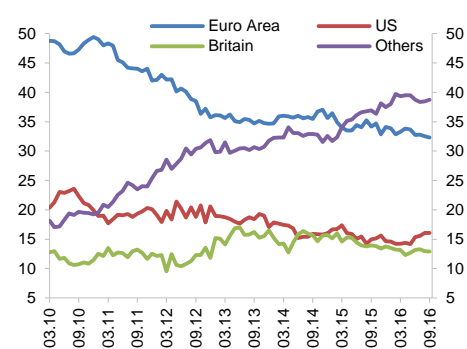
Recent developments in Eurozone banks, which played an important role in the allocation and intermediation of global liquidity, are closely monitored by international financial markets. The most important concern for Eurozone banks is their low profitability rates and this problem, if it persists, has the potential to adversely affect their intermediary capacity (Chart 5). Then again, the modest but steady growth trend in the Eurozone economic activity is considered a development that can ease the issues of bank profitability in the Zone. It is evident that the Turkish banking sector is not experiencing problems in rolling over debt from both the Eurozone and the UK banks, and that the US election results have not affected this situation adversely. The share of debt obtained from the Eurozone in total foreign debt has been gradually decreasing over the years. In this context, it should be emphasized that the diversification of Turkish banks' external funding across countries and institutions in recent years is a favorable development that can mitigate the risks arising from the Eurozone banking system (Chart 6).

**Chart 5**  
Bank Indexes in Euro Zone and USA<sup>1,2</sup>



(1) Indexed to January 2016=100  
(2) KBW Bank Index serves as a benchmark of the US banking sector.  
Source: Bloomberg (Latest Data: 09.16)

**Chart 6**  
Regional Distribution of External Debt<sup>1</sup>  
(Based on Headquarters, Percent)



(1) Excludes external debt issuances.  
Source: CBRT (Latest Data: 09.16)

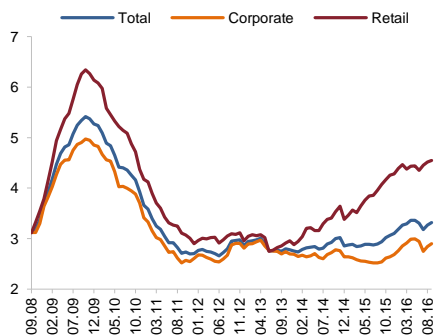
The improvement that has been observed in the current account deficit since 2012 has contributed to the decline in the dependence on foreign funds. In the second half of 2016, the decline in the current account deficit paused, in particular due to the drop in



tourism revenues and geopolitical developments. There are a couple of developments that may support the improvement in the current account balance in the medium term. These are: the sustained low momentum growth trend in the Eurozone, Turkey's most important trade partner; recovery in exports to Russia; moderate course of energy prices, and increasing competitiveness due to the depreciation of the TL. These factors are expected to support financial stability by reducing the need for external financing in a period of heightened uncertainty in global financial markets.

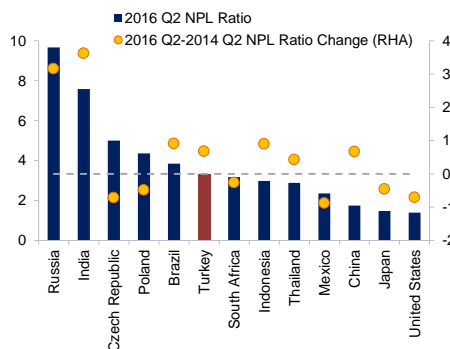
Non-performing loans (NPL) have been on a rising path due to slowing economic activity. Nevertheless, the increase in NPL ratios is far from historical highs and it is at reasonable levels compared to other countries (Chart 7, 8). The performance of foreign exchange (FX) loans is still strong, and historical data suggests that the link between the NPL ratios and exchange rate developments is weak. This is driven by the fact that the FX debt has long-term maturity, is clustered in large companies, and these companies are protected from foreign exchange risk through export revenues or state guarantees. High level of bank capital buffers and the recent profitability ratios indicate that losses due to rising NPL ratios will not have a significant effect on banks' lending capacity.

**Chart 7**  
NPL Ratios  
(Percent)



Source: CBRT (Latest Data: 09.16)

**Chart 8**  
NPL Ratios for Selected Countries<sup>1</sup>  
(Percent, Percentage Points)

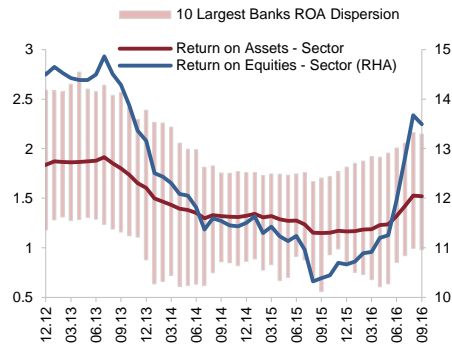


(1) Dashed line belongs to "change" figures.

Source: IMF-IFS, CBRT (Latest Data: 06.16)

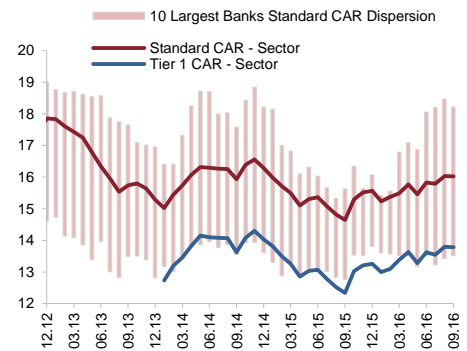
Profitability ratios that hit historic lows in mid-2015, started to recover as of the second half of 2016 (Chart 9). The profitability figures recorded in the third quarter of 2016 are sufficient to sustain high credit growth rates while preserving the current level of capital adequacy ratios (Chart 10). Although one-off factors have played some role in the strong recovery of profitability, their contribution has been indeed limited. In the last quarter of 2016, a limited decline is expected in profitability due to the valuation effects in securities owing to recent developments in bond rates. Yet, the positive outlook in profitability is expected to be mostly preserved in the forthcoming periods.

**Chart 9**  
Return on Assets and Return on Equities  
(12-Month Cumulative, Percent)



Source: CBRT (Latest Data: 09.16)

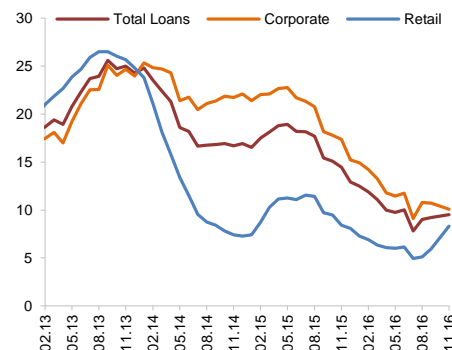
**Chart 10**  
CAR and Core Tier 1 CAR  
(Percent)



Source: CBRT (Latest Data: 09.16)

The moderate course of credit growth rates continues (Chart 11). Corporate lending has been on a weak trend while in consumer loans, housing and general-purpose loans have shown a strong recovery since September 2016 with the contribution of the decline in interest rates and easing in macroprudential measures (Chart 12). Although demand factors play an important role in the weak course of corporate lending, the cautiousness toward credit risk is also considered to be effective in reducing banks' lending appetite. The developments in the credit-deposit interest rate differential and the information provided by bank loan tendency surveys on bank lending standards point to the cautious stance of banks (Chart 13, 14).

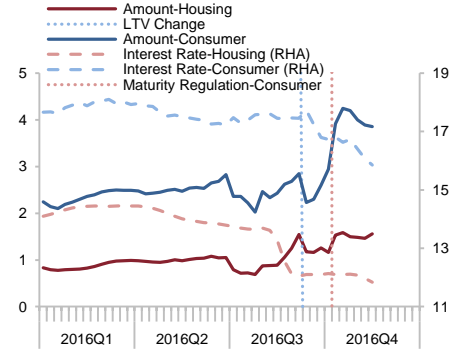
**Chart 11**  
Annual Loan Growth<sup>1</sup>  
(Percent, Adjusted for Exchange Rate)



(1) FX indexed loans are included in total FX loans and adjusted for exchange rate effects using the US Dollar and the Euro basket. Growth rates of weekly data for the last two months are appended to the graph of monthly data.

Source: CBRT (Latest Data: 18.11.16)

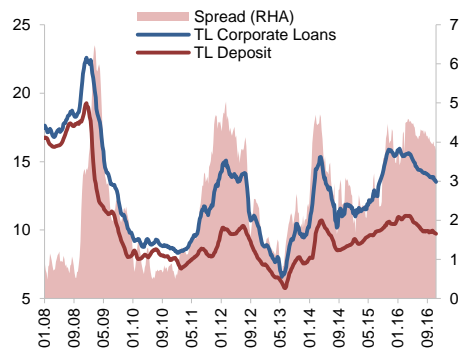
**Chart 12**  
Interest Rates, Regulations and Consumer Loans  
(4-Week Moving Average, Flow, Billion TL, Percent)



Source: CBRT (Latest Data: 18.11.16)

The interest rate cuts implemented by the Central Bank of the Republic of Turkey in the March-September period of 2016, supportive liquidity policies implemented through reserve requirements, stimulative fiscal policies, easing macroprudential measures and support to the credit market by state-owned banks that maintain their sound financial structures can be regarded as positive steps towards increasing the effectiveness of the financial intermediation. Economic activity, which has weakened recently due to geopolitical developments, the downturn in global growth, and the domestic developments, is likely to enter into a more favorable path in 2017 with the improvement in the outlook for both domestic demand and export markets.

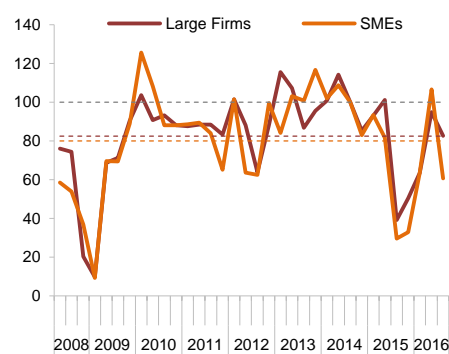
**Chart 13**  
Spread between Loan and Deposit Rates<sup>1</sup>  
(4-Week Moving Average, Percent)



(1) Overdraft accounts, credit card accounts and zero-interest credits since July 2015 are excluded.

Source: CBRT (Latest Data: 11.11.16)

**Chart 14**  
Banks' Credit Standards by Firm Size<sup>1</sup>  
(Net Percentage Change)



(1) Dashed line represents 100-line, which shows "neutral" level for long-term averages and standards. Figures higher and lower than 100 points shows easing and tightening, respectively.

Source: CBRT (Latest Data: 09.16)

In a period marked by increased volatility in financial markets where the pace of advanced countries' recovery is still weak, the Turkish banking sector remains resilient and continues to preserve its credibility in international markets. It is projected that the banking sector will continue to carry out its financial intermediation activities in a sound way in the upcoming period.



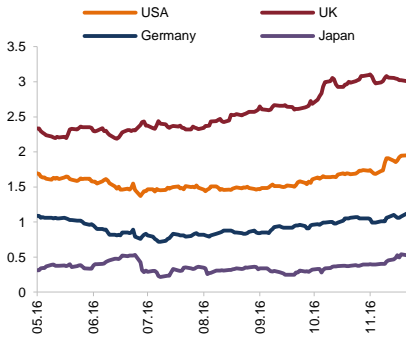
# I. Macroeconomic Outlook

*Following the US presidential election, uncertainty over the international financial outlook increased considerably. The possible changes in fiscal and foreign trade policies under the new administration in the US are expected by market participants to have repercussions on the Fed's monetary policy. The European Central Bank and the Bank of Japan have continued to implement expansionary monetary stances. Since the last Financial Stability Report, the capital flows to the emerging market countries have increased; however, these countries experienced extensive capital outflows following the US presidential election on the 8<sup>th</sup> of November. As an implication of capital flow movements, the returns on fixed-income securities increased while the US dollar appreciated against other currencies.*

*Leading indicators signal the continuation of domestic economic slowdown in the second quarter and thereby rising unemployment. The slowdown in global economies and ongoing geopolitical risks keep exerting their adverse impacts on economic activities through the foreign trade channel. The Brexit vote and volatilities in the aftermath of the US presidential elections worsen this negative outlook. Consumer prices declined in the third quarter of 2016 in contrast to the rise in the previous quarter due to the fall in basic goods and unprocessed food prices. The current account deficit narrowed due to the higher fall in imports than exports despite the decline in the tourism sector. The ongoing progress in the current account is expected to continue with the support of the normalization process with Russia. Turkey's risk premium recorded a decline despite its rise in June due partly to ongoing fiscal discipline. Volatilities in the foreign exchange markets are basically due to negative sentiment toward monetary policies in advanced economies.*

## I.1 International Developments

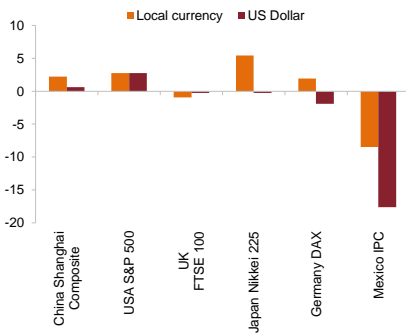
**Chart I.1.1**  
Breakeven Inflation Rate in Selected Countries  
(10 Year, Percent)



Breakeven inflation rate is the difference between the yield of a nominal bond and an inflation-linked bond of the same maturity.

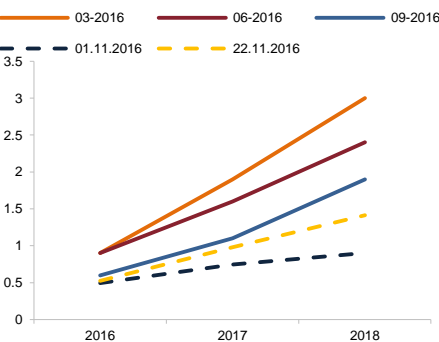
Source: Bloomberg (Latest Data: 22.11.16)

**Chart I.1.2**  
Stock Market Indices  
(Percent Change, 08.11.2016-21.11.2016)



Source: Bloomberg (Latest Data: 21.11.16)

**Chart I.1.5**  
Median of FOMC Members' Interest Rate Forecast and Market Expectations<sup>1</sup>



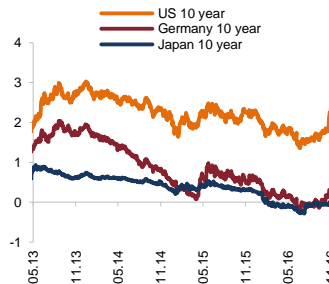
(1) Dashed lines represents 30 day Fed fund futures interest rates.

Source: Bloomberg

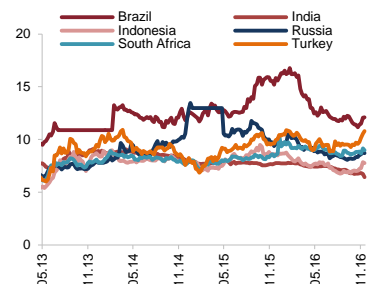
The US presidential election result led to an increase in volatility and uncertainty in financial markets. The new administration is expected to reduce taxes and increase public spending. It is assessed that the expansionary fiscal policy might cause a rise in growth as well as in inflation (Chart I.1.1). Hence, the sharp reaction in the stock markets shortly after the election turned into a recovery in the developed countries in a short period of time (Chart I.1.2). On the other hand, bond yields have increased while bond sales gained momentum (Chart I.1.3 and I.1.4).

Following the election, market investors increased their expectations for a more rapid normalization of the Fed's monetary policy. The Fed, however, maintains its policy stance regarding the normalization process, which will be gradual. With support of the leading indicators of growth, the expectations of a Fed rate hike in December 2016 have strengthened. Against this backdrop, market expectations and the projections of the FOMC members have recently converged (Chart I.1.5).

**Chart I.1.3**  
US, Germany and Japan 10-Year Government Bond Yields (Percent)



**Chart I.1.4**  
10-Year Government Bond Yields in Emerging Economies (Percent)



Source: Bloomberg (Latest Data: 18.11.16)

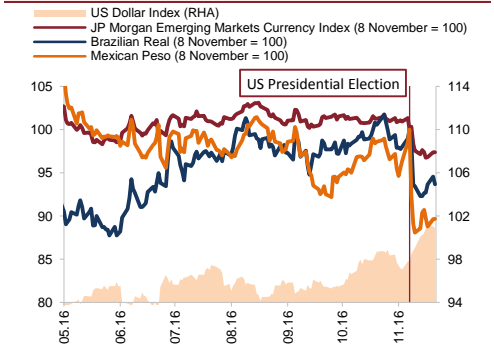
With the political change in the US, the US dollar has appreciated against major currencies, with the exception of the British pound (Chart I.1.6). Whilst the currencies of emerging economies declined to some extent, the Mexican peso and Brazilian real diverged negatively. The large portfolio outflows from emerging markets, especially in bond markets, have been influential on these developments following the US election.

In Europe and Japan, central banks continue to implement additional monetary policy measures. In addition to asset purchases, the Bank of Japan continued to take additional supportive measures by targeting the yield curve in monetary policy. Although the ECB has not taken any step towards interest rate cuts since the last reporting period, its asset purchases programme was extended to include non-bank corporate sector bonds, on the quantitative easing side. Any possible exit from the quantitative easing policy could be delayed due to the growing concern about political and financial stability towards the Eurozone after Brexit, in spite of the signs that the ECB monetary policy board will end its quantitative easing in March 2017. The possible uncertainty caused by political developments in relation to the future of the European Union depending on election results in some European countries in the upcoming period increases financial vulnerabilities.

Despite the limited response of the financial markets to the Brexit decision and the short-term fluctuations in the markets, it is likely that the decision will create some negative macroeconomic outcomes in the medium term. Given the size of the commercial and financial ties between the UK and the European Union, it is assessed that possible negative consequences may not be limited to Britain, but may have some consequences for the European Union and even the rest of the world. As of the year 2015, the UK accounted for 17.3 percent of the GDP in the EU, while, as one of the biggest members of the EU, the Germany accounted for 20.7 percent<sup>1</sup>. In 2015, the Eurozone sent 13.6 percent of its exports to the

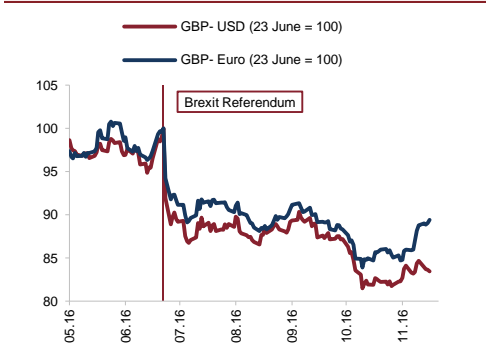
<sup>1</sup> IMF World Economic Outlook

**Chart I.1.6**  
Exchange Rate Indices



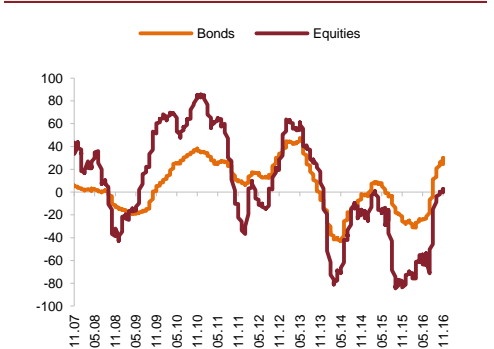
Source: Bloomberg (Latest Data: 22.11.16)

**Chart I.1.7**  
British Pound – Euro/Dollar Parity



Source: Bloomberg (Latest Data: 22.11.16)

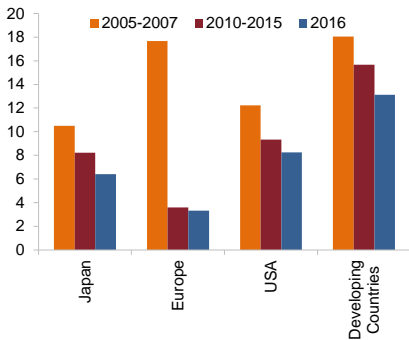
**Chart I.1.8**  
Weekly Capital Flows to Emerging Economies (Billion USD, 52-week cumulative)



Source: EPFR (Latest Data: 16.11.16)

UK, while 9 percent of its imports are from the United Kingdom<sup>1</sup>. With the UK's exit from the European Union, the loss of the privilege of the European single market might incur a cost for both parties. However, it is expected that the degree to which reciprocal financial and commercial agreements are substituted for the existing single market rules will be influential on the size of the cost. The commercial competitiveness power of the Eurozone may be adversely affected by the appreciation of the euro against the pound (Chart I.1.7).

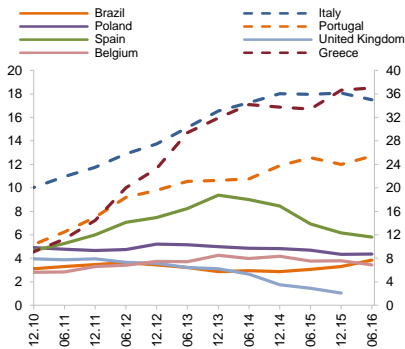
**Chart I.1.9**  
Return on Equity of Banking Sector in Developed and Developing Countries (Percent)



Note: It is based on Banking indexes.  
Source: Bloomberg (Latest Data: 17.11.16)

**The recovery in capital inflows to emerging economies in the third quarter of 2016 has turned into strong capital outflows after the US elections (Chart I.1.8).** It is expected that those countries that are sensitive to capital movements and with a high public debt to GDP ratio have been subject to capital outflows to a greater extent. The yield increase in the bond market leading to possible pressure on public borrowing costs has a role in this expectation.

**Chart I.1.10**  
NPL Ratios in Selected Countries (Percent)



Source: IMF (Latest Data: 06.16)

It appears likely that the financial fluctuations experienced after the US elections might increase the funding cost for banks in emerging market countries and this situation might adversely affect credit conditions. On the other side, the negative interest rate policy applied in some countries, notably by the ECB and the Bank of Japan, appears to have significant effects on the financial sectors in developed countries. The most important impact has been observed as the decline in the profitability of the banking sector (Chart I.1.9). While the low level of profitability increases the risk that the developed country's banking sectors might not adequately support long-term growth, together with the high level of NPLs in Europe, this raises concerns about the robustness of banks (Chart I.1.10). In this context, the implementation of the leverage ratio based on core capital and the effect of leverage ratio regulations on financial stability have been evaluated (Box I.1.I). On the other hand, by adapting their infrastructures to new financial technologies and reviewing their business models, banks can contribute to their profitability performance and financial strength (Box I.1.II).

<sup>1</sup> ECB Database

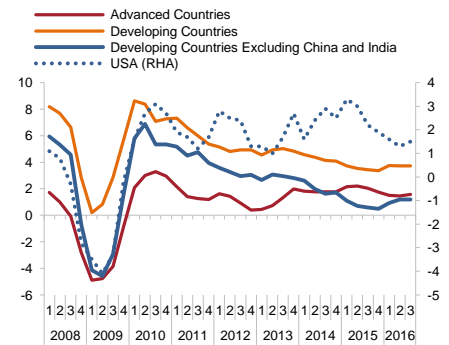


Although global economic growth remains below the long-term average, leading indicators have recently pointed to a recovery. While economic growth in developed countries has lost its momentum, the growth outlook between the US and other developed countries has continued to diverge (Chart I.1.11). However, leading indicators point to the fact that deceleration in the growth performance of developed countries will not continue as it has been (Chart I.1.12). On the other hand, a possible protectionist shift towards protective foreign trade policies in some developed countries will pose a downside risk to the global economic growth outlook.

Although the growth outlook in emerging market countries, particularly Brazil and Russia, has recovered in the recent years, growth rates of emerging countries, excluding China and India, are below those of developed countries. In the second half of the year, there has been a limited increase in the growth performance of emerging market countries due to stabilized growth performance in China and relatively strong economic outlook in India. The contribution of China to global growth has decreased compared to previous years given a transition process that has been occurring in China from investment and exports-led growth model to the consumption-based growth model. In addition, concerns about the structural problems in shadow banking and capital markets in China remain on the agenda of international financial markets.

The fluctuating commodity prices have recently increased (Chart I.1.13). A more stable economic outlook for China has played a role in this development. In addition, the efforts of the OPEC members and non-OPEC oil exporters to control the oil supply while under pressure from increasing budget deficits, and possible expansionary fiscal policies in some countries, especially in the US, are expected to have an upward impact on oil prices. In this context, the OPEC meeting to be held on the 30<sup>th</sup> of November will be followed closely by the markets. Developments in commodity prices might contribute to the growth performance and current account balances of commodity exporter countries.

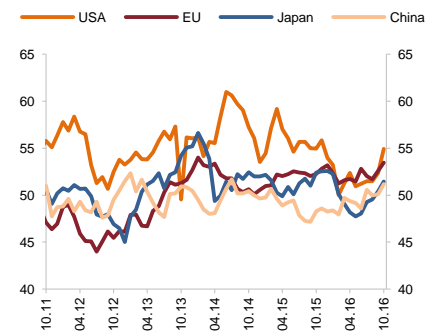
**Chart I.1.11**  
Growth Rates in Developed and Developing Economies<sup>1</sup> (Percent, Annual)



<sup>1</sup>)Weighted by each country's share in global GDP.

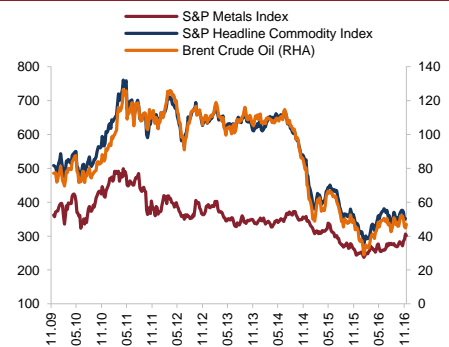
Source: Bloomberg, TCMB

**Chart I.1.12**  
Manufacturing Industry PMI Indices



Source: Bloomberg, TCMB.

**Chart I.1.13**  
Commodity Prices  
(Index, USD)



Source: Bloomberg (Latest Data: 18.11.16)

Box  
I.1.1

## Leverage Ratio as a Buffer for Financial Stability

The global financial crisis showed that a risk-based capital ratio mechanism is not enough to mitigate risks for financial stability. The Basel Committee on Banking Supervision designed leverage ratio which is simple, transparent and not a risk-based metric. The leverage ratio is expected to provide an additional support for the risk-weighted capital requirements and it aims to play a stabilizing role by creating a hard buffer during periods of rapid growth and a soft buffer during periods of sudden contraction for the banking sector, thus contributing to financial stability.

The leverage ratio defined in the Basel III framework is calculated by dividing the tier 1 capital by the sum of assets and off-balance sheet items accounted for with specific conversion ratios<sup>1</sup>. The leverage ratio will be supervised by a minimum of 3 percent by the beginning of 2017 and will be calibrated in 2017. While banks are subject to a leverage ratio of 3 percent, banks on the global systemically important bank (G-SIB) list are required to hold a leverage ratio of 5 percent.

The Basel Committee revised its leverage ratio in April 2016 and opened it to public consultation<sup>2</sup>. As a result of the opinions received, the tests and analyses made, the leverage ratio will be reviewed and the final rate will be included in the "Pillar 1" as of the 1<sup>st</sup> of January 2018.

In the implementation of leverage ratio the choice of financial assets, especially those that are added to the denominator, affects market liquidity. The weights on assets applied for differentiation of assets such as interest rates, assets, stocks, swaps and credit default swaps (CDS) can have impact on market liquidity. On the other hand, there are arguments that assets held in the central bank should be exempt from the leverage ratio exposure measure. On the basis of these observations, it is claimed that the central bank reserves, without applying any weight, require banks to hold more capital in the application of the Basel III leverage ratio. In this sense, it is assessed that a design which directly affects the transmission mechanism of the monetary policy will affect both the market liquidity and the funding liquidity of the banks. In addition, opinions are expressed that cash should be excluded from this scope.<sup>3</sup>

According to the European Savings and Retail Banking Group (ESBG)<sup>4</sup> announcement on the 6<sup>th</sup> of July 2016, the newly designed leverage ratio encourages banks to have fewer high quality liquid assets, which means less demand for liquid assets, and this in turn may damage the banks' liquidity position<sup>5</sup>. Therefore, it is recommended to exempt banks from holding high quality liquid asset stock in the calculation of leverage ratio. Asset management

<sup>1</sup> BCBS, 'Basel III leverage ratio framework and disclosure requirements', <http://www.bis.org/publ/bcbs270.pdf>

<sup>2</sup> BCBS, 'Revisions to the Basel III leverage ratio framework', <http://www.bis.org/bcbs/publ/d365.pdf>

<sup>3</sup> Bank of England, Financial Stability Report, <http://www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf>

<sup>4</sup> <http://www.wsbi-esbg.org/SiteCollectionDocuments/0576%20final%20BCBS%20consultation%20on%20Basel%20III%20leverage%20ratio.pdf>

<sup>5</sup> <http://www.wsbi-esbg.org/SiteCollectionDocuments/0576%20final%20BCBS%20consultation%20on%20Basel%20III%20leverage%20ratio.pdf>

companies that report to the Basel Committee in 2016 indicated that there will be a decline in the activities of the central counterparties if the initial margin is calculated by central counterparties at the design of the leverage ratio. On the other hand, the European Commission will issue a report on the impact of leverage ratio on the 31<sup>st</sup> of December 2016 and announce an arrangement involving different levels of leverage ratio for banks with different business models<sup>1</sup>. Therefore, it would be beneficial to design the leverage ratio so as to ensure a positive contribution to both market liquidity and financial stability, and not to damage the stability of the financial system.

On the other hand, it is known that some banks have increased their capital ratio by issuing convertible bonds into shares. To analyze how resistant these banks are to shocks from off-balance sheet transactions, it is necessary to look at the leverage ratios based on the Tier 1 capital. The leverage ratios of 30 global systemically important banks (G-SIB) according to the list of the year 2016 are shown in Table I.1.1.1.

**Table I.1.1.1**  
G-SIB Leverage Ratio (2016 Q3)

G-SIB	Leverage Ratio (%)	CAR (%)	CET1 (%)	RWA (Billion \$)	Total Assets (Billion \$)	G-SIB	Leverage Ratio (%)	CAR (%)	CET1 (%)	RWA (Billion \$)	Total Assets (Billion \$)
HSBC	5.4	20.1	13.9	904	2.557	Groupé BPCE	4.7	17.8	13.7	428	1.350
JP Morgan C.	6.6	15.1	11.9	1.480	2.521	Groupé C.A.	5.5	19.2	14.4	577	1.964
Barclays	4.2	18.8	11.6	484	1.717	ICBC	7.57	14.18	12.58	2.193	3.547
BNP Paribas	4	14.4	11.4	633	2.440	ING Bank	4.4	18.5	13.5	310	870
Citigroup	7.4	19.33	12.63	1.143	1.818	Mizuho FG	3.75	15.04	10.73	526	1.626
Deutsche	3.5	16.1	11.1	432	1.896	Nordea	4.6	24.1	17.9	152	737
Bank of Ame.	7.1	14.2	10.9	1.395	2.195	Royal Bank of Scotland	5.6	24.1	15	305	1.105
Credit Suisse	4.6	20.8	12	281	829	Santander	5	14.5	10.47	652	1.492
Goldman S.	6.3	16.2	12.4	591	879	Société Générale	4.1	17.6	11.4	396	1.577
Mitsubishi	4.79	16.63	11.63	944	2.460	Standard Chartered	5.6	20.5	13.1	292	660
Morgan S.	6.2	22	15.8	358	813	State Street	6	17.9	12	99	256
ABC	6.26	12.97	10.06	1.773	2.859	Sumitomo Mitsui FG	4.71	17.12	11.88	566	1.559
BC	7.08	14.12	11.29	1.673	2.678	UBS	4.4	24.8	14	223	962
Bank of NYM	5.7	12.6	9.8	175	374	Unicredit Group	4.33	14.02	10.33	442	987
CCB	8.8	18.3	15.3	1.720	3.075	Wells Fargo	7.7	15.4	11.34	2.645	1.942

RBA: Risk Based Assets, CET1: Common Equity Tier I  
Source: Bloomberg and bank financial positions

In a situation where all G-SIBs have a leverage ratio of 5 percent, it is expected that the effects of problems of capital quality on financial stability will be reduced.

<sup>1</sup> [www.wsbi-esbg.org/press/news-views/Pages/Leverage-ratio-versus-RWA.aspx](http://www.wsbi-esbg.org/press/news-views/Pages/Leverage-ratio-versus-RWA.aspx)

According to a study conducted by the European Banking Authority (EBA) based on data from year-end 2015, the average leverage ratio of 179 banks selected from the EU was 4.9 percent<sup>1</sup>. At the end of 2016, the European Commission will determine the ultimate leverage ratio for banks in the EU after the EBA report. The UK also uses the counter-cyclical leverage ratio buffer as well as the leverage ratio of 3 percent. The Bank of England is discussing differentiating the leverage ratio on a bank basis with respect to the assets placed in the nominator and denominator of the leverage ratio to avoid the negative impact on market liquidity. Switzerland has been applying the leverage ratio of 4.5 percent since its implementation in June 2016, while the 3 percent rate is applied in the USA. In addition, the USA also applies an additional 2 percent leverage ratio for G-SIBs. Banks that hold this rate are not subject to the limitations of the bonus payment.

Within the framework of the measures taken against excessive credit expansion by the CBRT in 2012, the leverage based reserve requirement application was initiated proactively in order to contribute to the financial stability ahead of the Basel regulation schedule. Within the framework of this policy, which is used as a structural monetary policy tool, banks that have leverage ratios of less than 3 percent, calculated from the last quarter of 2015, should have an additional 2 percentage points required reserves. Similarly, an additional 1.5 percentage points required reserves is mandatory for banks that have leverage ratio of between 3 percent and 3.5 percent; and an additional provision of 1 point is mandatory for banks that have leverage ratio between 4 percent (including 4) and 5 percent. The leverage ratio, which was started to be implemented by the BRSA in a similar manner to the leverage-based reserve requirement application, has been in force since 2015. According to the BRSA practice, leverage ratio should be applied as a minimum of 3 percent per annum on both the consolidated and solo basis on a monthly basis, as a simple arithmetic mean of every quarter. The leverage ratios calculated in the reserve requirement application are quite close to the rates calculated by the BRSA. Currently, two different leverage ratios calculated in two different ways are used to closely monitor the risks of leverage of banks.

As a result, while the leverage ratio has been reviewed by the Basel Committee and local authorities, in the upcoming period the impact of these regulatory arrangements on market liquidity will continue to be discussed in international markets. While a properly calibrated leverage ratio contributes to financial stability counter-cyclically, it is beneficial to design this ratio in a comprehensive way and take interactions with other regulations into account. In the coming period, the simplification process of monetary policy in our country, with the aim of reducing the intermediation costs and the operational burdens of the banks, will play a decisive role in designing implementations based on leverage.

<sup>1</sup> European Banking Authority (EBA) QIS (Sept-2016) <http://www.eba.europa.eu/documents/10180/1360107/CRDIV-CRR+Basel+III+Monitoring+Exercise+Report+-+1309.pdf/fd57198b-6aa6-442e-bfea-eabd7d3e13c1>

The notion of financial technology (FinTech), which emerges from the combination of the words "finance" - activities involving the efficient use of required funds - "technology" - tools for production and information - is among the concepts that have become increasingly important for the financial system. Even though there is no common definition, it is possible to define FinTech as financial innovation that has an impact on financial services, markets and organizations.

In recent years, there has been a significant increase in the investments made in financial technology and the diversity of services and products offered. As of 2015, global FinTech investment has surpassed US \$ 22 billion, while the amount invested by private equity firms, venture capital investment trusts and hedge funds has reached US \$ 50 billion since 2010<sup>1</sup>.

Financial technology covers payment systems, credit channels, currencies, digital contracts and many other financial services. The most evident examples of innovations in the financial services are listed in Table I.1.II.1.

There are several reasons for the spread of FinTech. Digitalization, low transaction costs, efficiency and a low interest environment, and post-crisis banking regulations have played a role in this widespread dissemination. For example, the provision of various services through the internet without a physical service point can reduce the fixed costs while ensuring that the transactions are carried out effectively. In addition, due to banking regulations, there might be some shifts toward alternative methods such as peer-to-peer lending or crowdfunding in credit intermediation activities. The low interest environment, on the other hand, is considered as a factor that accelerates these alternative credit channels.

FinTech influences the financial system through different channels. In some countries where the banking systems have not developed, thanks to technology, financial inclusion is improving; real persons and legal entities that cannot reach financing from traditional sources (banking and the market) have the opportunity to acquire resources from new intermediaries (crowdfunding, peer-to-peer lending etc.). In addition, technology has the potential of increasing efficiency and cost advantage through increasing the competition in the financial system. Some technologies, on the other hand, require a review of existing business models and adaptation. Possible deep-rooted changes in virtual money and payment systems and their implications on monetary policies are among the topics that will be on the agenda in the forthcoming period.

FinTech has important implications for the financial system and is closely monitored by

<sup>1</sup> Fintech and the evolving landscape - accenture.com. (n.d.) Retrieved November 9, 2016, from [https://www.accenture.com/t20160427T053810\\_w\\_/us-en/\\_acnmedia/PDF-15/Accenture-Fintech-Evolving-Landscape.pdf](https://www.accenture.com/t20160427T053810_w_/us-en/_acnmedia/PDF-15/Accenture-Fintech-Evolving-Landscape.pdf)

the international standard setting bodies and central banks in terms of financial stability. The Chairman of the FSB sent a letter to G20 Leaders on August 30, 2016, and indicated that at the beginning of 2017, the FSB and other standard setting bodies will start examining FinTech case studies and areas to be regulated will be raised for attention. Similarly, the FATF published guidance for a risk-based approach to virtual currencies in June 2015. Additionally, the CPMI, in its study published in November 2015, reviewed the digital currencies and their implications for central banks. Hence, FinTech will continue to be one of the most important trending topics of the international agenda.

**Table I.1.II.1**  
Services Arising through Financial Technology

Definition	Explanation
<b>Peer-to-peer lending</b>	A funding method linking persons and companies through a website.
<b>Crowdfunding</b>	Crowdfunding is a way of raising debt or equity from investors via an internet-based platform.
<b>Smart contracts</b>	Smart contracts are computer protocols that can self-execute, self-enforce, self-verify, and self-constrain the performance of a contract. With these contracts, it becomes possible to set the conditions for a financial transaction or exchange of assets.
<b>Cloud computing</b>	IT services reached through the Internet.
<b>Robo advice</b>	Applications providing portfolio allocation through algorithms and financial advice according to the client profile.
<b>Distributed Ledger Technology</b>	The database on a virtual network where the transactions (money or asset) are registered. Users can reach, verify, add or remove records. Records are separated and protected through digital keys and signatures.
<b>Virtual Money</b>	The digital correspondent of currency issued by a developer. It features a chain of digital signatures.

## I.2 Domestic Developments

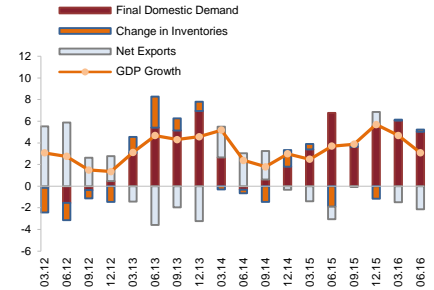
In the first half of 2016, the Turkish economy grew with the support of domestic demand (Chart I.2.1). The highest contribution to domestic demand was from the public sector while the contribution of public investments to growth was 1.7 percentage points in the second quarter. Meanwhile, the slowdown in the global economy and the ongoing geopolitical risks weakened Turkey's export and tourism revenues. Consequently, net exports, which made a positive contribution to the growth rate in the last quarter of 2015, had a negative impact on the overall growth figure in the first half of 2016.

In the second half of the year, the ensuing macroeconomic uncertainties from the Brexit vote and the volatilities in global markets in the aftermath of the US presidential elections were the determining factors on economic developments in emerging economies. Continued uncertainties in the Fed policies seriously affected capital flows, thereby elevating risk perceptions towards emerging economies, including Turkey. Meanwhile, oil prices, which remained considerably low compared to previous years, underpinned economic growth.

Leading indicators show the slowdown in economic activity that continued in the second half of the year. The seasonally and calendar adjusted industrial production index fell by 1.7 percentage points in the third quarter compared to the same quarter of the previous year (Chart I.2.1). However, the government has introduced several measures to address the economic slowdown and support GDP growth. Important steps have been taken via investment stimulation packages, which have been introduced recently, towards increasing production capacity.

**Economic activity weakened in the first half of 2016.**

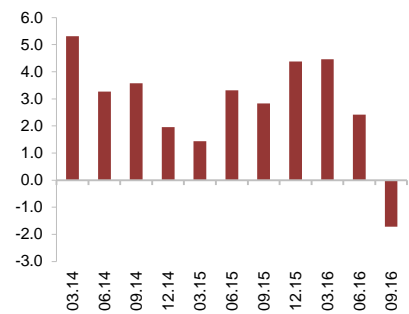
**Chart I.2.1**  
Contribution to Growth from the Expenditure Side  
(Percentage Point)



Source: CBRT (Latest Data: 06.16)

**In the third quarter of 2016, seasonally and calendar adjusted industrial production index fell by 1.7 percentage points year-on-year.**

**Chart I.2.2**  
Industrial Production Index  
(Annual Percentage Change)

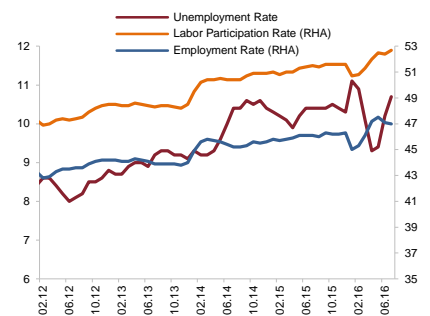


Note: Figures represent seasonally and calendar adjusted industrial production index.

Source: TURKSTAT (Latest Data: 09.16)

**The unemployment rate picked up again after the beginning of 2016.**

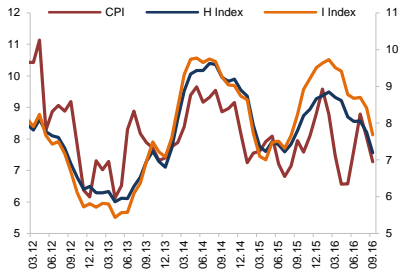
**Chart I.2.3**  
Labor Force  
(Seasonally Adjusted, Percent)



Source: TURKSTAT (Latest Data: 08.16)

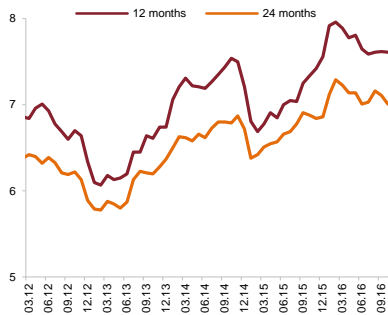
Consumer prices, which increased in the second quarter, decreased in the third quarter on the back of the decline in basic goods and food prices.

**Chart I.2.4**  
Price Indices  
(Annual Percentage Change)



Source: CBRT (Latest Data: 09.16)

**Chart I.2.5**  
Inflation Expectations  
(Percent)



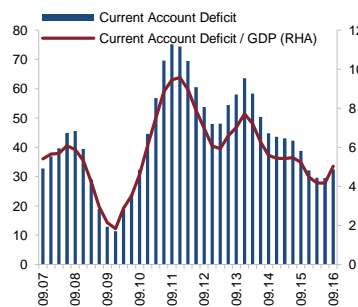
Source: CBRT (Latest Data: 09.16)

In the first half of 2016, employment capacity continued to increase and unemployment rates regressed to single digits. Nonetheless, in the rest of the year, the number of unemployed increased due to strong labor force participation as well as slowdown in the economic activity. Since July, the decline in public sector employment fueled the rise in the number of unemployed. As a result of these developments, unemployment rates in the second half of the year climbed up to double digits again in the labor market (Chart I.2.3).

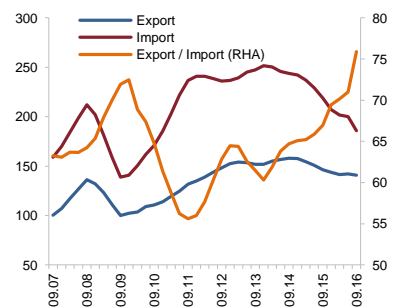
After a rise in the second quarter, consumer prices decreased in the third quarter owing to decreasing basic goods and unprocessed food prices. The basic goods prices declined on the back of the reduced cumulative impacts of foreign exchange rates and weaker demand conditions; whereas the fall in unprocessed food prices was mainly driven by the contraction in the tourism sector and declining trade with Russia. The moderate trend of imports prices supported the downtrend in inflation as well. Despite the decline in basic goods and unprocessed food prices, the services sector inflation remained high due to the rise in real unit labor costs and the outlook of the rental market. Meanwhile, tobacco products prices put upward pressure on consumer prices due to the tax adjustments accomplished for these products in January 2016. The downward trend of consumer and core inflation in the third quarter of 2016 had a positive impact on 12 and 24 month inflation expectations, which in turn decreased in accordance with the expectations (Chart I.2.5).

**Improvement in net exports narrowed current account deficit.**

**Chart I.2.6**  
Current Account  
(12 Month Cumulative Billion USD)



**Chart I.2.7**  
Foreign Trade  
(12 Month Cumulative, Billion USD, Percent)



Note: Third quarter GDP figure is CBRT estimate.

Source: CBRT (Latest Data: 09.16)



Despite the decline in tourism revenues, current account deficit narrowed down in this period as imports decreased more than exports (Chart I.2.6). As a result of this development in net exports, the ratio of exports to imports exceeded 75 percent and recorded the highest level in the last decade (Chart I.2.7). In the Turkish foreign trade market, mainly euro dominates the exports and US Dollar is used in imports; therefore, continued depreciation of euro against US Dollar in the upcoming period might have limited adverse effects on Turkey's foreign trade balance. Similarly, any rise in oil prices could exert upward pressure on the current account deficit. The ongoing normalization process with Russia is expected to have positive impacts on exports and tourism revenues in 2017.

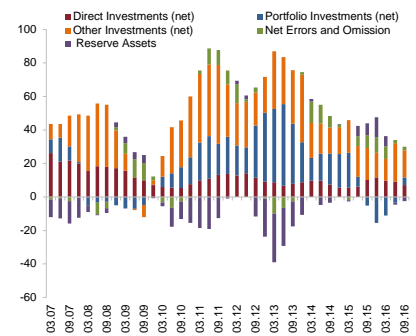
Direct investments slightly decelerated in the last quarter but still contributed to current account financing (Chart I.2.8). Portfolio outflows, which had started in the first quarter, continued. The downtrend in reserve assets continued due to portfolio outflows.

Due to marked fall in current account deficit and deceleration in the external borrowing requirement, the short-term foreign debt stock remains on a downward trend. The fall in short term debt stock coupled with the rise in the Central Bank reserves contributed to the significant improvement in the ratio of the Central Bank gross reserves to the short-term external debt stock (Chart I.2.9). Nonetheless, the upward trend in oil prices and the slow recovery in the tourism revenues might adversely affect the current account deficit in the short term.

In the first three quarters of the year, the central government budget balance improved slightly compared to the same period of 2015 mostly owing to the rise in non-tax revenues (Chart I.2.10). In this period, the moderate rise in tax revenues and cyclical fall in interest expenditures made a positive contribution to the budget performance despite the continued rise in primary expenditures. The central government budget performance is expected to deteriorate moderately in the upcoming period as a result of the rapid increase in primary expenditures and the slowdown in tax revenues despite the favorable impacts of the cyclical fall in interest expenditures and the rise in non-tax revenue increases.

**Long-term sources continue to finance current account deficit.**

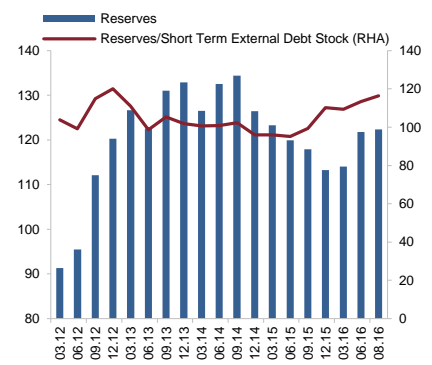
**Chart I.2.8**  
Current Account Deficit Financing Items  
(12 Month Cumulative Billion USD)



Source: CBRT (Latest Data: 09.16)

**Short-term external debt repayment capacity of CBRT gross reserves is on the rise.**

**Chart I.2.9**  
Short-term External Debt Stock and CBRT Gross FX Reserves (Billion USD, Percent)

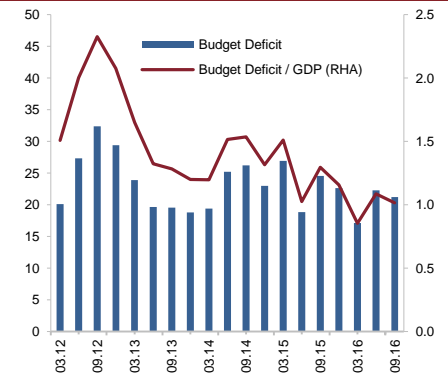


Not: Reserves are CBRT gross reserves including gold.

Source: CBRT (Latest Data: 08.16)

**Favourable performance of central government budget continues.**

**Chart I.2.10**  
Central Government Budget Balance  
(12 Month Cumulative, Billion USD, Percent)

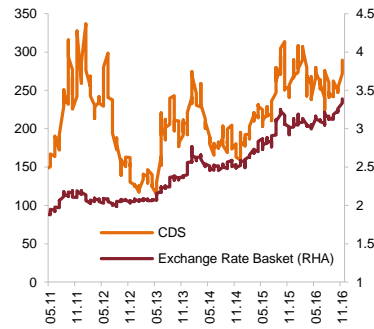


Note: Third quarter GDP figure is CBRT estimate.

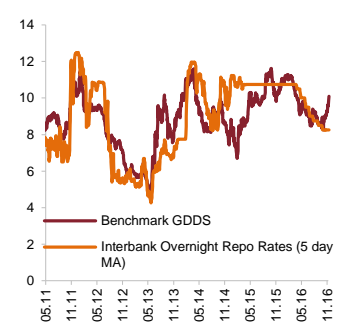
Source: Undersecretariat of Treasury (Latest Data: 09.16)

While the Turkish CDS premiums were adversely affected by the domestic volatilities in July, the impact on CDS premiums was partially taken back later (Chart I.2.11). Meanwhile, the appreciation in exchange rates is attributed to the uncertainties pertaining to advanced economies' monetary policy decisions in the upcoming periods (Chart I.2.12).

**Chart I.2.11**  
Exchange Rate Basket and CDS



**Chart I.2.12**  
Interest Rates (Percent)



Source: Bloomberg

## II. Non-Financial Sector

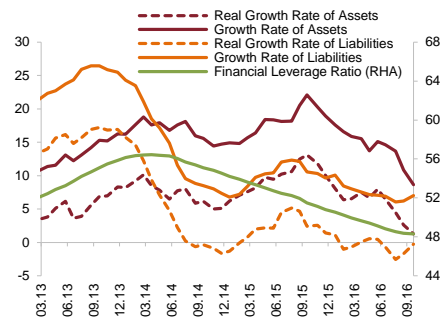
*Household assets and liabilities continued to grow and the biggest contribution to household assets' growth arises from the increase in deposits denominated in Turkish Lira and the biggest contribution to household liabilities' growth is attributable to the use of housing loans. It is expected that the liabilities will show a slight increase in the following period owing to the rise in maturity limits for general purpose loans, installment limits for individual credit cards and loan to value ratio for housing loans. However, since the rate of increase in household assets exceeds the rate of increase in liabilities, the household financial leverage ratio (liability/asset) continues to decline.*

*Although the real sector financial liabilities as a share of GDP have slightly increased compared to the previous reporting period, they are below the average of emerging markets. The continuation of the upward trend in the FX short positions of companies is regarded as a fragility factor in terms of FX risk but the factors that reduce these risks should not be ignored. As a matter of fact, most of the FX financial liabilities of the real sector are composed of loans with maturities over five years. These debts are mostly concentrated in the energy, transportation, health and construction sectors, which have a significant share in total exports (e.g. manufacturing industry) and government service / product purchasing guarantees within public-private partnership (PPP) projects. The fact that the developments in international markets and the fluctuations in exchange rates are reflected in the product pricing in these sectors; the natural protection provided by the export revenues and the government purchasing guarantees are expected to support the real sector against the demand and exchange rate shocks that may arise in the forthcoming period. In addition, the NPL ratio of FX loans is well below to TL NPL ratio, which supports our predictions in terms of exchange rate risks.*

**The household financial leverage ratio (liability/asset) continues to decline.**

**Chart II.1.1**

Household Financial Assets' and Liabilities' Growth Rates and Financial Leverage Ratio  
(Annual Percentage Change, Percentage Share)



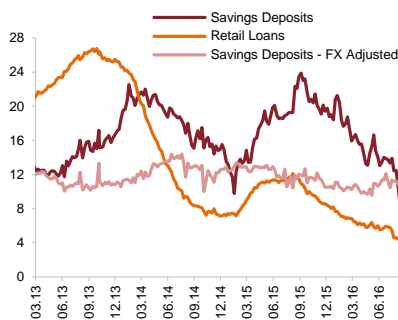
Note: The leverage ratio refers to the sum of the last 12 months liabilities to the sum of the last 12 months assets. Nominal terms are deflated by CPI.

Source: CBRT, BRSA, CMB, MKK, TOKİ

**The growth rate of household savings deposits outperforms the growth rate of retail loans.**

**Chart II.1.2**

Growth in Household Loans and Deposits  
(Annual Percentage Change)



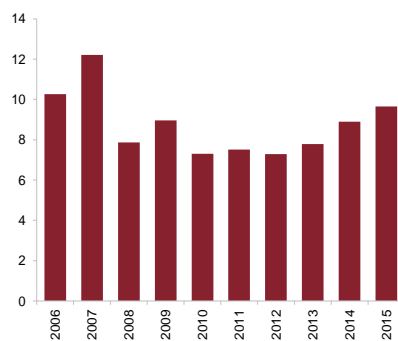
Note: Loans (credit cards included) extended by resident banks. FX savings deposit has been adjusted for exchange rate effect with the (0.6\$+0.4€) currency basket has been used to adjust the exchange rate effect.

Source: CBRT, BRSA

**Household saving rate has continued its gradual increase in 2015 and reached the highest level of the last 8 years.**

**Chart II.1.3**

Household Saving Rate  
(Percent)



Note: Household savings to disposable income ratio. Savings are calculated by subtracting consumption from disposable income data taken from Turkstat Household Budget Survey.

Source: TURKSTAT

**II.1 Household Developments**

Household financial assets and liabilities continued to increase in 2016 at lower rates (Chart II.1.1). When the increase in assets and liabilities is adjusted for inflation, it can be observed that financial assets and liabilities did not show any real growth compared to the same period of the previous year. The deceleration in assets' growth is mainly attributable to the moderation in deposit growth which previously recorded high growth rates as a result of high volatility in exchange rates (Chart II.1.2). The deceleration in liabilities' growth is mainly due to the macroprudential measures which were intensively effective starting from 2013 until the last September (Chart II.1.2). Since assets' growth rate exceeded the liabilities' growth rate, the financial leverage ratio (liability/asset) decreased in comparison to the last Report period (Chart II.1.1). The ratio of household assets and liabilities to GDP remained flat at 45 percent and 22 percent respectively.

**In line with the improvement observed in the financial leverage ratio since the second half of 2014, the household saving rate kept increasing.** According to the survey results compiled by TURKSTAT, the household saving rate rose for three consecutive years and reached its highest level of the last 8 years in 2015 (Chart II.1.3). The growth rate of retail loans falls short of the growth rate of savings deposits, which is the most important component of household financial assets. This indicates that the saving rate continued to rise in 2016 as well. The automatic enrollment in the private pensions system which will take effect in 2017 is expected to support the upward trend in saving rates.

**Table II.1.1**

Growth in Household Loans and Deposits

	09.15		09.16		Percentage Change	Contribution to Change
	Billion TL	Share	Billion TL	Share		
<b>Total Assets</b>	<b>889.2</b>	<b>100.0</b>	<b>965.9</b>	<b>100.0</b>	<b>8.6</b>	<b>8.6</b>
<b>TL Savings Deposits</b>	<b>425.5</b>	<b>47.9</b>	<b>486.1</b>	<b>50.3</b>	<b>14.2</b>	<b>6.8</b>
<b>FX Savings Deposits</b>	<b>275.0</b>	<b>30.9</b>	<b>263.3</b>	<b>27.3</b>	<b>-4.3</b>	<b>-1.3</b>
- (Billion USD)	91.5		87.8		-4.1	
<b>Precious Metal Deposits</b>	<b>10.2</b>	<b>1.1</b>	<b>10.3</b>	<b>1.1</b>	<b>0.9</b>	<b>0.0</b>
- (Billion USD)	3.4		3.4		1.1	
<b>Bonds and Bills</b>	<b>19.8</b>	<b>2.2</b>	<b>18.5</b>	<b>1.9</b>	<b>-6.3</b>	<b>-0.1</b>
- Public Sector	6.2	0.7	5.8	0.6	-7.6	-0.1
- Private Sector	13.5	1.5	12.7	1.3	-5.8	-0.1
<b>Mutual Funds</b>	<b>78.1</b>	<b>8.8</b>	<b>93.9</b>	<b>9.7</b>	<b>20.2</b>	<b>1.8</b>
Pension Mutual Funds	44.2	5.0	58.0	6.0	31.3	1.6
Other Mutual Funds	33.9	3.8	35.9	3.7	5.7	0.2
<b>Equity Securities</b>	<b>41.5</b>	<b>4.7</b>	<b>45.5</b>	<b>4.7</b>	<b>9.5</b>	<b>0.4</b>
<b>Repo</b>	<b>0.5</b>	<b>0.1</b>	<b>0.5</b>	<b>0.1</b>	<b>-0.1</b>	<b>0.0</b>
<b>Currency in Circulation</b>	<b>38.5</b>	<b>4.3</b>	<b>47.9</b>	<b>5.0</b>	<b>24.3</b>	<b>1.1</b>

Note: Currency in circulation as of September 2016 is calculated by taking the household share in total in 2016-II Financial Accounts Report as constant.

Source: CBRT, CMB, MKK (Latest Data: 09.16)

Three items are notable in the household financial assets' growth. The first one is the increase in the TL denominated savings deposits stemming from the withdrawal of FX deposits; the second and third are the rise in the pension investment funds and the equity securities investments respectively (Table II.1.1). Household FX denominated savings deposits decreased by approximately \$ 20 billion owing to a stronger preference for saving deposits in domestic currency in the last 6 months. As a result, the share of FX deposits in household deposits declined from 42 to 38 percent (Chart II.1.4). Analysis of the deposit developments with respect to the breaks in quantity shows that the shift to the TL is observed in all quantities compared to the same period and the end of the last year. A significant portion of the fall in FX savings deposits stemmed from the decline in large quantity deposits which exceed 1 million TL (Chart II.1.5).

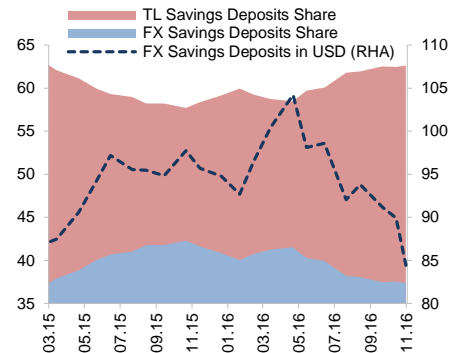
In an effort to boost domestic saving rates, the government has contributed by 25 percent of the amount contributed by investors to the private pension system since 2013. The number of participants in the system and the amount of participants' funds increased rapidly and exceeded 6 million and 50 billion TL (2.6% of GDP) respectively with the government contribution advantage (Graph II.1.6). The automatic enrollment mechanism is pre-determined to take effect in 2017; thus, the number of participants and the amount of funds invested are expected to grow significantly in the following period. It is intended that around 13 million paid employees under 45 will be enrolled to the system. The government will also provide a one-off 1000 TL contribution per employee in the automatic enrollment of employees in addition to the current 25 percent contribution. It is also expected that the government contributions will limit the opts out of the system.

As of September 2016, household equity securities in nominal terms and in real terms deflated by the BIST Stock Index, increased compared to the previous year (Chart II.1.7). The stronger preferences for the investments in the Turkish stock market contribute to domestic funding of investments and allow the individual investors to have a share in the growing economy. However, it should be emphasized that the domestic investors in Turkey have a short-term investment horizon and target speculative returns. The average holding period for stocks in the Istanbul Stock Exchange in 2015 was

Households shift from FX denominated to TL denominated savings deposits in the last 6 months.

Chart II.1.4

Savings Deposits of Resident Households By TL and FX Breakdown (Percentage Share, Billion USD)

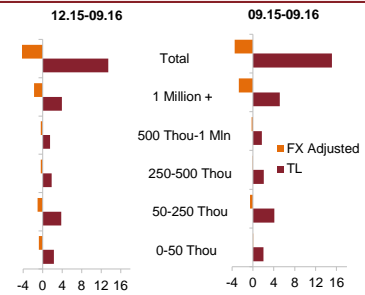


Source: CBRT (Latest Data: 04.11.16)

Households have stronger preferences for TL in all sized savings deposits.

Chart II.1.5

Contribution of Resident Households' Deposit Amounts to Growth by Periods (Percentage Points)



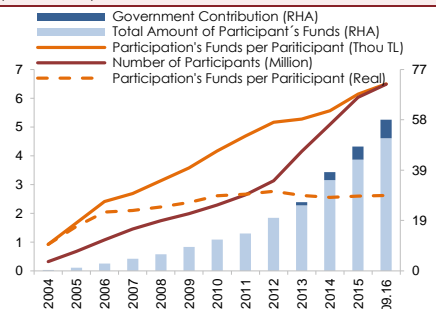
Note: FX savings deposit has been adjusted for exchange rate effect with the (0.6\$/0.4€) currency basket.

Source: CBRT (Latest Data: 09.16)

It is estimated that 13 million paid employees under 45 years old will enroll to the private pension system with automatic enrollment of employees in 2017.

Chart II.1.6

Private Pension System in Turkey (RHA: Billion TL)

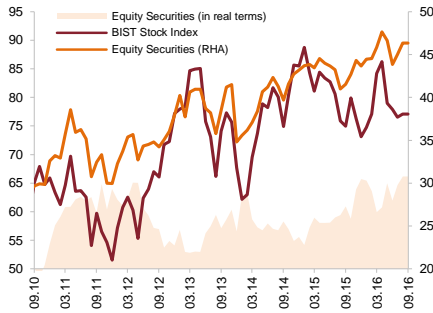


Note: The year end projection is used for GDP of 2016. Participation's Funds per Participant is deflated by CPI to obtain in real terms.

Source: CBRT, PMC (Latest Data: 09.16)

**Chart II.1.7**

BIST Stock Index and Household Equity Securities Portfolio (Thousand, Billion TL)



Note: Equity securities is deflated by CPI and a constant to obtain in real terms.

Source: CBRT, Bloomberg (Latest Data: 09.16)

287 days for foreign investors and 40 days for domestic investors<sup>1</sup>. A longer term horizon in equity securities would provide higher returns and support the production capacity of Turkey.

**The ongoing deceleration in households financial liabilities for a considerable time may give way to moderate growth in the following period due to recent easing of macroprudential policies on retail loans.** In accordance with the BRSA regulation amendments in September 2016, the maturity limits for general purpose loans and the installments limit on credit card spending were increased from 36 months to 48 months and from 9 months to 12 months, respectively, and the loan to value ratio for housing loans was raised from 75 percent to 80 percent. Meanwhile, there has been a decline in retail loan interest rates following the cut in policy rates since the first quarter of the year. Owing to the amended regulations and market conditions, retail loans, mainly general purpose and housing loans, began to accelerate starting from October. However, since the households' asset growth rate has outperformed the liability growth rate for a long time and the number of customers demanding retail loans narrowed recently, as of September the households' borrowing tendency decreased.

*Households' financial liabilities have continued to grow at moderate pace.*

**Table II.1.2**  
Household Financial Liabilities

	09.15		09.16		Percentage Change	Contributions to Change
	Billion TL	Share	Billion TL	Share		
<b>Total Liabilities</b>	<b>430.9</b>	<b>100</b>	<b>461.1</b>	<b>100</b>	<b>7.0</b>	<b>7.0</b>
(Based on Type)						
Housing	155.5	36.1	168.1	36.5	8.2	2.9
Vehicle	15.1	3.5	16.6	3.6	10.3	0.4
General Purpose	164.6	38.2	172.9	37.5	5.0	1.9
Individual Credit Cards	83.9	19.5	89.4	19.4	6.5	1.3
Asset Management Comp' Rec.	11.8	2.7	14.1	3.0	19.2	0.5
<b>Total Liabilities</b>	<b>430.9</b>	<b>100</b>	<b>461.1</b>	<b>100</b>	<b>7.0</b>	<b>7.0</b>
(Based on Counterparty)						
Banks	396.9	92.1	422.3	91.6	6.4	5.9
Financing Companies	9.5	2.2	12.3	2.7	29.4	0.6
TOKİ	12.7	2.9	12.5	2.7	-1.8	-0.1
Asset Management Comp'	11.8	2.7	14.1	3.0	19.2	0.5

Note: Housing loans include TOKİ's (Housing Development Administration of Turkey) receivables from house sales in installments. TOKİ data is as of June 2016.

Source: CBRT, TOKİ (Latest Data: 09.16)

<sup>1</sup> MKK BIST Trends Report (Vol XV)

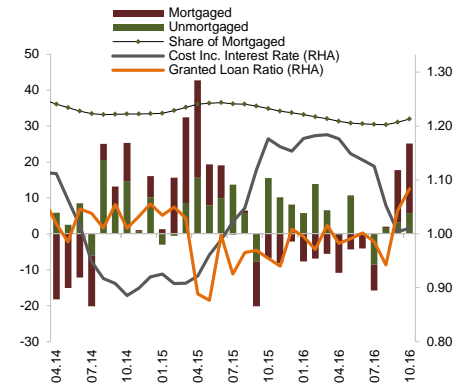
Households continued to prefer banks as a major source of funding. However, retail loans extended by financing companies increased 29.4 percent compared to the previous year and the share of financing companies' loans in total household liabilities increased by 0.5 percentage points (Table II.1.2). Households used financing companies' loans mainly for technology products and durable goods purchases (See Box II.1.1.) The largest contribution to retail loans in this period is attributable to the rise in housing loans in line with the decline in loan interest rates (Table II.1.2). Historical data also reveals that low interest rate periods have an augmenting effect on housing loan demand. Accordingly, as long as the low interest rate environment is preserved in the upcoming period, the positive contribution of the housing loans will continue. On the other hand, despite the rise in the amount of general purpose loans, the share of these loans in household liabilities decreased compared to the previous year (Table II.1.2).

**The demand for housing increased compared to the previous Report period.** Housing demand accelerates in line with the decline in interest rates. As a result of the enhancement in market conditions in favor of housing loans, mortgaged residential sales contributed positively to the growth rate of house sales since August. Additionally, banks have higher motivation for granting loan with the higher demand in housing. Accordingly, in September and October the ratio of number of people who were granted housing loans to the number of people, who applied for a loan (Granted Loan Ratio), exceeded the period average (Chart II.1.8).

The average maturity of housing loans remained stable around 8 years, while the average maturity of vehicle and general purpose loans continued to decline in line with the maturity limits introduced to the vehicle and general purpose loans in 2013 (Chart II.1.9). However, the maturities of vehicle and general purpose loans were expected to increase in tandem with the ongoing decline in market interest rates and the regulation amendment in September 2016. After the regulation amendment, the newly extended general purpose loans were concentrated over 36 month-maturities.

*Mortgaged residential sales have significant contribution to the acceleration in the housing market in recent months.*

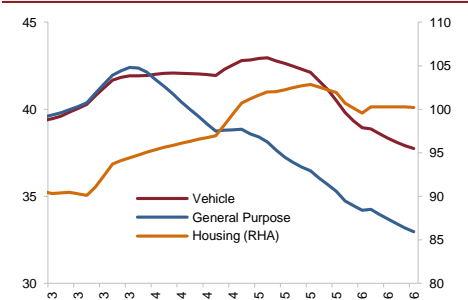
**Chart II.1.8**  
Contribution to Housing Sales Growth, Housing Loan Monthly Interest Rate and Granted Loan Ratio (Percent, Percentage Point)



Note: The share of mortgaged represents the share of mortgage sales in the sum of housing sales in the last 12 months. Granted Loan Ratio represents share of granted housing loans in the total application, the average of 2014-2016 (78.1 percent) is indexed to 1.

Source: CBRT, TURKSTAT (Latest Data: 09.16)

**Chart II.1.9**  
Average Retail Loan Maturity (3 Months MA) (Month)



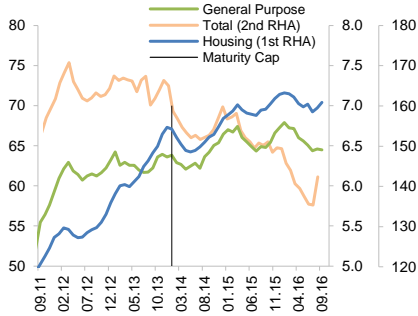
Note: The average retail loan maturity is calculated according to original loan maturity.

Source: CBRT (Latest Data: 09.16)

**There are approximately 7 and 65 borrowers for housing and general purpose loans, respectively, per 100 employed persons.**

**Chart II.1.10**

Borrowers to Employed People (Retail Loans)  
(Percent)



Note: Employment data is as of August. The data covers retail loans extended by banks. The total borrowers include the sum of housing, general purpose, vehicles loans and individual credit card borrowers. In case a customer has more than 1 retail loans in a bank, it is counted as 1. The maturity cap line represents the announced 36 month and 48 month maturity limitations, respectively, for general purpose and vehicle loans at the end of 2013. In the last September, the maturity cap for general purpose loans was relaxed to 48 months.

Source: CBRT, TURKSTAT (Latest Data: 09.16)

The number of borrowers to the number of employed can be used as an informative indicator for the capacity of the credit market. The aforementioned ratio for housing loans have remained flat at 7 percent since the beginning of 2015 (Chart II.1.10). In Turkey the total retail loans to GDP is lower compared to similar countries. Moreover the number of housing loan borrowers is also limited. On the other hand, the ratio for general purpose loans, which holds the second largest share in retail loans, is very high at 65 percent since 2012. The number of borrowers decreased due to seasonal effects and macro prudential measures implemented at the end of 2013, but returned back to pre-policy change levels in the following period (Chart II.1.10). Thus, it is expected that the maturity limit easing will have a limited impact on the number of borrowers for general purpose loans as this market is already close to saturation when the high ratio for general purpose loans is considered,



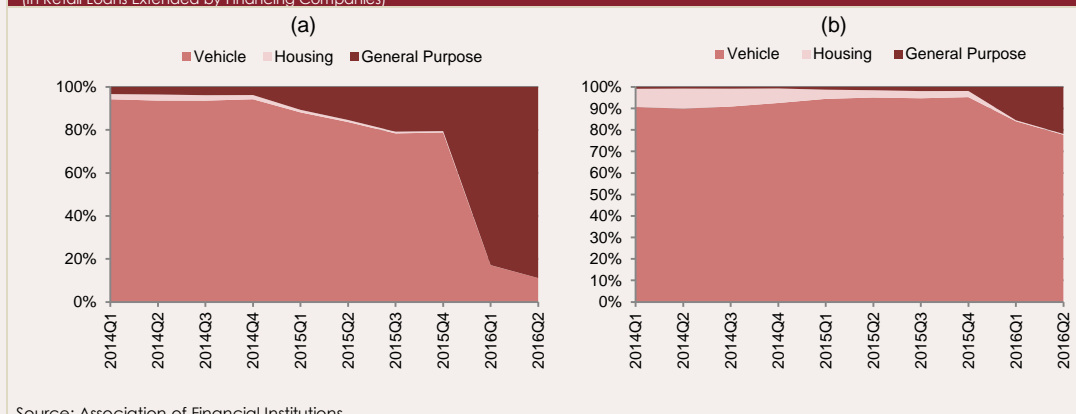
Box  
II.1.1

## Financing Companies as a Source for Household Funding

Households gather much of their financing needs from banks in Turkey. Household borrowing from other financing sources seems to be limited. Recently, due to the moderate growth of bank loans and opening of new financing companies, financing companies have been growing more important. In September 2016, the retail loans extended by financing companies increased by 29.4 percent compared to the previous year and reached TL 12.3 billion. As a result, the share of financing company loans in household liabilities increased to 2.7 percent (Table II.1.2). Financing companies' existing loan products are very similar to bank loans and financing companies provide funds for various needs of households such as vehicles, housing, consumer durables and the service sector. In Turkey, financing company loans are widely used to finance installment payments for personal and commercial vehicle purchases. As a matter of fact, the amount of the vehicle loans extended by the financing companies has exceeded the amount of vehicle loans provided by banks starting from 2015.

An analysis of financing companies' new retail loans with respect to quantity and amount shows that since the beginning of 2016, households have started to use financing companies for their purchases, which would otherwise be funded by general purpose loans. While the number of new retail loans issued by financing companies was approximately 125 thousand in 2015, it exceeded 1 million in the first half of 2016. In this period, general purpose loans extended by financing companies constituted approximately 82 percent of the total retail loans in quantity and 22 percent in value (Chart II.1.1.1.(a) and Chart II.1.1.1.(b)).

Chart II.1.1.1

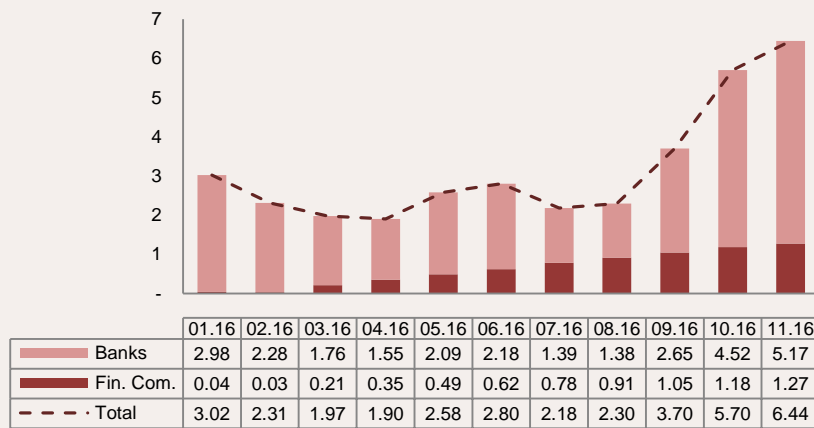
Shares of New Retail Loans by Quantity (a) and Amount (b)  
(In Retail Loans Extended by Financing Companies)

The different business model of financing companies compared to banks pave the way for the increasing demand for their loans. Furthermore, the installment limits imposed by the BRSA on spending with credit cards in 2013 are thought to have prepared a potential for the growth. The advantage of financing companies is their access to large sales channels which allows consumers to have easy and on-site financing in a shorter time than general purpose bank loans. Households appear to prefer the financing company loans particularly for their spending

on technological products and durable goods. Therefore, the amount of financing companies' general purpose loan per borrower is much less than the bank's. Nonetheless, despite the considerably lower amounts, general purpose loans extended by financing companies contributed significantly to the total growth (both by banks and financing companies) recorded in the last one year. For example, the contribution of financing companies to total general purpose loan growth of 4.5 percent in October 2016 compared to previous year is 1.2 percent (Chart II.1.I.2).

**Chart II.1.I.2**

Annual Growth of General Purpose Loans and Financing Companies' Contribution  
(Annual Percentage Change, Contribution to Growth in Percentage Points)



Note: The annual growth rate represents the annual percentage change in the sum of consumer loans provided by banks and financing companies. November data is as of 4th November 2016.

Source: CBRT

Financing companies can contribute to financial stability by deepening the financial sector and increasing risk diversification. Similarly, it is expected that financing companies can increase the operational efficiency of the Turkish financial system via the competition channel. Meanwhile, steps have been taken by regulatory authorities to designate the risk framework of financing companies. The BRSA's regulations on capital and provisions for financing companies prevent the emergence of regulatory arbitrage. Moreover, the CBRT's decision to add financing companies to the reserve requirement framework starting from 2014, is compatible with this framework. These institutions will continue to operate effectively and have positive effects on financial deepening in line with the necessary regulations are made.

The real estate sector continues to be vivid owing to Turkey's demographic and economic structure while funding requirements of the sector on both supply and demand sides are largely met by bank loans. Real estate certificates stand out as an alternative source to bank loans for financing real estate projects. It is also a potential tool for customers who don't have the financial power to buy a real estate as a whole but have the will to benefit from real estate price increases. Besides, real estate certificates are considered as one of the financial instruments which might support the urban transformation process.

Real estate certificates is defined as "securities which have equal par value representing particular single spaces or a limited area of single spaces of real estate projects issued for financing real estate projects that will be built or are being built"<sup>1</sup>.

Real estate certificate issuance starts with the application of the issuer who has a land or construction servitude title for the new project and has accomplished a real estate project within the last 5 years that had the value at least 50 per cent of the new project, for a granting permit to CMB and for public listing to the BIST. Funds acquired by issuance shall not exceed half of the new project's appraisal value.<sup>2</sup> Ten percent of funds prior to the construction start and the remaining part of funds in direct proportion to advance the project are transferred to the issuer's account by a competent body or a bank if there is bank guarantee regarding the issuance. Funds blocked by the bank are meanwhile utilized in capital market instruments approved by CMB. Ownership regarding the certificate is transferred to the certificate owner within the scope of determined rules and procedures as soon as project finishes (principal act) while certificate owners who do not request the principal act to be performed in predetermined "principal act tenure" are paid the real estate sale price (deputy act).

One of the areas that real estate certificates are expected to be used is urban transformation projects. Urban transformation projects are expected to provide people with houses that are more resistant against earthquakes, while increasing housing demand can be met by building more houses than the existing housing stock. The Ministry of Environment and Urbanization estimates that 6 to 7 million houses need to be rebuilt across the country<sup>3</sup>. These houses will be finished in 20 years' time, while 350 thousand houses on average will be rebuilt annually. Therefore, an existing 50 thousand annual house building capacity of TOKİ<sup>4</sup> implies that the private sector must take a role in these urban transformation projects.

<sup>1</sup> Communiqué on Real Estate Certificates

<sup>2</sup> In case of issuer of the certificate is TOKİ, İLBANK or subsidiaries of these institutions, mentioned features in the text for initiation of issuance operation and issuance cap are not demanded.

<sup>3</sup> <http://www.csb.gov.tr/gm/altyapi/index.php?Sayfa=sayfahtml&id=2091>

<sup>4</sup> <http://www.toki.gov.tr/faaliyet-ozeti>

Besides being a required source of funding for transformation of real estates, real estate certificates are a suitable model for protecting house-owners' rights. Thus, the Communiqué on Real Estate Certificates have a specific section related to the certificates issued for urban transformation projects that relatively increases funding capacity and featuring right ownership protection for this type of issuance. The certificate issuance cap for urban transformation projects is the total value of that project. Accordingly, a general issuance cap of 50 percent is not applied to urban transformation projects but it is possible to finance these projects thoroughly by real estate certificates. Real estate certificates regarding urban transformation are revocable during its maturity period, within the scope of procedures and principles determined on the date of issuance and in a way to provide protection for the time value of money. Public guarantees to complete these kinds of projects are also provided.

Even if the real estate sector has reached a considerable size in our economy, real estate-based finance/investment instruments' progress has been relatively limited. The Communiqué on Real Estate Certificates ensures a more comprehensive application framework. In addition to an expected contribution to urban transformation projects and diversifying funding sources of construction companies, the certificates may function as an alternative investment instrument for the small savers by increasing savings and bringing under-the-mattress savings to the economy.

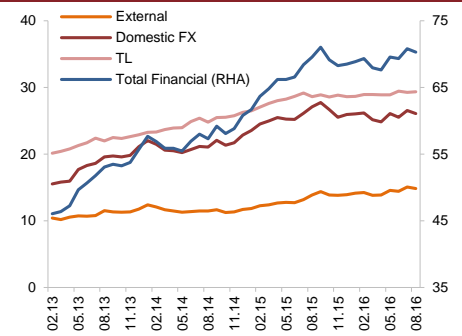
## II.2 Corporate Sector

**The ratio of real sector financial indebtedness to total GDP has remained mainly flat (Chart II.2.1).** The level of indebtedness which tended to increase continuously until the last quarter of 2015 decreased slightly in the following period. It has started to increase again from April 2016 and now it is close to the September 2015 value. The deceleration of the real sector leverage from the third quarter of 2015 has been mainly caused by the slowdown in FX loans opened by the domestic banks. The highest share in real sector financing belongs to long-term bank loans, which are on an upward trend (Chart II.2.5). While the resources provided by issuances and non-bank financial institutions have a limited share within the total, they continue to rise in the last period.

**While the ratio of total corporate credits to GDP is well below the average of emerging markets in the first quarter of 2016, it is close to the average when China is excluded (Chart II.2.2).** While the developing market average increased by 20 percentage points compared to the previous two years, the increase in Turkish firms was 10 percentage points. However, according to the average of emerging markets outside of China, the debt of firms increased more in Turkey. It is estimated that the public-private partnership (PPP) projects (eg power plants, airports, city hospitals, etc.) rising in recent years have a significant contribution to this development. As a matter of fact, Turkey is one of the countries that make the most investments in PPP compared to GDP among emerging market economies. Although an important part of these projects is the real sector risk, the fact that the public sector provides contracting firms with the purchase guarantee for the services at the FX indexed price delivers protection to the companies against the financial risks. The repayment of debts due to these investments over time will be a significant factor that lowers the debt burden of the real sector (Box II.2.II).

*Firm Liabilities have been stable in recent years.*

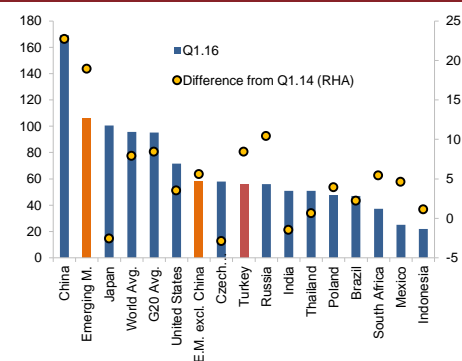
**Chart II.2.1**  
Financial Liabilities of Corporate Sector  
(Per cent of GDP)



Note: Composed of loan liabilities and issues. External liabilities include data from foreign branches and affiliates of resident banks. External TL liabilities are included in total FX liabilities.  
Source: CBRT and BRSA (Latest Data: 08.16)

*Companies' financial indebtedness is below the emerging market average.*

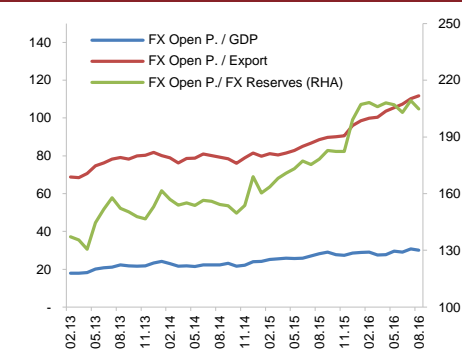
**Chart II.2.2**  
Corporate Loans / GDP for Selected Countries  
(Percent, Point)



Source: BIS (Latest Data: 03.16)

*FX open position of corporate sector continues to increase.*

**Chart II.2.3**  
Corporate Sector FX Open Position as a Share of  
Macro Variables  
(Percent)

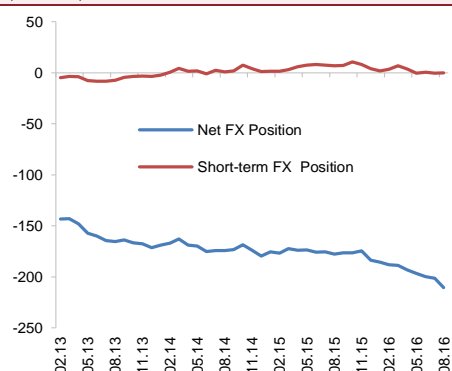


Source: CBRT (Latest Data: 08.16)

## II.2.1 FX Risk of Corporate Sector

*Firms do not have FX open position in short run.*

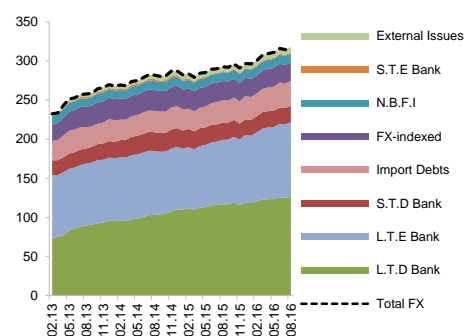
**Chart II.2.4**  
Corporate Sector FX Open Position  
(Billion USD)



Source: CBRT ( Latest Data: 08.16)

*The biggest share in corporate FX liabilities belongs to long-term domestic and foreign bank loans.*

**Chart II.2.5**  
FX Liability Composition of Corporate Sector  
( Billion USD)

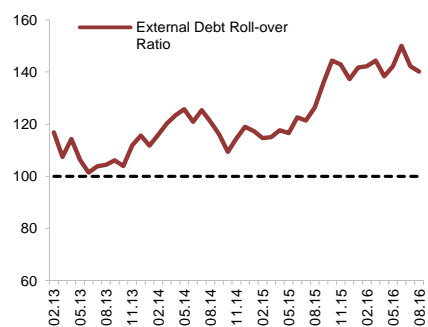


Note: S.T.E: Short-term External, N.B.F.I: Non-Bank Financial Institutions, S.T.D: Short-term Domestic, L.T.E: Long-term External, L.T.D: Long-term Domestic

Source: CBRT ( Latest Data: 08.16)

*External debt roll-over ratio is increasing.*

**Chart II.2.6**  
External Debt Roll-Over Ratio  
(6 Months M.O, Percent)



Source: CBRT ( Latest Data: 08.16)

**Net foreign exchange open positions of the corporate sector continue to trend upward (Chart II.2.3).** The ratio of open positions to CBRT foreign exchange reserves approaches to 200 percent and to the annual exports of goods and services is close to 100 percent. The fact that the short-term open position is close to zero is a positive indicator that depicts the resistance of companies to short-term FX shocks (Chart II.2.4). On the other hand, the ongoing bullishness in the long-term open position keeps exchange rate risks alive. When the open position amount is examined on an aggregate basis, it may be viewed as a risk factor; however, the impacts of these risks will depend on the financial structures of the firms, the maturity of their debt, their hedging methods and their pricing power. The fact that nearly all of the PPP investments which require long-term and large-volume financing are funded by FX-denominated sources also made an important contribution to the upward trend in the open position (See Box II.2.II).

**Long-term domestic and foreign bank loans have the highest share in the real sector foreign currency debt distribution (Chart II.2.5).** Looking at the developments in the last year, domestic FX loan usage is stable, while the growth rate of external FX loan is rising (Chart III.1.6). The cautious attitude of domestic banks towards FX risk and the weak trend in investment demand have been influential on the slowdown in domestic FX loan growth. In addition, the rapid increase in PPP investments, which are often externally funded, in recent years accounts for a large increase in foreign loans relative to previous years.

**Domestic FX bank loans with original maturity longer than five years constitute more than 50 percent of the total and the share continues to increase compared to the previous reporting period (Chart II.2.7).** In external liabilities, loans over five years have the biggest share in total with 32.1 percent and their share is rising. Despite the significant shocks experienced in recent years, the fact that foreign debt rollover ratios still remain above one hundred percent confirms that the capacity of firms to renew their external debt is strong (Chart II.2.6).

When examined on a sectoral basis, FX loans are mostly concentrated in the manufacturing industry, electricity, gas and water, transportation and construction sectors (Chart II.2.8). The manufacturing sector, which realizes more than 90 percent of the total exports in the country, has a significant portion of the FX loans. In the electricity, gas and water, warehouse and communication, construction and health sectors, the volume of FX usage has increased especially with the recent investments in PPP. Concentration of investments in energy, transportation, health and construction sectors on projects such as renewable energy power plants and distribution, airports, bridges, highway and city hospitals, which have public service purchase guarantees with FX indexed prices, protects firms against credit and exchange rate risks in the long run (Box II.2.II). The fact that these sectors, which hold more than 65 percent of total FX loans, have high export revenues and government purchasing guarantees with FX indexed prices provide protection to the firms in these sectors. Moreover, due to the low price elasticity of the demand, firms in the sector can reflect international developments and exchange rate fluctuations in goods and services pricing, and this significantly reduces the exchange rate risk of firms.

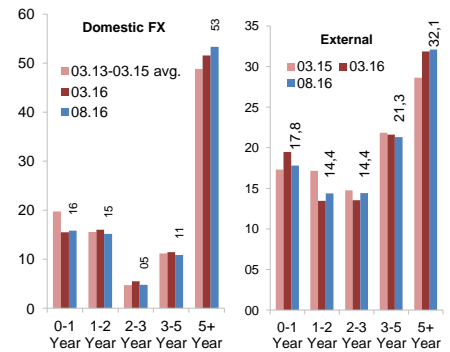
While the share of large firms in FX and TL loans increased compared to the previous report period, the share of micro and SMEs decreased significantly (Chart II.2.9). According to the Bank Credits Tendency Survey in the third quarter of 2016, loan demand is rising for large firms and SMEs in a similar manner; however, credit standards are tightened more for micro and SMEs. In other words, this decline in the share of SME loans stemmed from the cautious attitude of banks alongside demand. The FX indexed loans, which are largely used by SMEs, have negatively grown in the last half of 2015 and first quarter of 2016 and obtained above-zero growth rate in the recent months but the growth is still below the FX loan (excluding FX-indexed loans) growth.

When FX loans are grouped according to the amounts, it is observed that the loans concentrate in firms with high-amounts of FX loan debt (Chart II.2.10). Of the approximately 27 thousand firms with FX loan balances, one hundred thousand firms with FX liabilities worth of over 100 million TL hold 75 percent of total FX debt. The weighted average maturity of all FX loans used by these companies is over 7

The maturities of FX liabilities continue to lengthen

Chart II.2.7

Maturity Breakdown of Corporate Sector FX Liabilities (Percent Share)



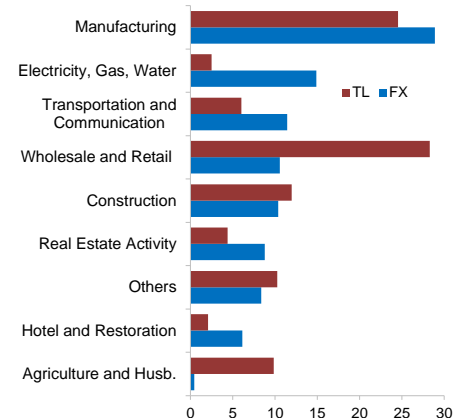
Not: Domestic loans are grouped by original maturity and external debts are by remaining maturity.

Source: CBRT (Latest Data: 08.16)

FX loans are mostly used by the manufacturing industry.

Chart II.2.8

Sectoral Breakdown of Corporate Sector FX Liabilities (As of 09.2016) (Percent share)



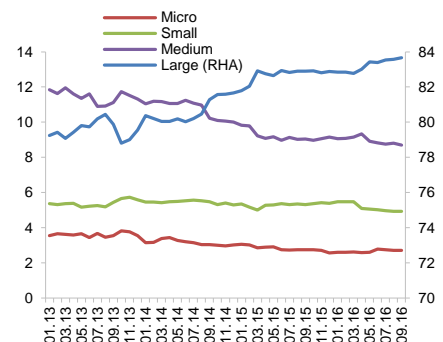
Not: Loans extended abroad and used via the intermediacy of domestic banks are included.

Source: BAT Risk Center (Latest Data: 09.16)

The share of large firms in the FX loan stock is increasing.

Chart II.2.9

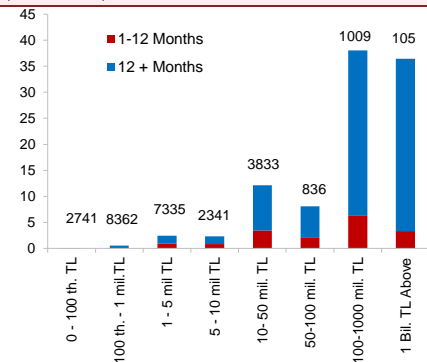
Firm Size Breakdown of Domestic FX Corporate Loans (Percent share)



Source: CBRT (Latest Data: 09.16)

**FX loans are concentrated in very large amounts.**

**Chart II.2.10**  
Breakdown of Corporate FX Loans by Amounts  
(Percent Share)

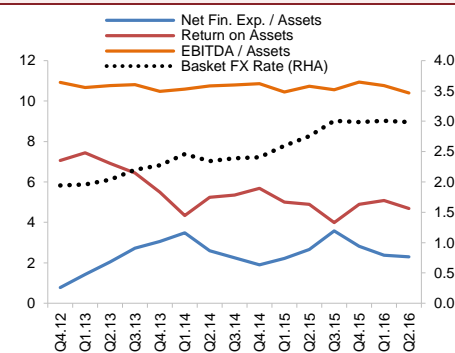


Not: Loans extended abroad and used via the intermediacy of domestic banks are included.

Source: BAT Risk Center (Latest Data: 09.16)

**While net profits are declining, the net real operating profit is stable**

**Chart II.2.11**  
Profitability and Financial Expense Indicators for Publicly Listed Companies  
(Percent)

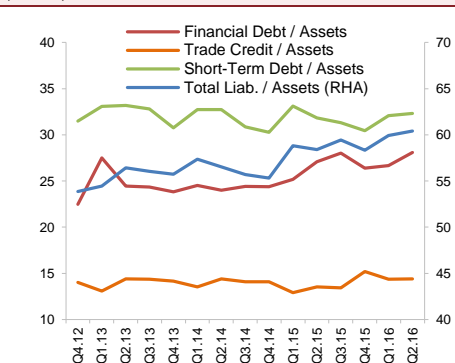


Not: Return on assets: Net profit / Assets; EBITDA: Net Profit + Financial Expenses + Tax Expense + Depreciation and Amortization Costs  
Financial companies, holdings, and firms in BIST emerging companies list are excluded. In total, 234 firms are included.

Source: FİNNET (Latest Data: Q2.16)

**While the leverage ratio is rising, short-term borrowing is flat.**

**Chart II.2.12**  
Indebtness and Leverage Indicators for Publicly Listed Companies  
(Percent)



Not: Financial companies, holdings, and firms in BIST emerging companies list are excluded. In total, 234 firms are included.

Source: FİNNET (Latest Data: Q2.16)

years. In addition, when 30 firms that use FX credits in the highest amounts constituting 20% of the total FX credits are examined, it is observed that their investments are mostly concentrated in PPP projects such as energy, airport, highway, city hospital and telecommunication and export intensive sectors such as automotive and metal industries. The fact that PPPs have a large share of government procurement guarantee and that the export-intensive sectors have natural protection against foreign exchange risk, provides additional resistance to the firm against demand and exchange rate shocks.

In the following section, a detailed financial analysis of non-financial BIST firms for which current FX asset-liability positions can be obtained is presented.

**II.2.2 Financial Ratio Analysis of BIST Firms**

**The net return on assets of publicly traded real sector companies decreased slightly in the second quarter of 2016, while it tended to increase from the third quarter of 2015 (Chart II.2.11).** Earnings before interest and tax as a share of assets (EBITDA / Assets) maintain a horizontal trend although they show a limited decrease in the last period. The movement in the net end of period profit very much depends on the changes in financial expenses of the firms. Furthermore, changes in the financial expenses are largely due to exchange rate movements. It is predicted that the exchange rate movements depending on the global developments will affect the financial expenses in the upcoming period.

**The leverage ratio of BIST firms which had declined in the last quarter of 2015 is on an upward trend as of 2016 (Chart II.2.12).** While the main source of the increase was long-term financial liabilities, short-term debt remained flat. The financial debt is expected to increase slightly in the upcoming period due to interest expenditures and exchange rate developments and this increase will be expected mainly in long term financial debt, which will keep the short and medium term risks at manageable levels.

**BIST firms' liquidity ratios have been on a downward trend since the third quarter of 2015 (Chart II.2.13).** The decrease in the



current ratio and the acid-test ratio is due to the limited increase in short-term assets of firms compared to previous periods. The strong increase observed in the Days Payable Outstanding (DPO) within the year 2015 supported the liquidity of the companies in the related period but the positive contribution from here has come to an end as DPO has become relatively flat in 2016. It is assessed that the strong increase in the DPO is caused by the cost reduction of import financing abroad after the regulations made in April 2015. After the amendment, the companies started to finance their imports on more favorable terms. The flattening tendency of DPO observed in the last two quarters indicates that the positive effect of the amendment has been completed. Another important indicator for company liquidity, Days Sales Outstanding (DSO), has increased recently, which shows that firms fund each other for longer periods.

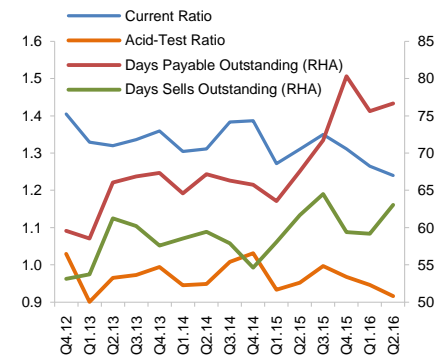
**The interest coverage ratio (ICO), a measure of the ability of firms to borrow, is well above the lower limit of 1.5 which is accepted by the related literature (Chart II.2.14).** As of the second quarter of 2016, annual operating profits of companies are at about four times higher than their annual interest expenses, and this rate has been increasing since the last quarter of 2015. The international literature points out that if this ratio will fall below 1.5, the borrowing ability of the firm will decline and the cost of borrowing will rise. In addition, the Debt-at-Risk ratio is calculated considering that companies under this threshold will have difficulty in paying their debts. Debt-at-Risk is the ratio of the debts of firms with ICR below 1.5 over the debts of all firms in the sample. This rate is rapidly falling for BIST firms in the recent period. Debt-at-Risk ratio reached 40 percent in the third quarter of 2015, but dropped to 10 percent by the second quarter of 2016. Likewise, among the firms with open foreign exchange positions, FX Debt-at-Risk, which is the ratio of the total FX debt of the firms with ICR below 1.5 to total FX debt in the sample, tends to decrease in the same way. The fact that only 15 percent of total FX debts of firms in open position are at risk suggests that these firms will not suffer from FX debt repayments. The low NPL ratio of firm FX loans clearly supports this argument (Box II.2.1).

**In the second quarter of 2016, of the 22 BIST firms, which are in the largest 10 percentile by asset size, 16 have FX open positions (Chart II.2.15).** Among 132 firms that are in net FX short position among all real sector firms in BIST, these 16 firms constitute 81 percent

**The commercial debt payment capacities are rising while the liquidity ratios tend to decrease.**

**Chart II.2.13**

Liquidity Indicators for Publicly Listed Companies (Value, Days)



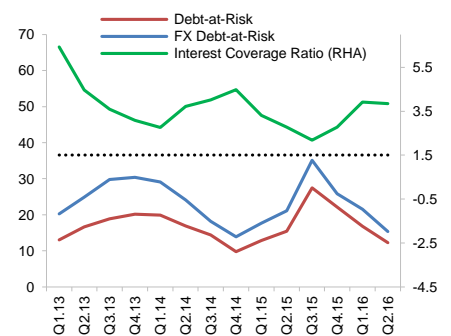
Note: Current Ratio= Current Assets / Short term Liabilities; Acid-test Ratio= (Current Assets – (Inventories+Other Current Assets)) / Short-termLiabilities; Days Payable Outstanding= 365\* Trade Debts / Cost of Goods Sold; Days Sales Outstanding=365\*Trade Receivables/ Net Sales  
Financial companies, holdings, and firms in BIST emerging companies list are excluded. In total, 234 firms are included.

Source: FINNET (Latest Data: Q2.16)

**The Debt-at-Risk ratio is declining.**

**Chart II.2.14**

Interest Coverage Ratio (ICR) and Debt-at-Risk for Publicly Listed Companies (Percent, Value)

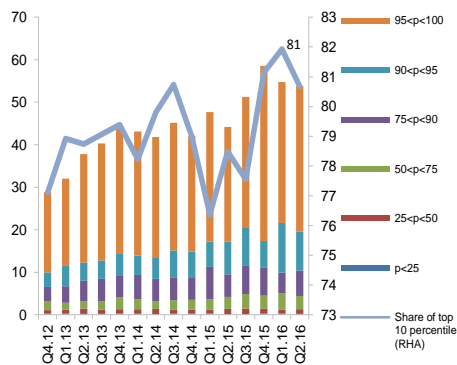


Note: Interest Coverage Ratio= Net Operating Profit (EBIDTA) / Interest Expenses. FX rate expenses are included in the interest expenses.  
Debt-at-Risk= Total debt of firms with ICR<1.5 / Total debt of whole firms.  
FX Debt-at-Risk= Among all firms with open position, Total FX debt of firms with ICR<1.5 / Total FX debt of whole firms.  
Financial companies, holdings, and firms in BIST emerging companies list are excluded. In total, 234 firms are included.

Source: FINNET (Latest Data: Q2.16)

**81 percent of the FX open position belongs to the 16 largest firms by asset size.**

**Chart II.2.15**  
Distribution of Publicly Listed Companies' FX Open Position by Their Asset Sizes  
(Billion TL, Percent Share)

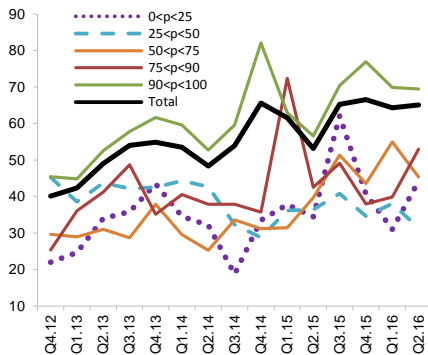


Note: P = 100 is the largest firm, and p = 0 is the smallest firm. The blue line indicates the share of the open position of firms in the region "p > 90". Financial companies, holdings, firms in BIST emerging companies list, companies that use FX as a functional currency in their balance sheets and firms without FX open position are excluded. In total, 132 firms are included

Source: FİNNET (Latest Data: Q2.16)

**Small firms have less FX open positions according to equity size.**

**Chart II.2.16**  
FX Leverage (FX Open Position / Equity) in Asset Size Percentiles  
(Percent)

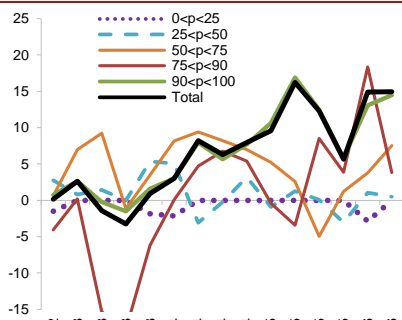


Note: Financial companies, holdings, firms in BIST emerging companies list, companies that use FX as a functional currency in their balance sheets and firms without FX open position are excluded. In total, 132 firms are included

Source: FİNNET (Latest Data: Q2.16)

**Large firms hedge more of their open positions via derivative transactions.**

**Chart II.2.17**  
Net Derivative Position / FX Open Position in Asset Size Percentiles  
(Percent)



Note: FX Open Posion is the open position outside the derivative transactions. Financial companies, holdings, firms in BIST emerging companies list, companies that use FX as a functional currency in their balance sheets and firms without FX open position are excluded. In total, 132 firms are included

Source: FİNNET (Latest Data: Q2.16)

of the total open position amount. Looking at the past four years, the small numbers of firms constituting the top 5 percent and 10 percent tranches hold the majority of the whole open position. These 16 firms possess 80 percent of the total export revenue of the companies in the sample. The export / open position ratio of these firms, which historically have export revenues above their open positions, rose to 1.05 in the first half of 2016, even though it fell to 0.85 in the second half of 2015. The fact that the exports to total sales ratio of the six firms without FX open positions in the top 10 percent is 15 percent, while it is 29 percent for other 16 firms proves that a significant relationship exists between the foreign exchange position and export revenues. In addition, the increase in the aggregate FX open position in the last year emerging is the result of the rise in the position of large-scale firms and there is not a significant change in the FX open position of a large number of firms located in the lowest 90 percentile. It is an important finding from the analysis that the recent rise in the open position does not originate from the additional risk-taking of small firms, but from a relatively small number of exporting and large-scale firms.

Even though firms in the lower quintiles have FX open positions at a level that is not systemically important, they may be at a high level of open position risk if considered by their sizes. Looking at the open position values of firms relative to their equity sizes, for small firms it is actually lower than the average of the whole sample and for firms in the largest 10 percentile it is above the average (Chart II.2.16). In other words, small-scale firms do not take as much risk as big firms according to their own equity size.

The incidence of hedging FX open position by derivative transactions is also higher for large firms. The net derivative position / open position ratio of the companies in the largest 10 percentile is above the average rate in the sample, and also the firms in the largest 25 percentile exceeded the average in the last period (Chart II.2.17). Companies in the lowest 50 percentile hedge a very small portion of their open positions via derivative transactions. It is positively evaluated for financial stability that 80 percent of total open position is concentrated in large firms that provide better protection against FX risk through derivative transactions.

The most concrete indicator of the effect of past exchange rate movements on the real sector's debt payment capacity is the performance of foreign currency (FX) credits. In this context, considering the significant depreciation in TL in recent years, it is important to monitor recent developments in the non-performing loan (NPL) rates of FX credits with respect to financial stability. Since the FX NPL data is not directly accessible from banks' balance sheets, the CBRT shares the data with the public by calculating the relevant numbers through the financial stability reports. In this box, firstly the method of forming the FX NPL data is presented, and secondly the performance of the FX credits in the recent periods is discussed.

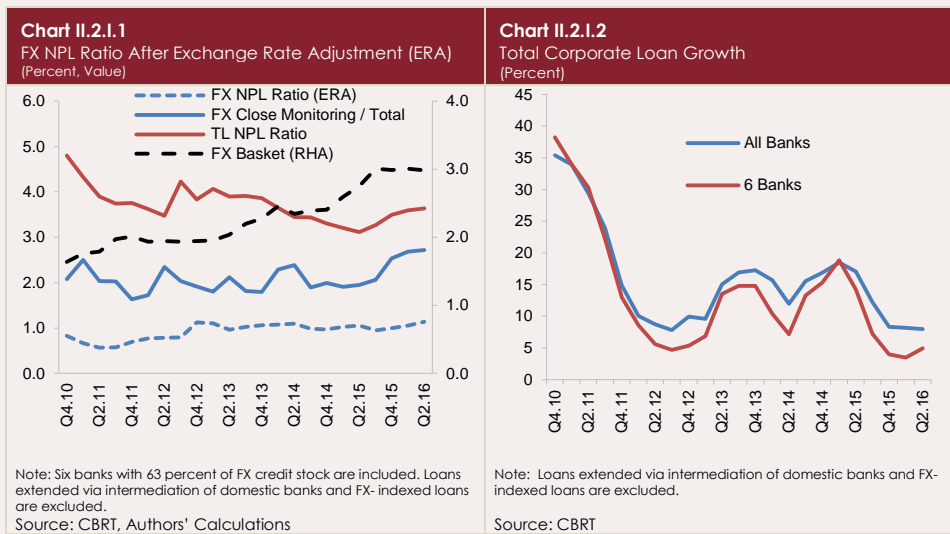
It is possible to create a realistic estimate of the relevant data by compiling data from different sources, as it is not directly accessible due to the accounting practices of the banks. The banks convert the FX NPLs into TL from the balance sheet period's exchange rate in accordance with the uniform accounting system they are subject to. During the time FX NPLs are included in the NPL accounts; their value is kept at the initial TL equivalent amount recorded. Moreover, because of the regulation allowing the FX NPLs to be treated in the same account as the TL NPLs, most of the banks record the FX and TL NPL amounts in one account. It is possible to reach the stock FX NPLs in the independent audit reports of banks. However, it is not possible to make a sound analysis by using these rates, because, the balance of FX NPLs remains in TL and FX loans inserted as a denominator in the computation of FX NPL ratio change depending on the exchange rate.

Following a specific reference date, the TL-denominated FX NPL balances are obtained from the quarterly published independent audit reports of banks, and quarterly approximate flow NPL values at bank level are computed by differencing quarterly. The amount of approximate flow NPL amounts in each quarter is converted to the basket exchange rate using the 3-month average exchange rates in the same period, and these current flow values are added cumulatively to the NPL stock in the reference date to calculate the stock FX NPL amount for each quarter. Finally, the FX NPL stocks in each quarter are converted back to TL over the average basket exchange rate in each respective date. Although the exchange rate effect is eliminated while the flow NPLs are being computed, the stock FX NPL value of the reference date will inevitably carry valuation effects. Using a reference date with foreign exchange rates had been experiencing minimal fluctuations for a few years would ease this problem. An analysis of historical exchange rate developments indicates that the TL/Euro and the TL/US dollar remained largely stable, even down to some extent, from the end of 2008 to the end of 2010. In order to minimize the potential biases related to the choice of reference date, we picked the last quarter of 2010 as the reference date.

Even though the FX NPL data for some banks go as early as the 2000s, post-2008 reporting is more reliable for many banks. The six largest banks with 63 percent of total company FX loan

stock, which also reported FX NPL regularly since 2008, were included in the study. Loans borrowed from foreign countries intermediated by domestic banks and FX-indexed loans have not been included in the study.

The historical development of the FX NPL ratios calculated in the method outlined above is presented in Chart II.2.1.1. The chart shows that historically, the firms' FX NPL ratios have been well below the TL NPL ratios. In the second quarter of 2016, the ratio of firm's FX NPL ratio was 1.14 percent, which was one third of firms' TL NPL ratio. Another remarkable inference from the graph is that FX NPLs follow a relatively stable path.<sup>1</sup>



The low trend of FX NPLs may be due to the upward trend of FX credit growth and/or due to the grace period of FX loans, ranging between 0-5 years, and repayments are due over a long maturity. Relying on these claims, one can argue that FX NPLs may not be a good indicator for evaluating FX loan performance. The fact that the growth rate of FX loans has been weakening since 2010 indicates that the first argument is not valid (Chart II.2.1.2). The average maturity of FX loans that companies borrowed from domestic banks is around 3 years.<sup>2</sup> Chart II.2.1.4 shows how much of the loans, opened annually starting from 2008, was paid until the second quarter of 2016. As shown in the graph, about 90 percent of the total amount of loans opened in 2012, a relatively near past, has been paid. It has been calculated that more than 95 percent of the total amount of loans opened in 2008 and 2009 has been repaid. Therefore, arguments that FX NPLs may be an inadequate indicator does not seem to hold.

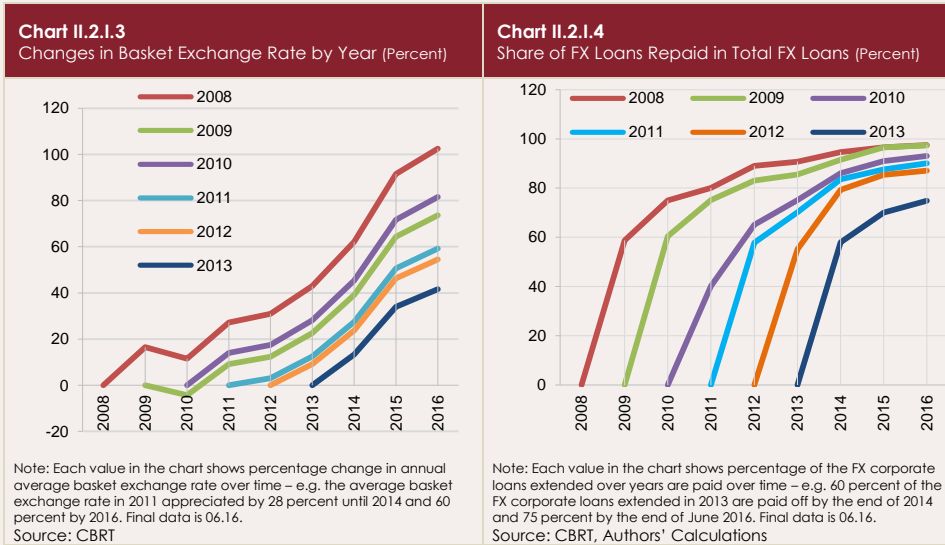
<sup>1</sup> The difference between the levels of FX and TL NPL ratios may be driven by the choice of reference date. For this claim to be valid, the bias must decrease very quickly, as one moves away from the reference date. However, the YP NPL ratios do not show a significant upward trend (indicating that the bias of the reference date is limited), and the difference between the two ratios is maintained until the last observation.

<sup>2</sup> The average maturity of loans that companies borrow from abroad is longer than 5 years.

Despite the volatility in the exchange rates during the period examined in this box and, high and permanent depreciations in the TL, the favorable outlook in the historical performance of FX credits confirms the strength of the corporate sector (Charts II.2.1.3 and 4). Regulations introducing limits on the lower amount of FX borrowing for firms with no FX income (e.g. 5 million US Dollars) and constraints on maturity lead to the accumulation of FX debt mostly on large scale firms with capabilities of hedging against exchange rate risks (other than relying on FX revenues) as well as on exporters with natural hedge. Such accumulation is believed to be an important factor in reducing credit risks on FX loans.

Nevertheless, the ratio of FX credits under close monitoring to total FX loans has increased slightly since the last quarter of 2015 (Chart II.2.1.1). This suggests that there may be an increase in FX NPLs in the following periods. However, the historical relationship between FX NPLs and FX credits under close monitoring suggests that the possible increases will be limited.

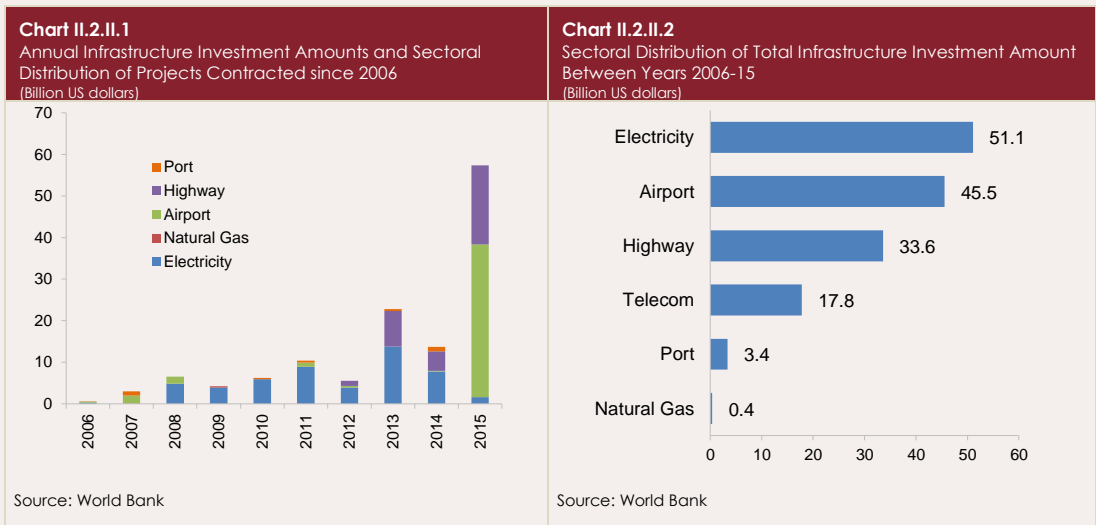
To sum up, the historical development of the FX NPL ratios reveals that FX loans remained strong in the post-2008 period, when the exchange rates displayed high volatility from time to time with rapid and permanent depreciations in the TL. This observation partly alleviates concerns about firms' FX open positions. The low credit risks for FX loans is mainly attributed to the restrictions on foreign currency credits in Turkey, leading the FX debt to accumulate on large scale or exporting companies. Nevertheless, it should be noted that a thorough examination of firms' FX open position should be based on more detailed balance sheet data.



In the "Real Sector Developments" section of the report, it is shown that the FX open position, according to the sample of BİST firms, is concentrated among exporters and/or among firms with high FX income, those that are taking hedge positions and financially strong large companies. However, BIST firms constitute only a certain part of the total FX debt and open position of the real sector. When we look at the real sector in general, sectors with only domestic sales of goods and services also hold FX debt. On the other hand, it is known that a considerable portion of the FX borrowing by sectors with domestic sales is due to the financing of public-private partnership projects (PPP), where the risks related to income streams and the exchange rate are assumed by the public sector. In this box, the CBRT and World Bank data are used to calculate the amount of FX loans used for PPP.

Within the scope of PPP projects (local and foreign) real sector companies invest in infrastructure projects (i.e. PPI: private participation in infrastructure) and city hospitals in Turkey. In general, the total amount of PPP investments based on build-operate-transfer and similar models reached 140 billion US dollars for Turkey in the last 10 years according to the data of World Bank and Ministry of Health (Chart II.2.II.1). PPP projects, whose construction and operation durations are quite long (an average of 10 to 49 years depending on sectoral differences), are generally financed by very long term (10-15 years) FX loans. Since the projects do not generate income especially during the construction phase, the loan repayments are delayed between 1-5 years according to the sector structure, which in turn implies that the repayment of the loans used for these investments made in the last 10 years is still ongoing. Therefore, it appears that the related projects have a significant effect on the real sector FX debt position. As a matter of fact, there was a strong increase in PPI investments similar to the sharp upward trend of the FX open position in 2006 and thereafter.

According to the World Bank data, a total of 197 PPI projects, worth 130.4 billion US dollars have been completed or under construction in Turkey since 2006. Most PPI investments are concentrated on economically feasible projects such as electricity generation and distribution facilities (51 billion US dollar), highways and bridges (33.6 billion US dollar), and airports (42 billion US dollar) (Chart II.2.II.2). Among these projects, renewable electricity generation, electricity distribution, highway and bridge and airport projects possess government goods and/or service purchase guarantees based on FX indexed prices, which significantly reduces the risks that the private sector undertakes due to FX indebtedness. For example, the amount of renewable electricity production that cannot be sold or under capacity production due to unexpected events is purchased at pre-contracted FX indexed prices by the state. Similarly, when the number of vehicles passing through bridges and highways and the number of passengers using airports are below pre-contracted limits, government is committed to purchase the difference based on FX index prices. Such a guarantee protects firms against demand shocks and also reduces the foreign exchange risks, associated with FX loan repayments.



In addition to PPI projects, city hospitals projects, which accelerated in recent years to reach 29 projects and a projected investment value of approximately 10 billion US dollars, also benefit from the public sector guarantees. City hospital projects, constructed by domestic and foreign private sector companies using domestic or international financing, are also supported by the government through lease agreements or service purchase guarantees. In this way, investors are protected against demand and exchange rate shocks during the operation or rental period in the long term (25 years on average), as do PPI projects.

The companies that undertake PPP investments usually manage their investments through special purpose vehicles (SPV), which are solely established for the projects. Using the Turkish Banking Association (TBB) Risk Center (RM) corporate loan data set and World Bank data and relying on the SPVs, we are able to match a significant portion of the loans used in these projects based on project firms that have been contracted since 2006. On the other hand, it is very difficult to distinguish between the loans that firms have used for PPP projects under the name of holdings or group companies (i.e. instead of an SPV), where these holdings and group companies hold FX loans in various fields with or without foreign partners. This is particularly an issue in electricity sector. In this context, mapping is done in two different ways, rigid and flexible, to increase coverage. Rigid mapping takes into account investments made through using SPVs, while flexible mapping also takes into account PPI investments made by holding and group companies under their own umbrella.

Following solid and flexible mapping methods, 52 percent and 93 percent of the total electricity investments can be matched with the TBB RM data (Table II.2.II.1). The average debt-equity ratio in electricity projects is around 75 percent. Considering this ratio, it is estimated that the companies, which were mapped according to the first method, financed 26.7 billion US dollars investment with US \$ 20.7 billion debt and according to the second method, 47.5 billion US dollars investment was financed with 36.6 billion US dollars debt. According to the mapping with TBB RM data, the total FX loan stock that is used to finance electricity projects in the last decade



is computed to be 8.9 billion US dollars as of August 2016, compared to 15.5 billion US dollars based on flexible matching.

**Table II.2.II.1**

Electricity Generation and Distribution Investments (2006 - 2015) and FX Loan Borrowings,  
World Bank and TBB RM Data Mapping  
(Million US dollars)

Electric Energy Investments			Solid Mapping			Flexible Mapping		
Electricity	Technology	Investment Amount	Investment Amount	Share	TBB RM FX Loans	Investment Amount	Share	TBB RM FX Loans
Distribution	-	14,073.4	8,576.6	60.9%	839.4	13,549.2	96.3%	1,145.5
Generation	Wind	5,440.2	1,316.4	24.2%	665.8	4,596.4	84.5%	1,900.6
	Geothermal	1,368.0	-	0.0%	-	1,368.0	100.0%	832.4
	Large Hydro (>50MW)	6,576.6	2,615.4	39.8%	2,263.60	5,903.0	89.8%	2,769.4
	Small Hydro (<50MW)	1,198.7	251.7	21.0%	427.3	981.3	81.9%	1,095.6
	Natural Gas	8,963.0	4,931.7	55.0%	2,087.70	7,678.4	85.7%	3,505.4
	Coal	13,444.6	8,984.2	66.8%	2,624.50	13,444.6	100.0%	4,198.5
<b>Total</b>		<b>51,064.5</b>	<b>26,676.0</b>	<b>52.2%</b>	<b>8,908.30</b>	<b>47,520.9</b>	<b>93.1%</b>	<b>15,447.4</b>

Note: \*PPI: Private participation in infrastructure Investment world Bank Data, TBB RM: Turkish Banking Association Risk Center Data, \*\* Contains PPIs in between 2006-2015, \*\*\* Some inconsistency between sums is due to lack of reporting in the PPI data set, \*\*\*\* For the US dollar conversion, the end of month (2016/08) TL/USD exchange rate is taken, 2.95 TL.

Source: Authors' Calculation, World Bank and BAT RM

The total FX credit for investments in electricity generation and renewable electrical energy (e.g. wind, hydroelectric and geothermal) production, where the government provides service purchase guarantees, according to the solid mapping, is 4.2 billion US dollars and according to the flexible mapping is around 7.7 billion US dollars.

Similarly, the total investment value of highway and bridge projects that have been completed or under construction since 2006 is 33.6 billion US dollars (Table II.2.II.2). Approximately 86 percent of these projects, amounting to 28.9 billion US dollars, are financed with loans from domestic and foreign financial institutions. In average, operation duration of these projects is about 22 years. The total borrowing of the relevant SPVs in the TBB RM is USD 5.4 billion.

Similarly, the total investment made in airports is recorded to be 45 billion US dollars in the last decade, although 35 billion US dollars of this amount belongs to the 3rd Istanbul Airport project that is currently in the early construction period. 97 percent of the total airport investments were matched with the TBB RM data, where the FX credit debt of these companies is recorded as 3.6 billion US dollars. Lastly, according to the Ministry of Health, the amount of credit used for the investment to the ongoing city hospitals projects reached 3.8 billion US dollars.

According to our assessment, the total amount of PPP investments with public service purchase guarantee between 2006 and 2015 is estimated to be 118 billion US dollars (Table II.2.II.2). When these investment projects are matched with TBB RM data, according to solid mapping, the lower band of average FX debt is 17 billion US dollars; and 21 billion US dollars according to flexible matching. The World Bank PPI dataset does not cover all the PPI investments in the country due to lack of reporting, nor does it include projects contracted in 2016. This deficiency is particularly important in terms of the coverage of energy (e.g. electricity) investments, which are a large number of project projects. In this context, all the electricity generating and distributing companies in the TBB RM dataset are identified and their FX debt



stock is compiled. As of August 2016, these companies record a total FX liability of USD 33 billion US dollars. To compute how much of this amount possesses public service purchase guarantee, we utilize the share of investments with public service purchase guarantee in electrical energy investments in the World Bank data that is computed to be 56 percent. When we use this number, we calculate that 18.5 billion US dollars of the FX loan debts of all electricity (producing and distributing) companies (worth 33 billion US dollars) possess public service purchase guarantees.

**Table II.2.II.2**  
FX Loans Used for PPP Financing with Public Service Purchase Guarantees Under Different Assumptions  
(Billion US dollars)

	<b>Investment Amount</b>	<b>TBB RM FX Loans (Solid)</b>	<b>TBB RM FX Loans (Flexible)</b>	<b>TBB RM FX Loans (Broadest)</b>
<b>Electricity Production and Distribution</b>	29.0	4.2	7.7	18.5
<b>Highway / Bridge</b>	33.6	5.4	5.4	5.4
<b>Airport</b>	46.0	3.6	3.6	3.6
<b>City Hospitals</b>	10	3.8	3.8	3.8
<b>Totals</b>	<b>118.0</b>	<b>17.0</b>	<b>21.0</b>	<b>31.0</b>

Source: Authors' Calculation, World Bank and BAT RM

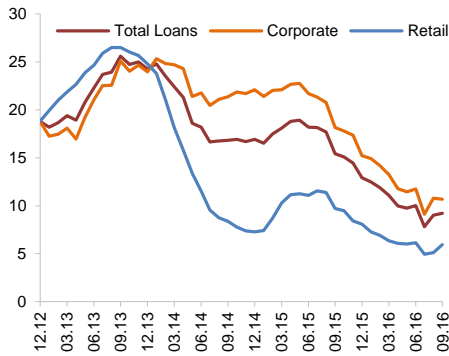
In summary, a significant portion of the FX loans are estimated to be clustered in the PPP projects. The current total FX debt of firms invested in the PPP projects is estimated to reach 46 billion US dollars under the broadest assumptions according to TBB RM data. This number varies depending on the mapping assumptions. According to our analysis, about 31 billion US dollars of this figure has protection against exchange rate and demand risks through public service and product purchasing, leasing or indirect guarantees.

Although our work is aimed at providing detailed information about the subject, we have to make some significant assumptions. The first assumption we make is: parent (holding and group) companies can also debt-finance the equity they are obliged to put in their SPVs. Second assumption is: parent (holding and group) companies can finance their SPVs indirectly through trade relationship with their SPVs by selling services (e.g. construction) and crediting the investment in their own balance sheets. Unfortunately, it is not possible to track these operations from existing data. Therefore, there are serious differences between current investment values and debt stocks. Although a significant part of the differences can undoubtedly be attributed to the repayments of loans used for investments made since 2006, indirect financing methods, listed above, should also be mentioned, which accounts for another important part of the difference. The use of foreign resources in financing of the PPP investments made with foreign partners is another factor that makes it difficult to identify the loan facility. In addition to what has been said, investments made in 2016 have not been included in the study since they have not yet been added to World Bank data. For instance, the total electricity investment made in 2016 is about 5 billion US dollars according to the Ministry of Energy, while 4 billion US dollars of it is under public service purchase guarantee.

### III. Financial Sector

The deceleration in credit growth rates continues, albeit with a slower pace.

**Chart III.1.1**  
Annual Loan Growth  
(FX-Adjusted, Percent)

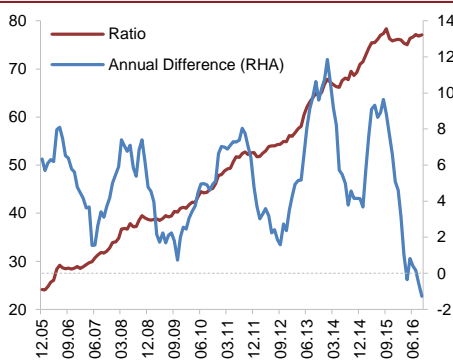


Note: FX loans are adjusted using a dollar-euro basket, and FX-indexed loans are included in FX loans.

Source: CBRT (Latest Data: 09.16)

Following a long period of slowdown, retail lending is showing signs of recovery thanks to easing macroprudential measures, supportive fiscal policies, and interest rate developments underpinning the increase in demand. In commercial lending, credit costs and weak trend in investments and economic activity resulted in a shortage of demand. In this period, banks' general macroeconomic outlook and credit risk evaluations resulted in tighter credit supply. With the credit growth recovering, Non-performing Loan (NPL) ratios are stable. The moderate recovery in loan growth is expected to continue in the upcoming period with the effect of supporting measures.

**Chart III.1.2**  
Credit/GDP Ratio  
(Percent)

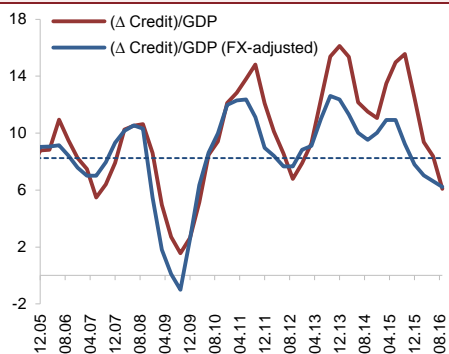


Note: The ratio takes stock of credit over the sum of monthly GDP over the past 12 months.

Source: CBRT, TURKSTAT (Latest Data: 09.16)

Just as banks' use of foreign resources remains stable, their liquidity buffers are adequate to cover any global liquidity shocks. Although the amount of external debt is stable, the maturity composition changed in favor of longer terms, partly owing to the policies adopted; thus, the resilience of the banking sector against potential volatilities in international markets increased.

**Chart III.1.3**  
Change in Credit/GDP  
(Percent)



Note: The annual change in credit is reported as a ratio of flow GDP. The change in corporate FX credits takes 3-month differences of stock values to calculate the flow variable. The value is then FX adjusted using 3-month averages of CBRT buy rates. Annual values are calculated by adding up 4 quarters. FX-indexed are included in FX loans. The blue dashed line shows the long term average of the FX-adjusted value.

Source: CBRT, TURKSTAT (Last Data: 09.16)

The capital of the sector strengthened as a result of the recovery in profitability and increased capital adequacy ratios together with the moderate credit growth. The rise in profitability was driven both by the improvement in net interest income and by the decline in non-interest expenses, especially by a proportional decrease in general provisioning costs due to relative change in loan compositions, and by austerity measures in operational expenses. Moreover, the decline in the loss generated by combination of securities, foreign exchange and derivatives transactions also contributed to the increase in profitability.

#### III.1 Credit Developments and Credit Risk

Credit growth rates continued their year-long decline up until September 2016 when a level performance in corporate loan growth and the recent pickup in retail loans backed its recovery. The

revival in retail loans was mainly driven by the decline in interest rates, particularly in housing loans, and easing in relevant macroeconomic measures imposed on retail loans. As the credit and nominal GDP growth rates remained close in the past six months, the credit/GDP ratio stayed rather stable within the 75 to 80 percent range in the last 12 months (Chart III.1.1 and Chart III.1.2). The ratio of the banking system's annual net lending to GDP continued to decline (Chart III.1.3).

Despite the slowdown in credit growth rates over the last year, the ratio of bank loans to non-financials to GDP remains high relative to peer emerging markets (Chart III.1.4).

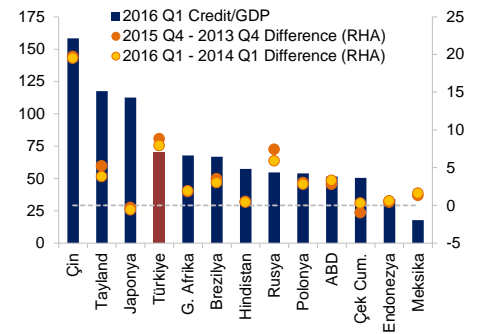
The slowdown in bank lending over the last six months was driven by supply and demand-side dynamics. On the demand side, the level of interest rates, the slowdown in economic activity and the slump in investment demand played a major role, whereas on the supply side banks' tightening credit standards due to credit risk assessments was the main driver. Meanwhile, as mentioned above, in the last two months, the decline in loan interest rates, the supportive changes in macroeconomic policies and fiscal policy incentives were influential in the recovery of the credit growth rate. It is projected that the positive effects of these factors on credit demand and volume will continue in the upcoming period.

### III.1.1 Corporate Loans

Steered by TL loan dynamics, corporate loans slowed down in the past 12 months. The exchange rate-adjusted growth rate was 10.7 percent in September (Chart III.1.1). The decline in TL corporate loan growth across all firm sizes in the second quarter of 2016 decelerated, albeit a significant difference across firm sizes (Figure III.1.5). In September, TL corporate loans grew at a similar rate as they did in August, above the nominal increase in GDP, at 12.3 percent. The progress of FX loans is chiefly determined by large firms that use 80 percent of the volume of FX credits in total. While the growth rate of total FX loans remained flat, growth rate of SME loans continued to fluctuate, but remained positive in the third quarter of the year (Chart III.1.6).

*Credit growth rate is relatively high, despite the recent slowdown.*

**Chart III.1.4**  
Credit/GDP in Different Countries  
(Percent, Percentage Points)

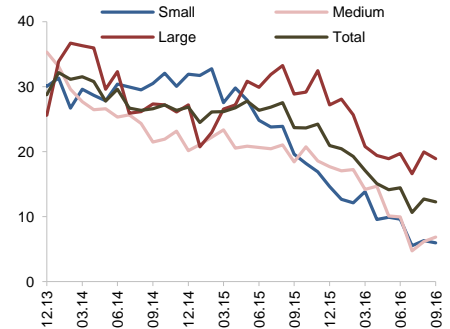


Note: Data covers all private non-financial sector credit, with the latest data taken from 2016Q1. The dashed line marks the zero line for the RHA, the two year differences are calculated between the first and last quarters of the years indicated.

Source: BIS (Latest Data: 03.16)

*While TL corporate loans are decreasing across all firm sizes ...*

**Chart III.1.5**  
Annual Growth in TL Corporate Loans by Firm Size  
(Percent)

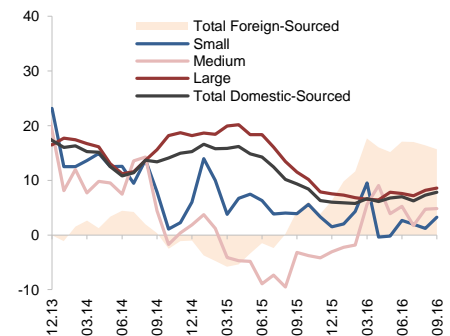


Note: FX-indexed loans are excluded. Micro and Small SMEs are grouped together under the Small heading.

Source: CBRT (Latest Data: 09.16)

*...Domestic-sourced FX corporate loans continue on a moderate path.*

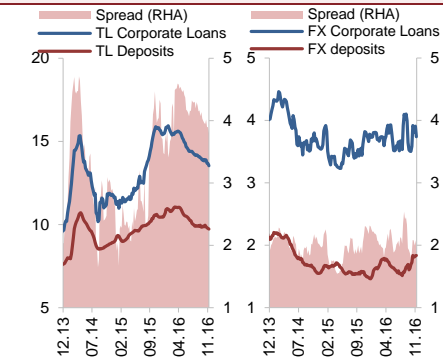
**Chart III.1.6**  
Annual Growth in FX Corporate Loans by Size  
(FX-adjusted, Percent)



Note: Total foreign sourced FX credit growth takes the foreign FX loans and other FX liabilities of all non-financials, excluding foreign branches and affiliates of domestic banks, in USD. FX-indexed loans are included in the total and size distribution. Micro and Small SMEs are grouped together under the Small heading.

Source: CBRT (Latest Data: 09.16)

**Chart III.1.7**  
Corporate Loan Interest Rates and Spreads  
(4-weekMA, Percent)

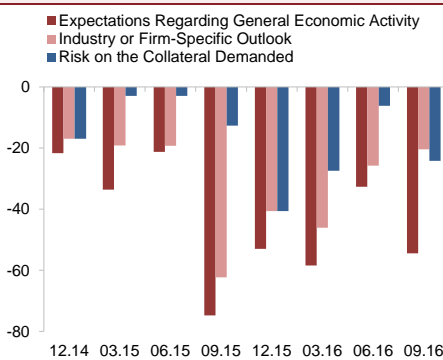


Note: Overdraft accounts and credit cards, as well as loans with zero interest starting from July 2015 are excluded.  
Source: CBRT (Latest Data: 11.11.16)

Foreign-sourced corporate FX loans followed a more vibrant path than loans of domestic origin (Chapter II.2). This is the result of direct involvement of intergovernmental organizations and foreign private banks in the financing of PPP investments, which require large and long-term financing (see Box II.2.II).

The deceleration in credit growth rates in the past year is attributed to tighter bank lending standards due to credit risk, and weaker investment appetite. In addition to the policy rate cuts implemented by the CBRT between March and September, public finance policies supporting economic activity are expected to affect TL loan growth positively (Chart III.1.7). Corporate support and incentive programs, which have recently been increased especially for SMEs, will likely support the recovery in demand for TL loans in the coming period.

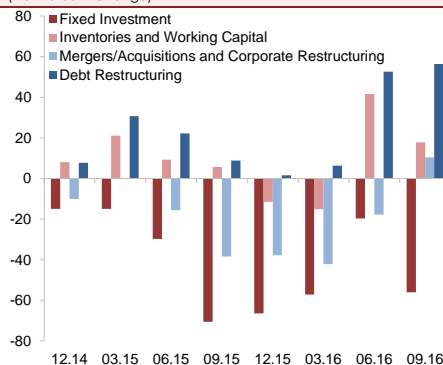
**Chart III.1.8**  
Contributions to Corporate Loan Supply  
(Net Percent Change)



Note: The quarterly Survey asks respondents to compare current quarter to the previous. Zero is the neutral state of no change.  
Source: CBRT (Latest Data: 09.16)

Developments in loan interest rates are important as they affect demand dynamics, and reflect banks' credit risk pricing. The widening of the TL loan-deposit spread starting from the beginning of 2015, in tandem with the increase in corporate NPL ratios, indicates that credit risk plays an important role in loan pricing. In addition to the increase in the credit risk premium, the rise in deposit rates due to the deposit competition (See Special Topic IV.1) also significantly raised TL loan costs. The Bank Loans Tendency Survey suggests that the tightening in interest rate conditions caused by rising average loan margins in the second quarter continued in the third quarter. This proves that the increase in the TL credit-deposit margin is driven by credit risk. Meanwhile, FX loans, which have lower NPL ratios, saw an increase in interest rates, albeit much more limited, as deposit competition pushed FX deposit interest rates up.

**Chart III.1.9**  
Contributions to Corporate Loan Demand  
(Net Percent Change)



Note: The quarterly Survey asks respondents to compare current quarter to the previous. Zero is the neutral state of no change.  
Source: CBRT (Latest Data: 09.16)

The Bank Loans Tendency Survey confirms the importance of supply-side factors in corporate credit growth in the past quarter. Expectations over general economic activity and risks associated with loan collaterals tightened credit supply in the third quarter of 2016, as it did in the past two years (Chart III.1.8). Banks reported that lending standards are tight across all firms sizes, and especially for SMEs, on long-term loans and FX-denominated loans. Tighter standards are perceived as a step taken by banks to protect their asset quality given their risk perceptions based on the overall

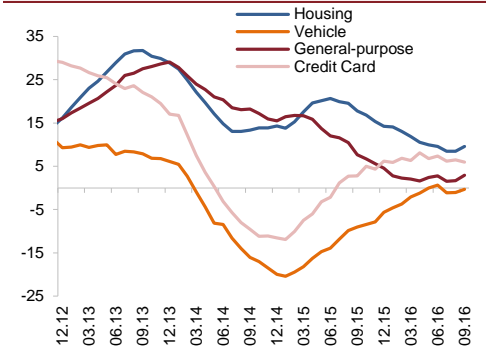
economic outlook. With the impact of fiscal policy incentives and the increase in retail loans, it is likely that any pick-up in economic activity could contribute to easing in credit standards.

The primary factors affecting the demand for corporate loan growth rates are credit costs, and the general economic demand and outlook. The Survey confirms that supply-side factors as well as the dynamics of credit demand were influential in corporate loan developments (Chart III.1.9). According to the Survey, firms, as implied by national accounts statistics, have substantially decreased their demand for investment credit; while debt restructuring continued to support demand. Although this development is confirmed by higher levels of financial indebtedness observed in the real sector (See Section II.2), their prolonged maturities and the steady course of their interest coverage ratios is remarkable. Business capital and stock financing became secondary factors pushing up credit demand. This factor increases loan demand due to weakened cash flows during periods of slow economic activity as attested by both historical data and theory. As another reflection the rise in firms' demand for cash, in the Survey, the firms have listed discounts and other benefits in cash purchases as a factor increasing credit demand.

### III.1.2 Retail Loans

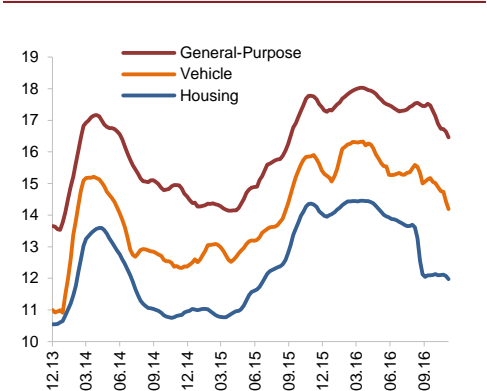
Retail loans, which have been displaying a weaker growth performance compared to corporate loans, grew annually by 6 percent in September (Figure III.1.1). Recently, however, general-purpose and housing loans, which together make up the majority of retail loans, have shown signs of a strong recovery (Figure III.1.10). The interest rate cuts in August of 2016 played an important role in the recovery in housing loans, while the increase in general-purpose loans was mainly driven by the easing in macroprudential measures in September (Graph III.1.11 and Graph III.1.12). The base effect-driven acceleration observed in credit cards and vehicle loan growth rates were recently replaced by a level growth rate. The relatively weak performance of vehicle loans issued by the banking sector can be attributed to the rising share of financing companies in these types of loans.

**Chart III.1.10**  
Annual Growth in Retail Loans  
(Percent)



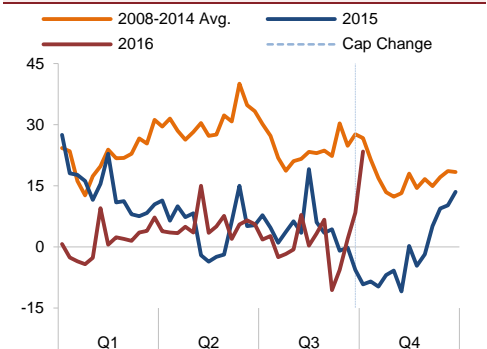
Source: CBRT (Latest Data: 09.16)

**Chart III.1.11**  
Retail Loan Lending Rates  
(4-week MA, Percent)



Source: CBRT (Latest Data: 11.11.16)

**Chart III.1.12**  
General Purpose Loan Weekly Growth Rates  
(4-week MA, Annualized Percent)

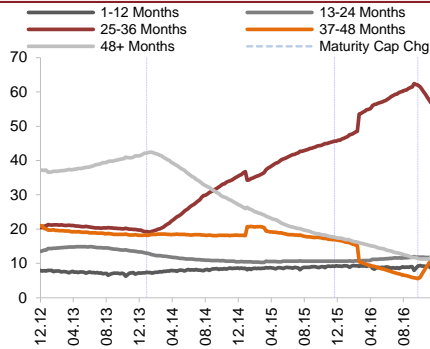


Note: The maturity cap change is shown to include the week it took effect in.

Source: CBRT (Latest Data: 11.16)

**General-purpose loans up to 36 months are losing their share to loans up to 48 months.**

**Chart III.1.13**  
General-Purpose Loans Maturities  
(Stock, Percent)

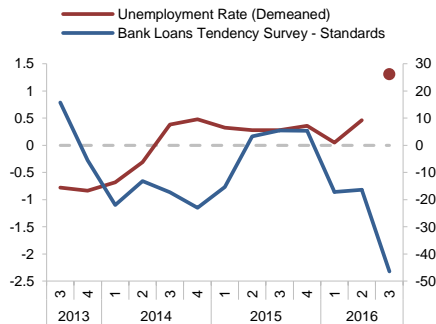


Note: The maturity cap change in 2013 limited the maturities with 36 months. The change at the end of 2015 removed the cap for education loans, and since 09.2016 the 36 month maturity cap has been increased to 48 for all general-purpose loans. The sharp movements in the beginning of 2015 and 2016 are due to changes in definition and coverage. As general-purpose loans and "other" types of retail loans not classified elsewhere are reported together since 2015, they are graphed together for the entire duration of the Chart. The maturity cap changes are shown to include the weeks they took effect in.

Source: CBRT (Latest Data: 11.11.16)

General-purpose loans, which make up almost half of consumer lending, started to slow down in the first quarter of 2015 and annual growth rates dipped below 2 percent in the past year, due to tight macroprudential measures implemented, banks' credit risk concerns, level of interest rates, and weak consumer confidence in general. While the tightness in credit standards for general-purpose loans continued (Chart III.1.14), changes, which were made in the regulations in September 2016, increased the maximum maturity cap from 36 months to 48 and thus accelerated growth rates (Chart III.1.12).<sup>1</sup> The fact that general-purpose loans rapidly increased immediately after the change in regulation, and that the said increase was concentrated in loans above 36 months, confirms that the recovery is chiefly determined by these late developments (Chart III.1.13). Meanwhile, the decline in interest rates is considered to have contributed to these developments as well.

**Chart III.1.14**  
Survey and the Economic Outlook  
(Percent, Net Percent Change)



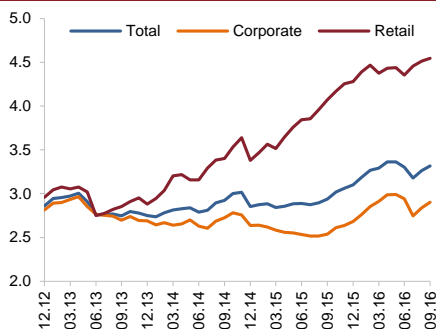
Note: The standards shown are only for general-purpose loans. The zero line shown in dashed marks the neutral level; values below indicate tightening standards, values above indicate easing standards. The unemployment level is adjusted for seasonality and demeaned. Since September labor data are not yet reported, the third quarter for unemployment is shown with a marker.

Source: CBRT, BRSA (Latest Data: 09.16)

It is expected that the amendments in regulation relaxing maturities for general-purpose loans and credit card installments will continue to contribute to the growth tendency of the related loan types with decreasing effect in the coming period. Indicators of general economic activity and unemployment will be of material as far as credit risk is concerned (Chart III.1.14).

Housing loans continue to be the fastest growing retail loan. The main driver of housing loans is demand-side developments. Historical data implies that interest rates are the most significant determinant of demand. The interest rate cuts in August of 2016 played a designating role in the recent rapid rise in housing loans. In addition to the increase in demand from the interest rate channel, it is expected that the increase in the loan-to-value ratios will support demand for housing loans.

**Chart III.1.15**  
NPL Ratios  
(Percent)



Source: BRSA (Latest Data: 09.16)

<sup>1</sup> According to the amendments made to the regulations regarding the credit transactions of and credit cards issued by banks on 27 September 2016; The maturity cap for general-purpose loans, while retaining some exceptions, has been raised to 48 months and current balances on performing loans are allowed to be restructured with maturities up to 72 months. If this restructuring requires a new credit to be issued, the maturity is again limited by 48 months. The loan-to-value ratio for housing loans or loans with housing as collateral other than vehicle loans has been increased from 75 percent to 80 percent. With the exclusion of various consumption items, the number of installments in retail and corporate credit card spending and cash withdrawals has been increased from 9 to 12 months, and as in general-purpose loans, current balances on performing loans are allowed to be restructured with maturities up to 72 months.



### III.1.3 Non-Performing Loans

NPL ratios, which had been on the rise since the last quarter of 2015, reversed its course over the last three months and declined to a total of 3.26 percent in September (Chart III.1.15). Factors contributing to this change are write-offs through substantial sales especially in corporate loans in June, the withdrawal of a bank in the SDIF structure from the banking system in July, and the decline in the large firm NPL ratios in August respectively (Chart III.1.16 and Chart III.1.17).

Despite the upward trend in NPL ratios, the level of, and the 2-year change in the NPL ratio in the first quarter of 2016 is similar to the average of peer emerging markets (Chart III.1.18).

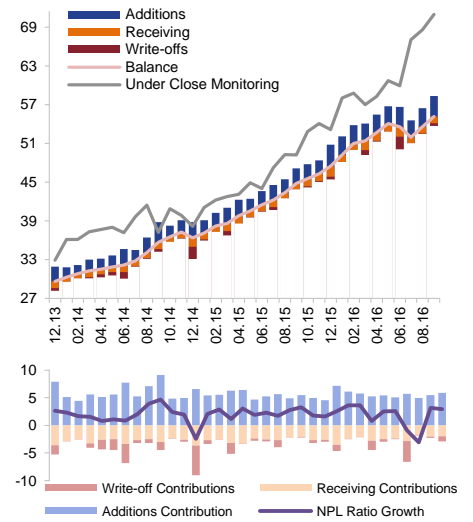
While corporate NPL ratios follow a more moderate path relative to retail NPL ratios, they diverge significantly based on firm sizes. Accordingly, while NPL ratios of large-scale business loans are around 2 percent, the ratio for SME loans is close to 4.5 percent.

Dissecting corporate NPL ratios by currency; NPL ratios in FX loans are considerably lower than NPL ratios in TL loans (See Box II.2.1). Likewise, the recent increase in corporate loans under close monitoring is mainly stemming from TL loans.

While NPL is rising across the board in the real sector; the latest NPL ratios show that there are substantial differences across sectors (Table III.1.1). The biggest contribution to corporate NPL increase comes from the two largest sectors in total corporate loans; manufacturing, and wholesale and retail trade. Meanwhile, the NPL ratios in hotels and restaurants sector, which includes tourism companies that were exposed to significant negative shocks, experienced a limited increase.

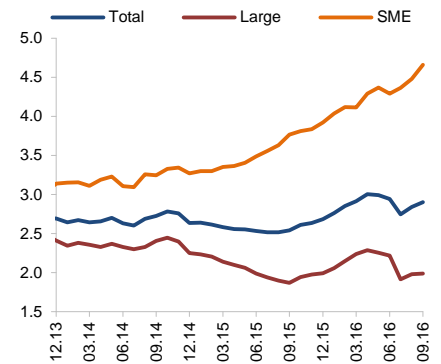
The persistence of the decline in NPL ratios of large firms in the upcoming period will depend on improvements in profitability conditional on the general economic outlook, and the developments in firms' leverage ratios. As shown in Section II.2, even though the leverage ratios of BIST firms increased due to the rise in

**Chart III.1.16**  
NPL Components and Contributions to its Growth  
(Billions TL, Percent)



Source: CBRT (Latest Data: 09.16)

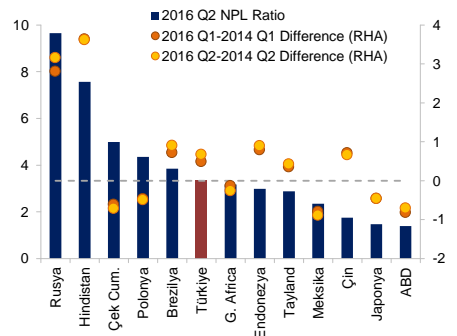
**Chart III.1.17**  
Corporate NPL Ratios  
(Percent)



Source: CBRT (Latest Data: 09.16)

*The NPL ratio is moderate in international comparison.*

**Chart III.1.18**  
NPL Ratios in Different Countries  
(Percent)



Note: The dashed line marks the zero line for the RHA, the two year differences are calculated between the first and last quarters of the years indicated. As Japanese data is not available for Q2, the bars show values for 2016 Q1 and the two-year differences are taken for 2015 Q4 and 2016 Q1.

Source: IMF-IFS, BRSA (Latest Data: 06.16)

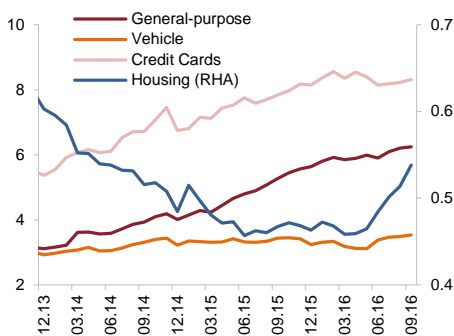
financial debts since the beginning of the year, the fact that their debt is mostly long-term strengthens their debt-paying capacities. As stated in the October Inflation Report, it is expected that incentives and rising consumer confidence will help improve domestic demand that in turn will support corporate revenues.

**Table III.1.1**  
Sectoral Breakdown of NPL Ratios  
(Percent)

	09.15 NPL Ratio	09.16 NPL Ratio	Percent Change	Share of Credit
<b>Manufacturing Industry</b>	2.6	3.5	34.9	25.2
<b>Wholesale and Retail Trade</b>	3.0	4.0	31.7	20.8
<b>Construction</b>	3.7	3.8	2.4	11.5
<b>Electricity, Gas and Water Resources</b>	1.2	0.6	-51.8	9.3
<b>Transportation, Inventory, Communication</b>	1.3	1.9	50.7	7.4
<b>Real Estate, Renting, and Management</b>	0.9	1.0	13.0	6.8
<b>Agriculture, Livestock, Forestry</b>	2.2	2.6	17.7	6.0
<b>Hotels and Restaurants</b>	2.0	2.4	17.4	4.3
<b>Mining and Quarrying</b>	3.5	2.7	-23.6	1.7

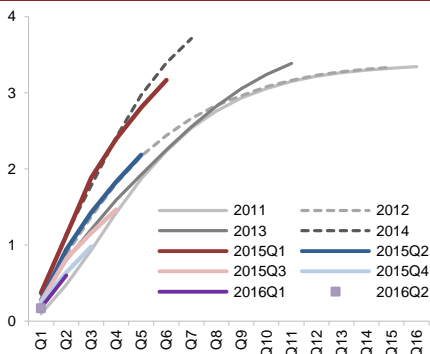
Note: Sectoral breakdown is based on the loan purpose indicated at the time of application. The shares are calculated excluding retail loans and the financial sector, and the selected sectors represent 93% of real sector loans.  
Source: BRSA (Latest Data: 09.16)

**Chart III.1.19**  
Retail Loans NPL Ratios  
(Percent)



Source: CBRT (Latest Data: 09.16)

**Chart III.1.20**  
General-Purpose Loans Vintage Curves  
(Percent)



Note: The vintage analysis reports NPL ratios cumulatively in the quarter following the issuance of a loan.

Source: CBRT (Latest Data: 09.16)

The upward trend in the NPL ratios in retail loans continues (Chart III.1.15). NPL balances have been following a flat trend since March following write-offs through sales from the NPL portfolios in credit cards (Chart III.1.19). Despite the deceleration in the growth rates of vehicle and general-purpose loans, the upward trend in their NPL rates weakened which can be considered a positive development.

The course of NPL ratios in general-purpose loans, which is the main determinant of retail loan NPL dynamics, remained moderate in the second and third quarters of 2016. The NPL ratio of the general-purpose loans increased from 5.85 percent in March to 6.25 percent by the end of September. The recent strong recovery in these loans is expected to have a dampening effect on NPL rates in the short term.

Vintage curves display cumulative NPL ratios following the quarter in which the retail loan was issued. The curves show that since 2015, new loans issued in each quarter have performed better than those issued in the preceding quarter (Chart III.1.20). In addition to the macroeconomic outlook which affects NPL performances, the tight supply conditions in general-purpose loans in 2016 may have



played a role in the level performance of their NPL ratios. The regulatory amendments that brought about a longer maturity cap and higher installment opportunities will support credit growth rates. At the same time, it is expected that the regulatory arrangement, which allows restructuring of current performing loan balances with longer maturities may lower conversion rates to NPL by mitigating the pressure on debtors' monthly debt payments.

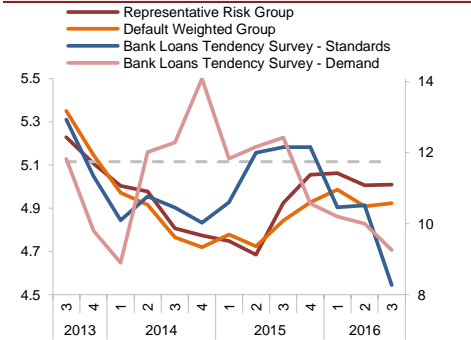
The Bank Loans Tendency Survey suggests that banks retained their cautious stance in general-purpose loans in 2016, which is confirmed by data from the Credit Bureau of Turkey (KKB). Accordingly, both the average representative risk group of general-purpose loan users calculated based on their Retail Loan Scores (RLS), and the adjusted group weighted by the likelihood of delinquency for each RLS group decreased since the beginning of the year (Chart III.1.21). While these two groups moved in tandem previously, the default-weighted group displayed lower risk scores at times of tighter standards which is a further indicator that banks choose less risky customers while extending loans.

The NPL ratio for housing loans was 0.54 percent in September. Given the solid collateral structure of housing loans and the level of the NPL ratio, the effects of housing NPL developments on banks are deemed to be negligible.

Another factor that may affect housing NPL performance in the upcoming period is the increase in the loan-to-value ratio. It is anticipated that the effect on the NPL ratio will be limited due to the narrow size of the change.

In September, housing loan applicants had the highest RLS, both historically and relative to the recent performance of other types of retail loans (Chart III.1.22). Owing to banks' selective attitude in extending housing loans, just as in other types of retail loans, housing loan clients diverge positively from the average (Chart III.1.23). The recent high growth rate of housing loans is considered feasible for the banking system since the credits extended are chosen among high RLS applicants, housing loans are still highly collateralized following the amendments, and the NPL ratios were stable at low levels in the past.

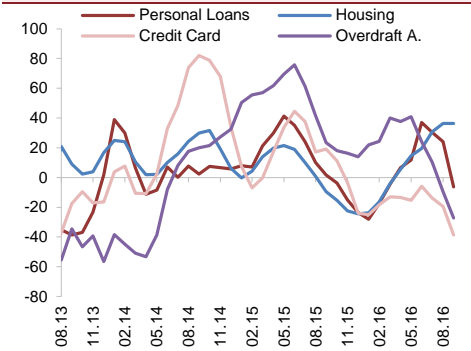
**Chart III.1.21**  
New General Purpose Loans and the Survey  
(Average Risk Group)



Note: Standards and demand values from the Survey are only for general-purpose loans. These values, which were also referenced in Chart III.1.14, and are reported as net percent change, are rescaled in this Chart to fit the risk group range. The dashed zero line shows the neutral point for the Survey. Values above are easing and below are tightening.

Source: KKB, CBRT (Latest Data: 09.16)

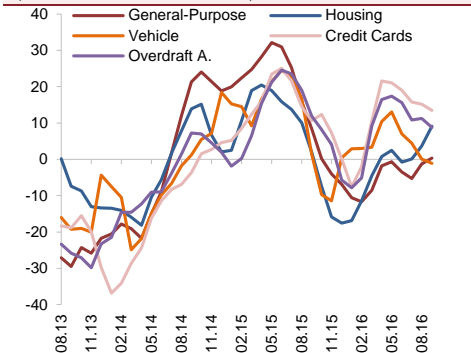
**Chart III.1.22**  
New Loan Applications by RLS  
(3-Month MA, Demeaned RLS Points)



Note: Vehicle and general-purpose loans are reported together under the personal loans heading.

Source: CBRT (Latest Data: 09.16)

**Chart III.1.23**  
Newly Issued Retail Loans by RLS  
(3-Month MA, Demeaned RLS Points)

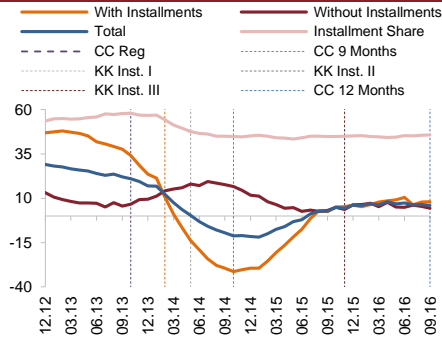


Note: Group means are calculated using the 11 different RLS groups reported for each type. The same methodology employed for applications returns a similar chart to Chart III.1.22 and confirms that Chart III.1.23 is representative, even though it is calculated over group means.

Source: CBRT (Latest Data: 09.16)

Chart III.1.24

Growth in Personal Credit Card Balances and Installment Share (Percent)



Note: The changes in the relevant regulations are respectively: in 2013, among other changes minimum payments were linked to card limits and new card limits to income. In February 2014, the number of monthly installments were limited to 9, and jewelry, telecommunications, food, and petroleum expenses were exempted from the right to installments. The 1st regulation removed the right to installments for gift cards and cheques; the 2nd brought about 4 months of installments to jewelry; the 3rd extended household goods, furniture and educational expenses to 12 months of installments. In September of 2016, the maximum installment numbers were extended to 12, and in addition to the existing exceptions, electronics and computer spending was limited by 6, airline, transportation, travel agency, hotels, health and social services, health products, club and association membership and tax payments were limited to 9 months, and direct sales, sales abroad, and cosmetic and office supplies spending were exempted from installments.

Source: CBRT (Latest Data: 09.16)

The recent amendment in the number of retail credit card installments could both increase households' debt burden in the long run by changing the credit card balance growth rates, and alter the stable course of the installment balance share of the total credit card balance observed for over a year in favor of the balance with installments (see Chart III.1.24). Nevertheless, the increase in the number of installments and the opportunity to restructure existing debt will aid households in their debt service.

### III.2 Liquidity Risk

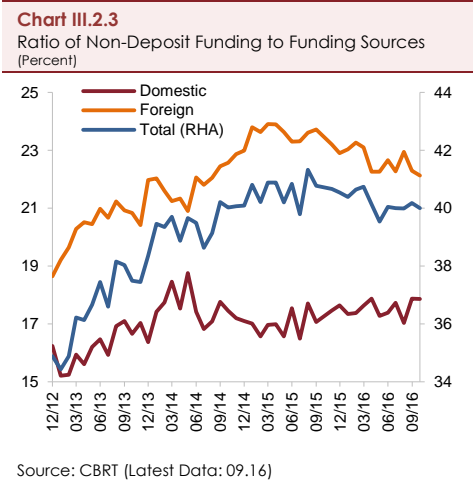
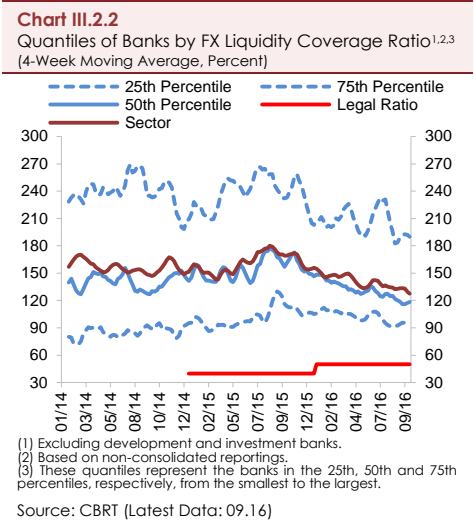
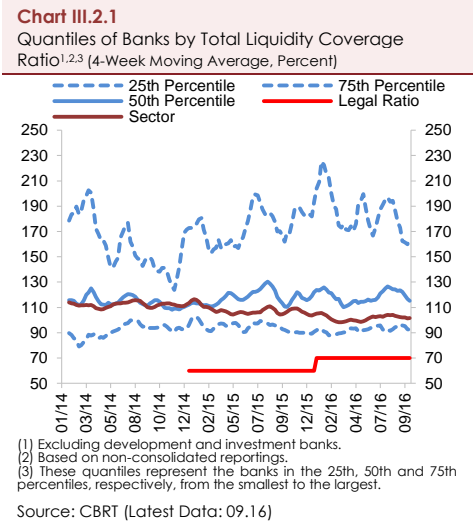
**The short and long-term liquidity positions of the banks remain strong.** While the Liquidity Coverage Ratios (LCRs) ensure that banks hold their one month maturity short-term liquidity positions in a safe zone, the Reserve Options Mechanism and FX required reserves provide a one-year window for banks to hedge themselves against FX liquidity shocks even under the most adverse scenarios. The maturities for non-core funding items, which were concentrated mostly in FX liabilities, continued to lengthen thanks to the measures implemented, increasing the resilience of the banking sector to possible global liquidity shocks.

**The short-term liquidity position of the Turkish banking sector maintains a solid outlook.** The sector's LCRs regulated for total and FX, are well above the legal limits that aim to keep banks' short-term liquidity positions in a safe zone.<sup>1</sup> Besides, the LCRs that are calculated for most of the banks, both for the total and the FX, already meet the legal sub-limits of 100 percent for the total and 80 percent for the FX, which were reported as the final amounts to be reached in 2019 (Chart III.2.1 and III.2.2). The possibility of accessing TL liquidity in the interbank money market by placing foreign exchange deposits -a facility provided by the CBRT- also contributes positively to the banks' short term liquidity management. This practice limited the costs and liquidity-related risks that banks may face in swap markets within the framework of liquidity management.<sup>2</sup>

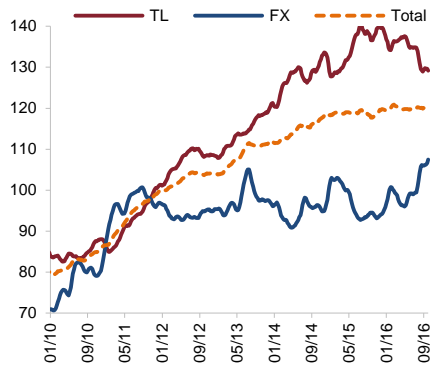
**The share of non-core liabilities in total resources remains flat.** Approximately 60 percent of deposits and non-equity liabilities are comprised of foreign banks and foreign currency denominated borrowings through issuance. The share of funds provided from abroad in total liabilities fluctuated with changes in exchange rates and has followed a flat course since the last report period. Domestic

<sup>1</sup> The LCR, the details of which have been determined by the Basel Committee and which is currently being used by the BRSA, has been taken as the criterion for banks' short-term liquidity positions. The LCR shows to what extent a bank can cover its 30-day net cash outflows from its high quality liquid asset stock.

<sup>2</sup> The effects of the aforementioned facility were elaborated in a study entitled "The Collateral FX Deposit Facility and Its Impact on Currency Swap Markets" in the Inflation Report published on 27 October 2016.



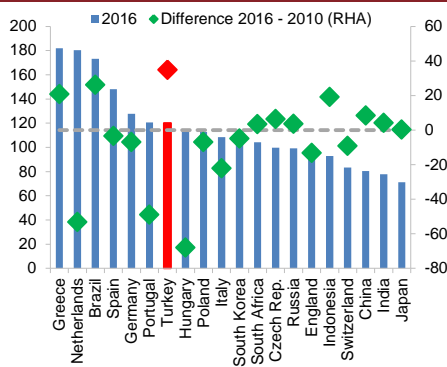
**Chart III.2.4**  
Loan/Deposit Ratio<sup>1</sup>  
(4-Week Moving Average, Percent)



(1) Excluding development and investment banks.

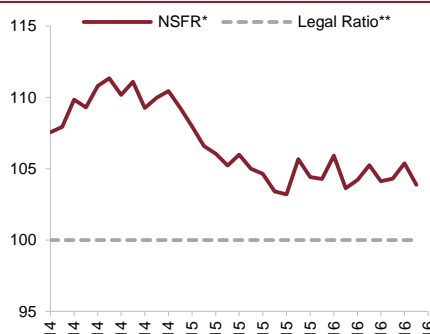
Source: CBRT (Latest Data: 09.16)

**Chart III.2.5**  
Loan/Deposit Ratio of Selected Countries  
(Percent, Percentage Point)



Source: SNL Financial (Latest Data: 2016)

**Chart III.2.6**  
Net Stable Funding Ratio  
(Percent)



(\*) Based on the information available in Basel III, some assumptions have been made regarding the uncertain points. In the context of these assumptions, assets and liabilities are taken into account according to the original maturity. TL saving deposits subject to insurance are stable, not insured savings and SME deposits are considered low-stable. Commercial deposits under TL 250,000 are considered as SME deposits. All repo transactions are included in repo transactions with financial institutions. Net liabilities from other liabilities and derivative transactions remaining in the balance sheet are taken into account with the current stable funding factor of 0 percent. The receivables from financial institutions are taken into consideration with the required factor of 15 percent. All securities subject to deposit are considered as level 1 assets. Assets of reverse repurchase agreements are assumed to be level 1. In the derivative transactions, 85 percent of the initial assurance is taken into consideration, and 100 percent is considered under other balance sheet items. Net receivables from derivative transactions are taken into account with the required factor of 100% regardless of the guarantee of transactions. 100 percent of the required funding factor was applied to other assets.

(\*\*) Represents the expected lower limit to be implemented in Basel III framework.

Source: CBRT (Latest Data: 09.16)

non-deposit funds mainly consist of repo transactions and issuance from money markets. The share of the related liabilities in the total also remains flat (Chart III.2.3).

**The Loan/Deposit (L/D) ratio, which is one of the main indicators of the long term liquidity position of the banking sector, preserves its flat course.** The L/D ratio, which represents the extent to which the loans constituting the bulk of the banks' illiquid assets are funded with steady resources, hovered around 80 percent in 2010 in overall figures; but approached to 120 percent by end-2014 and started to follow a flat course at this level (Chart III.2.4). Anecdotal evidence suggests that bank preferences are also influential in the sense that banks perceive this ratio as an important indicator (See Special Topic IV.1). On the other hand, a comparison of the Turkish banking sector's L/D ratio with other selected countries suggests although the ratio has recently increased significantly, it has not exhibited a negative divergence from the countries compared (Chart III.2.5).

**Although the L/D ratio is an important indicator for the follow-up of long-term liquidity positions of banks and the measurement of funding risks, it still falls short of measuring the risk thoroughly as it does not take into account the maturity matching in assets and liabilities of bank balance sheets.** In addition to deposits, the equity, subordinated debts, long-term issuances and other long-term debt instruments can also be evaluated as stable sources of funding for banks. Indeed, the long-term liquidity risk, in other words, the net stable funding rate (NSFR) that is developed to limit the conversion of bank maturities and expected to be implemented in 2018 has been broadly defined in Basel III standards, including the items mentioned above. Chart III.2.6, illustrating the progress of the NSFR ratio calculated for the Turkish banking sector, indicates that the sector' average NSFR is above the minimum rate of 100 percent, as set by the Basel regulation. Therefore, according to the perspective set forth by the Basel regulation, banks are able to sustain credit growth without weakening the quality of their funding by extending the maturity of foreign borrowing (See Special Topic IV.1).

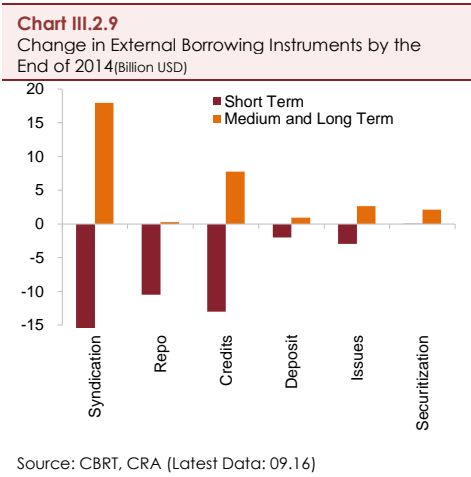
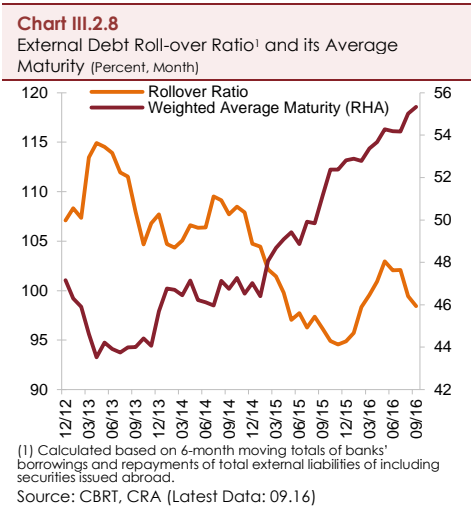
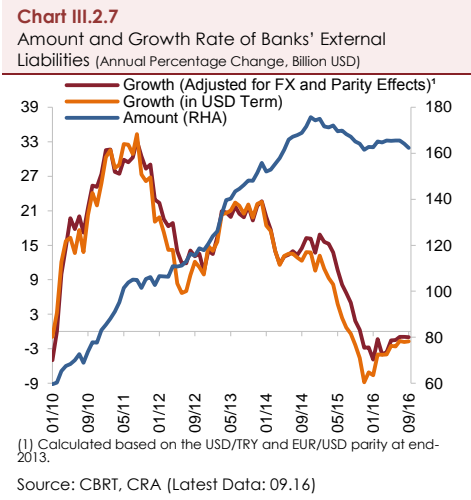
External Funds

**The banking sector's external fund utilization remains flat.**

Banks' utilization of external funds has remained weak since the beginning of 2015, which is attributed mainly to weakening of banks' demand for foreign resources rather than the conditions and costs of accessing external borrowing. As the foreign resources have been transferred to the corporate sector mostly to finance their investment decisions, the slowdown in corporate sector investments limits banks' demand for external financing (Chart III.2.7). The development of external borrowing costs also supports this assessment.

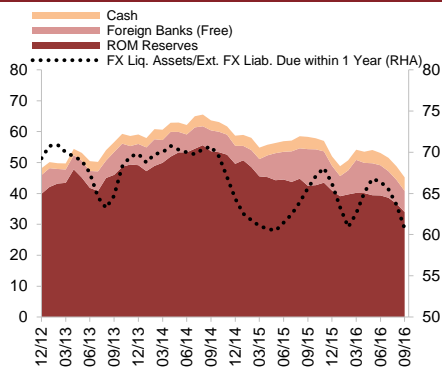
**While the amount of external debt is flat, the maturity composition changes in favor of long-terms.** Foreign debt rollover ratios have recently been at 100 percent levels, yet the rollover ratios for the short and long term show significant divergence from each other (Chart III.2.8). This situation reflects the effects of the changes made by the CBRT in the reserve requirements, as mentioned in previous reports. Following the revision of the regulation related to reserve requirements, the weighted average maturity of the foreign debt of the sector started to increase as of February 2015 and extended up to 55 months as of September 2016 (Chart III.2.8). In this period, banks renewed their medium and long-term foreign debts by large margins and the stock amount increased rapidly and their short-term sources were renewed below 100 percent. Since early 2015, the banks significantly reduced their external borrowings up to one year maturity and increased their medium and long-term resources by shifting from short to long-term maturities in all types of external borrowing. The rollover of due syndicated loans with maturities of one year by maturities up to three years, the shift from short to long maturities for other credits, the strong course of securitization credits provided on longer term maturities were the main drivers of this transition (Chart III.2.9).

**The extension of external borrowing maturities reinforces the resilience of the banking sector against any possible volatility in international markets.** As of September 2016, banks' FX foreign debt payments due within the next six months and one year were 47 and 78 billion US dollars, respectively. In this framework, banks will continue to pay regard to the developments in the global markets



**Chart III.2.10**

FX Liquid Assets<sup>1</sup> and FX External Liabilities Due Within 1 Year (Percent)



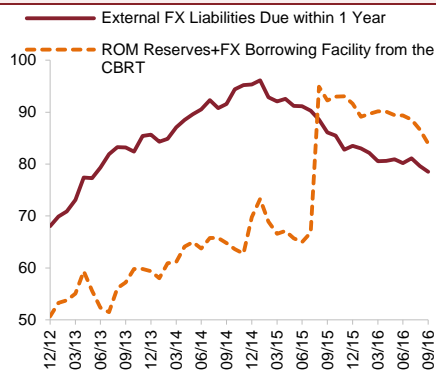
(1) Selected FX Liquid Assets: Cash+Foreign Banks (free) + Required Reserves held within the ROM facility.

Source: CBRT, CRA (Latest Data: 09.16)

with respect to the renewal of their external debts at appropriate maturities and costs. As of September 2016, the selected FX liquid assets of the banks were 46 billion US dollars. These assets are at an adequate level to cover around 61 percent of the FX debts due within one year (Chart III.2.10).<sup>1</sup> As a significant portion of external loans due within one year was borrowed by pledging Eurobond and GDDS, the facility enabling banks to use the TL-denominated government debt securities as collateral in the FX and banknotes markets within the CBRT provides an additional support to the banks. The sum of the Foreign Exchange Deposit limits allocated to the banks and the foreign exchange and gold assets held at the CBRT in the scope of the ROM facility is adequate to meet the banks' external FX debt payments due within one year (Chart III.2.11).

**Chart III.2.11**

ROM Reserves + FX Borrowing Facility and External FX Liabilities Due Within 1 Year (Billion USD)

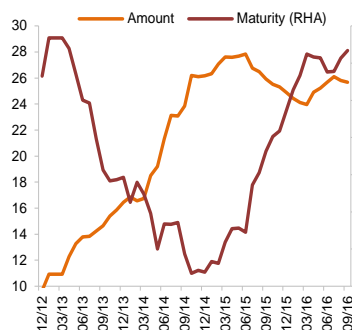


Source: CBRT, CRA (Latest Data: 09.16)

**The stagnation experienced in FX-denominated securities issued abroad of the banking sector, which is highly sensitive to global liquidity developments, has recently been replaced by a limited increase.** In response to the expectations that implementations supporting liquidity conditions would continue in the global monetary policies and the rise in risk appetite, the average maturity of FX-denominated securities issued abroad, whose amount had increased by 5 percent in the first three quarters of 2016, reached 69 months due to the decrease in short-term issues from November 2014 (Chart III.2.12). There was no remarkable recovery in the amount or average maturity of the banking sector's domestic security issues (Chart III.2.13).

**Chart III.2.12**

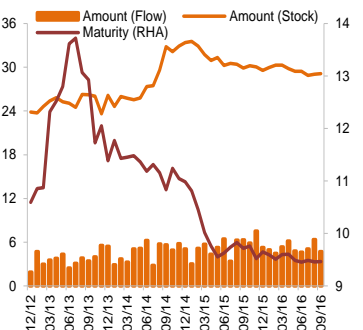
FX Issues Abroad (Stock, Billion USD, Month)



Source: CRA (Latest Data: 09.16)

**Chart III.2.13**

Domestic TL Security Issues (Billion TL, Month)



<sup>1</sup> The extent to which banks can use the ROM reserves is related to the extent to which they can provide the TL needs arising from the use of the ROM facility. The sector's free GDDS portfolio is at an adequate level to cover the TL reserves and at the end of October 2016 the ratio of the free GDDS portfolio to the TL equivalent of the ROM reserves was 135 percent.



### III.1 Interest Rate and Exchange Rate Risk

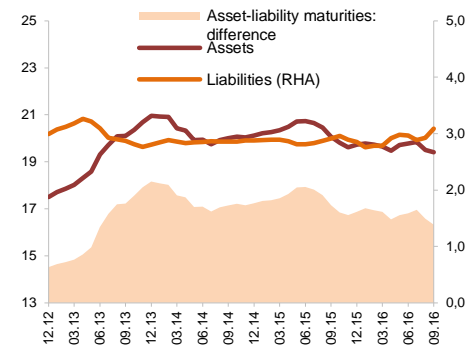
**No significant development has been observed in the sensitivity of the Turkish banking system to interest rate risk since the last report period.** Maturities of TL assets, which had decreased by about one month from the second quarter to the end of 2015, continued to fluctuate within a narrow band in 2016. As for TL-denominated liabilities, maturities have exceeded 3 months for the first time since the second quarter of 2013 resulting from the increase in the maturities of fixed rate securities issued (Chart III.3.1). Easing of the maturity restrictions for the general-purpose loans from 36 months to 48 months in September 2016 and the restructuring provided for the existing credit balances up to 72 months are expected to result in a moderate increase in the maturities of TL assets in the upcoming period.

An analysis of the FX-denominated balance sheet items suggests that the increase in the maturities of FX liabilities came to an end in response to the matured effects of the arrangements made in reserve requirements for non-core FX liabilities to encourage long-term borrowing. Because the maturities of FX assets also continued their horizontal trend, the FX asset-liability maturity mismatch remained largely constant (Chart III.3.2).

**The banking sector continues to stay resilient to interest rate shocks.** In order to observe the sector's sensitivity to interest rate shocks through the repricing channel, interest rate risk-related losses were measured by exposing the banking system to an interest rate shock that would last for a period of one year. Based on banks' balance sheets at the beginning of the period, interest rate sensitive TL and FX assets and liabilities with maturities up to one, three, six and twelve months were repriced assuming a five-point increase in the interest rate. The calculations suggested that losses due to the TL interest rate shock corresponded to approximately 2.3 percent of the capital, while losses due to the FX interest rate shock were about 1.6 percent of the capital. (Chart III.3.3). The fact that the losses are limited despite the size of the shocks verifies the resilience of bank balance sheets to interest rate shocks.

*Limited improvement in the TL asset-liability maturity mismatch.*

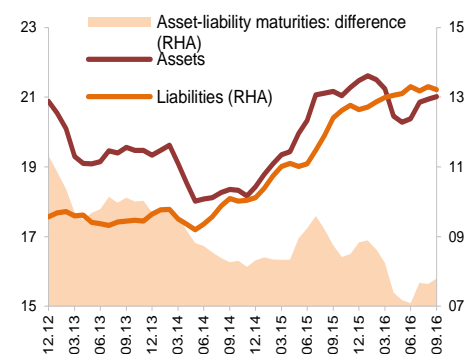
**Chart III.3.1**  
Maturities of TL Assets-Liabilities of Banks  
(Interest rate-sensitive assets and liabilities, 3-Month MA, Month)



Source: CBRT (Latest data: 09.16)

*Horizontal course in the FX asset-liability maturity mismatch continued.*

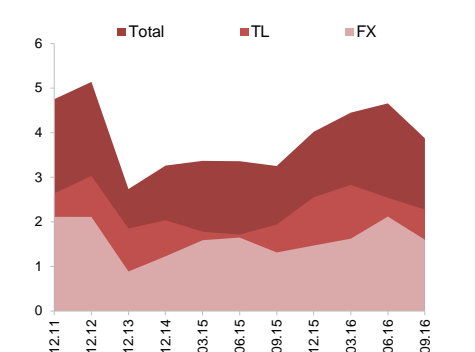
**Chart III.3.2**  
Maturities of Banks' FX Assets-Liabilities  
(Interest rate-sensitive assets and liabilities, 3-Month MA, Month)



Source: CBRT (Latest data: 09.16)

*Impact of interest rate shocks on capital is limited.*

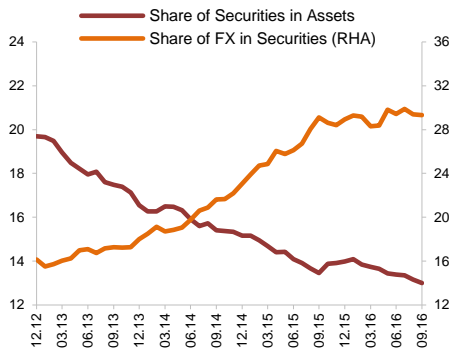
**Chart III.3.3**  
Loss/Capital after TL and FX Interest Rate Shocks  
(Percent, Point)



Note: Calculations are based on the data of banks with an asset size of TL 6 billion and more (excluding Eximbank and Provincial Bank-İller Bankası).

Source: CBRT (Latest data: 09.16)

**Chart III.3.4**  
Securities Portfolio  
(Percent)



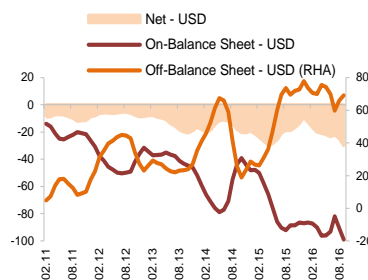
Source: CBRT (Latest data: 09.16)

In addition to the repricing channel, another channel through which the financial intermediation system can be affected by external interest rate shocks is the revaluation of securities. The share of securities in the banking sector assets declined to 13 percent. Approximately 30 percent of the portfolio consists of FX-denominated securities. The average maturity of TL-denominated securities is five years while that of FX-denominated securities is four years (Chart III.3.4).

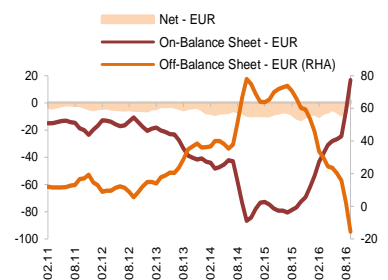
**The Turkish banking system maintains its resilience to exchange rate risk.** The regulation on the net FX general position puts a restriction on the total foreign currency short position of the banking system, yet it does not impose any restrictions concerning cross currency swaps. Nevertheless, banks refrain from taking positions in the US dollar and euro, which constitute a considerable part of their FX assets and liabilities. With the recent decline in the costs of funding in euro, firms' preferences in foreign currency loans have significantly shifted towards euro-denominated loans. Additionally, banks started to hold significant amounts of euro deposits at the CBRT following the removal of the restrictions on the collateral FX deposit facility in July 2016, which provided banks with the opportunity to borrow in TL by placing FX deposits as collateral. As a result, banks had on-balance sheet long positions in euro. Banks offset their on-balance sheet long positions in euro by taking off-balance sheet short positions in euro through euro-US dollar currency swaps (Chart III.3.5, Chart III.3.6). As of November 11, 2016, limitations on the collateral FX deposits resumed. It is predicted that this practice will narrow the on-balance-sheet long and off-balance-sheet short positions of banks in euro.

*Euro and US dollar denominated net short positions are at low levels.*

**Chart III.3.5**  
On- and Off-Balance Sheet Items - USD  
(Billion TL)



**Chart III.3.6**  
On- and Off-Balance Sheet Items - Euro  
(Billion TL)



Source: CBRT (Latest data: 09.16)



### III.4 Profitability and Capital Adequacy

As of September 2016, the banking sector's annual cumulative net income increased by around 50 percent compared to the same period last year. Accordingly, the return on assets (ROA) and return on equity (ROE) of the banking sector also increased significantly over the past one year. This improvement in the indicators of profitability is a widespread phenomenon on a bank-by-bank basis. The enhancement in profitability supported equities and thus, with slowdown in loan growth, affected capital adequacy ratio (CAR) positively. As a result, the sector's CAR increased to 16 percent (Chart III.4.1 and Chart III.4.2).

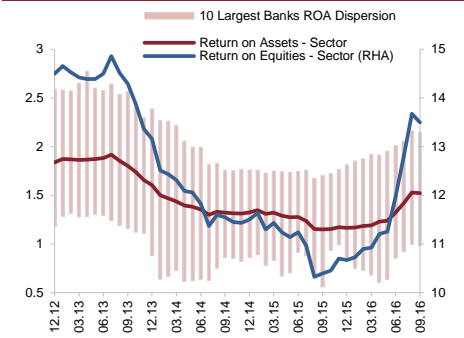
#### III.4.1 Developments in Profitability

Profitability indicators of banking sector began to deteriorate by mid-2013, when the FED announced taper tantrum, and this trend continued until September 2015. Interest expenses increased as a result of rising funding costs, which in turn contributed to the decline in profitability in this period. The decrease in non-interest income such as banking service revenues due to the BRSA's regulations and unfavorable outlook in other non-interest income/expenses item driven mostly by increasing currency swap rates were other potent elements in the recession of profitability. On the other hand, a more efficient management of non-interest expenses was the primary factor that partially limited the negative effects (Chart III.4.3).

The recovery observed in profitability in the past one year was mainly due to the improvement in non-interest expenses, the partial recovery in net interest income, and the decrease in losses in securities trading, derivatives and foreign exchange transactions (Chart III.4.3). The most influential item in non-interest expenses was reduced general provision expenses due to changes in asset composition and regulations. The growth in consumer loans -except housing- and credit cards, the items having higher provision rates, was more limited than the growth in other types of loans with lower provision rates. The general provision rates in consumer loans and credit cards, which had previously been 4 percent for the first group of loans and 8 percent for the closely monitored loans, were

*Profitability shows a strong recovery.*

**Chart III.4.1**  
Return on Assets (ROA) and Return on Equities (ROE)  
(Percent)

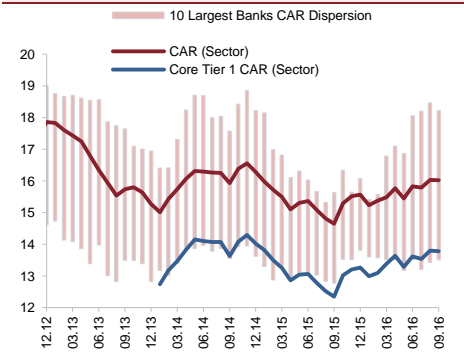


Note: Profitability ratios are calculated by dividing the annual cumulative profit by one year's average denominator.

Source: CBRT (Latest Data: 09.16)

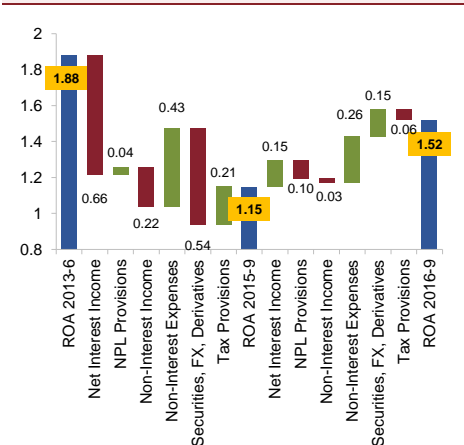
*Capital adequacy has gained momentum with the strengthening of the profitability and the slowing down of the loans.*

**Chart III.4.2**  
CAR and Core Tier 1 CAR  
(Percent)



Source: CBRT (Latest Data: 09.16)

**Chart III.4.3**  
Effects of Income Statement Items on Return on Assets (Points)

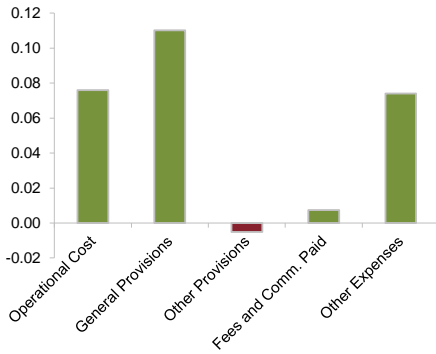


Note: Red columns indicate decreasing, green columns indicate increasing effects.

Source: CBRT (Latest Data: 09.16)

*Virtually all sub-components have had positive effect on non-interest expenses.*

**Chart III.4.4**  
Effects of Non-interest Income Items on ROA  
(between 2015 Sep. – 2016 Sep., Points)

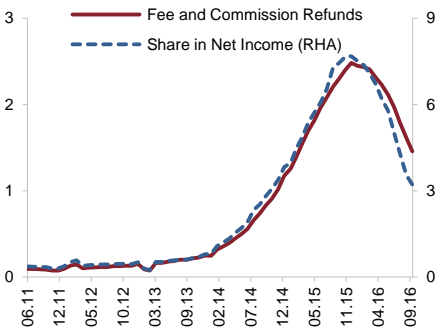


Note: Red columns indicate decreasing, green columns indicate increasing effects.

Source: CBRT (Latest Data: 09.16)

*The effect of fee and commission refunds is gradually diminishing.*

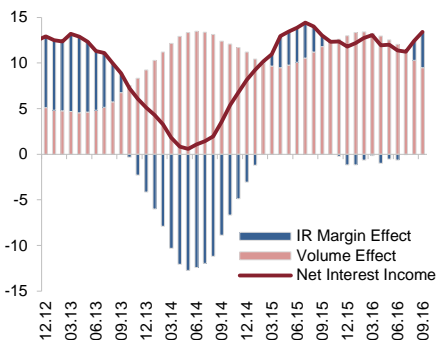
**Chart III.4.5**  
Fee and Commission Refunds  
(Annualized, Billions TL, Percent)



Source: CBRT (Latest Data: 09.16)

*The decline in interest rates has begun to affect the net interest income positively.*

**Chart III.4.6**  
Contribution to Changes in the Net Interest Income  
(Annualized, Billion TL)



Source: CBRT (Latest Data: 09.16)

reduced to 1 percent and 2 percent respectively, effective September 2016, in accordance with the other types of loans. Therefore, the positive impact of general provisions on profitability is expected to prevail in upcoming periods.<sup>1</sup>

A significant portion of the positive surplus in non-interest expenses stems from the limitation of operational expenses through austerity measures taken by banks. As a matter of fact, in the last one year, nearly 200 branches were closed and the total number of personnel decreased by more than 3,300 in the sector.<sup>2</sup> Finally, other non-interest expenses item, which generally accounts for one-time impacts and adjustments, also contributed to the increase in profitability with the decline in the effects of fees and commission repayments from previous years (Chart III.4.4 and Chart III.4.5). On the other hand, non-interest income continued to post a relative decline after the regulations in 2014<sup>3</sup>, however, the Turkish banking sector recorded an inflow of approximately TL 1.6 billion through this item due to the global restructuring of Visa in 2016, which, in turn, reduced the negative effect of the non-interest income on profitability.

The limited recovery in the net interest income item in the last one year raised the return on assets by around 10 basis points (Chart III.4.3). In the last six months, the effect of volumetric growth on net interest income decelerated; but the net interest income trended up with the recovery in the interest margin between funding and lending (Chart III.4.6). The reduced funding costs as a result of the CBRT's interest rate cuts stood out as the most influential factor in widening interest rate margins in this period. Due to the maturity mismatch between assets and liabilities, the decline in interest rates led to a faster decline in interest expenses than interest income. On the other hand, the fact that the deposit rates have a relatively limited decline compared to the loan rates and the adaptation of

<sup>1</sup> Before September 2016, the higher provision rates were applied to banks whose loan portfolio consisted of more than 25 percent of consumer loans and whose NPL ratio in consumer loans - excluding housing loans- were over 8 percent. This application was abolished by the Regulation on the Amendment to the Regulation on the Procedures and Principles for the Determination of the Qualifications of Loans and Other Receivables and the Provisions to be Held by Banks (O.G. of 27.09.2016 No: 29840).

<sup>2</sup> The calculations do not include the change in branches and personnel of banks transferred to the SDIF.

<sup>3</sup> Regulation on Procedures and Principles on the Fees to be Obtained from Financial Consumers (O.G. of 03.10.2014 No. 29138)

the asset returns to the new interest rates over time could limit the contribution from the interest margin to the net interest income in the upcoming period. However, the impact of falling interest rates on the loan demand is expected to strengthen the positive contribution from the volume channel.

In the last year, the most negative impact to the sector profitability came from the specific provision expenses. Due to the increase in NPL rates and the decline in collection rates, banks act prudently and increase their specific provisions significantly. On the other hand, the increase in the closely monitored loans indicates that the upward trend in NPL rates may continue for an extended period. Therefore, it seems probable that the cost of provisions will put pressure on bank profits, depending on progress in NPLs. However, as stated in the previous Financial Stability Reports, the banks are already allocating high provision rates for NPLs when all collaterals are taken into account. Owing to the prudent attitude of banks vis-à-vis the provisioning, a likely recovery to be observed in collections rates on the back of the revival of the economic activity can make a vigorous contribution to profitability (Chart III.4.7).

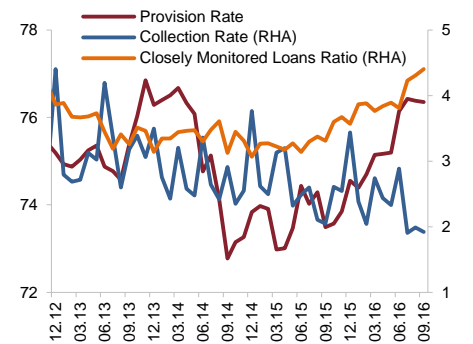
Other non-interest income/expenses item, in which the positions of banks in securities trading, derivatives and foreign exchange (FX) transactions are accounted for, had a more positive outlook and affected the profitability favorably compared to period when the ROA was declining. While the gains from securities trading are maintained, the resultant of derivative and FX transactions, used for the asset-liability management by banks, costed less due to the lower FX swap rates (Chart III.4.8).

In response to the decreasing profitability ratios of banks, the market value/book value indicators of the banking sector have recently posted a worldwide decline. The Borsa Istanbul (BIST) banking index market value/book value indicator, previously showing a similar behavior as in the case of other emerging market indices; but diverged from them following the negative domestic developments in July. With the fading effects of this negative development in time, the increase in the profitability of banks is expected to reflect on market indicators and the Turkish banking

*As the collection rates decrease, the provision ratios are drawn to more cautious levels.*

**Chart III.4.7**

Additional Indicators on NPLs  
(Percent)

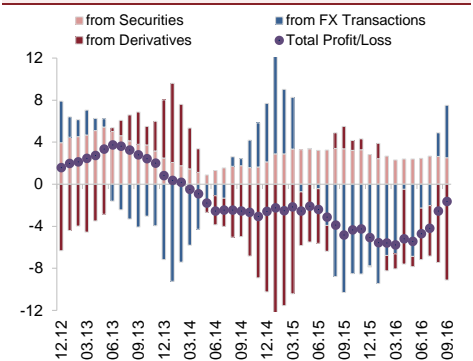


Source: CBRT (Latest Data: 09.16)

*The negative effect of derivative and FX transactions on profitability is decreasing.*

**Chart III.4.8**

Profit/Losses from Security, Derivative and FX Transactions  
(12-Month Cumulative, Billion TL)

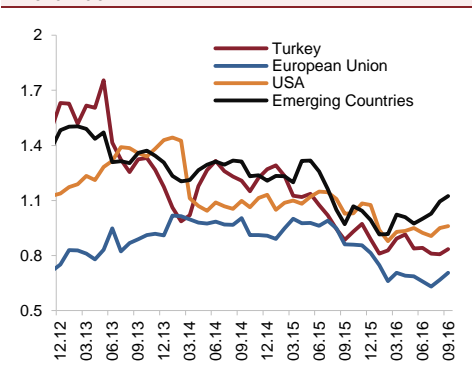


Source: CBRT (Latest Data: 09.16)

*The Turkish banking sector showed signs of divergence from other countries in the markets due to negative domestic developments.*

**Chart III.4.9**

Banking Sector Market Value/Book Value  
Worldwide

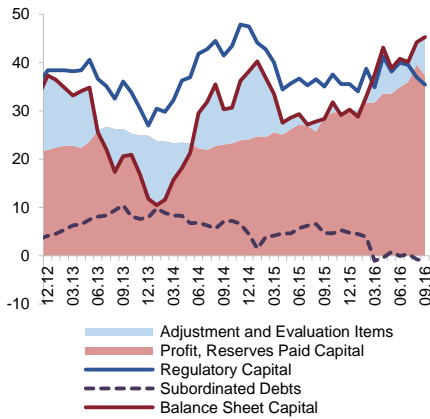


Source: CBRT (Latest Data: 09.16)

indicators are estimated to converge to those of other emerging economies (Chart III.4.9).

**Capital strengthens with increased profitability.**

**Chart III.4.10**  
Changes in Items Affecting Capital  
(12 Months Cumulative, Percent)



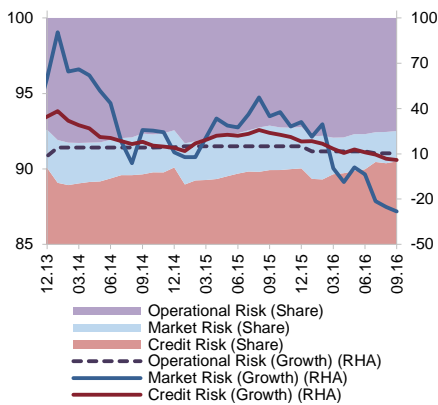
Source: CBRT (Latest Data: 09.16)

**III.4.2 Capital Adequacy**

The strong recovery in profitability emerged as the most important element affecting capital in the last one year. In this period, the significant decrease in the interest rates on government securities also positively affected the capital via securities reevaluation channel. However, the recent uptrend in the interest rates on government securities indicates that the cumulative contribution from this channel to capital might taper in the coming periods. On the other hand, the exclusion of some of the subordinated debts that had been acquired in the past and have some certain conditions, stock cancellation profits and general provisions for possible risks from the legal capital definition affected the capital adversely (Chart III.4.10).<sup>1</sup>

**Slowdown in credit growth is also seen in credit risk.**

**Chart III.4.11**  
Risk Components  
(Percent)



Source: CBRT (Latest Data: 09.16)

In the last one-year period, there was no significant change in the risk-weighted asset composition, and credit risk maintained its predominant role with a weight of about 90 percent. With the amendments made to the Capital Adequacy Regulation in January 2016, the risk weighting of 50 percent in housing loans decreased to 35 percent and the risk weights ranging from 75 to 250 percent in unsecured consumer loans and credit cards decreased to 75 percent, positively affecting the risk weighted items.<sup>2</sup> When the development of risk weighted asset components is examined, it is seen that the credit risk has been acting virtually in direct proportion with loan growth and has been slowing down. The market risk decelerated, thus turned negative because of the relatively increased predictability of the FED's policies. The operational risk amount, which is updated once a year by banks, increased by 12 percent compared to the previous year (Chart III.4.11). The reductions in the credit rating of Turkey could increase the risk weights applied to the foreign currency receivables from the central government and the Central Bank, to 100 percent from 50 percent

<sup>1</sup> Regulation on the Amendment to the Regulation on Equities of Banks (O.G. of 23.10.2015 No. 29511 and O.G. of 20.01.2016 No: 29599 )

<sup>2</sup> Regulation on the Amendment of the Regulation on Measurement and Evaluation of Capital Adequacy of Banks (O.G. No. 29599 on 20.01.2016)

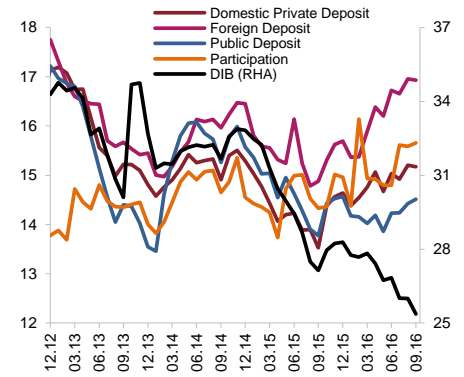
(depending on the credit rating agencies that the banks previously determined and reported to use in their assessments) and may play a negative role on CARs.<sup>1</sup>

Increase in the profitability strengthened the capital, and the slowdown in the loan growth rate limited the risk-weighted asset growth. Depending on these factors, the sector's capital adequacy strengthened significantly in the last one-year period. The strengthening of the capital adequacy became more pronounced in all banking groups, except development and investment banks (DIBs), which already have very high CAR values; but is more limited in public deposit banks due to their higher loan growth rates (Chart III.4.12).

According to the analysis of the relationship between the capital adequacy ratio and the credit growth in view of profitability levels recently reached, by using the methods and parameters in Box III.4.1 of the November 2015 Financial Stability Report, if the banking system continues to work with the current ROA, which is 1.5 percent, it will be able to support an annual nominal loan growth of around 11 percent without lowering the current level of CAR. On the other hand, at such a level of profitability, a nominal loan growth of 15 percent can be supported by 22 years, and a growth of 20 percent can be supported by up to five years, without falling under the target CAR limit (12 per cent). Finally, if the CAR limit is considered to be the legal minimum level including the capital protection buffer (10.5 percent), the sector will not face any constraints in terms of the capital adequacy while supporting of a loan growth of less than 17 percent (Chart III.4.13).

*Capital adequacy is strengthening in all banking groups except DIBs.*

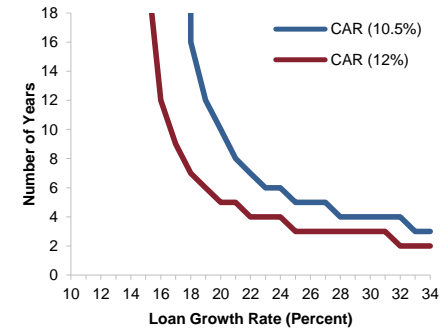
**Chart III.4.12**  
CARs According to Bank Types  
(Percent)



Source: CBRT (Latest Data: 09.16)

*Capital adequacy and return on assets are strong enough to support higher growth rates.*

**Chart III.4.13**  
Relationship Between the CAR and Loan Growth Rate under the Current Profitability



Source: CBRT, Authors' Estimations (Latest Data: 09.16)

<sup>1</sup> Following the rating cuts by Moody's and S&P, only three of the banks in the sector started to apply one hundred percent weight for foreign currency receivables from the central government and the Central Bank. The effects of this situation are seen in the relevant banks as of September 2016.

## Special Topics

### IV.1 Banking Sector's Liquidity Position and Deposit Rates

#### *Abstract*

*This study analyzes possible reasons behind the recent discrepancy between the TL deposit rates and the short-term market rates, which historically tracked one another closely. In this regard, the study tests the validity of the hypothesis that the TL deposit rates became more costly compared to alternative funding resources due to bank's liquidity positions. Accordingly, using econometric techniques, the study analyzes the relation of the deposit rates with the Liquidity Coverage Ratio (LCR) and Loan to Deposit Ratio (LDR) that represent the short-term and long-term liquidity positions of banks, respectively. The estimation results suggest that both indicators are statistically significant, while the long-term liquidity position indicator LTD is a more influential factor in explaining the recent deposit competition.*

#### IV.1.1 Introduction

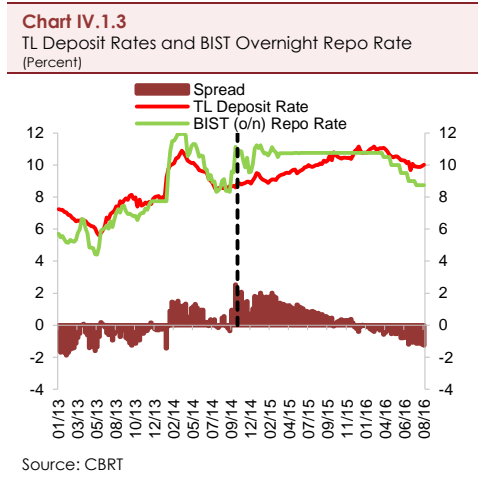
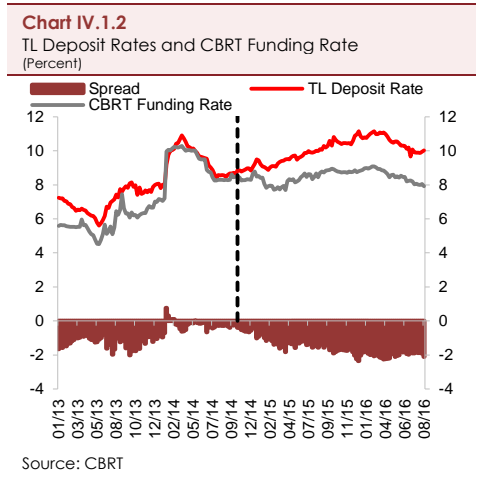
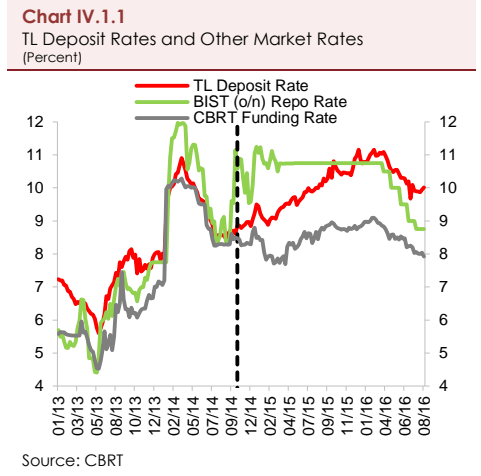
In pricing the TL deposit rates, the costs of alternative sources and accessibility of these sources are expected to play an important role. It can be argued that in countries with short maturities and limited alternative resources, the relationship between money market rates and deposit rates may be stronger. Taking into account the fact that the money market rates are under the control of the central banks, this suggestion means that the policy interest rate should play a decisive role on deposit rates. As a matter of fact, Binici, Kara and Özlü (2016) find that BIST overnight repo rates in particular play a key role in the pricing of deposits. In addition to the money markets, it is possible to say that the external debts increasing in the balance sheet of the banking sector constitute an alternative to deposits. Difficulties in accessing external debts or a rise in the costs of these resources are among the factors that can affect deposit rates.

Chart IV.1.1 shows the development of the TL deposit rates alongside the weighted average cost of the CBRT Funding (CBRT funding rate) and the BIST overnight repo rate. The TL deposit rates, which are highly correlated with short-term market rates historically, started to diverge from these interest rates since the last quarter of 2014 and tended to increase continuously until April 2016. In the same period, while the spread between the TL deposit rates and the CBRT funding rate increased steadily, the spread between the TL deposit rates and the BIST overnight repo rate became more pronounced (Chart IV.1.2 and Chart IV.1.3). The CBRT's decision to reduce marginal funding rates since March 2016 did not change this tendency and the decline in deposit rates after this period followed the fall in policy rates to a limited extent. Bank-based analysis also shows that the dynamics of deposit rates are effective for all bank groups.

As a result, it is observed that deposit rates have diverged from other short-term market rates, which historically displayed a close relationship with deposit rates, since the last quarter of 2014, and the recent decline in deposit rates followed the decrease in other short-term interest rates only to a limited extent. In this analysis, the possible reasons behind the relatively high course and downward rigidity in deposit rates, which also limits the effectiveness of the monetary policy, will be discussed both graphically and empirically.

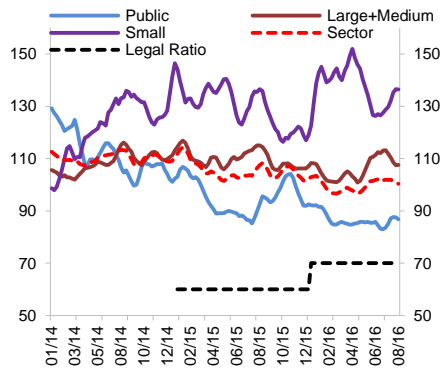
#### IV.1.2 Factors Determining the Dynamics of Deposit Rates

The discrepancy between the TL deposit rates and other market rates implies that deposits have become more valuable than alternative sources since the last quarter of 2014. This may be due to the reduced access to alternative resources and/or that the characteristics which distinguish deposits from related sources have become more important during this period. In this period, the BIST rates materialized at the upper bound of the interest rate corridor in which the CBRT has committed to provide unlimited liquidity against collateral, and banks were not at the limit of free GDDS stock, thus it can be asserted that there were no constraints on access to money markets. However, since the conditions for accessing foreign funding, which can substitute for deposits, did not change significantly during this period, the probability that deposits become





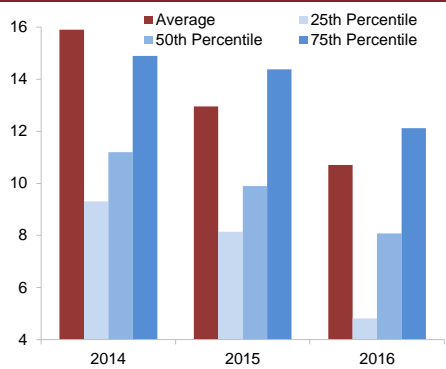
**Chart IV.1.4**  
Liquidity Coverage Ratio\*  
(4-Week Moving Average, Percent)



\* "Public" 3 public banks, "Big + Medium", the largest 9 banks according to asset sizes outside the public sector, "Small" the second largest 9 banks according to asset size outside the public sector, and "Sector" represent the all 21 banks.

Source: CBRT

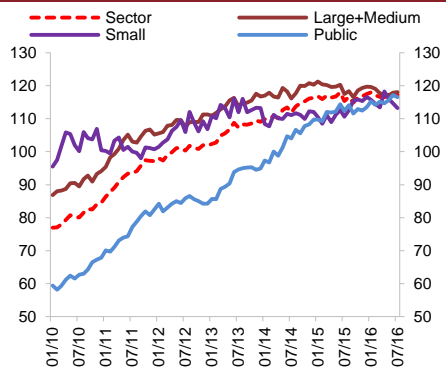
**Chart IV.1.5**  
Quantiles for the Loan Capacity of Margins on Legal Ratio\* (Percent)



\* These quantiles show the ratio of the margins over the legal ratio to the current loan volumes of the banks in the 25th, 50th and 75th percentiles, from the smallest to the largest, respectively.

Source: CBRT

**Chart IV.1.6**  
Public-Private and Scale-Based LDR Developments\* (Percent)



\* "Public" 3 public banks, "Big + Medium", the largest 9 banks according to asset sizes outside the public sector, "Small" the second largest 9 banks according to asset size outside the public sector, and "Sector" represent the all 21 banks.

Source: CBRT

more important within the framework of the characteristics that distinguish deposits from other sources of funds has increased.

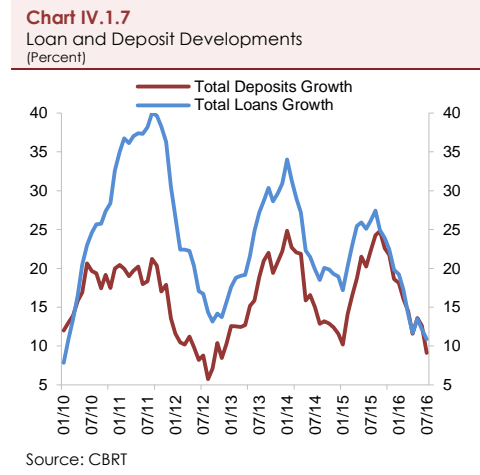
The main factors that make deposits more advantageous compared to other sources of funds are: i) they do not require collateral, ii) they are relatively stable sources of funds. Unlike deposits, borrowing from money markets takes place against collateral and therefore it adversely affects the liquidity position of banks. The fact that deposits are more stable funding sources makes them more valuable with respect to banks' structural or longer-term liquidity positions. At times of stress, banks may have difficulty in rolling over their external funding sources, which are considered as non-core liabilities. Banks, which are highly dependent on non-core funding, bear the risk of facing short-term liquidity position problems in the long term even if they have strong short-term liquidity positions.

In this regard, we examine the relationship between banks' short-term liquidity positions and their dependence on non-core liabilities, and TL deposit rates. As an indicator of banks' short-term liquidity positions, we use the Liquidity Coverage Ratio (LCR) that is monitored by the BRSA and limited by regulations. We observe that the average LCRs for sectors and bank groups did not significantly deteriorate over the last three years and the latest data indicate that they exceeded legal limits by a significant margin (Chart IV.1.4). This significant margin above the legal ratios reduces the likelihood that such rates will have a restrictive effect on the banks. To give a concrete example of the strength of the short-term liquidity position, if the banks prefer to convert their excess liquidity to loans by drawing their current rates to the legal limits, the loan capacity of the margin will be quite high (Chart IV.1.5). Hence, banks' margins with very high loan capacity weaken the possibility that LCR acts as the main reason underlying the tendency of banks toward deposits.

To represent banks' dependence on non-core liabilities, the Loan to Deposit Ratio (LDR) was used. The reason for choosing the LDR ratio among other alternative indicators is that banks prefer to use this ratio to emphasize the stability of funding sources in the presentations that they make to investors. This ratio, which was on a steady rise until the end of 2014, has been relatively flat since the



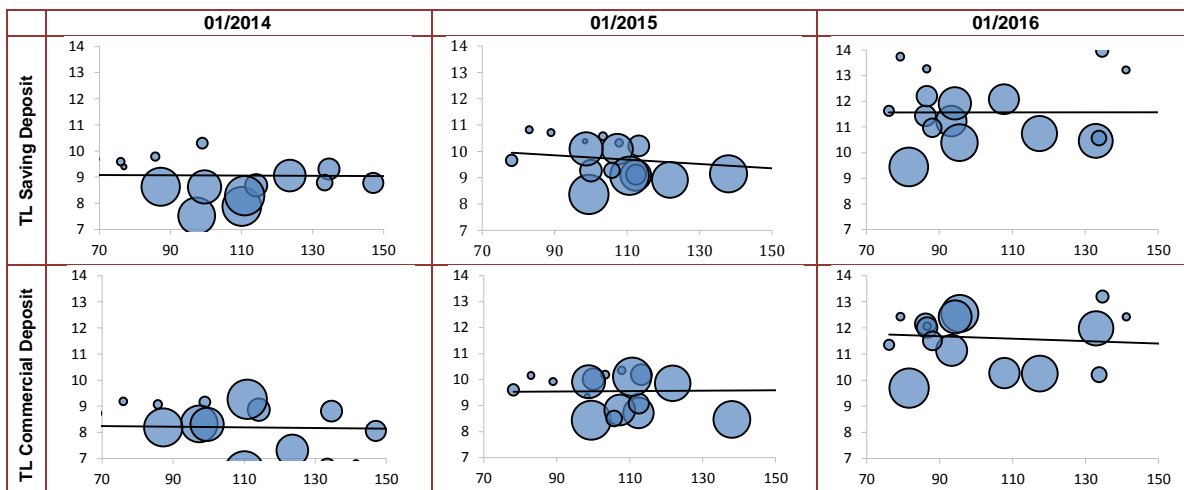
beginning of the period of deposit competition (Chart IV.1.6). This is thought to be a consequence of macroeconomic developments, independent of bank preferences, as well as being a consequence of banks setting limits for themselves. Therefore, there is a possibility that banks may place an internal limitation on this ratio as a result of their own internal evaluations, or the importance attributed by investors that provide resources to the banks. If the stable course in the LDR during the last one-year period is the consequence of an internal restriction that banks intend to strictly obey, the deposit base will be a determinant on the loan growth rates in the upcoming period and more clearly the lending and deposits will grow at the same pace (Chart IV.1.7). This finding confirms the necessity of the steps taken to achieve higher saving rates in our country.



### IV.1.3 Liquidity Positions and Deposit Rates

The relationship between short-term and long-term liquidity indicators of banks and deposit rates in the light of the previous section can be examined through simple graphs. In this respect, Figures IV.1.8 and IV.1.9 show the relationships between the TL deposit rates and liquidity positions of banks, LCR and LDR. No meaningful relationship is observed between LCR and deposit interest rates in 2014, when there was no deposit competition, and there is no indication that this relationship has become stronger recently (Chart IV.1.8).

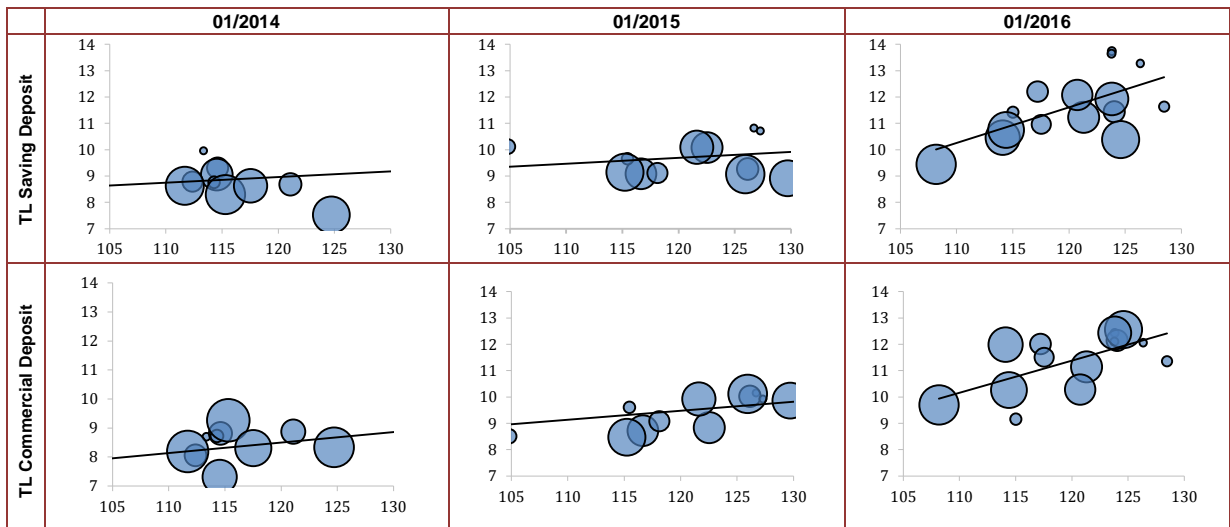
**Chart IV.1.8**  
Deposit Rates & LCR & Assets Size\*



\* On x-axis of the charts, there are banks' LCR values and on the y-axis, there are TL saving deposit rates. The balloon sizes represent the banks' assets sizes.  
Source: CBRT

Chart IV.1.9 shows the relationship between LDR and the TL deposit rates. In 2014, when there was no deposit competition, there was a very weak relationship between the related variables, and this relationship is apparently strengthened in the recent period. Incidentally, it seems likely that banks recently converged in their internal limits of LDR and therefore started aggressive pricing on deposit rates in order to expand their deposit base or at least maintain their existing deposit base.

**Chart IV.1.9**  
Deposit Rates & LDR & Assets Size\*



\* On x-axis of the charts, there are banks' LDR values and on the y-axis, there are TL saving deposit rates. The balloon sizes represent the banks' assets sizes. 5 banks with the highest and lowest LDR ratios have been excluded.

Source: CBRT

On the other hand, in order to make more reliable conclusions about the relation between banks' liquidity positions and deposit rates, it is thought that an empirical analysis should be done in addition to graphical analysis. In this respect, the relationship between these variables is analyzed through the panel data analysis method in the next section.

#### IV.1.4 Data Setup and Methodology

We use fixed effects for our analysis employing weekly data of 21 deposit banks, which have significant weight in the sector for the period January 2013-August 2016.<sup>1</sup> We examine how the liquidity ratios of the banks in that period are effective on the TL deposit rates, and the lagged values of the explanatory variables are included in the regression in order to solve the possible endogeneity

<sup>1</sup> The banks' asset size covers 89.2 percent of the total asset size of the banking sector as of August 2016. Therefore, the representative power of the sample set is quite high.

problem. The following model was used to analyze the effects of the development of banks' liquidity ratios on the TL deposit rates:

$$r_{i,t} = \beta_0 + \beta_1(LDR)_{i,t-3} + \beta_2(LCR)_{i,t-3} + \beta_3(Interest)_t + \beta_4(Interest)_{t-1} + Bank'_{i,t-1}\delta + \gamma_i + \theta_t + \varepsilon_{i,t}$$

$r_{i,t}$ , is bank i's deposit rates at time t,  $(LDR)_{i,t-3}$  is bank i's LDR value at time t-3,  $(LCR)_{i,t-3}$  is bank i's LCR value at time t-3,  $(Interest)_t$  is the BIST overnight repo rate or the CBRT funding rate at time t,  $(Interest)_{t-1}$  is the BIST overnight repo rate or the CBRT funding rate at time t-1,  $\gamma_i$  is bank i's fixed effects,  $\theta_t$  represents fixed effects at time t. The model also includes dummy variables for certain ratios at some levels and their interactions with the liquidity ratios mentioned above, in the sense that certain levels in banks' liquidity positions may have an impact on deposit pricing behavior.

#### IV.1.5 Empirical Findings

In all the regressions listed in Table IV.1.1, LCR and LDR are the main variables, while the first four regressions include savings deposits and the other regressions include commercial deposits. Unlike the first regression, the second regression also includes bank-specific variables. In the third and fourth regressions, the deposits are divided into two groups: small and large. The results indicate that LDR has a positive and significant effect at 1 percent level on all deposit rates irrespective of type and amount. According to the second and sixth regressions where the bank-specific variables were controlled, the banks with higher LDR applied higher interest rates to the TL deposits and an increase by 10 basis points in the LDR leads to an increase by 18 basis points in saving and commercial deposit rates. LCR has a significant effect only on commercial deposits of small amounts at the 10 percent level. Consistent with the related literature, it is observed that the BIST overnight repo rate has a positive effect on deposit rates and it is the main determinant of deposit rates. The results also indicate that banks with relatively slow growth rate, relatively high NPL ratios, and relatively weak sources of equity have higher deposit rates.<sup>1</sup>

<sup>1</sup> Consistent with the results in the related literature, it is observed that bank's opportunities to increase lending may lead to an increase in deposit rates in order to attract new deposits and fund the new loans (Jayaratne and Morgan, 2000; Gatev and Strahan, 2006). Acharya and Mora (2015) present evidence that banks that faced a liquidity shortage (their lending commitments exceeded their deposits) during the Global Financial Crisis increased deposit rates in order to attract more deposits.

**Table IV.1.1**

## Estimation Results

Dependent Variable:	Deposit Rates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Independent Variables	Saving	Saving	Saving of Small Amount	Saving of Large Amount	Commercial	Commercial	Commercial of Small Amount	Commercial of Large Amount
LDR <sub>t-3</sub>	0.018*** (0.003)	0.018*** (0.004)	0.016*** (0.003)	0.025*** (0.004)	0.020*** (0.004)	0.018*** (0.004)	0.024*** (0.003)	0.015*** (0.005)
LCR <sub>t-3</sub>	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001 (0.001)
Interest <sub>t</sub>	0.401*** (0.022)	0.395*** (0.023)	0.349*** (0.022)	0.577*** (0.028)	0.511*** (0.025)	0.509*** (0.026)	0.386*** (0.022)	0.537*** (0.028)
Interest <sub>t-1</sub>	0.384*** (0.022)	0.368*** (0.023)	0.364*** (0.022)	0.398*** (0.029)	0.395*** (0.026)	0.395*** (0.027)	0.334*** (0.022)	0.399*** (0.029)
<b>Bank-Specific Variables</b>								
Assets <sub>t-1</sub>		-0.227*** (0.047)	-0.232*** (0.046)	-0.226*** (0.058)		-0.152*** (0.049)	-0.103** (0.042)	-0.140** (0.054)
NPL <sub>t-1</sub>		0.415*** (0.035)	0.366*** (0.034)	0.543*** (0.040)		0.390*** (0.035)	0.362*** (0.031)	0.389*** (0.037)
Capital/Assets <sub>t-1</sub>		-0.190*** (0.023)	-0.172*** (0.023)	-0.284*** (0.030)		-0.231*** (0.026)	-0.119*** (0.020)	-0.231*** (0.028)
Profit/Assets <sub>t-1</sub>		-0.020 (0.037)	-0.016 (0.036)	-0.020 (0.049)		-0.063* (0.038)	0.007 (0.030)	-0.041 (0.040)
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2.128	2.128	2.128	1.994	2.204	2.204	2.204	2.099
R <sup>2</sup>	0.715	0.744	0.768	0.484	0.618	0.635	0.705	0.626

\*\*\*, \*\*, \* indicate statistical significance at 1 percent, 5 percent and 10 percent, respectively. Values in parentheses refer to robust standard errors.

In addition to these results, it is estimated that certain levels of LCR and LDR for banks may also be of critical importance. For this purpose, 110 and 120 percent for LDR and 80 and 100 percent for LCR, are determined as critical levels and the banks are classified according to these levels. Although the LDR is found to be effective on deposit pricing in Table IV.1.1, it is not valid for banks whose LDR is below 110 percent, and LDR is effective in banks' deposit pricing behavior with a LDR of between 110 and 120 percent and over 120 percent (Table IV.1.2). Therefore, the results suggest that the LDR has a significant effect on the TL deposit rates and this impact is stronger when the LDR is above 110 percent. According to the results in Table IV.1.1, while the explanatory power of LCRs on deposit rates is limited, it is observed that this ratio is effective in deposit pricing for banks with LCR between 80 and 100 percent and LCR below 80 percent.

Table IV.1.2

## Estimation Results

Dependent Variable:	Deposit Rates					
	(1)	(2)	(3)	(4)	(5)	(6)
Independent Variables	Saving	Saving of Small Amount	Saving of Large Amount	Commercial	Commercial of Small Amount	Commercial of Large Amount
LDR*D110 <sub>t-3</sub>	-0.012 (0.007)	-0.012 (0.007)	-0.005 (0.009)	0.012 (0.008)	-0.012 (0.007)	-0.005 (0.009)
LDR*D110-120 <sub>t-3</sub>	0.012* (0.006)	0.010* (0.006)	0.025*** (0.008)	0.035*** (0.008)	0.010* (0.006)	0.025*** (0.008)
LDR*D120 <sub>t-3</sub>	0.023*** (0.004)	0.021*** (0.004)	0.029*** (0.005)	0.016*** (0.005)	0.021*** (0.004)	0.029*** (0.005)
LDR*D110-120	3.529*** (0.898)	3.291*** (0.859)	3.473*** (1.084)	0.044 (1.115)	3.291*** (0.859)	3.473*** (1.084)
LDR*D120	1.340* (0.805)	1.326* (0.754)	0.656 (1.065)	-2.261** (1.095)	1.326* (0.754)	0.656 (1.065)
LCR*D80 <sub>t-3</sub>	-0.008*** (0.003)	-0.009*** (0.002)	-0.006* (0.003)	-0.005* (0.003)	-0.009*** (0.002)	-0.006* (0.003)
LCR*D80-100 <sub>t-3</sub>	-0.005*** (0.002)	-0.004** (0.002)	-0.008*** (0.002)	-0.004*** (0.002)	-0.004** (0.002)	-0.008*** (0.002)
LCR*D100 <sub>t-3</sub>	0.002 (0.001)	0.003 (0.001)	0.002 (0.001)	0.001 (0.001)	0.003 (0.001)	0.002 (0.001)
LCR*D80-100	1.445*** (0.228)	1.470*** (0.220)	1.406*** (0.298)	1.058*** (0.255)	1.470*** (0.220)	1.406*** (0.298)
LCR*D100	0.882*** (0.191)	0.771*** (0.192)	1.193*** (0.216)	0.752*** (0.184)	0.771*** (0.192)	1.193*** (0.216)
Bank Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Bank-Specific Variables	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2,128	2,128	1,994	2,204	2,128	1,994
R <sup>2</sup>	0.759	0.782	0.510	0.646	0.782	0.510

\*\*\*, \*\*, \* indicate statistical significance at 1 percent, 5 percent and 10 percent, respectively. Values in parentheses refer to robust standard errors. D80, D80-100, D100, D110, D110-120 and D120 are dummy variables that represent the banks' relevant liquidity indicator with lower than 80 percent, 80-100 percent, higher than 100 percent, lower than 110 percent, 110-120 percent and higher than 120 percent, respectively.

## IV.1.6 Conclusion

This study analyzes the possible reasons behind recent discrepancy between the TL deposit rates and the short-term market rates, which historically displayed a close relationship, since the last quarter of 2014. In this period, it is considered that the conditions of access to alternative sources of deposits did not change significantly. Moreover, the main factors that make deposits more advantageous compared to other sources of funds such as not requiring collateral and being relatively stable sources of funds have gained importance within the banks' liquidity positions. Therefore, it is considered that developments in liquidity positions of banks have played an important role in the dynamics of TL deposit rates. In addition, the developments in LCR and LDR representing the short and long-term liquidity positions of the banks, respectively, have been elaborated and their effects on the bank's deposit pricing behavior have been analyzed by means of econometric methods.

The results show that the LDR is an important factor in explaining the recent deposit competition, especially for the banks

whose LDR value is higher than the 110 percent level. Besides, it has been found that LCR, which is a short-term liquidity measure, has more limited effects than LDR on deposit rates, and this effect is more evident in the banks whose LCRs are below the 100 percent level. It is foreseen that the effect of LCR on deposit rates may be strengthened somewhat by raising the legal limit to 100 percent in 2019.

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## IV.2 The Effect of the CBRT Interest Rates Cuts on the TL Commercial Loan Interest Rates

Gradual cuts in the Central Bank overnight lending rate since March 2016 have been reflected in the TL loan rates by varying magnitudes according to loan types. Although the TL commercial loan rates move coherent with policy rate cuts, it is crucial to analyze the interaction for various firm scales in order to examine which company size benefited more from favorable funding rates. For this purpose, the distribution of the TL commercial loans and number of companies according to interest rate buckets are examined by firm scale.

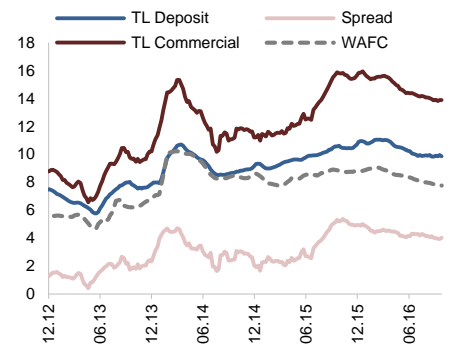
### IV.2.1 Developments in Funding Costs and Commercial Loan Rates

Loan growth has shown a significant slowdown since the second half of 2015. FX adjusted annual total loan growth, which stood at around 24 percent at the end of 2013, declined to 9 percent by October 2016. This loss of momentum began at the end of 2013 for retail loans particularly owing to the macroprudential measures while slowdown in commercial loans became apparent after the first half of 2015 (See Chart III.1.1). Bank Loans Tendency Survey indicates that in addition to the tightening of loan standards, weakening in the demand-side has also been effective in this development (See Chart III.1.8 and Chart III.1.9). According to survey results, decreasing funding needs especially for fixed investments and mergers&acquisitions for commercial loans, and consumer confidence and housing market prospects for consumer loans have been effective in the weakness of loan demand. On the other hand, according to the survey, credit supply continues to maintain a tight outlook since the second half of 2015, while the weakness in credit demand came to an end since the second half of 2016.

The cuts in the CBRT overnight lending rate, which started in March 2016, reached 250 basis points as of October 2016. In this period, the TL commercial loan rates decreased by 168 basis points and the TL deposit costs decreased by 118 basis points, thus loan-deposit interest rate spread narrowed slightly (Chart IV.2.1). However, decline in loan interest rates differs on the basis of firm

**Chart IV.2.1**

TL Commercial Loan, Deposit Rates and WAFC  
(4-Week Moving Average, Percent)

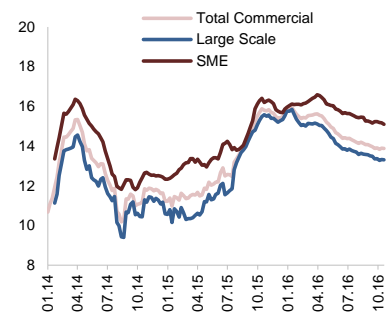


Note: Excluding corporate overdraft account and corporate credit cards. Moreover, zero interest loans are excluded from commercial loan interest rates starting from July 2015.

Source: CBRT (Latest Data: 21.10.16)

**Chart IV.2.2**

TL Commercial Loan Rates based on Firm Scale<sup>1</sup>  
(4-Week Moving Average, Percent)

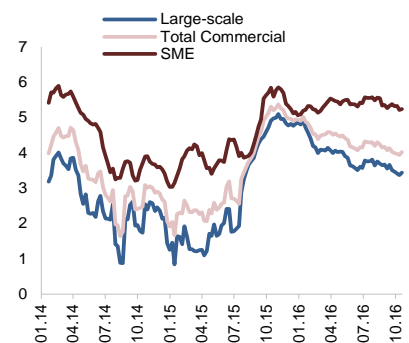


1) Excludes corporate overdraft account and corporate credit cards for all firm scale loans. Moreover, zero interest loans are excluded from commercial loan interest rates starting from July 2015.

Source: CBRT (Latest Data: 21.10.16)

**Chart IV.2.3**

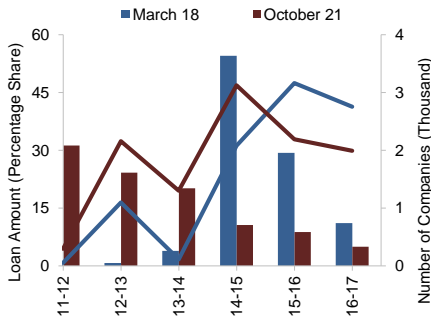
Spread Between TL Commercial Loan and TL Deposit Rate<sup>1</sup>  
(4-Week Moving Average, Percent)



1) Excludes corporate overdraft account and corporate credit cards for all firm scale loans. Moreover, zero interest loans are excluded from commercial loan interest rates starting from July 2015.

Source: CBRT (Latest Data: 21.10.16)

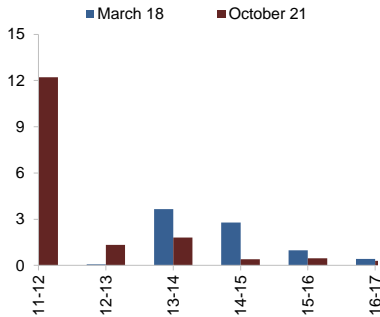
**Chart IV.2.4**  
TL Large Scale Commercial Loan Usage by Interest Brackets<sup>1)</sup>



1) Data for the largest 10 banks in the sector according to the assets size is used. Excluding overdraft accounts and credit cards. Column values are shown on the left axis, and line values are shown on the right axis. The percentage share of the loan amount represents the share within the 11-17% interest bracket.

Source: CBRT

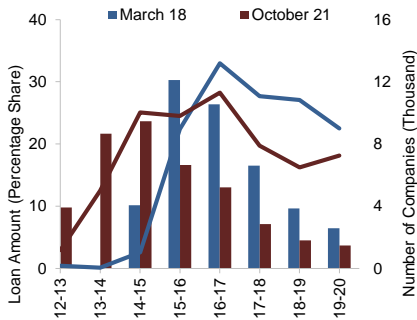
**Chart IV.2.5**  
Average Loan Amount Per Large Scale Companies by Interest Brackets<sup>1)</sup> (Million TL)



1) Data for the largest 10 banks in the sector according to the assets size is used. Excluding overdraft accounts and credit cards.

Source: CBRT

**Chart IV.2.6**  
TL SME Loan Usage by Interest Brackets<sup>1)</sup>



1) Data for largest 10 banks in the sector according to the assets size is used. Excluding overdraft accounts and credit cards. Column values are shown on the left axis, and line values are shown on the right axis. The percentage share of the loan amount represents the share within the 12-20% interest rate band.

Source: CBRT

scale. Considering MPC meeting dates in March and October 2016, it is observed that large corporate loan interest rates decreased by 180 basis points while the decline was 130 basis points for SME loans (Chart IV.2.2). The fall in SME loan-deposit spread was quite limited whereas it was stronger for large-scale firm loan – deposit spread (Chart IV.2.3). Factors regarding SME credit risk outlook was possibly effective in this differentiation.

#### IV.2.2 The Effects of the TL Commercial Loan Interest Rate Changes on Loan Amount and the Number of Corporate Borrowers by Interest Rate Brackets

In order to examine the effects of declining CBRT's marginal funding rate on loan volume and number of corporate borrowers by company size, TL commercial loan interest rates were analyzed by interest segments. The segments were determined considering large scale firms' loans concentrated in the 11-17 percent interest band and SME loans concentrated in 12-20 percent band. Before the March MPC meeting in which policy interest rate cuts started, large scale companies' TL loan disbursements was concentrated in the 14-15percent band in the third week of March 2016 while it was intensified in the 11-13 percent interest rate band for October 21, 2016. During this period, TL interest rate band for large scale firms' with the highest concentration decreased to 14-15 percent from 15-16 percent band (Chart IV.2.4). In addition, the amount of loans per company in the same period increased significantly for the 11-12 percent interest rate band (Chart IV.2.5).

On the other hand, while TL SME loan extension was concentrated in the 15-16 percent interest rate band in the third week of March, the 13-15 percent band gained momentum in the third week of October. Therefore, the interest rate band where large corporate loans intensified declined by 3 percentage points. Meanwhile, the deceleration in the intensified bracket for SME loans declined by 2 percentage points from 16-17 to 14-17 percent interest rate segment (Chart IV.2.6). Similar to large scale firms, amount of SME loans per company also rose in the same period and concentrated on lower interest rates. However, high volume loan usage by limited number of firms at low interest rates was effective in this particular development (Chart IV.2.7).

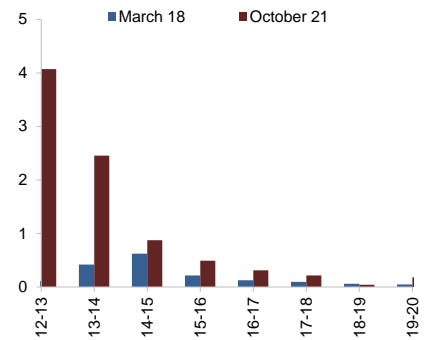


### IV.2.3 The Sampling Effect on TL Commercial Loan Interest Rate Changes

Change in the sample of companies should also be considered while assessing reflections of marginal funding rate cuts on TL commercial loan rates. In this study, January 1 and March 23, 2016, which is the period prior to policy interest rate cut was considered as the reference period. The weighted average interest rate of the loans originated after March 23, 2016 and those originated in the reference period are analyzed. In order to analyze the sample effect, TL commercial loan interest reductions were calculated by providing companies in the sample to be the same under different scenarios (Figure IV.2.1). Then for these scenarios TL commercial loan interest rate reductions are compared. With this method, it is aimed to separate the effect of firm specific factors for TL commercial interest rates especially for companies which are not included in the reference period.

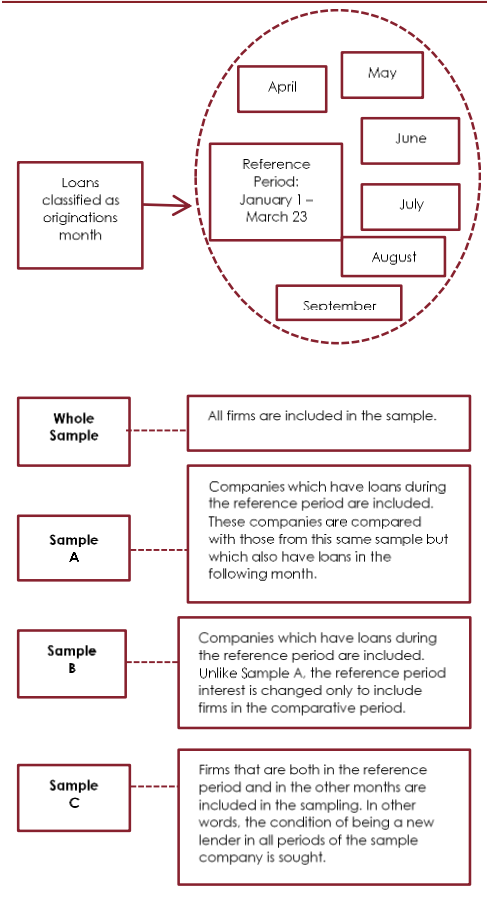
For the whole sample, it is observed that the weighted average interest rate of the loans originated in September decreased by 140 basis points compared to the reference period. In Sample A, funding cost for companies that borrow in the reference period and in the remaining months was compared to analyze the effect of changing sample. However, all of the companies using credit in the reference period may not be represented in the following months. For instance, companies borrowing both in April and in the reference period may differ from companies that used loan both in May and in the reference period. Thus, in Sample A, firms that borrow after March 23, 2016 is considered as a subset of the reference period for each month, and these subsets tended to be different from each other. Under this constraint, in case of Sample A, the decline in interest rate was 151 basis points in September compared to the reference period. Even though number of observations reduces by about 35 percent for Sample A compared to the entire sample, it substantially impedes the misinterpretation risk for deteriorating interest rates due to changing borrower sample.

**Chart IV.2.7**  
Average Loan Amount Per SME by Interest Brackets<sup>1</sup>  
(Million TL)



<sup>1</sup>) Data for largest 10 banks in the sector according to the assets size is used. Excluding overdraft accounts and credit cards.  
Source: CBRT

**Figure IV.2.1**  
Sample Explanations



In sample B, the interest rates of the two periods are compared based on the companies that have borrowed in both the reference period and the month in which interest rates decline. In sample B, it is ensured that the firms that used credit in the month when the interest rate reductions are realized, and the firms that used credit in the reference period are the same firms. Therefore, the companies in the reference period can change according to the companies that have used credit in the following months. If sample B is used, the interest rate drop in September is 142 basis points relative to the reference period. However, it can be misleading to compare the interest rate differentials among the loans opened in months other than the reference period because the sample changes in sample B. For this reason, in the sample C, credit interest rates of firms that have used credits in all other months including the reference period have been examined. In this case, the decrease in interest rate in September is 165 basis points relative to the reference period. As a result, the sample effect in the commercial loan interest rate change shows that companies that use loan with higher interest rates in the following months without using any loan in the reference period have limited interest rate decrease (Table IV.2.1). On the other hand, interest rate declines are seen to be higher when the analysis focuses on firms that used credit in the reference period of 2016 and all other months.

**Table IV.2.1**  
Sample Effect on TL Commercial Loan Rates

	Whole Sample	Sample A	Sample B	Sample C
23 March-31 March	0.03	-0.03	0.17	0.02
April	-0.31	-0.32	-0.20	-0.34
May	-0.54	-0.51	-0.39	-0.48
June	-1.00	-1.05	-0.97	-1.11
July	-1.20	-1.24	-1.10	-1.19
August	-1.23	-1.32	-1.21	-1.34
September	-1.40	-1.51	-1.42	-1.65
<i>Number of Observations</i>	2,025,976	1,316,342	1,316,342	495,531
<i>Loan Amount (Billion TL)</i>	429	361	361	230

1) Overdraft accounts, retail credit cards and zero-interest loans are excluded. Loan interest rates represent simple interest rates. The figures in the table represent the interest rate differentials relative to the reference period.  
2) The number of observations indicates the number of loan accounts, and if a firm uses multiple loans, each loan is included in the number of observations.

#### IV.2.4 The Scale Effect on TL Commercial Loan Interest Rate Changes

The effect of decrease in the CBRT's marginal funding rate on TL commercial credit interest rates may vary depending on loan size. For this study, it is assumed that loan amounts used by firms should be related to the firm size. In this regard, based on the data of sample A, interest rate developments are examined according to loan size breakdown. Accordingly, for January-September 2016 analysis period, it is observed that total decrease of 250 basis points in CBRT marginal funding rate had a reflection of 170 basis points and 45 basis points in the weighted average commercial loan interest rates for loans amounted between 10 to 50 million TL and less than 100 thousand TL respectively. 206 basis points interest rate decrease for loans more than 50 million TL may be affected by limited number of firms borrowed with low funding cost since number of observations for this amount breakdown is low. Since the concentration is high in the 1-10 million TL range in terms of loan size, banking sector TL commercial loan interest rate decrease is close to the decrease in interest rates for this amount bracket. On the other hand, considering the fact that about 75 percent of the companies that use loan amounting to 100 thousand TL or less, the decrease in CBRT's marginal funding rate had an important effect on the loans used by a small number of large firms (Table IV.2.2).

**Table IV.2.2**  
TL Loan Amount Effect on Commercial Loan Rates

	50 million and over	10-50 million	1-10 million	500 bin-1 million	100-500 thousand	Under100 thousand	Number of Observations	Loan Amount (billion TL)
1 January-23 March (a)	13.39	14.15	14.69	14.75	15.28	16.07	833,992	155
23 March-31 March	13.50	14.15	14.89	15.26	15.87	16.82	81,870	28.6
April	12.91	13.40	14.46	14.75	15.48	16.64	199,697	49.5
May	12.72	13.49	14.15	14.35	15.19	16.30	217,465	53.2
June	12.39	12.83	13.66	13.72	14.81	16.03	238,829	67.8
July	12.15	12.91	13.66	13.94	14.68	15.87	168,640	49.7
August	11.81	12.65	13.47	13.63	14.57	15.74	211,068	54.2
September (b)	11.33	12.45	13.41	13.84	14.57	15.61	198,773	58.2
Interest Rate Differential (b-a)	-2.06	-1.70	-1.28	-0.91	-0.71	-0.45		
Number of Observations	945	5,024	59,970	71,780	488,745	1,523,870	<b>2,150,334</b>	
Loan Amount (billion TL)	94.9	96.6	135	45.9	95.2	48.7		<b>516.3</b>

1) Overdraft accounts, retail credit cards and zero-interest loans are excluded. Loan interest rates represent simple interest rates.

#### IV.2.5 Conclusion

The effect of CBRT's marginal funding rate cuts on banking sector TL commercial loan rates has been examined by company sample, interest rate and loan amount breakdown. According to the results of this study, the magnitude of decline in interest rates differs on the basis of firm size. In this regard, a limited number of large-scale firms are more likely to benefit more from policy rate cuts while the discounts are reflected less to SME loans. This development demonstrates that banks take into consideration credit risk developments and they assume a more cautious stance for credits extended to SMEs.

### IV.3 Contribution of Advanced Credit Reporting System to Financial Inclusion and Financial Stability

#### Summary

*Financial inclusion (FI) means that individuals and businesses have access to affordable financial services and products that meet their needs in a continuous and sustainable way. When the concept is assessed generally, appropriate access to financial services and products also includes financial consumer protection and financial literacy. According to World Bank's "FI Global Findex" database, two billion adults worldwide do not have any access to financial services. In high-income countries, the rate of access to financial services within the adult population is very high while the rate in developing countries is about 40 percent. Accordingly, establishment of an effective credit database is considered prerequisite for enhancing financial inclusion. Therefore, it is expected that improved credit reporting, especially in developing countries, spread the financial inclusion and contribute financial stability by applying different methodologies, expanding the database and increasing its quality.*

#### IV.3.1 Credit Reporting System and Financial Inclusion

Although, financial inclusion has many dimensions ranging from financial literacy, electronic payment systems to financial sophistication, so this study will be addressing the topic of how efficient credit reporting will contribute to financial inclusion. On the other hand, the focus will be on the document "**General Principles of Credit Reporting**" published by World Bank International Committee on Credit Reporting (ICCR) in 2011 and other studies will also be considered.

#### IV.3.2 Credit Reporting and its Standards

Credit reporting means, in general terms, providing and assessing information by expert institutions in their area about the identity, debt, credit and derivatives of individuals/companies, institutions and organizations for decision makers, lenders and borrowers in a systematic and historical structure, within the framework of a certain law. Expert institutions for this business are performed by risk centers, credit bureaus and other credit reporting

agencies according to the financial structure of the country. In Turkey, the Risk Center, which was established within the Central Bank of the Republic of Turkey (CBRT), functioned smoothly between 1951 and 2013 and later carried out the activities of that center in 2013 by reform to the Banks Association of Turkey Risk Center (BAT-RC). It was aimed that this reform focuses on the core functions of the Central Bank and so on that risk center operations would be carried out by an expert organization in this regard.

In 2011, "General Principles on Credit Reporting" was published for the first time in order to ensure the direction of the World Bank in parallel with the developments in the credit sector after the global crisis in the worldwide. These principles are;

- i) Determining the scope of data,
- ii) Evaluation and analysis of the data within the process
- iii) Good governance and risk management,
- iv) Establishing legal and regulatory environment,
- v) Providing cross border data flows.

These concepts are indicative rather than imperative in terms of establishing an effective credit reporting system. Effective credit reporting provides support for the spread of financial inclusion from one side to the other, particularly for the creation of accurate, effective, auditable, comprehensive and historical data, and for central banks to benefit from a broad set of data on monetary policy applications.

#### IV.3.3 Effect of Credit Reporting on Financial Inclusion

There are serious international studies on the mentioned topic (See CBRT Financial Stability Report Issue 14: Special Topic 4). The World Bank has been working on this issue since 2011 and has included the theme in its final report in 2016 "How Credit Reporting Contributes to Financial Inclusion". In its 2020 projection, the Financial Inclusion Center, a think-tank organization formed by many experts in its field, stated that consumer rights need to be at the forefront and there is need for reform regarding the issue of credit reporting. Furthermore, one of the important studies related to the issue was conducted by the Bank of International Settlements (BIS). In this study which was published in April 2016, positive developments in payment systems in Turkey were also mentioned.

#### IV.3.4 Contribution of Credit Reporting on Reaching Credit Facilities and Financial Inclusion

In the whole world, the issue of financial inclusion has begun to become a priority public policy. In particular, policies have been initiated to meet the needs of communities living in poor and unserved regions in developing and low-income countries. In this framework, it will be useful to emphasize about three main issues.

- 1) **Access to financial products and services.** Access to financial products and services by individuals, firms and government entities. These include, making payments, using credit, savings, investment, insurance products and services.
- 2) **Regular usage of those financial products and services.** Those products and services are strongly related to how valuable they are to the users for cash flow and budget balance.
- 3) **The overall quality of those financial products and services.**  
In parallel with consumer protection and financial capability issues, makes it possible for a user to benefit to a greater extent from using those products and services in his or her daily life.

The three key elements have been set as a common goal by the World Bank and other public and private institutions to achieve the 2020 goals of financial inclusion about reaching the two billion people with no financial access worldwide. In this framework, provision of credit access for micro and small enterprises (M&Ses) as well as for individuals may become possible with the foreground of the concept of "**sustainable financial inclusion**". The concept refers not only the purpose of the financial system is to extend the credit and debt but also to ensure the sustainability of borrowing according to its income and capacity level. Currently, as a result of insufficient institutions to gather those information, or the lack of information itself, there is inadequate information in the databases of countries for M&Ses. By including these companies in the database, it will be possible to implement policies that will provide access to credit as well as prudential borrowing.

In this context, ICCR reports also assess the contribution of credit reporting systems to the financial sector in terms of individuals with little or no information that are not represented in the database of credit evaluation companies, in particular, micro and small-scale enterprises.

### IV.3.5 Evaluation of Credit Reporting through SME's

It will be useful to evaluate credit reporting in terms of SMEs, which are the cornerstone of the economy, for companies as well as individuals especially in developed countries. Credit reporting provides an important input to SME lenders in terms of the assessment process for the proper functioning of the credit mechanism. While big companies and individuals are presented in the database of credit reporting companies, this is not very common for SMEs. The credit data on SMEs should be accurate, reliable, timely and evaluable. However, establishing and monitoring this infrastructure is a cost element. The study of Beck, Demirguc, Kunt and Martinez Peria (2008) revealed the difference between developing countries and developed countries in terms of access to SME data. In this study, it was determined that banks need credit bureau data for SMEs in which 70 percent of the banks in developing countries are insufficiently provide SME data, while 44 percent of the banks in developed countries are in need of that SMEs data. In this regard, the ICCR working group recommends solution proposals for SME credit reporting under 10 headlines.

**Table IV.3.1**  
Recommendations for SMEs for Credit Reporting Methodologies

- 1) Need to increase reporting of SME credit data .
- 2) Increase SME transparency, including through mandatory reporting of their financial information.
- 3) Co-responsibility of SMEs.
- 4) Cooperation of public sector agencies providing national ID services.
- 5) Public records agencies/public registers to enhance their contribution to credit reporting.
- 6) Governments to clarify the permissible uses of the information they collect through various means.
- 7) Better cooperation between commercial credit information companies and consumer credit bureaus, to improve credit reports on SMEs.
- 8) Authorities to oversee and provide leadership in improving credit reporting.
- 9) Improve comparability of credit data that is shared across border.
- 10) Improve availability of information (e.g. qualitative and quantitative) on the status of commercial credit reporting.

Source: World Bank ICCR



On the other hand, it will be beneficial to promote the addition of M&SEs as well as individuals to the effective credit reporting database to be created within the framework of the above principles. Given below, it is explained that how credit reporting does support and facilitate access to credit with newly added sub groups through financial inclusion. According to this:

1) By helping individuals and M&SEs build their "reputational collateral" via the accumulation of payment history data and other predictive data sets and making these data available to lenders, credit reporting systems may help lenders to expand markets to include unserved individuals and M&SEs. This market expansion, created by the data found in credit reporting systems, means many gain access to their first loan from sources other than informal lenders.

2) Financial inclusion also includes a "**quality component**", which can be interpreted as improved terms and conditions, including interest rates. In this context, credit reporting can help lower-risk individuals and M&SEs that already have a formal loan in obtaining more affordable and flexible terms for subsequent loans.

3) By making access to credit sustainable over time. Usage of credit reporting data can be useful for avoiding over-indebtedness. Worldwide, over-indebtedness can lead to loan re-payment problems and eventually, depending on the severity of the failure, usually four years or more. Where lenders are successful in matching the loan product to the needs and abilities of the applicant the credit offered is sustainable over the term of the loan. New, positive payment history is reported to credit reporting system creating a virtuous cycle of lending, reporting and economic opportunity users.

4) By improving consumer and M&SE financial literacy. Giving individuals and M&SEs access to their credit reports and credit scores and providing them with essential information on how lenders commonly evaluate these data they are empowered with new knowledge leading to better credit management skills and understanding of how credit scores work, in particular.

After analyzing the general framework of the credit reporting, it would be useful to assess the impact of credit reporting and financial inclusion in Turkey.

#### IV.3.6 The Case of Turkey through Credit Reporting and Financial Inclusion

At the same time, the case of financial inclusion is a public policy in Turkey and monitored by Republic of Turkey Undersecretariat of Treasury, Banking Regulation and Supervision Agency (BRSA), Capital Markets Board and CBRT from different perspectives. These institutions, together in the Financial Stability Committee, are also evaluating this issue. On the other hand, organizations such as the "Small and Medium Sized Industry Development Organization" (KOSGEB) and private banks also contribute to this topic.

Regarding credit reporting system in Turkey, the primary data provider is the Banks Association of Turkey Risk Center (BAT-RC) and the Credit Bureau (KKB), which carries out services on behalf of it. After transferring the risk center activities from CBRT to the BAT-RC in June 2013, significant progress has been made in the field by increasing the products and activities on credit reporting.

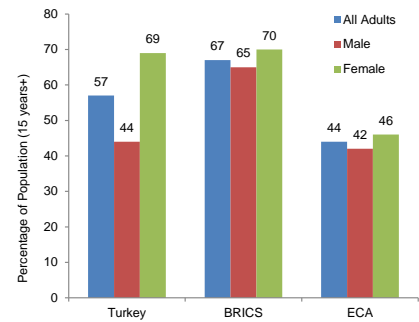
Currently, there are nearly 180 members of the risk center, including banks, financial institutions, credit insurance companies, Borsa Istanbul, The Central Union of Turkish Agricultural Credit Cooperatives. According to the law, the BRSA and the CBRT are each represented by one member in the nine member risk center management board and those two members have a right to request and receive the data they see appropriate. At the risk

center, the number of detailed reports produced for all member institutions, public authorities, individuals and companies reached 307 by the end of 2015. Those reports produced by the risk center is above the report volume of many developed country risk centers and credit bureaus. The number of information inquiries made by the member institutions from the risk center system surpassed 400 million inquiries per year and rose to the top in Europe.

In addition to traditional reporting systems, the risk center also contributes to financial literacy in terms of the ability of companies and individuals to see and manage their own risks by generating an individual indebtedness index, check report and a risk report. On the other hand, products such as complex credit scoring for banks have been produced in the last five years. In addition to this, the number of checks and risk reports produced by the system for users have exceeded 10 million annually.

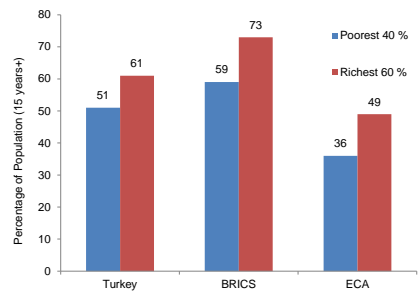
Although financial reporting system in Turkey is at the European Union standards and partly at a high level in some reports, the integration of individuals to the financial system and the use of the system are not at the same level. According to the World Bank's Global Findex data, while the account ownership among individuals ratio in Turkey is higher than the Europe and Central Asia (ECA) countries but it lags behind the ratio of BRICS countries. While the ratio of having a current account for a population aged 15 years and over in the total population was 57 percent, this ratio is 69 percent for males and 44 percent for females, indicating that the gap between the gender is quite high (Chart IV.3.1). When account ownership ratios are evaluated according to income, age and education level, Turkey is ahead of the ECA group countries but fall behind BRICS countries group. (Chart IV.3.2, IV.3.3 and IV.3.4)

**Chart IV.3.1**  
Account Ownership among Individuals  
(Overall and by Gender)



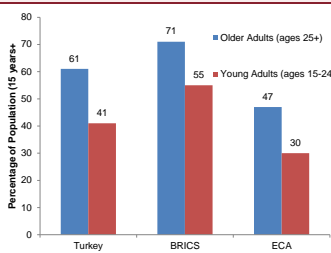
Note: BRICS (Brasil, Russia, India, China, South Africa)  
ECA countries, Europe and Central Asia countries (30 countries)  
Source: Global Findex 2014

**Chart IV.3.2**  
Account Ownership among Individuals  
(By Income Group)

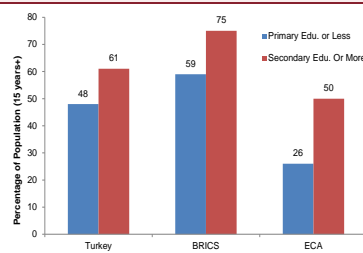


Note: BRICS (Brasil, Russia, India, China, South Africa)  
ECA countries, Europe and Central Asia countries (30 countries)  
Source: Global Findex 2014

**Chart IV.3.3**  
Account Ownership among Individuals  
(By Age Group)



**Chart IV.3.4**  
Account Ownership among Individuals  
(By Level of Education)

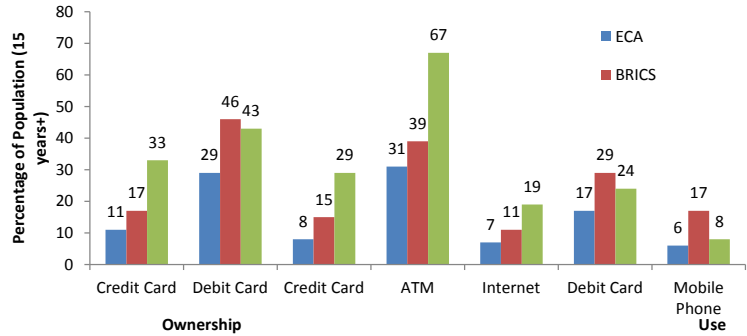


Note: BRICS (Brasil, Russia, India, China, South Africa)  
ECA countries, Europe and Central Asia countries (30 countries)  
Source: Global Findex 2014

According to the Global Findex survey, credit card and debit card ownership ratios in the population over the age of 15 are 33 percent and 43 percent, respectively (Chart IV.3.5). Accordingly, credit card ownership ratio is higher than other country groups. On the other hand, when the usage of transaction accounts by adults is examined, it is observed that credit card and ATM usage ratios are at the highest level among all other country groups with 29% and 67%, respectively. In the same chart, the ratio of payment by internet

is relatively high compared to other country groups and it is 19 percent. Payment by mobile phone is at a relatively low level of 8 percent.

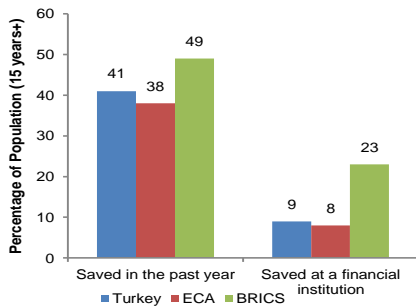
**Chart IV.3.5**  
Use of Transactions Accounts by Adults



Source: Global Findex 2011 and 2014

Finally, as shown in Chart IV.3.6, survey estimates of savings behaviour adults a year ago indicated that about 41 percent of adults save on a financial institution, but others do not have a regular savings at a certain institution. On the other hand, only 9 per cent of the relevant population has been found to accumulate savings in a legal financial institution.

**Chart IV.3.6**  
Savings Behaviour of Adults  
(Percent)



Source: Global Findex 2014

In summary, although the financial reporting system in Turkey has made great progress in recent years, it is a fact that a considerable part of the population is still not included in the financial system and the credit reporting system in Turkey. Since the savings rates are low in Turkey, the integration into the financial system cannot be fully realized. On the other hand, the use of technology for payments is not at the desired level. In this context, it will be beneficial to expand the concept of credit reporting to include the granular data base within the scope of financial inclusion. As a result, to complete the credit reporting system as a whole, it is necessary to increase financial literacy, include more detailed SME data to credit reporting system, and improve public and private sector cooperation in this area.

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# Abbreviations

BAT	Banks Association of Turkey
BAT-RC	Banks Association of Turkey Risk Center
BIS	Bank for International Settlements
BRICS	Brazil, Russia, India, China and South African Republic
BRSA	Banking Regulation and Supervision Agency
CAR	Capital Adequacy Ratio
CBRT	Central Bank of the Republic of Turkey
CC	Credit Card
CDS	Credit Default Swap
CET1	Common Equity Tier 1
CMA	Capital Markets Board of Turkey
CPI	Consumer Price Index
CRA	Central Registry Agency
CRRRA	Collateralized Reserve Requirement Application
DIB	Development and Investment Bank
DPO	Days Payable Outstanding
DSO	Days Sells Outstanding
EBA	European Banking Authority
EBITDA	Earnings Before Interest Taxes Depreciation and Amortization
ECA	Europe and Central Asia
ECB	European Central Bank
ESBG	European Savings and Retail Banking Group
FED	Federal Reserve System
FOMC	Federal Open Market Committee
FTY	Financial Inclusion
FX	Foreign Exchange
GDP	Gross Domestic Product
GOÜ	Developing Countries
G-SIB	Global Systemically Important Banks
GÜ	Developed Countries
ICCR	World Bank International committee on Credit Reporting
ICR	Individual Credit Rating
ICR	Interest Coverage Ratio
IFS	International Financial Statistics
IMF	International Monetary Fund
KKB	Credit Bureau of Turkey
KMH	Overdraft Account
LCR	Liquidity Coverage Ratio

LDR	Loan/Deposit Ratio
MA	Moving Average
MPC	Monetary Policy Committee
NPL	Non-Performing Loans
NSFR	Net Stable Funding Ratio
OG	the Official Gazette
OPEC	Organization of Petroleum Exporting Countries
PMC	Pension Monitoring Center
PMI	Purchasing Managers' Indexes
PPI	Private Participation in Infrastructure
PPP	Public Private Partnership
PPS	Private Pension System
RC	Risk Center
RHA	Right Hand Axis
RLS	Retail Loan Score
ROA	Return on Assets
ROE	Return on Equity
ROM	Reserve Option Mechanism
RWA	Risk Weighted Assets
S&P	Standard&Poors
SDIFT	Savings Deposit Insurance Fund of Turkey
SME	Small and Medium-Sized Enterprises
SMEDO	Small and Medium Enterprises Development Organization
SPV	Special Purpose Vehicle
TL	Turkish Lira
TOKİ	Housing Development Administration of Turkey
TURKSTAT	Turkish Statistical Institute
USA	United States of America
WAFC	Weighted Average Funding Cost of CBRT

