



CENTRAL BANK OF THE REPUBLIC OF TURKEY



# Financial Stability Report

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**CENTRAL BANK OF THE REPUBLIC OF TURKEY**

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This report, which aims to inform the public, is based mainly on September 2007 data. However, the report also includes the developments and evaluations until the publishing date of the report in Turkish. This text is fully available at the CBRT web site. The CBRT cannot be held accountable for decisions taken based on the information and data provided in this report.

## FOREWORD

*In this fifth issue of the Financial Stability Report, the risk factors and fragilities challenging the financial system within the context of the current turmoil in global financial markets are assessed.*

*The impacts of problems intensifying since last summer in global markets, have remained limited on Turkey's economic balances and financial system. Moreover, analyses have revealed that the banking sector is resilient to potential shocks. This is mainly attributable to the improvements in macroeconomic balances and structural transformation in the financial system. Hence, it is stated in the Financial System Stability Assessment Report, which is prepared within the scope of the Financial Sector Assessment Program by the IMF and the World Bank, that the Turkish financial sector has been remarkably invigorated in the last five years and that it has become a rapidly growing sector, which has increasingly been integrating with international markets. It is also emphasized in the Report that remarkable progress has been made in the fields of supervision and financial infrastructure via effective regulations that will ease systemic effects of a potential shock.*

*In the meantime, since it is not yet known how and to what extent global volatility will affect global liquidity conditions, liquidity risk management assumes great importance for Turkish banks.*

*Furthermore, in order to ease the effects of potential risks in international markets on our country, it is of vital importance to continue the current economic program; to maintain monetary and fiscal discipline; to step up the pace of structural reforms; to continue strengthening prudent regulations and, for economic units, to take the necessary measures to minimize risks by adopting risk management principles.*

*In this context, I hope that the assessments presented in this report will be beneficial for all market participants.*



Durmuş YILMAZ  
Governor  
Central Bank of the Republic of Turkey



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## OVERVIEW

The year 2007 was marked by concerns over the effects of problems experienced in the USA subprime mortgage markets on global liquidity conditions and financial stability. Easing the unfavorable effects of these problems has become a priority for central banks. Meanwhile, the impacts of the turmoil remained limited in developing countries, including Turkey owing to the lack of mature subprime mortgage markets, and to the recent recovery in economic fundamentals.

Despite the slowdown in consumption and investment expenditures, the Turkish economy maintained its growth trend in the first half of 2007 owing to net exports that grew on account of strong foreign demand. Due to the fact that high growth rates, which were achieved thanks to macroeconomic stability of recent years, have been primarily driven by the high course of the investment trend compared to savings, the current account deficit remains large despite significant hikes in exports. Although this deficit was funded chiefly by long-term investments in 2007, as it was the previous year, it constitutes one of the most important risk factors with respect to financial stability; due to the fact that it is not yet known how and to what extent the recent global volatility will affect developed countries in particular and global liquidity conditions.

Annual inflation assumed a downward trend as a result of the effect of monetary tightening on private consumption demand. Accordingly, medium-term inflation expectations maintained their downward trend. Nevertheless, inflation is expected to exceed the upper limit of the uncertainty band by the end of 2007 due to recent increases in food and energy prices as well as tax adjustments.

The primary surplus of the consolidated government sector, which surpassed the program target in 2006, remained below the target in the first eight months of 2007 as a result of the rapid rate of increase in primary expenditures compared to tax revenues and the year-end target was foreseen to be unattainable in the 2008 Annual Program. In the meantime, the ratio of public net debt stock to gross national product continued to decrease, the share of debt stock sensitive to the exchange rate declined and the average maturity of government domestic debt securities was extended. Achieving the primary budget surplus target and conducting structural reforms in the field of public finance are deemed to be of great importance in terms of achieving macroeconomic targets, improving the country's resilience to possible fragilities and consequently maintaining financial stability in the upcoming period.

Though household liabilities showed some increase in 2007, they are still at low levels compared to many other countries. However, it is believed that the household liability in Turkey will rise gradually close to the level of EU countries in the long run as a result of the increased utilization of housing loans against a backdrop of sound economic stability, decreased interest rates and a mortgage system that has become prevalent. Even though fixed interest rates in consumer loans protect households against any rise in interest rates, the increase in FX-indexed

liabilities compared to the previous period pushes up foreign exchange risk exposure. Therefore, it is still crucial that Turkish citizens lacking foreign currency income should avoid borrowing in foreign currency.

The level of indebtedness of firms has risen, chiefly in line with their utilization of bank credits. Nevertheless, the not-so-high share of bank credits in total debts is believed to limit credit risk. There has been a recovery in the short-term debt repayment capability and the profitability ratios of firms. In 2006, the sales of firms continued mainly to foreign markets due to sluggish domestic demand and despite a slight increase in the share of financing expenses in net sales, their profit margins climbed due to the reduction in the cost of goods sold.

The foreign currency short positions of firms increased compared to year-end 2006. The number of non-exporting firms with a short position and the amount of their short positions tended to rise. Therefore, it is advisable for firms to use derivatives to hedge against foreign exchange risk and for banks to adopt a more cautious stance to curtail credit risk when lending to firms with high short positions and no foreign exchange income.

The Turkish banking sector continued to grow in 2007 and the ratio of aggregate balance sheet of the sector to GDP increased. Foreign investors' ongoing interest in the Turkish banking sector points to favorable expectations and hints at sector's potential for growth.

The rate of increase in loans, which slowed down until June 2007, displayed a moderate rise from then on. This rise was mainly driven by the easing in political uncertainties despite the lack of significant changes in interest rates. The enhancement in external financing sources of banks is considered to be the main factor that will determine the course of the rate of increase in loans in the upcoming period. Moreover, the fixed interest rate nature of consumer loans, whose share in total loans tends to increase, stands out as a factor that intensifies the susceptibility of banks to interest rate risk. Meanwhile, the ongoing rise in the ratio of loans to deposits indicates an improvement in banks' intermediation functions. Likewise, the ongoing stable course of NPL ratios and the high provisioning policy of the sector are also considered favorable developments in respect of credit risk.

The short position aversion tendency of the banking sector continued in 2007 as well. The main reason for the banking sector, which levels off its on-balance sheet short position via its off-balance sheet long position, to have a high short position on the balance sheet is the funding of YTL denominated loans by foreign currency resources.

Even though the liquidity adequacy of the banking sector is above the limits stipulated by law, recent volatilities in global markets once more highlighted the importance of liquidity risk management. The Central Bank has the ability to provide Turkish currency liquidity against collateral within the framework of the program in implementation. Nonetheless, banks should keep focusing on cautious and effective liquidity management.

The net profit, return on assets and return on equity of the banking sector increased in 2007. Though the capital adequacy ratio showed a slight decline due to the enforcement of the regulation that obliges banks to hold capital for operational risk as of June 2007, it was realized above the minimum capital requirement of 8 percent and the target ratio of 12 percent. The results of scenario analyses indicate that the current capital structure of the sector is robust enough to meet losses that may arise under various shock assumptions.



The Financial Strength Index, which we closely monitor as an indicator of the soundness of the banking sector, remained at high levels throughout 2007 despite slumps in the Capital Adequacy Index, Interest Rate Risk Index, and Liquidity Index.

The problems faced in external markets in recent times have posed a threat both to the economies of relevant countries and the global financial system. In particular, in the event of a rise in default rates in US subprime mortgage loans, as foreseen, the pressure on financial markets may persist in 2008, thus leading to instability in financial markets. Though the 2007 nine-month data relating to the Turkish banking sector have not yet shown any signs of negative impacts of the financial volatility on the sector, in order to ease risks, it is of vital importance to maintain policies that will ensure the sound functioning of markets; to hasten the pace of structural reforms; to continue prudent regulations and to decisively implement the economic program.



## I. MACROECONOMIC DEVELOPMENTS

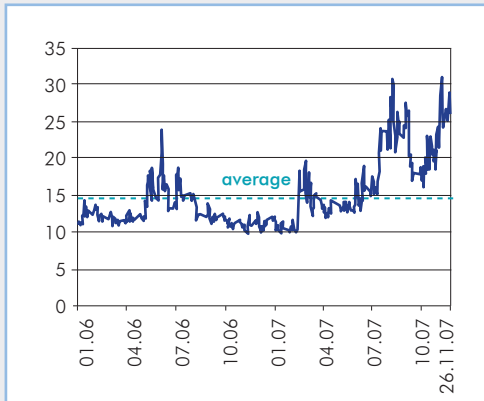
In this chapter, macroeconomic developments will be elaborated, taking into account the importance of such developments for financial stability.

### I.1. External Sector

#### I.1.1. International Developments

Liquidity conditions induced by the turmoil in international credit markets as well as the changes in the risk appetite of investors remain significant with respect to financial stability. Global liquidity conditions deteriorated in the second half of 2007 due to the US subprime mortgage crisis, thus compelling the FED, ECB, BoJ and BoE to provide liquidity to the market. Moreover, forecasts pointing to a limited slowdown in the US economy coupled with the rapid growth in developing countries have curbed notable changes in investors' risk aversion behavior. Developments in the debt markets of developed countries remain to be of significance with respect to their impact on developing countries like Turkey.

Chart I.1.  
VIX Index



Source: Bloomberg

Chart I.2.  
iTraxx Europe Crossover Index



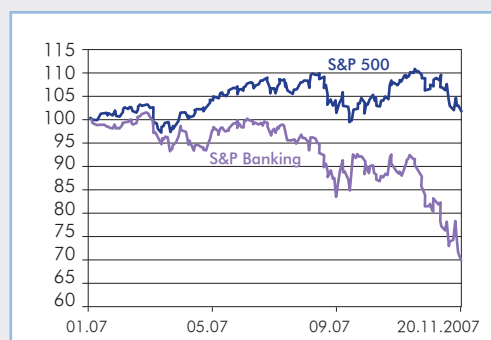
Source: Bloomberg

The rise in default rates, chiefly in US subprime mortgage loans, has led to higher pricing of risks in global credit markets since end-July 2007. This, in turn, caused a contraction in liquidity and a rise in volatility in the markets. As a consequence, the VIX Index, a widely accepted main volatility measure for the US stock market, which depends on real-time option prices and measures the implied volatility in US stock market, has risen (Chart I.1). The persisting high level of the index points to investor expectations of a continuance of current problems in the markets.

The iTraxx Europe Crossover Index, comprising of 50 of the highly traded sub-investment grade corporate bonds, which reflects investors' expectations, rose parallel to the developments in the US subprime mortgage market (Chart I.2). This rise points to an increase in the cost of insuring the bonds of European companies against default and supports opinions that the markets of developed countries have been more severely affected by this fluctuation.

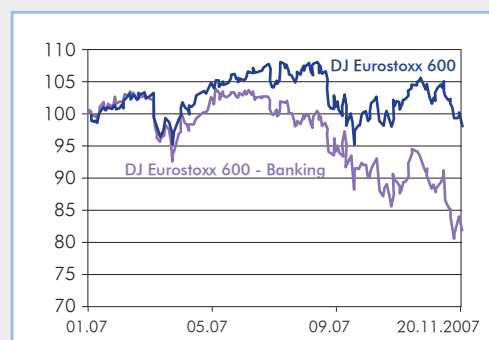
High losses experienced in the US subprime mortgage market and the amount of losses suffered by numerous funds and banks because of liquidity problems are of great importance since they indicate the extent of the cost of such unfavorable developments on developed countries. For instance, Citigroup, Merrill Lynch and UBS announced that they were facing losses of USD 8 – 11 billion, USD 8 billion and USD 3.4 billion, respectively. Meanwhile, a rescue fund of Euro 3.5 billion has been established by some public and private banks led by KfW –one of the main shareholders of IKB, a leading long-term finance company in Germany- to cover IKB's potential losses that might arise from its investments in the subprime mortgage market. Japanese Banks announced that their loss resulting from securities linked to subprime mortgage loans was USD 1 billion.

**Chart I.3.**  
S&P Index  
(01.01.2007=100)



Source: Bloomberg

**Chart I.4.**  
DJ EUROSTOXX 600 Index  
(01.01.2007=100)



Source: Bloomberg

In line with these developments, there have been sharp downward movements in US and European banks' equity prices (Chart I.3 and Chart I.4).

**Box 1.**  
**Recent Fluctuation in the US Subprime Mortgage Market**

Due to the high demand for housing since the end of 1990s, there was rapid growth in housing loans between 2001-2005 in the USA, which was accompanied by low interest rates and flexible loan terms. While variable rate mortgage loans were 20 percent in 2002, they increased to 50 percent in mid-2005. The share of subprime mortgages in these loans also rose in the same period.

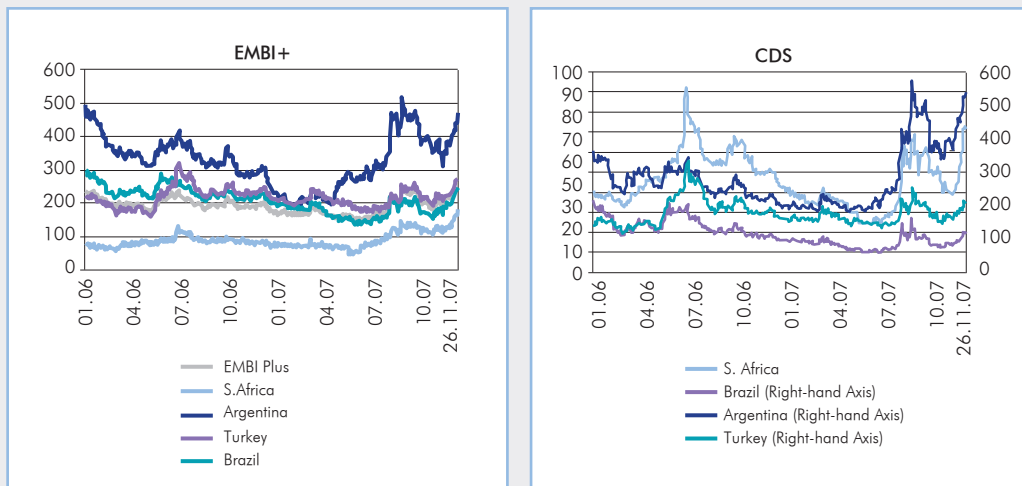
In the USA, the subprime mortgage is the type of mortgage granted to the highest risk group of borrowers. Subprime mortgage loans have a much higher rate of default risk

compared to other types of loans. This risk is even higher for those customers with variable-rate subprime mortgage loans that constitute a major part of this type of loans. In order to make subprime mortgage loans with variable rates more attractive, lower interest rates are offered at the beginning of their term and interest rates rise in subsequent years. Any increase in market interest rates leads to a rise in the interest rates of these loans that borrowers already have difficulty in paying, and end up in the bankruptcy of customers.

Interest rates in the USA, which have been rising since mid-2004, led to a rise in the amount of installments that customers of subprime mortgage loans with variable interest rates had to pay. The reversal of the upward trend in house prices during the same period restricted the customers' chance of selling their properties in order to pay off their debt. These developments have led to an upsurge in the number of subprime borrowers in default in the subprime mortgage market since the second half of 2006.

As a consequence, credit rating agencies started to downgrade the credit rating of many securities backed by subprime mortgage loans as of June 2007. Due to the erosion of investor confidence, demand for all commercial papers and asset-backed securities, especially for securities backed by sub-prime mortgage loans, decreased and investors started to edge towards less-risky treasury bonds. Loss of demand triggered liquidity problems in these markets.

**Chart I.5.**  
Risk Premia<sup>1,2</sup> of Selected Countries and Turkey and Development of Credit Default Swap Spreads<sup>3</sup>  
(Basis Point)



Source: Bloomberg

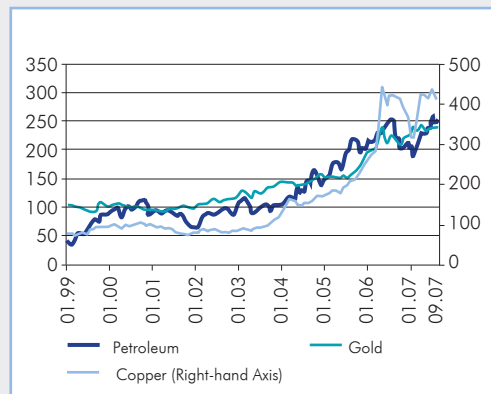
(1) Country risk premium is the difference between the relevant country's EMBI+ index and returns of US Treasury instruments.

(2) EMBI+ index includes Eurobonds of 18 developing countries, Brady bonds and traded loans. The weight of each country in the index is different. For instance, Brazil's weight is 22.5, Turkey's weight is 10, Argentina's weight is 2.6 and South Africa's weight is 1.8 percent in the EMBI+ index. Also the index is calculated for each country individually.

(3) 5 year CDS contracts in USD are taken as benchmark.

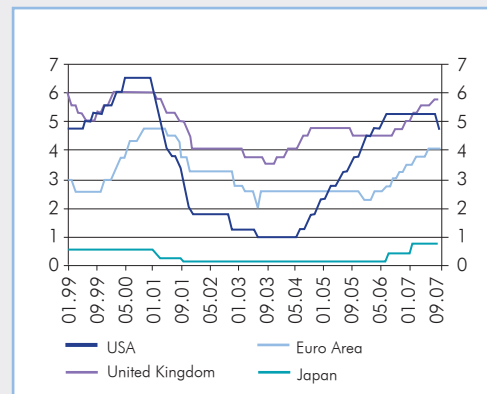
Meanwhile, the effect of the subprime mortgage crisis on developing countries remained quite limited owing to the improvement in economic fundamentals in emerging markets and the non-existence of mature subprime mortgage markets in these countries (Chart I.5).

**Chart I.6.**  
Petroleum and Other Primary Commodities' Price Index (2000=100)



Source: IMF IFS

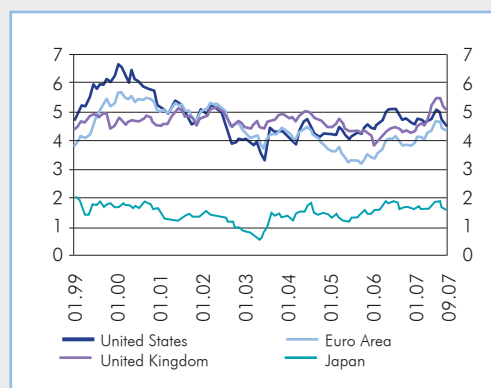
**Chart I.7.**  
Selected Countries' Policy Interest Rates (%)



Source: ECB, Federal Reserve, BoJ, Bank of England

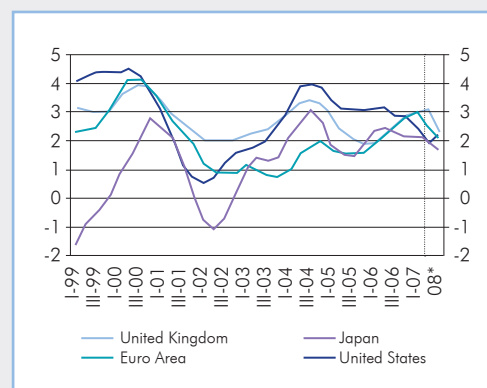
Following the turmoil in the debt markets, there has been a shift in the monetary policy implementations of developed countries. The central banks of these countries, which had tightened their monetary policies due to inflationary pressures driven by the rise in prices of primary commodities, chiefly in oil prices (Chart I.6) in the pre-turmoil period, eased their monetary policies slightly. Despite the sustained rise in the prices of these items, this development was due to the downgrading of growth expectations. The FED cut policy rates by 50 and 25 basis points in September and October, respectively (Chart I.7). Meanwhile, sustained inflationary pressure in the Euro area and inflation persisting above 2 percent are still perceived as risk factors by the ECB.

**Chart I.8.**  
Average Government Bond Yields (10 year) (%)



Source: IMF IFS, ECB

**Chart I.9.**  
Growth Rates of Selected Developed Countries (annualized quarterly, %)



Source: IMF IFS, IMF WEO, EU European Economy  
\* Forecast (IMF)

An analysis of the public debt markets of developed countries reveals that the liquidity, which is leaving risky debt markets, is heading towards safe haven bond markets, pulling down interest rates (Chart I.8).

Despite concerns about the growth performance of developed countries and the downward trend of their growth forecasts, global growth in 2008 is expected to surpass the averages of previous years<sup>1</sup> due to sustained high growth rates in developing countries (Chart I.9).

## Box 2.

### Measures Taken by Central Banks

Due to the direct and indirect effects of problems in the US subprime mortgage market, volatility in global markets has increased and liquidity conditions have deteriorated. Financial institutions granting mortgage loans and institutions that have invested in securities backed by mortgage loans have called upon central banks for their liquidity needs. Therefore, with the aim of preventing these developments from growing into a systemic risk, the central banks have supplied markets with liquidity by means of open market operations, and banks in need of liquidity by means of the lender of last resort function.

The FED lowered its benchmark interest rates by 50 basis points to 4.75 percent on September 18, 2007 and to 4.50 percent on October 31, 2007 and provided the necessary liquidity for the market via large-scale open market operations. While the FED used to accept securities only backed by mortgage loans of government-sponsored entities such as Fannie Mae and Freddie Mac as collateral, the FED expanded the list of eligible collaterals on August 24, 2007 and announced that it would start accepting asset-backed securities issued by other commercial enterprises as collateral, including securities backed by subprime mortgage loans. The FED announced that in case of a liquidity squeeze in the future, it would provide liquidity for those financial enterprises in need of liquidity.

With the aim of breaking down the perception that borrowing directly from the FED is a financial weakness, on August 22, 2007, it was announced that four major banks (Citigroup, Bank of America, JP Morgan Chase & Co and Wachovia Corp), which had “substantial liquidity” and the ability to borrow funds at relatively reasonable rates, borrowed a total of USD 2 billion from the Federal Reserve’s discount window.

On August 9, 2007, the ECB announced that the tension following the US subprime mortgage crisis has started to hit the money markets in the Euro area. The ECB stressed that the developments were being closely monitored and it would take the necessary measures to calm market conditions. Consequently, the ECB injected liquidity into the market via reverse repo in an amount more than planned.

The BoE continued to carry out its regular open market operations after the turmoil in the credit markets. Meanwhile, taking into account Northern Rock Bank’s temporary liquidity problems, the BoE provided emergency liquidity support in an amount of GBP 25 billion for Northern Rock against collateral within the framework of the lender of last resort facility. As this loan was provided within the framework of the lender of last resort facility, it was extended for a 3-month period, maturity longer than those of regular open market operations.

To sum up, the adverse effects of the US subprime mortgage crisis were curbed by central bank interventions and no devastating effects have occurred on the markets of developed and

<sup>1</sup> IMF World Economic Outlook, October 2007.

developing countries. However, the problem has not yet been solved. According to the IMF's Global Financial Stability Report<sup>2</sup>, delinquencies tend to peak 27-30 months after origination. In this framework, some market participants estimate that default rate may rise to 20-25 percent due to new subprime delinquencies on loans extended in 2006. In case these predictions materialize, the pressure on financial stability may also continue throughout 2008 and hence, financial markets both at national and global level may suffer instability.

### 1.1.2. Balance of Payments

The high current account deficit, driven by the growth in investment rates, increased primary commodity prices and falling private sector savings ratios in recent years, have been mostly financed by long-term credits and foreign direct investments.

Table I.1. Balance of Payments (USD in Billions)

	2004	2005	2006	Jun.07*	Jul.07*	Agu.07*	Sep.07*
CURRENT ACCOUNT BALANCE	-15.6	-22.6	-32.9	-32.6	-33.7	-34.1	-34.4
Foreign Trade Balance	-23.9	-33.5	-41.3	-40.9	-42.3	-43.1	-43.5
Exports (f.o.b) (including gold)	67.0	76.9	91.9	102.2	103.8	105.5	106.6
Imports (f.o.b) (including gold)	-90.9	-110.1	-132.8	-143.1	-146.1	-148.6	-150.1
Rate of imports covered by exports (%)	73.7	69.9	69.2	71.4	71.1	70.9	71.0
Balance of Services	12.8	15.3	13.4	13.5	13.6	13.9	14.2
Balance of Investment Income	-5.6	-5.8	-6.6	-6.8	-6.9	-6.7	-6.9
Current Transfers	1.1	1.5	1.7	1.6	1.9	1.8	1.8
CAPITAL & FINANCIAL ACCOUNT	13.4	20.4	35.1	32.7	35.4	31.9	34.8
Foreign Direct Investments	2.0	8.9	19.0	20.3	21.7	19.0	19.8
Portfolio Investments	8.0	13.4	7.4	14.3	15.1	9.1	8.1
Other Investments	4.2	15.9	14.8	7.0	8.6	15.3	16.0
Reserve Assets	-0.8	-17.8	-6.1	-8.9	-10.1	-11.5	-9.1
NET ERRORS & OMISSIONS	2.2	2.2	-2.3	-0.1	-1.7	2.2	-0.4

Source: CBRT

(\*) Cumulative figures for the last 12 months.

The annualized current account deficit, which had started a downward trend after a record high in November 2006, started to climb as of May 2007, and surpassed USD 33 billion once again in July. The ratio of current account deficit to GNP, which was 8.2 percent at the end of 2006, dropped below 7.6 percent by June 2007 (Table I.1., Chart I.10).

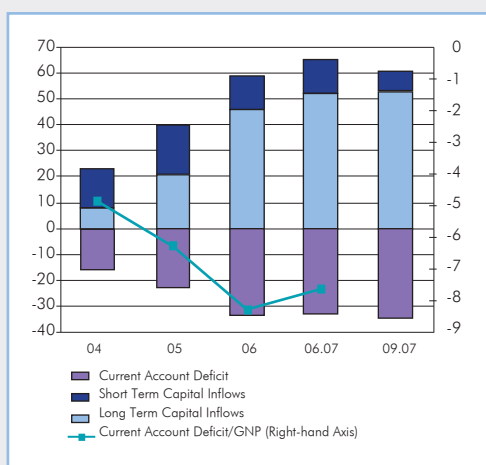
As for the foreign trade balance; exports, which exceeded USD 100 billion in May 2007, reached USD 106.6 billion in September 2007. Meanwhile, the growth in imports goes on due to continued appreciation of the New Turkish Lira, the high share of the imported input components in industrial production, and the persistent rise in energy prices. Because the growth rate of exports exceeded that of imports as of the first quarter of 2007, the ratio of imports covered by exports climbed to 71.4 percent in June and was 71 percent in September (Table I.1).

<sup>2</sup> IMF Global Financial Stability Report, September 2007



Foreign direct investments, the share of which in total financial accounts has been steadily increasing since 2002, constitutes the most important financing item of the current account deficit. While the share of portfolio investments in financial accounts decreased in August 2007 due to foreign investors' sale of securities as a result of the global turmoil, the share of "other investments" increased with the effect of long-term credits extended to banks and the private sector by banks abroad (Table I.1, Chart I.10).

**Chart I.10.**  
Current Account Deficit and Capital Inflows<sup>1,2</sup>  
(USD in Billions, %)

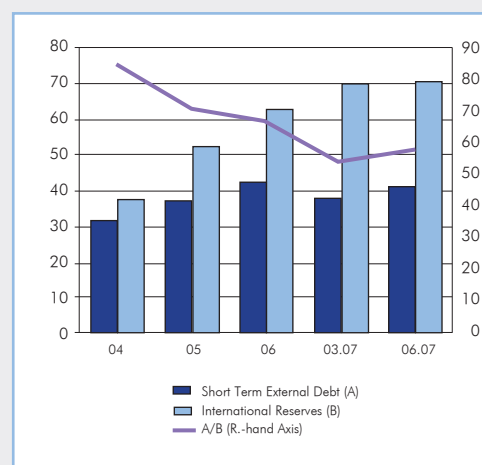


Source: CBRT

(1) Long-term capital inflows consist of foreign direct investment, debt securities of general government and banks, long-term cash loans, long-term trade loans and long-term deposits at CBRT.

(2) Short-term capital inflows consist of portfolio investments including equities and government bonds, short-term cash loans, short-term trade loans, short-term deposits at CBRT and banks and other short-term liabilities.

**Chart I.11.**  
Short-Term External Debt<sup>1</sup> and International Reserves<sup>2</sup>  
(USD in Billions, %)



Source: Treasury, CBRT

(1) Short-Term External Debt = General Government + CBRT + commercial banks + Other sectors

(2) International Reserves = CBRT gross foreign exchange reserves (including gold)

The ratio of short-term debt to international reserves, one of the indicators of external debt service capacity, which was 66.9 percent at the end of 2006, dropped to 58.1 percent by June 2007 owing to the continued rise in the Central Bank's international reserves (Chart I.11).

**Table I.2. Parties Financing The Current Account Deficit (USD in Billions)<sup>1</sup>**

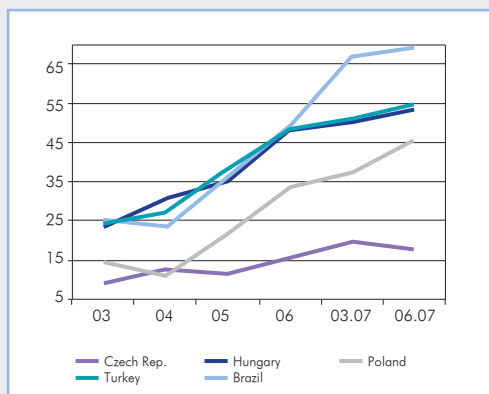
	2004	2005	2006	Jun.07	Jul.07	Aug.07	Sep.07
Current Account Balance	-15.6	-22.6	-32.9	-32.6	-33.7	-34.1	-34.4
Finance Accounts	13.4	20.4	35.1	32.7	35.4	31.9	34.8
General Government (including CBRT and CBRT Reserves)	2.4	-16.5	-2.9	1.7	1.3	-6.6	-6.9
Private Sector (Including Banks)	11.0	36.9	38.0	31.0	34.1	38.5	41.7
<b>Net Errors and Omissions</b>	<b>2.2</b>	<b>2.2</b>	<b>-2.3</b>	<b>-0.1</b>	<b>-1.7</b>	<b>2.2</b>	<b>-0.4</b>

Source: CBRT

(1) Annualized data is used

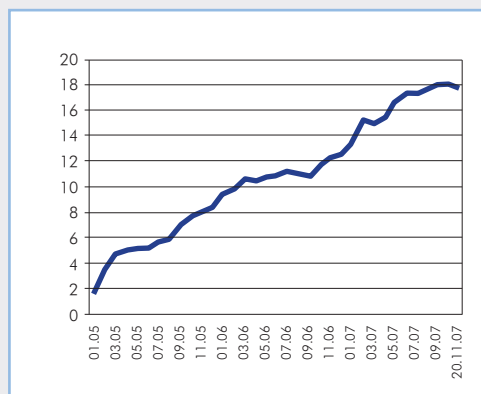
The current account deficit, as is the case in recent years, has been mostly financed by funds obtained by the private sector, including banks (Table I.2).

**Chart I.12.**  
Net Receivables of International Banks  
from Selected Countries<sup>1</sup> (USD in Billions)



Source: BIS  
(1) Figures for June 2007 are provisional.

**Chart I.13.**  
Net YTL-Denominated Bonds Issued by  
Foreigners (Billion YTL)



Source: CBRT

The rise in funds extended to developing countries by banks reporting to the Bank for International Settlements (BIS), except those of the Czech Republic, has continued and net receivables of international banks from Turkey reached USD 54.9 billion in June 2007 (Chart I.12).

The net volume of YTL denominated bonds issued by foreigners, which was YTL 12.6 billion at the end of 2006, rose to YTL 18 billion by October 2007 (Chart I.13). Banks abroad, which hedge against exchange rate risk arising from their YTL denominated investments by means of issuing YTL-denominated bonds for international investors, continued to issue such bonds in October 2007. This indicates that international investors' demand for YTL-denominated borrowing instruments have not been severely affected by the recent turmoil in global markets.

**Table I.3. Current Account Balance (CAB) to GDP Ratios and GDP Growth Rates of Selected Economies (%)**

	2006		2007*		2008**	
	CAB /GDP	Growth	CAB /GDP	Growth	CAB /GDP	Growth
New EU Members	-6.0	6.4	-7.2	6.1	-7.7	5.2
Bulgaria	-15.8	6.1	-20.3	6.0	-19.0	5.9
Romania	-10.3	7.7	-13.8	6.3	-13.2	6.0
Hungary	-6.5	3.9	-5.6	2.1	-5.1	2.7
Poland	-2.3	6.1	-3.7	6.6	-5.1	5.3
Czech Republic	-3.1	6.4	-3.4	5.6	-3.5	4.6
European Economies						
Advanced	0.5	2.9	0.2	2.7	0.0	2.2
Emerging	0.1	6.6	-1.9	6.3	-2.9	5.7
European Union	-0.7	3.2	-1.0	3.0	-1.2	2.5

Source: IMF, World Economic Outlook (October 2007)  
(\*) Year-end forecast.  
(\*\*) Projection.

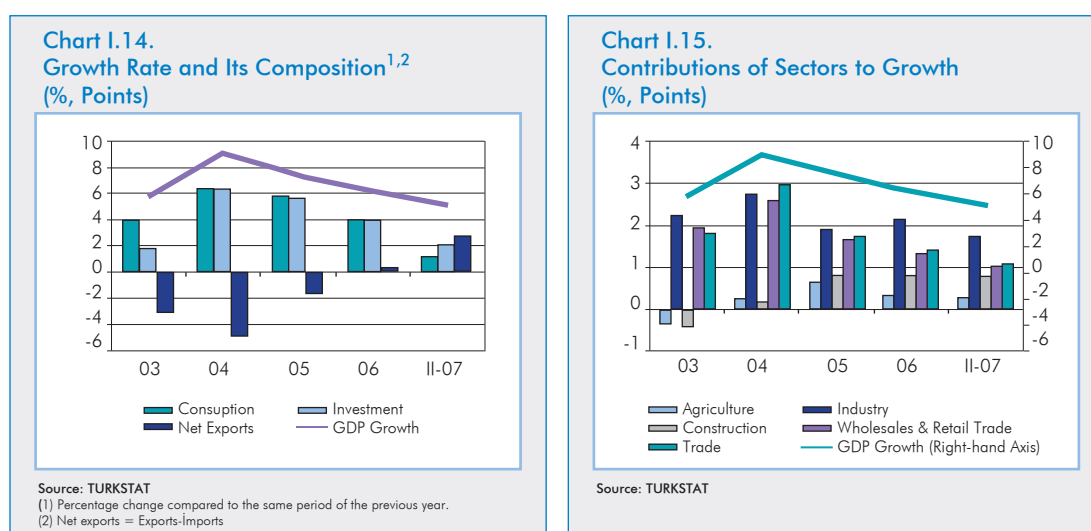
Similar to the case in Turkey, it is observed that new EU members also experience rapid growth rates and a high current account deficit simultaneously (Table I.3).

On the other hand, the growing volume of long-term credits and capital inflow to Turkey along with increased foreign direct investments in the last few years are the factors that enhance the quality of the current account deficit financing. In fact, as a favorable outcome of the decline in the share of short-term capital inflows, namely the “hot money” in total financing, concerns over the sustainability of the current account deficit did not display a notable increase during the recent fluctuations in global markets. Nevertheless, as the extent of the impact of the recent global turmoil, especially on developed countries, and the way this will affect global liquidity conditions in the coming months is not yet clear, the current account deficit still constitutes one of the most important risk factors with respect to financial stability.

## 1.2. Growth and Inflation

### 1.2.1. Growth

Albeit its sluggish trend in the first half, economic growth in Turkey continued in 2007.



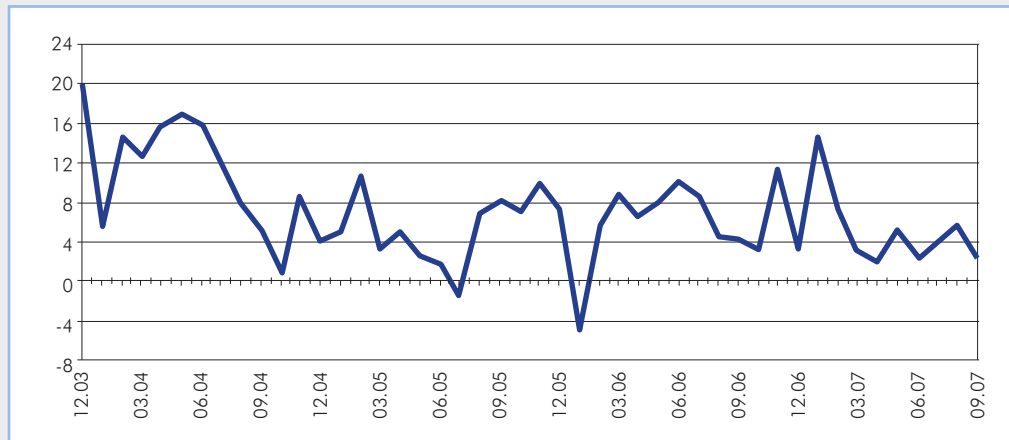
Despite the slowdown in consumption and investment expenditures of the private sector, Gross Domestic Product (GDP) grew by 5.3 percent in the first half of 2007 compared to the same period of 2006 mainly owing to strong foreign demand. While the contribution of consumption and investment expenditures to growth diminished in the first half of 2007; that of net exports increased.

As private consumption expenditures, which is the major component of expenditures in the GDP, increased by a mere 0.8 percent in the first half of 2007 compared to the same period last year, the contribution of consumption to growth has decreased (Chart I.14).

In the first half of 2007, investment expenditures of the private sector rose by 4.9 percent compared to the first half of 2006. Despite the 25.1 percent rise in investment expenditures of the public sector, the contribution of investment expenditures to growth has continued to decrease (Chart I.14).

An analysis of the GDP by sectors with respect to production reveals that the strong contribution of the construction sector to growth continued in the first half of 2007, while that of other sectors diminished (Chart I.15).

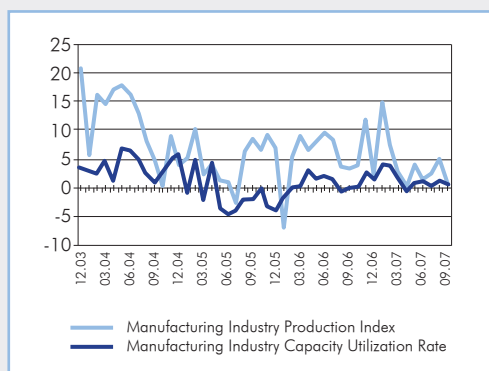
**Chart I.16.**  
Industrial Production Index (%)<sup>1,2</sup>



Source: TURKSTAT  
 (1) Percentage change compared to the same month of the previous year.  
 (2) Monthly Industrial Production Index 1997=100

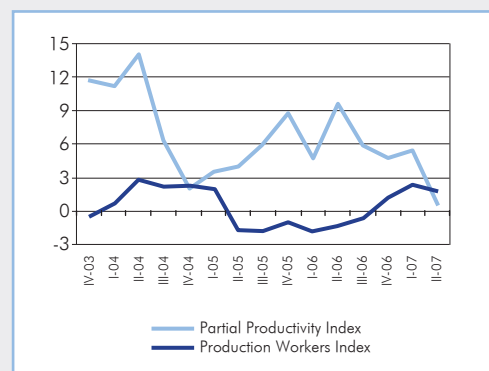
In the first half of 2007, industrial production rose by 5.4 percent compared to the same period of last year. Industrial production data pertaining to the third quarter indicate the continuing moderate growth pace in economic activity. In this period, industrial production increased by 4 percent in annual terms while seasonally adjusted data point to a limited rise of 0.4 percent compared to the previous period.

**Chart I.17.**  
Manufacturing Industry Production and Capacity Utilization Rate (%)<sup>1,2</sup>



Source: TURKSTAT  
 (1) Percentage change compared to the same month of the previous year.  
 (2) Monthly industrial production index 1997=100

**Chart I.18.**  
Number of Workers and Partial Productivity per Worker for the Manufacturing Industry<sup>1,2</sup> (%)



Source: TURKSTAT  
 (1) Percentage change compared to the same month of the previous year.  
 (2) 1997=100 index is used

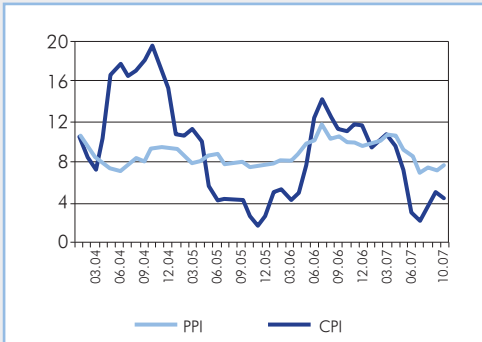
The nine-month average of manufacturing industry production, the share of which is 86.9 percent in the industrial production index, increased by 4.1 percent in 2007 compared to the same period of last year. When the manufacturing industry is analyzed by areas of economic activity in terms of nine-month averages, it is observed that electrical machinery and equipment manufacturing and wood products manufacturing (excluding furniture), made the largest contribution to production in fabricated metal (excluding machinery and equipment) and in the main metal industry.

Compared to the same period of 2006, the capacity utilization rate of the manufacturing industry increased by 0.7 percentage points in September 2007 and reached 83.3 percent (Chart I.17). According to the Manufacturing Sector Tendency Survey results, the main reason for working under-capacity in workplaces in September 2007 was the inadequate domestic demand.

The rate of increase in partial productivity per worker employed in the manufacturing industry continued to slowdown as a result of the deceleration in the rate of increase in the manufacturing industry production index and continuing increase in the number of manufacturing sector workers in the second quarter of 2007 compared to the same period of 2006 (Chart I.18).

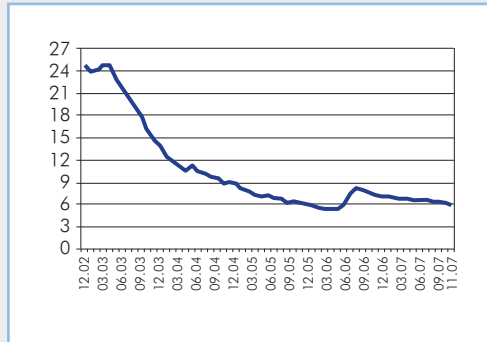
## 1.2.2. Inflation

**Chart I.19.**  
Annual PPI and CPI Developments  
(Annual % Change)



Source: TURKSTAT

**Chart I.20.**  
CPI Expectations for the Next 12 Months  
(Annual % Change)



Source: CBRT

Annual CPI inflation, which was 9.7 percent in 2006, dropped to 7.7 percent by October 2007 (Chart I.19). Price hikes in unprocessed food products, price increments in tobacco products and the lagged effects of the depreciation of the New Turkish lira in 2006 triggered a rise in inflation in the first quarter of 2007. However, in the following months, despite the unfavorable developments in unprocessed food and oil prices and the rise in public expenditures, inflation assumed a downward track, with the help of the lagged effects of monetary tightening that started in June 2006 on private consumption demand

The annual Producer Price Index (PPI) inflation, which is an important indicator for evaluating the cost-side effects on consumer inflation, dropped to 4.4 percent by October 2007, from 11.6 percent in 2006 (Chart I.19). While annual inflation in producer prices increased in the first quarter mainly due to the rise in energy prices, it decreased substantially in the second quarter compared to the same period of 2006 with the effect of the high base effect. Meanwhile, there was a limited rise in the prices of manufacturing industry excluding petroleum products. Annual PPI inflation in subsequent months displayed an increase due to the rise in prices of agricultural products, food and petroleum products.

Despite the favorable developments in inflation indicators, short-term inflation expectations have been recently revised upwards due to price increments in energy and food products, and developments beyond the control of monetary policy, such as tax adjustments. Within this framework, it is estimated that inflation would exceed 6 percent, the upper limit of the

uncertainty band. Meanwhile, it is observed that the downward trend in medium-term inflation expectations continues owing to the decline in annual inflation (Chart I.20).

### I.3. Public Finance

The consolidated government sector primary surplus, which surpassed the program target in 2006, was realized at YTL 9.2 billion below the program target in the first eight months of 2007 because of the increase in public expenditures exceeding the increase in public revenues (Table I.4). In the Annual Programme for 2008, the ratio of consolidated government sector primary surplus to GNP has been projected to be 4.1 percent by the end of 2007.

**Table I.4. Consolidated Government Sector Primary Surplus Targets and Realizations (Billion YTL)**

	2004	2005	2006	April 2007	August 2007	December 2007
Primary Surplus Target (including SEEs)	26.2	30.4	34.5	12.3	32.3	39.7
Primary Surplus Realization (including SEEs)	27.8	28.3	36.2	9.4	23.1	-
Realization / Target (%)	106	93	105	76	72	-

Source: Treasury

Central government budget revenues increased by 10.9 percent and primary expenditures rose by 19.3 percent as of October 2007. Due to the fact that the rise in total expenditures was realized as 16.6 percent, the ratio of expenditures covered by revenues decreased by 4.7 percentage points in the January-October 2007 period compared to the same period last year (Table I.5).

**Table I.5. Central Government Budget Performance (Billion YTL)**

	January- October 2006	January- October 2007	Change (%)	2007 Budget Target	Realization / Budget Target (%)
Expenditures	144.3	168.2	16.6	205.0	82.0
Primary Expenditures	103.5	123.5	19.3	152.0	81.3
Revenues	140.5	155.9	10.9	188.2	82.8
The coverage ratio of revenues to expenditures (%)	97.4	92.7	-	91.8	-

Source: Ministry of Finance

The increase in revenues mainly arises from non-tax revenues. The early payment of remaining installments equivalent to YTL 5.8 billion from the privatization of Turk Telecommunications Inc. made during the year and revenue amounting to YTL 1.1 billion from the sale of real estates has had a favorable effect on non-tax revenues. Moreover, the limited increase in the Special Consumption Tax (SCT) and VAT proceeds has limited the rise in tax revenues.

High increases in agricultural transfers, health expenditures and purchase prices of wheat and hazelnuts accompanied by the setting of public workers' wage over the intended rate stood out as factors that exerted pressure on primary surplus budget expenditures.

The 2008 Annual Programme specifies that by the end of 2007 tax revenues would remain below the target, whereas primary budget expenditures would overshoot the target. The Programme also states that central government budget expenditure and revenue targets of

2007 could be achieved owing to positive performance of non-tax revenues and the expected drop in interest expenses.

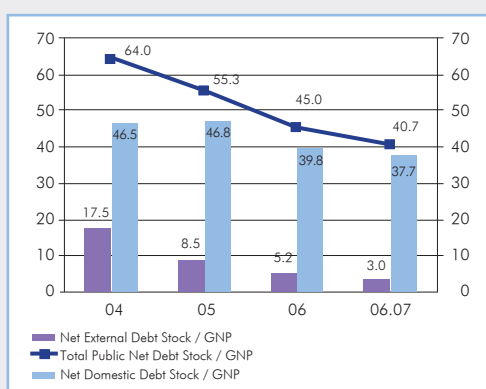
### Box 3. Reduction in the Primary Surplus Target

The ratio of the consolidated public sector primary surplus to GNP, which was set as 6.5 percent for 2007 by the central government draft budget for 2008, was reduced to 5.5 percent for 2008. In 2007, the primary surplus remained below the target due to the increase in public expenditures, inadequacy of tax revenues arising from limited increases in VAT and the SCT and unfavorable developments in the financial position of energy companies. In this framework, the primary surplus is expected to be realized at 4.1 percent by the end of 2007. Given the ratio of the primary surplus to GNP is expected to be 4.1 percent for 2007, a 5.5 percent target for 2008 corresponds to a significant improvement.

In order to attain the target, an adjustment in electricity prices is planned for 2007 and 2008 with the aim of overcoming the cash shortage of the SEEs in the energy sector. An increase by 13.3 percent is targeted in 2008 on the tax revenues side. Within this framework, on November 2, 2007, SCT rates on fuel oil and tobacco products were pushed up.

Achieving the primary surplus target is of great importance in terms of reducing the debt stock and improving the country's resilience against possible fragilities by demonstrating the government's intention and capacity to pay its debt. However, the quality of fiscal discipline is also essential for sustainable macroeconomic stability. Therefore, structural reforms in the fields of social security, tax and the labor market are crucial.

**Chart I.21.**  
Composition of Total Public Sector Net Debt Stock<sup>1,2</sup> (%)

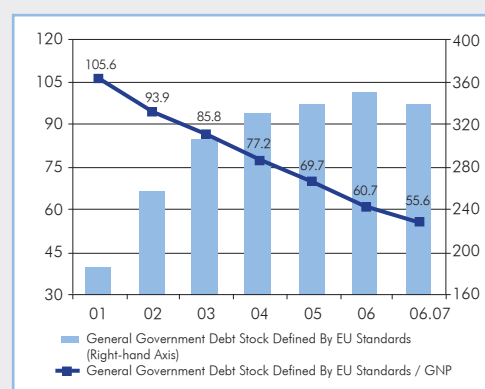


Source: Treasury

(1) Public sector net debt stock is calculated by subtracting central bank net assets, public deposits and unemployment insurance fund net assets from public gross debt stock.

(2) Figures for December 2006 and June 2007 are provisional.

**Chart I.22.**  
General Government Nominal Debt Stock Defined By European Union Standards<sup>1</sup> (% , Billion YTL)



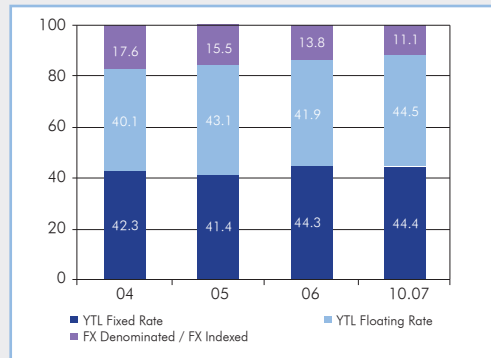
Source: Treasury

(1) Consolidated nominal debt stock as defined in European System of Accounts 95 (ESA 95) deficit and debt manual.

The ratio of public sector net foreign debt stock to GNP continued to decline and was realized as 40.7 percent in the first half of 2007. This decline primarily stemmed from rises in public deposits and unemployment insurance fund net assets and the GNP as well as the

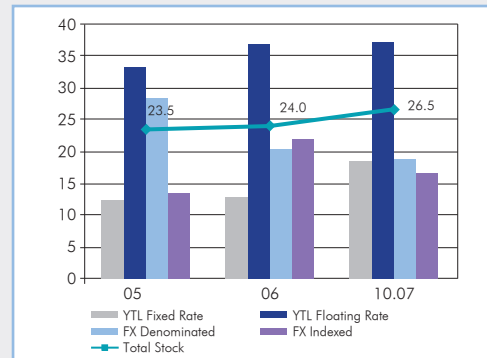
decline in the gross debt stock (Chart I.21). The decrease in YTL equivalent of foreign currency debts due to the parity effect was influential in the reduction of public sector gross debt stock. The general government nominal debt stock to GNP ratio, as defined by the EU, continued to decrease (Chart I.22)

**Chart I.23.**  
Composition of Domestic Debt Stock (%)



Source: Treasury

**Chart I.24.**  
Maturity Structure of Government Debt Securities (Month)<sup>1</sup>



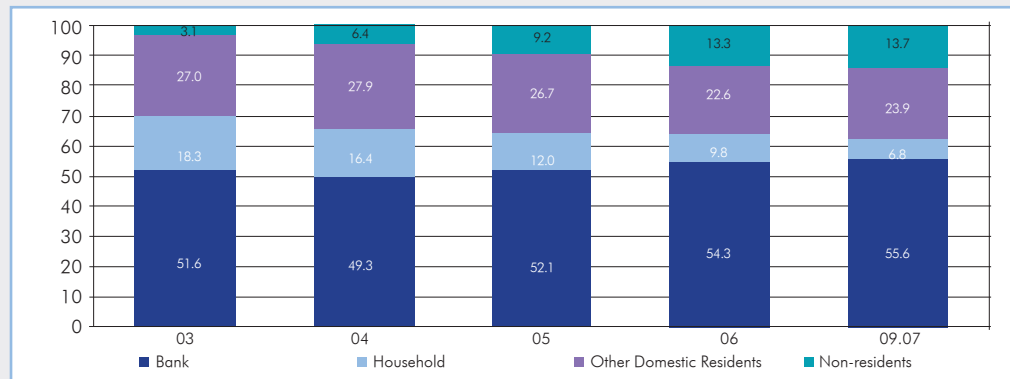
Source: Treasury

(1) Calculation is based on term to maturity.

Regarding the composition of domestic debt stock, the share of debt stock which is sensitive to the exchange rate movements maintained its downward trend by October 2007, whereas the share of floating-rate government bonds expanded. However, excluding CPI-indexed bonds, which have been issued since February 2007 and are interest rate risk-free though they are included in the floating-rate debt, the relevant share has slightly increased from 41.9 percent to 42.2 percent. This development points that there was no considerable increase in the sensitivity to interest rate risk (Chart I.23).

The average maturity of government securities extended to 26.5 months by October 2007. In the December 2006–October 2007 period, the term to maturity of YTL denominated floating-rate government securities remained unchanged, whereas the term to maturity of YTL denominated fixed rate government securities increased (Chart I.24).

**Chart I.25.**  
Government Debt Securities by Holders<sup>1, 2, 3</sup> (%)



Source: BRSA-CBRT

(1) Based on nominal amounts.

(2) "Bank" includes GDDS owned by banks operating in Turkey; "Household" includes GDDS that belong to real persons kept at domestic banks; "Other domestic residents" includes GDDS of domestic legal persons except banks and households also GDDS of mutual funds kept at banks and "Non-residents" involves non-resident real and legal persons' GDDS kept at domestic banks.

(3) GDDS owned by the Central Bank are excluded.

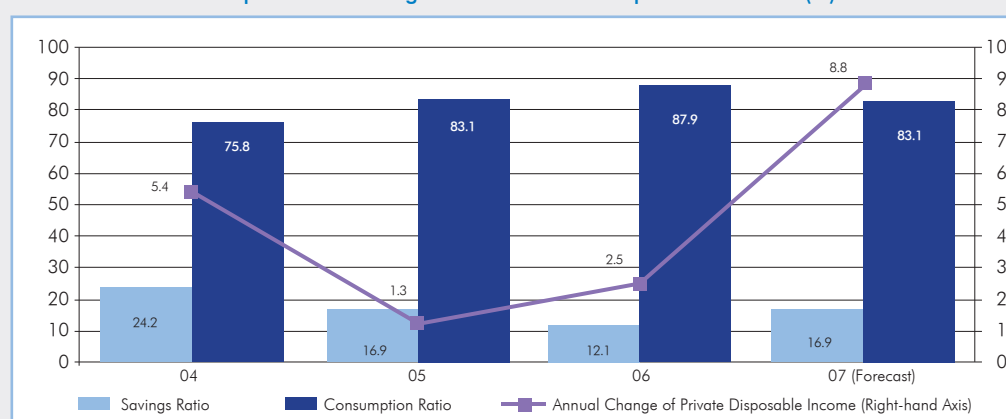


A large portion of total government bonds is owned by banks, thus comprising a major part of banking sector assets. As of September 2007, the share of banks increased, while the share of households continued declining, whereas that of non-residents did not display a significant change compared to the end of the previous year (Chart I.25).

#### I.4. Private Sector Developments

The effects of monetary tightening in the second half of 2006 also prevail in 2007.

**Chart I.26.**  
Private Sector Consumption and Savings Ratios and Real Disposable Income (%)<sup>1,2,3</sup>



(Source: SPO)

(1) Private sector's consumption and savings ratio is in current prices, private sector's disposable income is calculated using CPI (1998=100)

(2) Savings Ratio = Total Private Savings / Total Disposable Income.

(3) Consumption Ratio = Total Private Consumption / Total Disposable Income

In the 2008 Annual Programme, private disposable income is foreseen to grow by 8.8 percent in real terms in 2007, and the savings rate to rise by 4.8 points due to the slowdown in the rate of consumption growth (Chart I.26).

**Table I.6. Private Consumption Expenditures (Annual Real Change, %)**

	2003	2004	2005	2006	Jan-June 2007
<b>Private Consumption Expenditures</b>	<b>6.6</b>	<b>10.1</b>	<b>8.8</b>	<b>5.2</b>	<b>0.8</b>
Durable Goods	24.0	29.7	15.0	2.9	-5.2
Services	7.5	9.3	7.8	5.0	2.8
Food and Beverages	4.1	2.8	8.2	3.1	3.9
Semi-Durable and Non-Durable Goods	2.1	18.8	12.9	15.8	-0.6
Ownership of dwelling	1.4	1.8	1.5	2.2	2.4
Energy, transportation, communication	2.2	0.3	-0.1	2.9	4.8

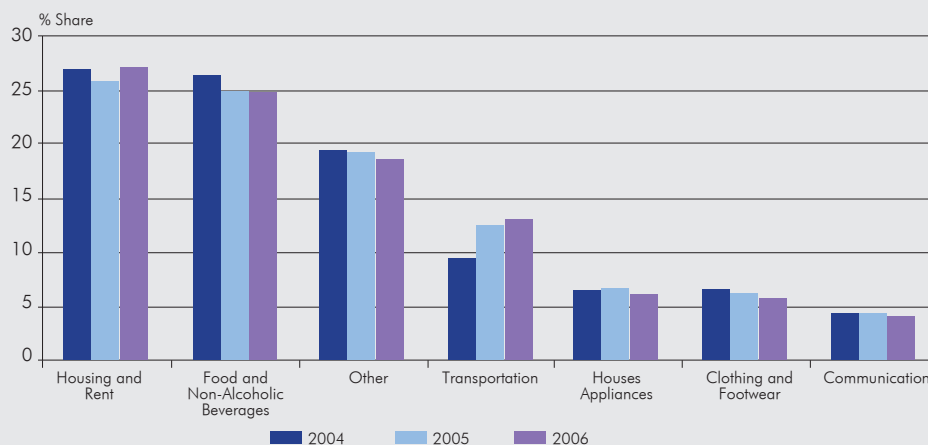
Source: TURKSTAT

The monetary tightening adopted since June 2006 became more pronounced in the second half of 2006 and led to a slowdown in domestic demand. This trend increasingly continued in the first half of 2007 and expenditures on durable goods, semi-durable and non-durable goods showed contraction trends compared to the same period last year. In the meantime, due to food and beverages, ownership of dwelling, energy, transportation and communication expenditures which rose more rapidly compared to the same period of the previous year, increasing services expenditures, albeit at a lower pace, private final consumption expenditures supported the positive course of annual change (Table I.6).

### I.4.1. Household

Household liabilities continued to rise in 2007.

**Box 4.**  
**Distribution of Household Consumption Expenditures**



Source: TURKSTAT, 2006 Household Budget Survey

Household consumption expenditures are composed of monthly purchases of households, consumption from its own production, consumption from stocks, earnings in-kind and consumption by way of transfers and monthly average of consumption expenditures made for durable consumption goods purchased in the last year.

In 2006, the share of expenditures for housing and rent (except for housing purchase investments) in total expenditures was 27.2 percent, while the share of expenditures for food and non-alcoholic beverages was realized as 24.8 percent.

Even though no significant change was observed in the distribution of household expenditures in 2006 compared to the previous year, the share of transportation expenditures in total expenditures continued to expand.

**Table I.7.**  
**Household Disposable Income, Indebtedness and Interest Payments<sup>1,2,3</sup> (Million YTL)**

	2003	2004	2005	2006	09.07
Household Interest Payments	3,983	7,245	10,264	12,175	14,863
Household Debt	13,442	28,259	49,979	73,654	90,348
Household Disposable Income	180,305	218,752	255,640	292,775	340,786
Interest Payments / Disposable Income (%)	2.2	3.3	4.0	4.2	4.4
Debt / Disposable Income (%)	7.5	12.9	19.6	25.2	26.5

Source: BRSA-CBRT, TURKSTAT

(1) September 2007 household interest payments are calculated on a yearly base.

(2) Household debt consists of gross consumer credits and credit card balances extended by banks (excluding participation banks for 2003 and 2004) and consumer finance companies.

(3) Household disposable income for 2006 and 2007 are calculated by using, private sector disposable income for 2005 and private sector disposable income estimation for 2006 and 2007 which are mentioned in 2008 Annual Programme, under the assumption that the 2005 ratio of household disposable income to private sector disposable income has not changed.

As of September 2007, the ratio of household interest payments to disposable income reached 4.4 percent, displaying a slight rise compared to the end of the previous year, while the ratio of total debt to disposable income rose from 25.2 percent to 26.5 percent (Table I.7).

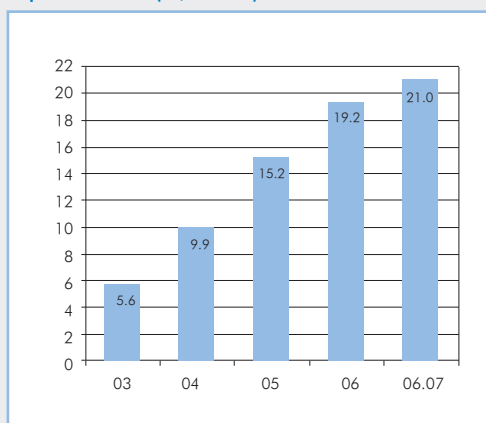
**Table I.8. Household Liabilities to GDP in Selected Countries**

	Household Liabilities excluding Housing Loans/GDP (%)			Household Liabilities /GDP (%)		
	2004	2005	2006	2004	2005	2006
Lithuania	2.5	4.1	6,7	8,0	13.2	19.3
Czech Republic	3.9	4.7	5.3	4.7	14.3	17.3
Hungary	5.4	6.8	9.2	14.9	16.9	21.1
Latvia	5.3	7.7	9.3	17.1	27.1	38.3
Poland	9.7	9.7	10.7	13.9	15.1	18.2
Italy	12.0	12.3	12.7	25.3	27.6	29.2
Greece	11.0	12.4	14.2	30.5	36.2	41.0
Portugal	13.8	13.9	15.1	63.2	67.3	74.3
Spain	17.5	19.1	20.8	57.5	68.6	76.8
EU-25	17.4	17.6	17.6	56.8	60.4	63.2
Eurozone	15.7	15.9	15.8	49.1	52.3	54.1
<b>Turkey</b>	<b>5.9</b>	<b>7.5</b>	<b>8.6</b>	<b>6.6</b>	<b>10.0</b>	<b>12.4</b>

Source: ECB, CBRT

Comparing the ratio of household liability, which increased by 47 percent in 2006, to GDP to selected countries, the ratio in question for Turkey is still lower than that of many other countries. An analysis of this ratio excluding housing loans indicates that Turkey displays a similar pattern especially in line with new member states of the EU. It is expected that household liability in Turkey will rise close to the level of EU countries as a result of the increased utilization of housing loans against a backdrop of sound economic stability, decreased interest rates and a functional mortgage system (Table I.8).

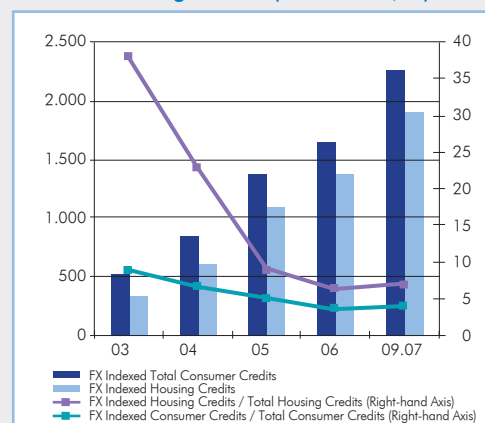
**Chart I.27.**  
Retail Loans to Private Final Consumption  
Expenditures<sup>1</sup> (% Share)



Source: CBRT, TURKSTAT

(1) Retail loans are composed of gross consumer credits and credit card balances extended by banks (excluding participation banks for 2003 and 2004) and consumer finance companies to real persons.

**Chart I.28.**  
FX Indexed Total Consumer Credits and FX  
Indexed Housing Credits (Million YTL, %)



Source: CBRT

The portion of private consumption expenditures financed by retail loans continued to increase in the first half of 2007 as well (Chart I.27).

**Table I.9. Number of Non-Performing Consumer Loan Borrowers and Credit Card Holders<sup>1</sup>**

	09.06	09.07
Non-Performing Credit Card Holders	182,076	167,841
Non-Performing Consumer Loan Borrowers	21,660	40,957

Source: CBRT

(1) It indicates the number of credit card and consumer credit debtors in the NPL accounts of banks. According to the implementation initiated by the Bank effective from 2000, the records whose "paid notice" is sent by banks are erased from the Registry of non-performing loans after three calendar years and those whose "paid notice" is not sent are removed after five calendar years. Therefore the number of records for previous periods may vary due to removal of three or five year old records.

In the first nine months of 2007, the number of defaulters increased due to the rise in consumer loan utilization compared to the same period last year. On the other hand, the number of credit card defaulters decreased during the same period due to the enforcement of "Bank Cards and Credit Cards Law" (Table I.9).

The ratio of FX indexed consumer loans to total consumer loans, which was 3.6 percent by the end of 2006, rose to 3.8 percent as of September 2007. This development can primarily be attributed to the increase in FX indexed housing loans. As a matter of fact, the share of FX indexed housing loans, which had increased from YTL 1.3 billion in 2006 to YTL 1.9 billion as of September 2007, in total housing loans rose from 6.1 percent to 6.8 percent in this period (Chart I.28). The said rise in FX indexed consumer loans, albeit with a lower share in retail loans, will lead to increased household indebtedness in case of depreciation of the Turkish currency. Therefore, individuals without foreign exchange income should avoid borrowing in foreign currency.

**Table I.10. Composition of Household Financial Assets<sup>1</sup> (Billion YTL)**

	2004	2005	2006	09.07
YTL Deposits	63.5	90.4	113.6	134.7
FX Deposits	61.3	59.8	75.0	78.9
FX Deposits (Billion USD)	45.3	44.5	53.4	65.3
Currency in Circulation	12.4	18.3	24.7	24.8
GDDS+Eurobond	39.1	32.6	28.2	20.3
Mutual Fund	-	-	17.5	21.4
Stocks	12.3	15.7	15.8	17.6
Private Pension Funds	0.3	1.2	2.9	4.1
Repos	1.6	1.5	2.0	2.1
<b>Total Assets</b>	<b>190.5</b>	<b>219.5</b>	<b>279.7</b>	<b>303.9</b>

Source: BRSA-CBRT, CMB, CRA

(1) YTL and FX deposits includes participation funds

The total household financial assets increased by 8.6 percent as of September 2007 compared to the end of 2006 and reached YTL 303.9 billion (Table I.10).

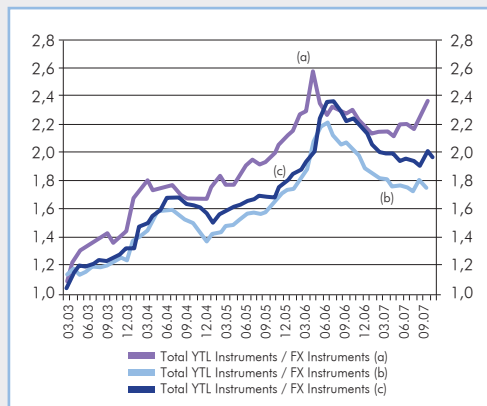
The share of savings deposits in household assets continues to expand. This is mainly driven by the decline in the share of FX deposits due to the parity effect. As a matter of fact, the share of FX deposits that increased by USD 11.9 billion (22.2 percent) in the first 9

months of 2007, in total deposits dropped from 40 percent to 37 percent, whereas its share in total financial assets declined from 26.8 percent to 26 percent. Recent observations show that households shift to FX denominated assets during periods of appreciation of the Turkish currency, whereas they prefer YTL denominated assets during periods of depreciation of the Turkish currency (Chart I.29).

The 11.4 percent increase in stock portfolio in the first 9 months of 2007 stemmed mainly from price hikes. Moreover, investment funds allowing investment in various capital market instruments such as bonds, bills, stocks and repos at the same time and of which the value increased by 22.3 percent and reached YTL 21.4 billion, progressively assumed more importance in household financial assets. The only investment instruments which exhibited a nominal decline among financial assets within the period concerned were government bonds and Eurobond portfolio (Table I.10).

Significant developments have occurred in pension funds, one of the items among household assets, in Turkey since 2004. The share of these funds in total household assets, which was 0.4 percent in 2004, increased to 1.3 percent as of September 2007. Pension funds, which have a significant share in financial assets in developed countries, are regarded as an indicator of financial depth owing to their long-term maturity. Although their share in total household assets is relatively low in Turkey, the rapid developments that pension funds display are considered positive for financial deepening.

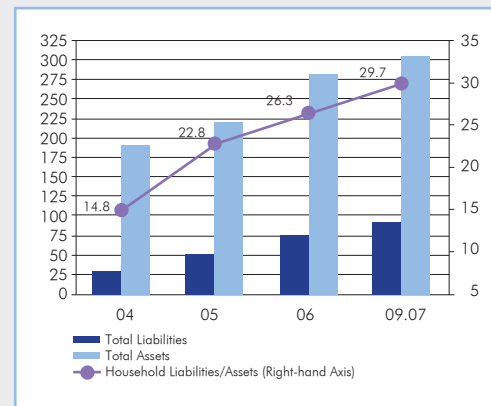
**Chart I.29.**  
Ratio of YTL-FX Denominated Investment Instruments<sup>1</sup>



Source: BRSA-CBRT, CMB, CRA

(1) YTL Instruments = Deposits + Repos + Gov. Dom. Debt Sec. + Participation Funds (YTL) + Stocks + Private Pension Funds; + Mutual Funds (starting from April 2006)  
FX Instruments = FX Deposits + Gov. Dom. Debt Sec. + Eurobond + Participation Funds (FX).  
(a) Current YTL value of FX deposits and Participation Funds (FX).  
(b) For FX deposits and Participation Funds (FX), exchange rate prevailing on 31.12.2002 is used.  
(c) For FX deposits and Participation Funds (FX), exchange rate prevailing on 31.12.2002 is used and the parity effect is eliminated

**Chart I.30.**  
Households' Financial Assets and Liabilities (Billion YTL, %)<sup>1</sup>



Source: BRSA-CBRT, CMB, CRA

(1) Household Assets = Savings Deposit + FX Deposit + Money in Circulation + Gov. Dom. Debt Sec. + Eurobond + Repos + Stocks + Pension Funds + Mutual Funds (starting from April 2006)  
Household's Liabilities consists of gross consumer credits and credit card balances extended by banks (excluding participation banks for 2003 and 2004) and consumer finance companies.

The ratio of household liabilities to financial assets continues to increase due to increasing retail loans (Chart I.30).

Despite the continuous rise in disposable income as a result of economic growth, the rise in household indebtedness and the increased recovery of consumption expenditures by loans require close monitoring of households by funders with respect to their repayment and expenditure capacity.

### Box 5. Income Distribution

The convergence of the “Gini” coefficient, prominently used measure of income distribution, to zero points to an increase in the equality of income distribution, whereas its convergence to 1 signifies a deterioration in the equality of income distribution. According to TURKSTAT, the Gini coefficient, which was 0.44 in Turkey in 2002, declined in subsequent years and fell to 0.38 in 2005.

Statistics related to income distribution suggest that in 2002, the 20 percent bracket, which had the largest share in income, possessed 50 percent of total income, while this ratio dropped to 44.4 percent in 2005. However, the 20 percent bracket, which had the lowest share in income in 2002, possessed 5.3 percent of total income while this ratio increased to 6.1 percent in 2005.

	Gini Coefficient	Distribution of Household Disposable Income				
		I. 20 %	II. 20 %	III. 20 %	IV. 20 %	V. 20 %
2002	0.44	5.3	9.8	14.0	20.8	50.0
2003	0.42	6.0	10.3	14.5	20.9	48.3
2004	0.40	6.0	10.7	15.2	21.9	46.2
2005	0.38	6.1	11.1	15.8	22.6	44.4

Source: TURKSTAT

Income distribution changing in favor of the group with the smallest share in income will increase involvement in financial markets and thus contribute to financial deepening.

## I.4.2. Corporate Sector

### I.4.2.1. Financial Analysis of Companies

Table I.11. Financial Ratios (%)

	All Companies			Manufacturing Companies		
	2004	2005	2006	2004	2005	2006
<b>Leverage and Capital Structure Ratios</b>						
Leverage Ratio	47.4	48.6	50.1	45.6	47.1	48.8
Bank Loans/Total Debt	30.6	32.2	36.0	38.0	40.5	42.6
FX Loans in Cash/ Total Loans in Cash	79.7	75.0	70.8	79.6	75.5	71.1
Long Term FX Loans in Cash / Total FX Loans in Cash	56.9	58.5	63.3	48.0	48.8	50.0
Total Debt / Total Equity	90.3	94.5	100.4	84.0	89.9	95.3
Interest Coverage Ratio (times)	3.6	4.3	3.1	3.4	3.6	2.7
FX Short Term Loans / Foreign Sales	13.5	15.2	13.6	13.3	14.9	13.5
<b>Liquidity Ratios</b>						
Current Ratio	138.7	138.5	141.8	160.1	158.7	158.3
Liquidity (Acid Test) Ratio	99.1	100.8	102.6	93.0	96.0	95.6
Cash Ratio	22.9	24.0	26.3	30.7	29.9	27.5
Days' in Inventory	-	48.0	47.4	-	68.9	65.2
Average Accounts Receivable Collection Days	-	64.0	66.4	-	65.2	66.4
Average Accounts Payable Payment Days	-	55.4	55.3	-	54.2	51.0
<b>Profitability Ratios</b>						
Asset Turnover Ratio	1.0	1.0	1.0	1.2	1.2	1.3
Net Profit Margin	4.6	4.0	5.5	4.6	3.3	4.5
Interest Expenses / Net Sales	2.3	1.6	3.1	2.5	1.7	3.3
Net Profit / Assets (ROA)	4.6	4.1	5.7	5.5	4.0	5.7
Net Profit / Equity (ROE)	8.7	7.9	11.5	10.1	7.5	11.0

Source: CBRT Company Accounts (Provisional Data)

When the financial structure ratios of companies are analyzed, the level of indebtedness of these firms is observed to be increasing, mainly in line with their utilization of bank credits. As a result of fluctuations in the financial markets during the period May – June 2006, the interest coverage ratio declined as a result of the increase in interest rates and exchange rates (Table I.11). Although the rise in leverage ratio and the fall in interest coverage ratio are considered to be unfavorable from the credit risk point of view; the total amount of debt being smaller than shareholders' equity and a modest share of interest bearing bank credits in total debt are assessed to ensure a considerable degree of safety for creditors.

Looking at leverage ratios as of the selected sectors, the leverage ratio increased in almost all sectors and the bank credit utilization rate exhibited an upward trend. It is worth noting that leverage ratios in the construction, wholesale and retail trade, machinery and equipment, transportation and textile sectors are above the average of sectors and that the total amount of debt surpasses the shareholders' equity (Table I.12).

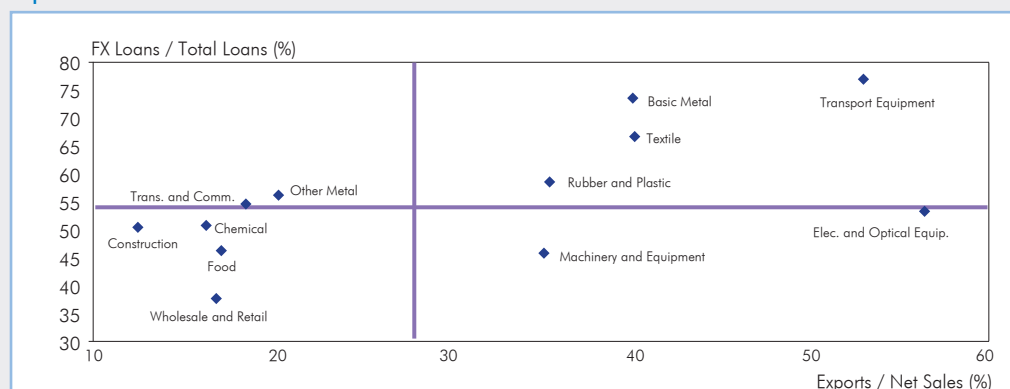
**Table I.12. Leverage Ratios for Selected Industries (%)**

	Bank Loans / Assets			Debt / Assets		
	2004	2005	2006	2004	2005	2006
Manufacturing	17.3	19.1	20.8	45.6	47.1	48.8
Food	18.5	19.9	22.9	45.9	44.1	45.1
Textile	22.5	24.5	24.7	50.1	51.2	52.1
Chemicals	14.3	16.0	17.0	42.3	41.2	44.4
Other Metals	10.5	13.7	15.1	29.6	35.5	37.8
Basic Metals	18.2	21.1	22.5	40.7	42.9	44.1
Machinery and Equipment	16.8	19.9	23.2	51.0	53.3	56.3
Transport Equipment	18.2	17.1	18.8	49.6	52.0	52.6
Construction	6.7	8.0	7.8	74.5	74.8	74.3
Wholesale and Retail Trade	17.7	19.5	20.2	64.9	67.1	65.5
Transport, Communication	8.4	9.8	18.9	37.8	38.1	48.4
All Companies	14.5	15.6	18.0	47.4	48.6	50.1

Source: CBRT Company Accounts

71 percent of cash loans used by companies in 2006 were FX denominated, while 29 percent were YTL denominated. It is observed that the maturities of FX cash loans were extended. The ratio of short-term FX loans to foreign sales declined due to increased revenues from exports in 2006 (Table I.11). The high level of FX loans, despite the shrinkage in their share, poses a risk for domestic market-oriented manufacturing sectors in this period. Nevertheless, analyzing by sectors, those with a large share of FX loans also have a large share in exports, while the FX loan shares of sectors producing for the domestic market are below the sector average (Chart I.31). However, transportation, communication and other metals sectors take place among the sectors with high FX loan-low exports.

**Chart I.31**  
**Exports and FX Loans<sup>1</sup>**



Source: CBRT  
(1) Areas are defined as of median measures.

The analysis of liquidity ratios, indicators of the capability of firms to repay their short-term debts, points to a recovery in the short-term solvency of firms (Table I.11). Examining the days in inventory and accounts receivables average collection days, which are complementary to liquidity ratios, the length of period products are kept in storage has been shortened, whereas the period for collecting receivables has been extended. The extended receivables collection period increase firms' working capital requirements.

Profitability ratios point to favourable developments for firms. The increase in leverage ratios and return on assets pushed the return on equity up. Despite firms' increased financing expenses, the reduction in cost of goods sold have been instrumental in the rise of the profit margin (Table I.11)

In conclusion, provisional data compiled from the balance sheets of firms sent to the Bank reveal that bank-originated indebtedness ratios of firms rose and that their financing expenses increased due to the effect of financial turbulence experienced in the second half of 2006. Nonetheless, firms' sales to mainly foreign markets continue due to the slowdown in domestic demand and they still maintain their profitability thanks to the reduction in sales costs.

**Table I.13. Financial Ratios for Selected ISE Companies**

	Jun.06	Sep.06	Dec.06	Mar.07	Jun.07
Asset Turnover Ratio (Times)	0.6	0.9	1.2	0.3	0.6
Net Profit Margin (%)	2.8	5.3	5.5	4.8	6.6
ROA (%)	1.7	4.7	6.4	1.3	3.8
ROE (%)	3.7	10.2	13.5	2.8	8.0
Leverage Ratio (%)	51.6	50.9	50.2	51.2	50.5
Total Debt / Total Equity (%)	112.5	109.1	106.0	110.9	107.3
Equity Multiplier	2.2	2.1	2.1	2.2	2.1

Source: ISE  
Minority interest has not been included in equity.

Comparing to the same period last year, firms listed on the ISE<sup>3</sup> maintained their strong profitability level in the first half of 2007 as well (Table I.13). The increase in the return on asset and return on equity stems from the increase in the profit margin. The increase in profit margins

<sup>3</sup> Financial statements of the firms which are publicly traded on the ISE and can be consolidated, however which are not considered as financial institution or a subsidiary thereof, are used.



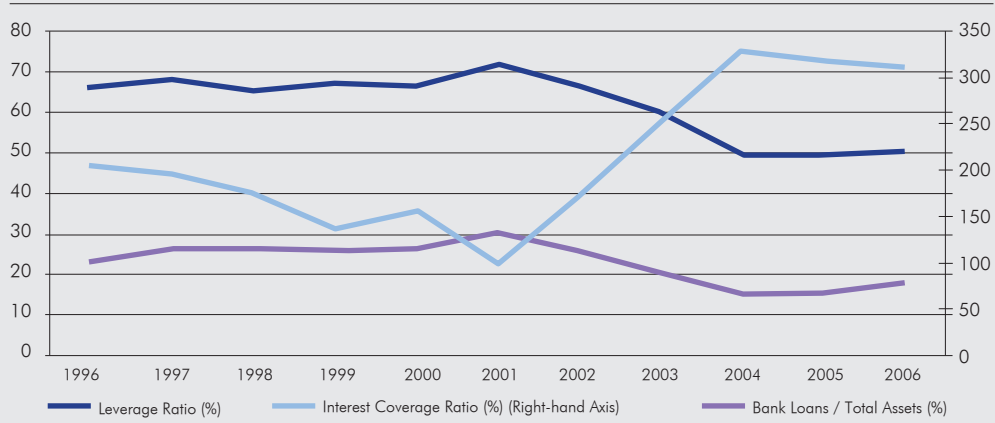
of firms arises from the exchange rate gains on credit debts caused by the appreciation of the Turkish currency and reflected on net financing expenses. However, it should be noted that the increases in profit margins obtained by non-operating income may not be stable.

**Box 6.**

**Evaluation of Leverage, Interest Coverage, Non-Performing Loan Ratios and Foreign Currency Short Positions of Firms**

According to data by the Central Bank, the leverage ratio, which had been fluctuating at around 65-68 percent between the years 1996-2000, reached 71 percent in 2001. This ratio declined during the 2001-2004 period and started to display a moderate increase in 2004. The ratio of bank loans to total assets also followed a similar trend. However, it is noteworthy that both ratios are below their previous levels. The ratio of earnings before interest and tax to financing costs, which is an indicator of interest payment ability, steadily declined during the 1996-2001 period to the extent that it failed to meet financing expenditures in 2001. Following a sharp hike between the years 2002 and 2004, the ratio started to follow a downward trend again, albeit still higher than its previous levels (Chart 1).

**Chart 1. Capital Structure Ratios**



Source: CBRT

**Chart 2. Debt / Equity Ratio and Interest Coverage Ratio**

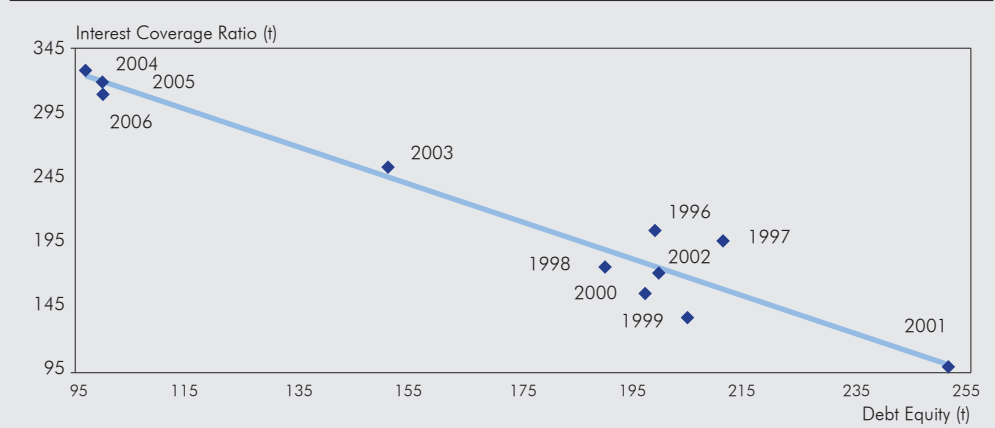
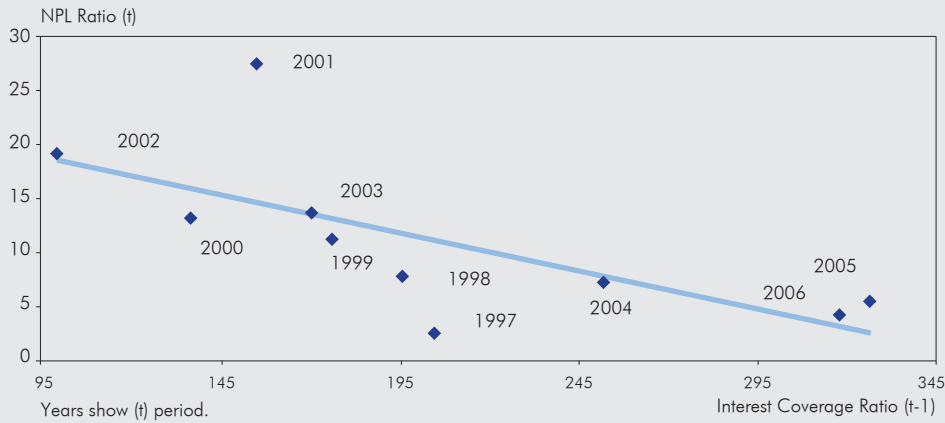


Chart 3. Interest Coverage Ratio and NPL Ratio



An analysis of the relationship between the debt to equity ratio and the interest coverage ratio for the 1996-2006 period indicates that the amount of the funds borrowed by firms increases, the interest coverage ratio decreases, and as the interest coverage ratio falls in the previous period, the NPL ratio of the banking sector rises (Charts 2 and 3). Joint analysis of movements of variables in the said period indicates that interest coverage ratio reduced by 14.3 percentage points on average in line with a 10 percentage point rise in the debt to equity ratio, while the NPL ratio of firms increased by 0.71 percentage point on average parallel to a 10 percentage point decline in the interest coverage ratio in the previous period.

Table 1. Sensitivity Analysis- Change in Foreign Exchange and Interest Coverage Ratio

	Debt / Equity (%)	Interest Coverage Ratio	NPL Ratio <sup>1</sup>	Capital Adequacy Ratio <sup>1</sup>
Current	100.4	309.8	3.7	17.0
10 % Depreciation	109.3	297.1	4.6	16.5
20 % Depreciation	118.7	283.7	5.5	16.0
30 % Depreciation	128.6	269.4	6.5	15.4

Source: CBRT Company Accounts, BRSA, CMB

(1) SDIF Bank, T.Kalkinma Bank, Iller Bank and Eximbank are excluded in the calculation of NPL ratio and capital adequacy ratio.

Depreciation of YTL, *ceteris paribus*, will lead to the erosion of equity by causing foreign exchange losses due to the short foreign currency positions of firms, while, at the same time, will lead to an increase in the debt to equity ratios of firms by raising YTL equivalent of FX denominated debts. As can be seen in the distribution charts, there are strong correlations between the debt to equity ratio and interest coverage ratio on the one hand, and between the interest coverage ratio and the NPL ratios of the banking sector, on the other.

Table 1 shows the sensitivity analysis of how the depreciation of the Turkish currency would affect the debt ratios and interest coverage ratio of firms as well as the NPL ratios of the banking sector in the following period. According to the "Analysis of Financial

Structures and Profitability of the Firms Listed on the Istanbul Stock Exchange” published by the Capital Markets Board of Turkey (CMB), the FX denominated debts to total assets ratio of firms listed on ISE was 29.3 percent, while the ratio of their FX assets to total assets was 15.5 percent by the end of 2006. The said ratios have also been used for representing the corporate sector in the Company Accounts of the CBRT. NPL ratio of firms and the capital adequacy ratio of the banking sector are shown as of August 2007.

According to the results of the sensitivity analysis, a 30 percent-depreciation of Turkish currency, *ceteris paribus*, would increase the debt to equity ratio of firms to 128.6 percent, and bring down the interest coverage ratio to 269.4 percent by triggering a 40.4 percentage points decline. The said 40.4 percentage points decline in the interest coverage ratio of firms would, in return, lead to 2.9 percentage point increase in the NPL ratio of the banking sector and 1.7 percentage point decline in the capital adequacy ratio, under the assumption that full provisions are set aside for all non-performing loans.

When the historical development of financial structure ratios of firms and the results of the sensitivity analysis are analyzed, the indebtedness level of firms is lower compared to that of the past, whereas their interest is higher. Though the interest coverage ratio of firms will weaken in the event of depreciation of YTL due to short positions of firms, it is believed that the interest coverage ratio will remain strong compared to previous years. However, once the interest coverage ratio of firms weakens, the NPL ratio of the banking sector will increase, posing credit risk for the sector. Nevertheless, the high capital adequacy ratio of the sector provides a significant amount of safety against such a risk. However, it should be noted that the capital adequacy ratio in the sensitivity analysis represents the consolidated data of the sector and could vary from bank to bank.

#### 1.4.2.2. Foreign Exchange Position of the Corporate Sector

Foreign exchange positions of the firms operating in Turkey cannot be calculated by referring to their balance sheets since the financial statements of these firms are prepared in terms of the total Turkish currency amount, regardless of the currency composition. However, in order to provide a general idea of the exchange rate risk of firms, the foreign currency position of the non-banking sector can be calculated approximately using data compiled from balance of payments statistics and various statistical reports prepared by banks for the Central Bank, as well as the database of the Treasury and the “Locational Banking Statistics” database of the Bank for International Settlements (BIS). On the other hand, foreign currency positions of non-financial firms on the ISE have been calculated by referring to footnotes in their disclosed financial statements, and the exchange rate risks of these firms, which constitute an important part of the corporate sector, and their cash loan risks for the Turkish banking sector, have been examined. The exchange rate risk of firms in the corporate sector has been analyzed and assessed from a macro perspective. Hence, considering that some firms have short positions while others have long positions, it would be more accurate to evaluate the vulnerability of the corporate sector to exchange rate risk by making individual analyses for each firm.

## I.4.2.2.1. Foreign Exchange Position of the Non-Banking Sector

Table I.14. FX Assets and Liabilities of the Sector Except Households and Banks (Million USD)

	12.05	03.06	06.06	09.06	12.06	03.07	06.07	Change 2006- 06.07 (%)	Change 06.06- 06.07 (%)
ASSETS	49,480	52,820	53,781	57,444	67,108	69,456	72,444	8	35
A. Deposits	34,017	36,958	37,433	41,178	49,334	49,878	52,195	6	39
-Domestic Banks (1)	15,763	17,772	17,321	18,531	22,638	23,053	25,105	11	45
-Foreign Banks (2)	18,254	19,186	20,112	22,647	26,696	26,825	27,090	1	35
B. Securities	1,686	1,661	1,536	1,576	1,745	1,849	1,662	-5	8
-Domestic Issuance	261	268	168	207	225	235	182	-19	8
-Foreign Issuance	1,425	1,393	1,368	1,369	1,520	1,614	1,480	-3	8
C. Export Receivables	6,721	7,092	7,688	7,460	8,572	8,758	9,382	9	22
D. Foreign Direct Invest.									
To Abroad	7,056	7,109	7,124	7,230	7,457	8,971	9,205	23	29
LIABILITIES	76,600	87,039	95,886	98,463	104,520	113,323	123,437	18	29
A. Cash Loans	60,320	71,521	78,247	81,285	86,023	94,786	103,686	21	33
-Domestic (1,3)	21,062	22,317	24,760	24,343	25,096	26,738	28,553	14	15
-Foreign	39,258	49,204	53,487	56,942	60,927	68,048	75,133	23	40
Medium and Long-Term	38,070	47,977	52,216	55,522	59,533	66,730	73,180	23	40
B. Import Payables	10,674	10,951	12,947	12,864	13,304	13,463	14,981	13	16
C. Protocolized Receivables									
of SDIF	5,606	4,567	4,692	4,314	5,193	5,074	4,770	-8	2
NET POSITION	-27,120	-34,219	-42,105	-41,019	-37,412	-43,867	-50,993	36	21

Source: BRSA-CBRT, Treasury, SDIF, BIS

(1) Participation funds and funds-extended by participation banks are included.

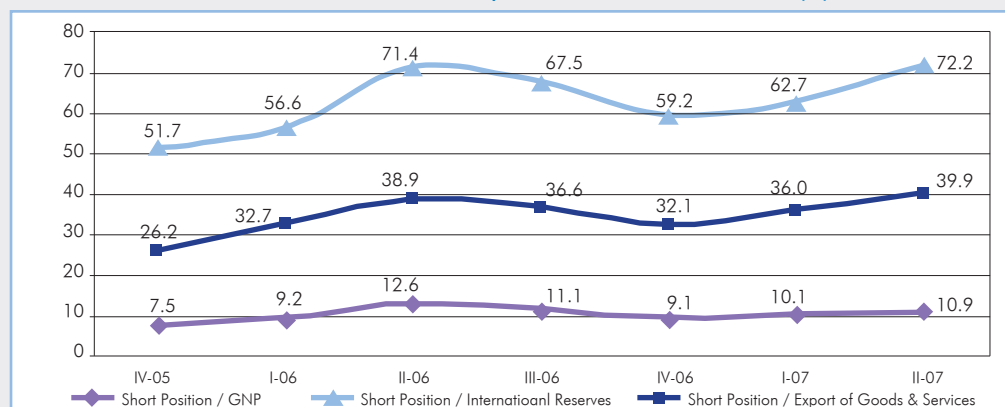
(2) It should be taken into consideration that real persons' deposits may be included in "Deposits-Foreign Banks" data received from BIS.

(3) FX indexed loans are included.

Note: Amounts in the table may be different from those published in the preceding issues due to the updates of the data.

The net short position of the non-banking sector, which increased by 21 percent in June 2007 on a year-on-year basis and by 36 percent compared to end-2006, reached USD 51 billion. This increase was mainly driven by loans received from abroad, which rose by 23 percent in the first half of 2007. The short position of the non-banking sector had decreased in the second half of 2006, but started to increase in 2007 (Table I.14).

Chart I.32.

Ratios Related to FX Position of the Sector Except Households and Banks<sup>1,2</sup> (%)

Source: BRSA-CBRT, TURKSTAT, Treasury, SDIF, BIS

(1) GNP and exports of goods &amp; services are computed on a yearly basis. International reserves are outstanding amounts at the end of period.

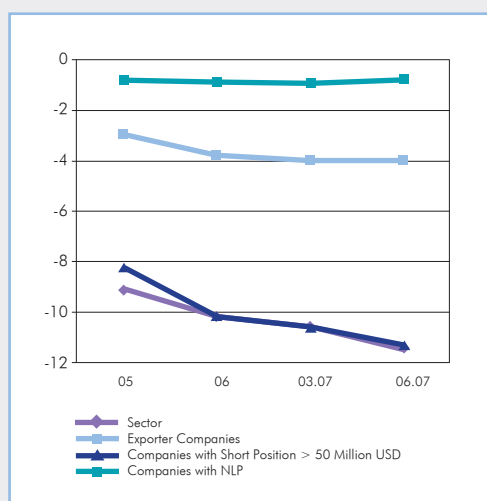
(2) International reserves are gross foreign exchange reserves of CBRT (including gold).

The ratios of the non-banking sector's short position to GNP, exports and international reserves declined in the second half of 2006. However, the rise in the net short position stimulated an upward movement in the said ratios in the first half of 2007 (Chart I.32).

#### 1.4.2.2.2. Foreign Exchange Position of the Non-Financial Firms Listed on the ISE

This section examines foreign exchange positions and bank loans of non-financial firms listed on the ISE. The analysis covers 192 firms whose financial statements are published by the ISE, which disclose their foreign exchange positions in their balance-sheet footnotes and do not include any financial institution in their consolidated financial statements.

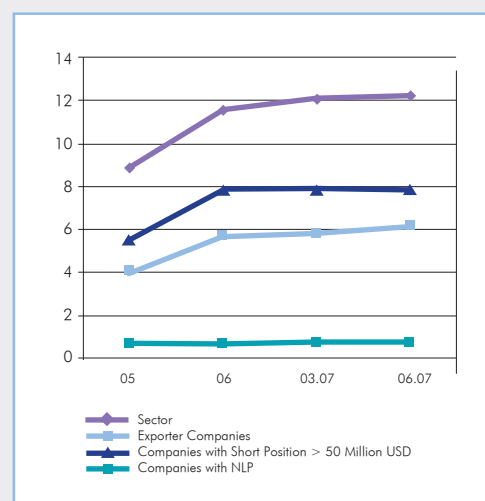
**Chart I.33.**  
FX Position of ISE Companies<sup>1</sup>  
(Billion USD)



Source: ISE

(1) As of year-end periods, companies for which the share of exports in net sales is equal to or greater than 30 percent, are considered exporter companies.

**Chart I.34.**  
Cash Loans Extended to ISE Companies<sup>1</sup>  
(Including NPL, Billion YTL)



Source: CBRT

(1) According to Risk Centre records, the cash loans are the loans which are extended directly by domestic banks or extended by foreign banks with guarantee or through intermediation of domestic banks.

The short position of firms, which was USD 10.2 billion at end-2006, increased in the first half of 2007 and reached USD 11.4 billion in June. Almost the entire amount of the short position belongs to 42 firms, whose short positions exceed USD 50 million. The short position of 131 non-exporting firms rose to USD 7.4 billion compared to end-2006, making up 65 percent of the total short position (Chart I.33).

Meanwhile, of the 192 firms analyzed, 141 firms have a short position equivalent to USD 12.8 billion and the remaining 51 firms have a long position of USD 1.3 billion, as of June 2007. Compared to end-2006, the number of firms with a short position has increased by nine firms, seven of which are exporting firms.

Total loans of firms, including NPLs, increased by 5.8 percent in the first half of 2007 and reached YTL 12.2 billion. Of these firms, 19 have NPLs (Chart I.34).

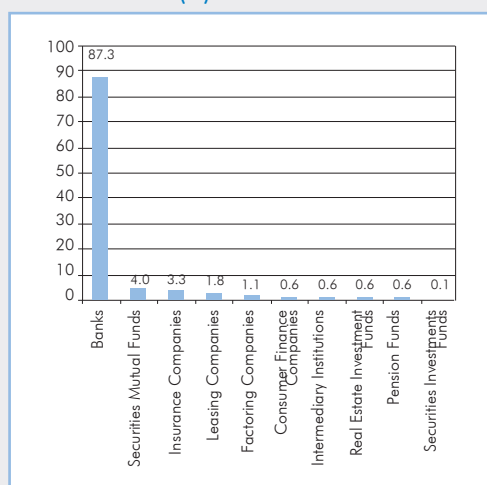
The number of non-exporting firms with a short position and the amount of their short positions tend to rise throughout 2007. In addition to the use of derivatives by firms to

hedge exchange rate risk and the measures that the authorities may take in the framework of prudential policies, essentially more prudential actions by the banks to avoid the credit risk especially when lending to firms with high short positions and no foreign exchange income would alleviate the potential risks.

## II. STRUCTURE OF THE FINANCIAL SECTOR

The Turkish financial sector maintained its stable growth trend in the first half of 2007. During the same period, the banking sector also continued to attract foreign investments.

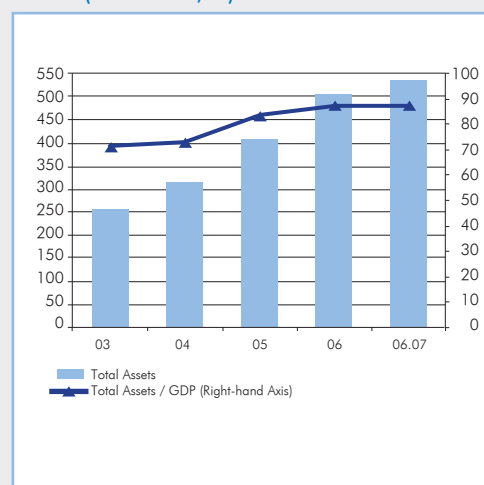
**Chart II.1. Composition of Balance Sheet of the Financial Sector (%)<sup>1</sup>**



Source: BRSA, CBRT, Association of Capital Market Intermediary Institutions, CMB

(1) Figures are as of June 2007.

**Chart II.2. Balance Sheet Size of the Banking Sector (Billion YTL, %)**



Source: BRSA-CBRT

The total asset size of the financial sector, which grew by 8 percent compared to year-end 2006, reached YTL 610 billion as of June 2007. 87 percent of financial sector assets belong to banks (Chart II.1).

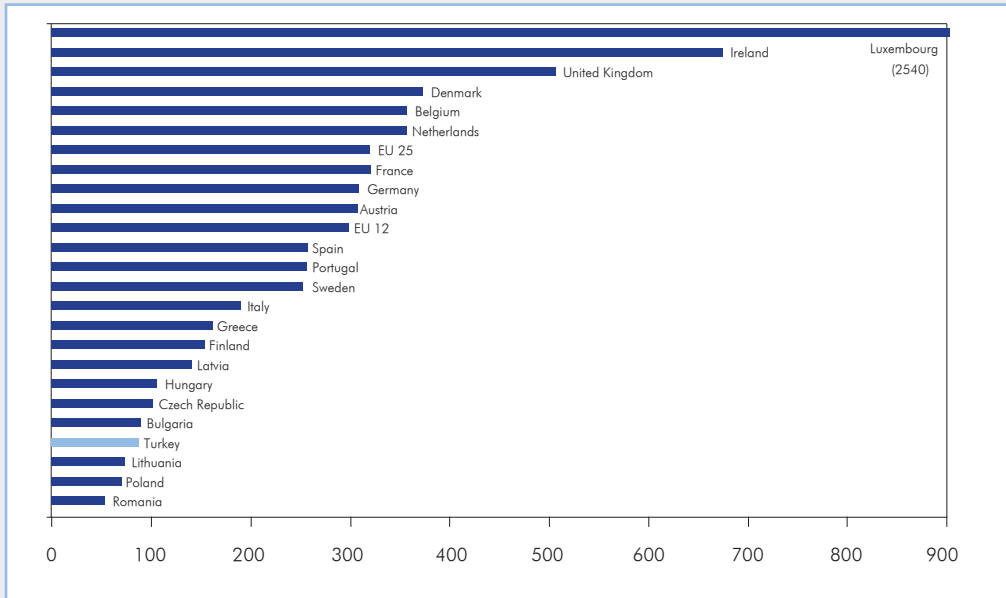
### II.1. Banking Sector

The Turkish banking sector consists of deposit banks, development and investment banks and participation banks that operate according to profit/loss sharing principles. Analyses in this section also include participation banks.

As of September 2007, the number of banking sector staff increased by 12,176 compared to end-2006 and reached 163,029, whereas the number of banks remained at 50.

As of September 2007, the total asset size of the banking sector increased by 1 percent in real terms compared to end-2006 and reached YTL 544 billion, while it increased to 451 billion from 355 billion in USD terms, with a rise of 27 percent. The real increase remained limited, due to the decrease in the New Turkish Lira value of the foreign currency items in the balance sheet, which resulted from the appreciation of the Turkish currency.

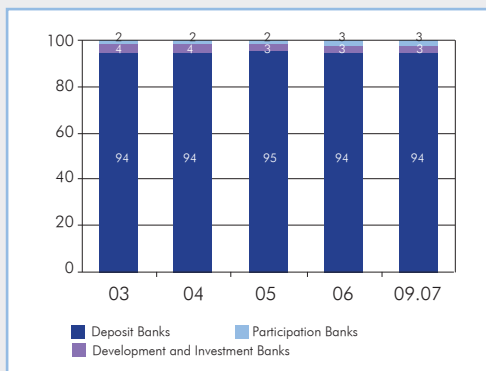
**Chart II.3.**  
Comparison of the Turkish Banking Sector Asset Size/GDP Ratio with Selected EU Countries (%)<sup>1</sup>



Source: TURKSTAT, BRSA-CBRT, ECB Report – 2006  
(1) Figures are as of 2006..

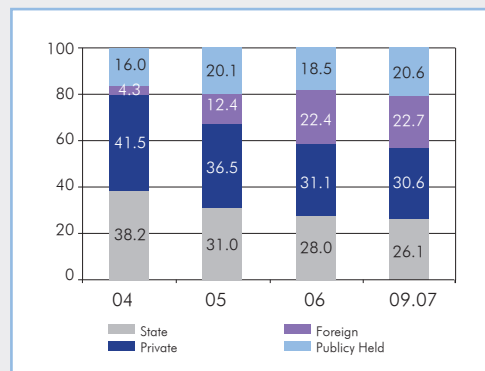
Turkish banking sector’s balance sheet size to GDP rose to 87 percent in June 2007 from 86.7 percent as of end-2006 (Chart II.2). The ratio is less than all EU countries except Lithuania, Poland and Romania (Chart II.3). This points to the growth potential of the Turkish banking sector.

**Chart II.4.**  
Banking Sector Assets by Group (%)



Source: BRSA-CBRT

**Chart II.5.**  
Banking Sector Assets According to Equity Ownership (%)<sup>1</sup>



Source: BRSA-CBRT  
(1) For publicly held shares no distinction is made between domestic and foreign investors.

Of the 50 banks in the Turkish banking sector, 33 are deposit banks, 13 are development and investment banks and 4 are participation banks, as of September 2007. As can be seen, deposit banking constitutes the main portion of the Turkish banking sector (Chart II.4).



The Turkish banking sector continued to attract foreign investors in 2007. As a consequence, according to their balance sheet size as of September 2007, the share of foreign participation stands at 22.7 percent, including the banks whose authorization process was finalized by September 2007 (Chart II.5). Adding the shares of banks, which have agreed to sell their shares to foreign investors but have not yet finalized the legal authorization and handover processes (Turkish Bank A.Ş., Oyak Bank A.Ş., Türkiye Finans Katılım Bankası A.Ş.), the total share of foreign participation increases to 25.6 percent. Meanwhile, according to Central Registry Agency data, the share of foreign participation in publicly held shares was 17.3 percent total assets of the sector during the same period. When these shares are included, the share of foreign participation in the banking sector reaches 42.9 percent. The continued interest of foreign investors in the Turkish banking sector indicates that the sector has growth potential and that positive expectations are still strong.

Table II.1. Comparison with Selected EU Member Countries<sup>1,2,3</sup>

Countries	Deposits/ GDP (%)	Loans/ GDP (%)	Loans/ Deposits (%)	Total Assets/ Number of Banks (Million Euro)	The Share of the Largest 5 Credit Institutions (%)	Number of credit Institutions	Foreign Participation in the Banking Sector (%)
Germany	119	132	111	3,475	22	2,050	11.1
Austria	104	135	130	976	44	809	19.5
Belgium	148	124	83	10,685	84	105	24.9
Czech Republic	68	45	67	2,013	64	57	96.9
Denmark	70	203	290	4,306	65	191	20.1
Finland	53	79	147	707	82	361	56.5
France	79	105	133	6,910	54	829	11.0
Netherlands	150	196	130	5,429	85	345	14.8
United Kingdom	143	162	113	24,069	36	401	50.3
Ireland	165	230	139	15,208	45	78	43.2
Spain	135	164	121	7,146	40	352	11.4
Sweden	60	132	221	3,793	58	204	8.9
Italy	63	96	153	3,461	26	807	13.9
Latvia	68	95	140	841	69	27	64.8
Lithuania	37	52	141	225	83	77	76.7
Luxembourg	872	482	55	5,452	29	154	94.6
Hungary	52	63	119	442	54	212	56.3
Poland	45	36	79	262	47	723	65.3
Portugal	114	149	130	2,231	68	178	22.3
Greece	108	86	79	5,082	66	62	37.4
<b>EU Zone Ave.</b>	<b>108</b>	<b>129</b>	<b>120</b>	<b>4,068</b>	<b>43</b>	<b>511</b>	<b>17.9</b>
<b>EU 25 Ave.</b>	<b>109</b>	<b>132</b>	<b>121</b>	<b>4,362</b>	<b>59</b>	<b>338</b>	<b>27.1</b>
Bulgaria	61	47	76	697	50	32	93.4
Romania	22	28	128	1,310	60	39	94.5
<b>Turkey 2006</b>	<b>53</b>	<b>39</b>	<b>74</b>	<b>5,397</b>	<b>61</b>	<b>50</b>	<b>22.4</b>
<b>Turkey 06.2007</b>	<b>54</b>	<b>42</b>	<b>77</b>	<b>6,070</b>	<b>60</b>	<b>50</b>	<b>22.3</b>

Source: BRSA-CBRT, Eurostat, ECB Report – 2006

(1) Figures for EU countries are as of 2006. In the EU countries, the definition of "credit institutions" may differ and non-bank financial institutions may be included in the definition of credit institutions in some cases. For Turkey the figures of banks are used.

(2) For Turkey, deposits include participation funds and loans include funds extended by participation banks.

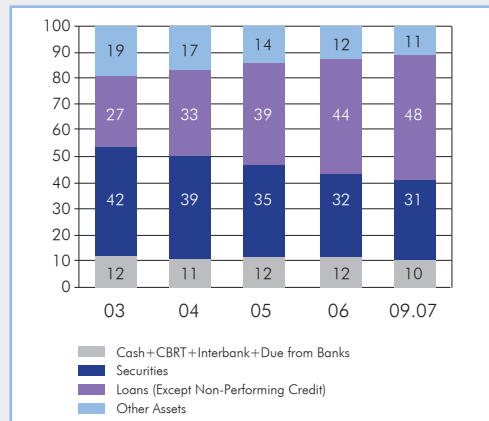
(3) Loans include gross non-performing credits.

Although the ratio of deposits and loans to GDP and the ratio of loans to deposits, which reveal the financial depth and intermediation level of the banking sector, rose in June 2007 compared to end-2006, they remain below EU averages (Table II.1).

The number of banks in the Turkish banking sector is significantly below the average of EU countries. The share of the first five banks in total assets was 60 percent as of June 2007, which is above the average of EU countries (Table II.1). As of September 2007, the share of the first five banks was 60 percent, while the share of the first ten banks was 82 percent, with declines of 1 and 2 percentage points compared to end-2006, respectively.

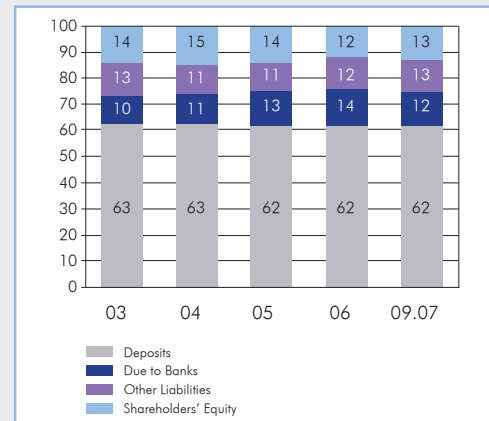
As for the share of foreign participation in the banking sectors of European Union countries, the shares of ten countries that joined the Union in 2005 and the shares of Bulgaria and Romania, which became EU members in 2007, remain above the EU25 average, which is 27 percent. According to legally finalized acquisitions and mergers, the share of foreign participation in the Turkish banking sector is above the Eurozone average and below the EU25 average as of September 2007 (Table II.1).

**Chart II.6.**  
Asset Structure of the Banking Sector (%)



Source: BRSA-CBRT

**Chart II.7.**  
Liability Structure of the Banking Sector (%)



Source: BRSA-CBRT

The share of loan portfolio as the largest asset item continued to grow throughout the year, and rose to 48 percent in September 2007 from 44 percent in end-2006 (Chart II.6).

As of September 2007, the share of due to banks in total liabilities of the banking sector fell by 2 percentage points compared to end-2006, whereas the shares of equity and other liabilities increased by 1 percentage point. These developments chiefly resulted from the decline in the New Turkish Lira value of FX denominated "due to banks" owing to the appreciation of the YTL. Meanwhile, the share of deposits remained unchanged compared to end-2006 (Chart II.7).

## II.2. Banking Sector Profitability and Capital Adequacy

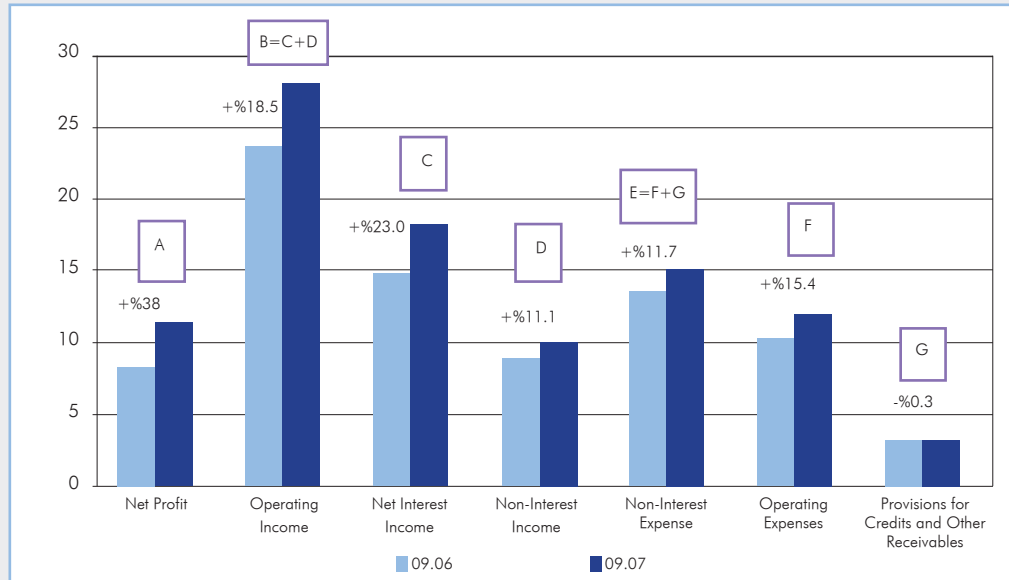
### II.2.1. Profitability<sup>4,5</sup>

Profitability of the banking sector improved in 2007. The net profit of the sector increased by 38 percent in September 2007 compared to September 2006, and reached YTL 11.3 billion.

<sup>4</sup> Participation banks are excluded in this section, since their operating principles differ from other banks.

<sup>5</sup> Birleşik Fon Bankası (Bank under SDIF) is excluded.

**Chart II.8.**  
**Net Profit and Its Components (Billion YTL, % Change)<sup>1</sup>**

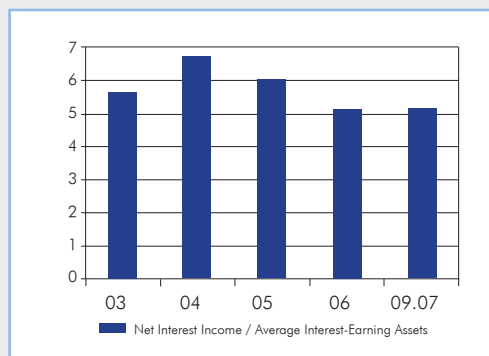


Source: BRSA-CBRT  
 (1) Operating Income = Net Interest Income + Non-Interest Income.  
 Non-Interest Income = Net Fees and Commissions Income + Dividend Income + Net Trading Income (Loss) + Other Operating Income.  
 Non-Interest Expenses = Provisions for Credits and Other Receivables + Operating Expenses.  
 Net Profit = Operating Income – Non-Interest Expenses ± Profit/Losses from Associates and Subsidiaries ± Extraordinary Income (Expenses) – Provision for Taxes.

The surge in profitability of the banking sector in September 2007 was mainly driven by the 18.5 percent rise in operating income (Chart II.8). This rise was triggered by the net interest income, which increased due to interest income on loans. Moreover, the 20.1 percent increase in net fees and commission income as one of the non-interest income components also boosted the operating income.

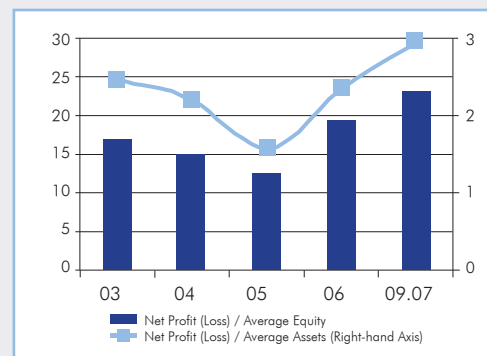
Unlike the same period of the previous year, the sector incurred losses from capital markets transactions in September 2007, whereas net foreign currency losses turned into profits.

**Chart II.9.**  
**Net Interest Margin (%)<sup>1</sup>**



Source: BRSA-CBRT  
 (1) Data is annualized for September 2007.

**Chart II.10.**  
**Return on Assets and Return on Equity (%)<sup>1</sup>**

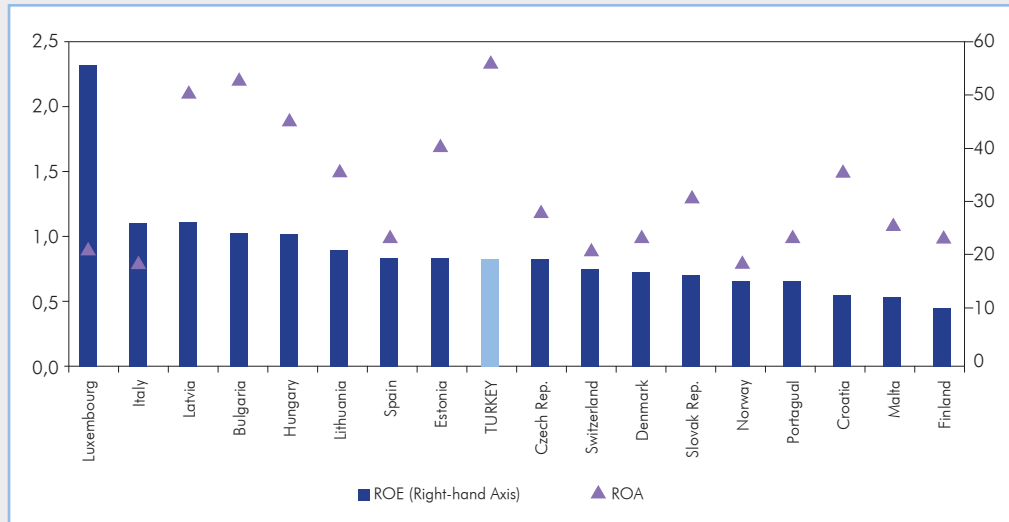


Source: BRSA-CBRT  
 (1) Data is annualized for September 2007.

The downward trend in the net interest margin, which is the ratio of net interest income to average interest-earning assets, came to a halt in 2007 and remained at its end-2006 level of 5.2 percent (Chart II.9).

As of September 2007, the average return on assets and the average return on equity were 2.9 percent and 23.3 percent, respectively. Both of these items display an upward trend compared to end-2006 (Chart II.10).

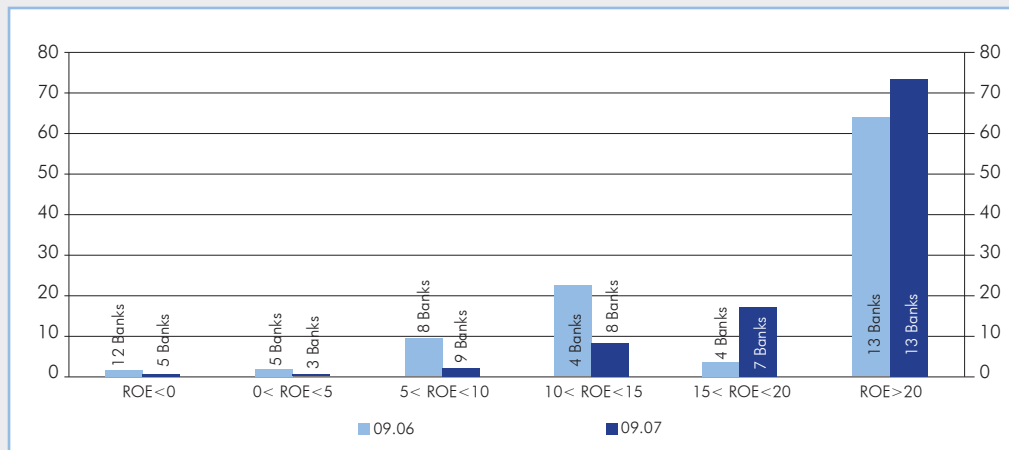
**Chart II.11.**  
Return on Assets and Equity by Selected Countries (December 2006) (%)



Source: BRSA-CBRT, Global Financial Stability Report, IMF-September 2007

When compared with selected countries as of December 2006, the Turkish banking sector displays higher performance, especially with regard to return on assets (Chart II.11).

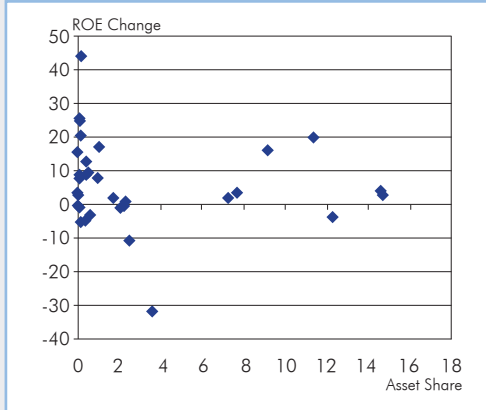
**Chart II.12.**  
Return on Equity Based on Asset Share<sup>1</sup>



Source: BRSA-CBRT  
(1) ROE data is annualized.

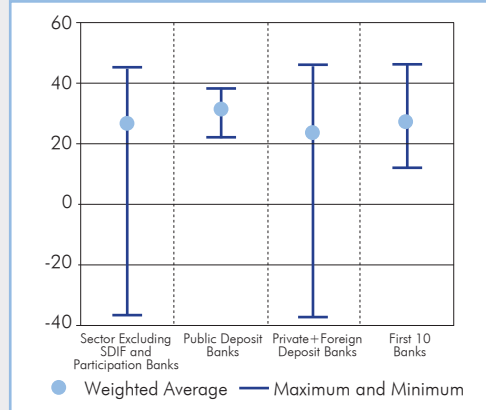
In September 2007, the number of banks with returns on equity over 15 percent rose to 20 from 17, while their share in total assets hiked to 89.9 percent from 66.3 percent. Meanwhile, the number of banks that incurred losses declined to five from twelve banks (Chart II.12).

**Chart II.13.**  
Change in Deposit Banks' Return on Equity (September 2006-2007) (%)<sup>1</sup>



Source: BRSA-CBRT  
(1) ROE data is annualized.

**Chart II.14. ROE:**  
Weighted Average, Maximum and Minimum (September 2007) (%)<sup>1</sup>



Source: BRSA-CBRT  
(1) ROE data is annualized.

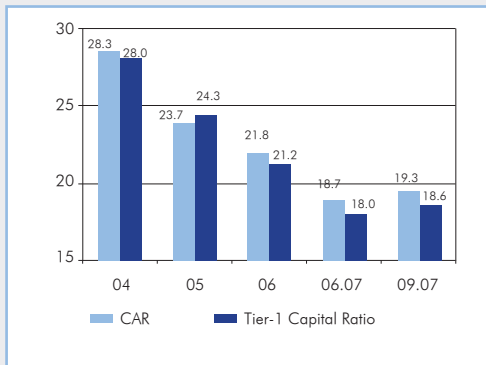
A comparison between the September 2007 and September 2006 periods reveals that the change in return on equity is more significant in small banks. The change in return on equity of the banks with a share exceeding 6 percent of total assets is moderate, except for two banks with higher asset shares. The changes in the structures of these banks have affected their profitability (Chart II.13).

As of September 2007, the value range for the return on equity (ROE) is narrow for public deposit banks and the largest ten banks. The broader range for private and foreign deposit banks results from the effect of small banks (Chart II.14).

### II.2.2. Capital Adequacy<sup>6</sup>

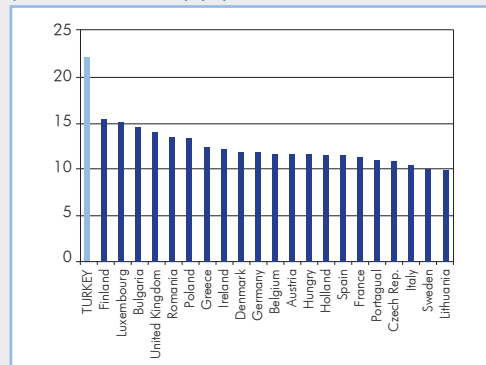
Although the unconsolidated capital adequacy ratio (CAR) of the banking sector, which is the ratio of own funds to risk weighted assets, pursues a declining trend, it is well above both the minimum requirement of 8 percent and the target ratio of 12 percent for all periods under review.

**Chart II.15.**  
Capital Adequacy Ratio (Unconsolidated) (%)



Source: BRSA-CBRT

**Chart II.16.**  
CAR-Selected EU Countries and Turkey (December 2006) (%)



Source: BRSA-CBRT, EU Banking Sector Stability, November 2007

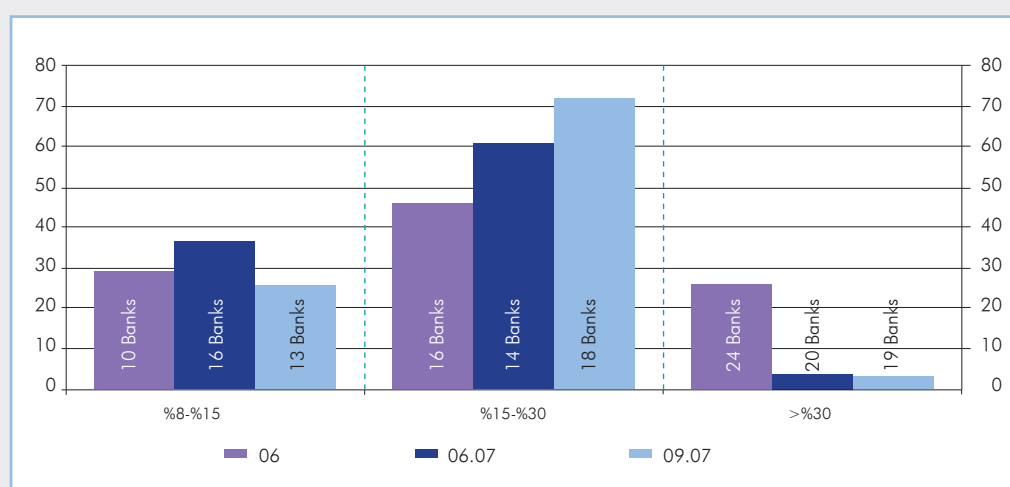
<sup>6</sup> Assessments in this section include participation banks.

The CAR of the banking sector decreased by 2.5 percentage points in September 2007 compared to end-2006 and became 19.3 percent (Chart II.15). The fall in CAR in June 2007 essentially resulted from the fact that the requirement for banks to hold additional capital to cover operational risks was stipulated as of that period. The additional capital held to cover operational risks in September 2007 stimulated a 2.8 percentage point decline in the CAR. However, the increase in net profit has helped raise the CAR to 19.3 percent from 18.7 percent in the last three months.

The tier-1 capital ratio, which is the ratio of core capital to risk weighted assets, declined compared to end-2006 owing to the increased amount of capital required to cover operational risks and the growth in loans. However, this ratio was still as high as 18.6 percent as of September 2007, which indicates that the Turkish banking sector has a high-quality capital structure.

In comparison with selected EU countries, the CAR of the Turkish banking sector is high due to the fact that Turkish banks hold large portfolios of risk-free Government Debt Securities (Chart II.16). The tier-1 capital ratio of the Turkish banking sector, which was 18.6 as of September 2007, outstripped the tier-1 capital ratio of the Eurozone banking sector, which was 8,2<sup>7</sup> as of end-2006.

**Chart II.17.**  
Asset Share of Banks Based on Capital Adequacy Ratio (%)

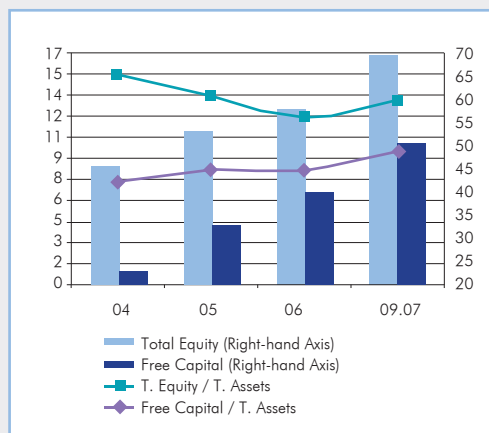


Source: BRSA-CBRT

The capital adequacy ratio of the 34 banks, which hold 63.8 percent of the sector assets, remained above 15 percent as of June 2007, while that of the 37 banks holding 74.6 percent of the sector assets remained above 15 percent in September 2007 (Chart II.17). It is observed in June 2007 that there is a dramatic decline in asset shares of the banks which had a capital adequacy ratio above 30 percent. This stemmed from the fact that two banks having large asset shares migrated to the group with a capital adequacy ratio of 15-30 percent due to the capital that they reserved for operational risks.

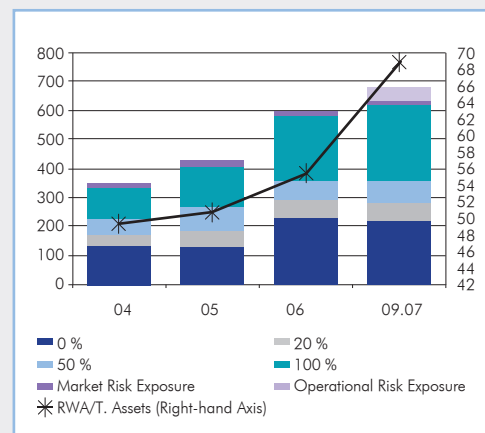
<sup>7</sup> EU Banking Sector Stability, November 2007

**Chart II.18.**  
Free Capital of the Banking Sector  
(%, Billion YTL)



Source: BRSA-CBRT

**Chart II.19.**  
Assets According to Risk Weights  
(Billion YTL, %)



Source: BRSA-CBRT

The ratio of free capital to total assets and the ratio of total equity to total assets increased remarkably as of September 2007. The higher rate of increase of free capital and total equity compared to that of total assets has been influential in this increase in the said ratios (Chart II.18).

As a result of the faster growth rate of risk-weighted assets, the ratio of risk-weighted assets to total assets, which was 55.4 percent in end-2006, increased to 68.8 percent in September 2007 (Chart II.19). This rise mainly stemmed from the amount subject to operational risk which makes up 7 percent of the risk-weighted assets. In the same period, another determinant of this rise was the growth of 100 percent risk-weighted assets by YTL 38.2 billion compared to the end of the previous year due to the upsurge in loans (Chart II.19).

### Box 7. Transition to Basel II

Work for harmonization with Basel II carried out by the Turkish financial sector, primarily the BRSA is underway. Recently, the QIS-TR2 study was conducted by the BRSA based on the September 2006 figures, with the participation of 31 banks holding nearly 97 percent of total sector assets. The results of the study, announced in July 2007, have indicated that the current capital adequacy ratios of banks will decrease by 5.6 points along with the transition to Basel II.

Meanwhile, in an announcement made in July 2007, the BRSA underlined that most of the EU countries that were foreseen to adhere to Basel II at the turn of 2007 had failed to complete this process. It was also stated that the real sector's deficiencies in financial reporting are an obstacle to the adoption of the concept of rating. The BRSA also announced that the majority of Turkish banks call for the postponement of Basel II implementation, since FX denominated government debt securities with a 0 percent risk weight under current practice

will be weighted on the basis of country note in accordance with Basel II and accordingly, the capital requirements of banks for such assets will increase. Due to the requirements and rationales mentioned above, the BRSA has postponed implementation relating to the ratings-based calculation of credit risk that will be taken as the basis in the measurement of the capital adequacy of banks, to the start of 2009, instead of early-2008 as announced earlier.



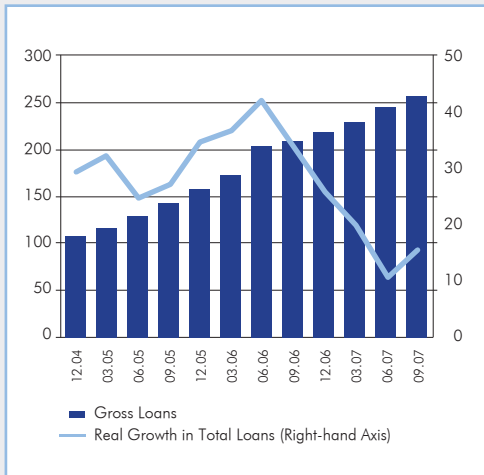
### III. BANKING SECTOR RISKS

Participation Banks, which have the same legal status as traditional banks but different operating principles, are excluded from the risk analyses of this section.

#### III.1. Credit Risk and Scenario Analysis

##### III.1.1. Credit Portfolio

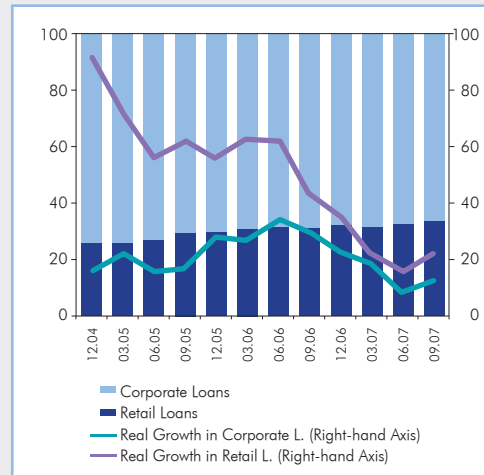
**Chart III.1**  
Gross Loans  
(Billion YTL, %)<sup>1</sup>



Source: BRSA-CBRT

(1) Annual percentage change as compared to the same month of the previous year.

**Chart III.2**  
Gross Loans by Borrowers and Real Annual  
Growth Rates (%)<sup>1,2</sup>



Source: BRSA-CBRT

(1) They were brought to real terms by using CPI (1994=100).

(2) Annual percentage change as compared to the same month of the previous year.

Gross credit volume<sup>8</sup> of the banking sector increased by 15.6 percent in real terms compared to the same period last year and reached YTL 257.2 billion by September 2007. The rate of increase of the credit volume that lost pace due to the tight monetary policy implemented after the fluctuations in the second quarter of 2006 re-entered an upward trend in the third quarter of 2007 (Chart III.1). The 68.1 percent ratio of corporate loans to total loans as of year-end 2006, whose rate of increase remains below that of retail loans in every period, decreased to 66.7 percent by September 2007 (Chart III.2).

<sup>8</sup> Gross Loans = Total Loans + Gross NPLs

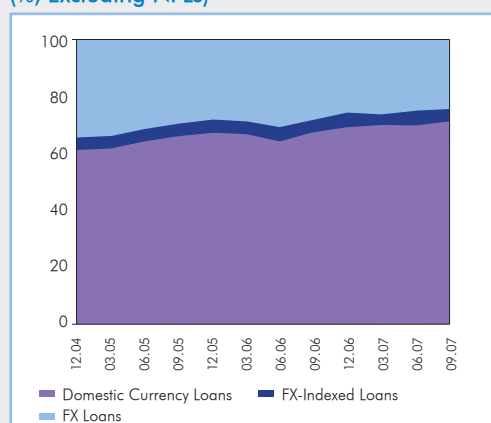
Table III.1. Some Selected Credit Ratios<sup>1</sup> (Million YTL, %)

	2004	2005	2006	09.07
<b>First 5 Banks</b>				
Total Gross Loans	56,620	87,889	127,494	148,199
Share in Total Gross Loans	53.6	55.8	58.5	57.6
NPLs / Total Gross Loans	5.0	3.9	4.0	4.0
Loans / Deposits	47.8	54.7	79.9	87.0
<b>First 10 Banks</b>				
Total Gross Loans	83,965	127,913	183,154	214,934
Share in Total Gross Loans	79.4	81.2	84.1	83.6
NPLs / Total Gross Loans	6.5	5.0	3.8	3.8
Loans / Deposits	49.5	58.9	68.5	74.5
<b>Sector</b>				
Total Gross Loans	105,698	157,440	217,846	257,160
NPLs / Total Gross Loans	6.0	4.8	3.8	3.6
Loans / Deposits	55.3	64.8	73.5	79.6

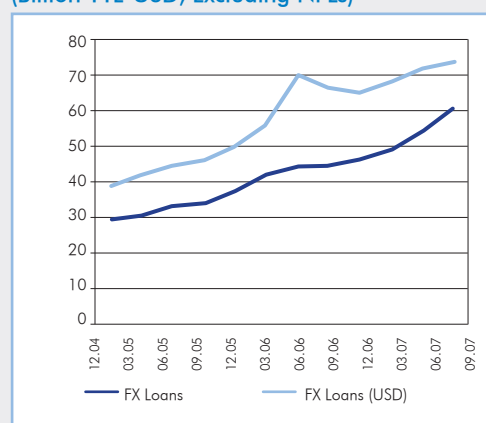
Source: BRSA-CBRT

(1) The first 5 and 10 banks have been taken into consideration according to their gross loans.

As of September 2007, the share in total loans of the first five and ten banks that represented the majority of loans extended decreased by 0.9 points and 0.5 points, respectively, compared to year-end 2006. However the NPL ratios did not change. The ongoing increase in the loans to deposits ratio of the sector is considered as a favorable development as it indicates an improvement in banks' intermediation functions. Likewise, the ongoing decline in NPL ratio of the sector is also assessed as a favorable development in terms of credit risk (Table III.1).

Chart III.3.  
Currency Composition of Loans  
(%, Excluding NPLs)

Source: BRSA-CBRT

Chart III.4.  
FX Loans  
(Billion YTL-USD, Excluding NPLs)<sup>1</sup>

Source: BRSA-CBRT

(1) They were converted to USD using the CBRT buying exchange rate as of month-end.

The share of domestic currency loans in total loans, which was 69.1 percent at the end of 2006, rose to 70.5 percent in September 2007 (Chart III.3). The appreciation of the Turkish currency was influential in the decline observed in the share of FX loans in this period. Thus, FX loans<sup>9</sup>, which amounted to YTL 64.9 billion as of year end 2006, reached YTL 73.1 billion in September 2007 with a 12.6 percent-increase, whereas the said increase appears to be

<sup>9</sup> FX-indexed loans are considered within the scope of foreign currency loans.

31.5 percent when the USD equivalent of those loans are taken into account. The growth rate of domestic currency loans was 20.7 percent in the same period (Chart III.4).

**Table III.2. Loan Distribution by Size (% , Excluding NPLs)**

	Total Loans				Number of Customers			
	2004	2005	2006	09.07	2004	2005	2006	09.07
Loans Greater than 1 Million YTL	43.6	41.5	42.1	39.4	0.03	0.04	0.05	0.05
Loans Between 501 Thousand YTL-1 Million YTL	6.0	4.5	4.6	4.9	0.03	0.03	0.05	0.05
Loans Between 101-500 Thousand YTL	8.4	10.6	12.1	13.6	0.15	0.27	0.43	0.53
Loans Between 51-100 Thousand YTL	3.9	5.6	6.7	7.7	0.22	0.40	0.67	0.85
Loans Less than 51 Thousand YTL	38.0	37.8	34.5	34.4	99.56	99.26	98.81	98.51
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: BRSA-CBRT

Distribution of loans by size suggest that in September 2007, the share of loans less than YTL 51,000 almost remained unchanged compared to year-end 2006, while the share of loans more than YTL 1 million declined and that the shares of other groups increased (Table III.2).

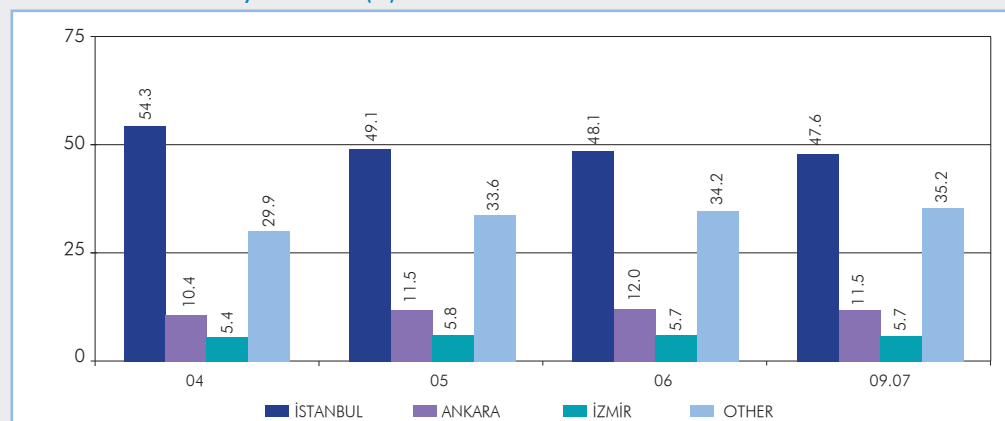
**Table III.3. Maturity Structure of the Loans (% , Excluding NPLs)**

	2004	2005	2006	09.07
Loans Between 0-12 Months	55.7	45.3	41.3	41.1
Loans Between 12 - 24 Months	17.9	23.3	17.8	15.8
Loans Greater than 24 Months	26.4	31.4	40.9	43.1

Source: CBRT

The maturity of loans continued to lengthen as of September 2007 (Table III.3). The increase in loans with a maturity longer than 24 months stemmed from other consumer loans, which have increased rapidly, mainly due to banks' campaigns targeted at wage earners in particular and housing loans.

**Chart III.5. Distribution of Loans by Provinces (%)<sup>1</sup>**

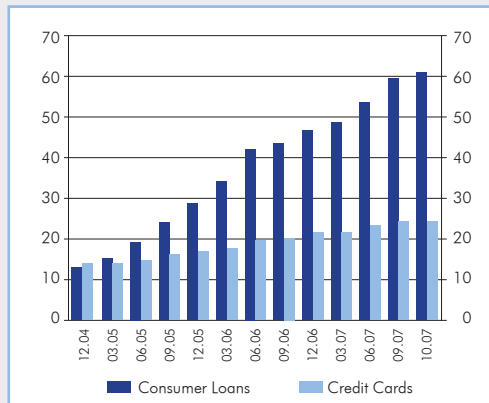


Source: CBRT

(1) Loans are compiled based on bank reporting under the scope of Central Bank Law No:1211, Article:44. They include corporate loans that are greater than ten thousand New Turkish Liras (inclusive) and retail loans that are greater than 5 thousand New Turkish Liras (inclusive); extended to real and legal bodies by banks (including external loans used by firms with the intermediation of banks). They are inclusive of non-performing loans and accrued interest and exclusive of non-cash loans. Therefore, they differ from the figures in the balance sheet-based analysis.

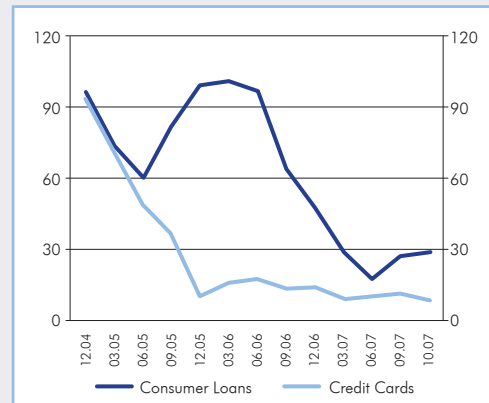
The geographical breakdown of loans shows that the shares of Istanbul and Ankara in total loans decreased in September 2007, whereas the shares of other provinces in total loans increased due to the rise in retail loans (Chart III.5).

**Chart III.6.**  
Retail Loans  
(Excluding NPLs, Billion YTL, %)



Source: CBRT

**Chart III.7.**  
Real Annual Growth  
Rates of Retail Loans (%)<sup>1,2</sup>

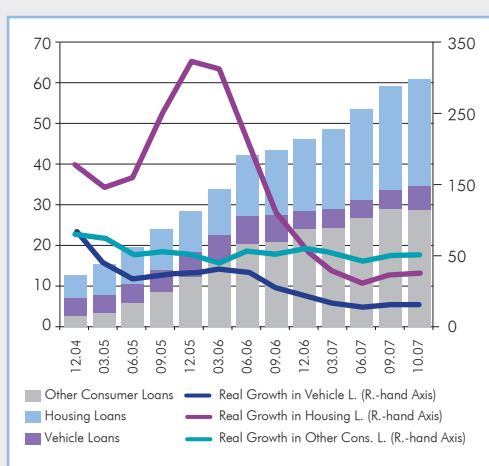


Source: CBRT

(1) They were brought to real terms by using CPI (1994=100).  
(2) Annual percentage change as compared to the same month of the previous year.

The rate of increase of consumer loans reaccelerated from June 2007 onwards. The rate of increase of credit cards<sup>10</sup> stood at 8.8 percent in October 2007, its lowest level throughout the year (Chart III.7). It is considered that the rise in consumer loans was mainly attributable to the banks' long-term campaigns towards other consumer loans, rather than any change in interest rates (Chart III.6 and III.9).

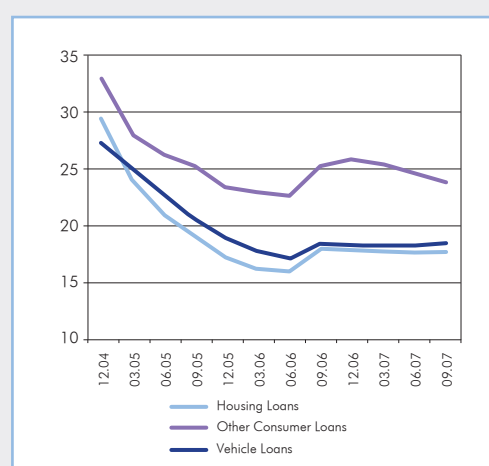
**Chart III.8.**  
Consumer Loans by Type (Excluding NPLs,  
Billion YTL, %)<sup>1</sup>



Source: CBRT

(1) Other consumer loans are consumer loans excluding housing and vehicle loans.

**Chart III.9.**  
Interest Rates (%)<sup>1</sup>



Source: CBRT

(1) Weighted average interest rates.

<sup>10</sup> Refers to the balance in the cash loans item, until credit card spendings and cash withdrawals are paid back to the Bank by the cardholder.

Annual growth rates of housing and other consumer loans had declined until June 2007, whereas they regained pace from that date onwards with the easing of political uncertainties despite no significant change in interest rates. Meanwhile, the real rate of increase in other consumer loans exceeded that of housing loans in 2007 and the share of other consumer loans in total consumer loans continued to increase. On the other hand, the downward trend of vehicle loans continues (Chart III.8).

**Table III.4 Housing Loans for Selected Countries (%)**

	Housing Loans / Total Loans			Housing Loans / GDP		
	2004	2005	2006	2004	2005	2006
Belgium	26.5	26.1	27.6	27.8	31.7	34.2
Czech Republic	20.6	23.8	26.4	7.8	9.7	12.0
Germany	31.6	31.8	32.0	43.0	42.9	42.3
Ireland	28.2	28.4	27.6	50.0	58.8	63.4
Greece	25.8	29.1	31.3	19.6	23.7	26.8
France	28.2	29.1	30.2	26.0	28.8	31.8
Latvia	24.2	25.2	30.4	11.9	19.4	29.0
Lithuania	18.4	21.3	24.4	5.5	9.1	12.6
Hungary	19.6	19.1	19.1	9.4	10.2	11.9
Poland	13.1	16.9	21.3	4.3	5.4	7.6
Portugal	36.5	38.0	39.8	49.4	53.4	59.2
United Kingdom	50.9	51.2	51.8	71.0	78.0	84.0
EU25	33.6	34.3	34.6	39.4	42.9	45.7
Turkey <sup>1</sup>	2.7	8.2	10.6	0.6	2.5	3.8

Source: EU Banking Structures, October 2007

(1) Housing Loans/ Total Loans ratio for Turkey is 10.8% and Housing Loans/GDP ratio is 4.2% in June 2007.

The share of housing loans in total loans and in the GDP is below the EU average (Table III.4). However, household liabilities in Turkey are expected to increase gradually in the upcoming years and converge to EU levels in the long term due to the housing loan utilization that is likely to increase further along with ongoing economic stability, the decline in interest rates and the spread of the mortgage system.

**Table III.5. Sectoral Composition of Corporate Loans (%)<sup>1,2</sup>**

	Loans (excluding NPLs)			FX Loans / Total Loans		
	2005	2006	09.07	2005	2006	09.07
1 Wholesale and Ret. Trade, Brokerage, Repair of Mot. Veh.	19.2	22.9	19.8	38.2	37.5	36.8
2 Transport, Storage and Communication	5.7	7.9	7.9	68.8	54.7	54.3
3 Textile and Textile Product Industry	8.7	6.5	6.2	70.5	66.7	65.8
4 Construction	6.5	6.4	8.1	59.5	50.3	51.5
5 Industry of Tobacco, Beverages and Food	7.3	5.5	5.9	47.9	46.2	44.5
6 Manufacture of Basic Metals and Fabricated Metal Prod.	5.5	5.5	5.8	73.9	73.5	70.9
7 Sources of Electricity, Gas and Water	4.0	5.2	4.3	96.0	93.4	95.4
8 Agriculture, Hunting and Forestry	4.7	4.6	4.7	19.5	17.3	17.0
9 Manufacture of Machinery and Equipment	3.1	3.6	3.6	60.2	45.9	38.9
10 Hotels and Restaurants (Tourism)	3.1	3.4	3.1	77.6	75.8	72.2
Total of 10 Sectors	67.9	71.4	69.3	55.8	51.7	50.6

Source: CBRT

(1) Loans are compiled based on bank reporting under the scope of Central Bank Law No:1211, Article:44. They include corporate loans that are greater than ten thousand New Turkish Liras (inclusive); extended to real and legal bodies; by banks (including external loans used by firms with the intermediation of banks). They are inclusive of accrued interest and exclusive of non-cash loans. Therefore, they differ from the figures in the balance sheet-based analysis.

(2) Excluding Financial Intermediation.

According to Central Bank Risk Center data, the share of the ten selected sectors in total corporate loans was 69.3 percent as of September 2007. Meanwhile, the sector with the largest share in total corporate loans is still the “Wholesale and Retail Trade, Commissions and Motor Vehicles Services”, with a total share of 19.8 percent. The share of the “Construction” sector in total corporate loans increased, while that of the “Textile and Textile Products Industry” continues to decline. In the first nine months of 2007, although the amount of FX loans used by firms exceeded domestic currency loans, their share in total loans declined due to the appreciation of the Turkish currency (Table III.5).

#### **Box 8.** **Loan Monitoring System**

The objective of the loan monitoring system is to enable banks and other financial institutions to monitor the total amount of loans utilized by their customers from the entire system, to provide the relevant banks and other financial institutions with up-to-date and consolidated information about their current or potential customers and to assist them in their decisions on credit utilization. In Turkey, this function is performed by the Central Bank Risk Center and the Credit Registry Bureau established by the banks.

The Risk Centralization system, which was established in 1951 within the structure of the Central Bank pursuant to Article 44 of the Central Bank Law No.1211, involves the collection and compilation of data on credit limits and risks of customers of banks, financial leasing companies, factoring companies, finance companies and other financial institutions operating in Turkey which shall be determined by the Central Bank and the Banking Regulation and Supervision Agency, along with feedback of consolidated information to the related banks and other institutions. The system allows the exchange of positive and negative credit data on firms and individuals.

Moreover, the Credit Registry Bureau established in 1995 carries out the exchange of retail credit data pertaining to its 34 member banks and financial institutions.

According to the Doing Business Report 2008 published by the World Bank and International Finance Corporation (IFC), the loan monitoring system in Turkey meets five of the six criteria of the evaluation and remains above the OECD average. Only 21 of the 178 countries analyzed in the report met all criteria and ranked higher than Turkey.

On the other hand, the recent developments in the financial sector, cessation of the monitoring and supervision duties of the Central Bank and exclusion of the operations of the Risk Center from Central Bank’s main duties have brought up the need to carry out these activities in another agency other than the Central Bank as in some other countries.

In this context, in the Quarterly Action Plan for 2007 of the Government announced on 8 October 2007, the assignment of the Risk Center operations to the Banks Association of Turkey, which is a legal public entity founded with Banking Law No.5411, was envisaged in order to improve the financial system.

### III.1.2. Non-Performing Loans

In September 2007, non-performing loans increased by 19.9 percent compared to the same period last year and reached YTL 9.3 billion.

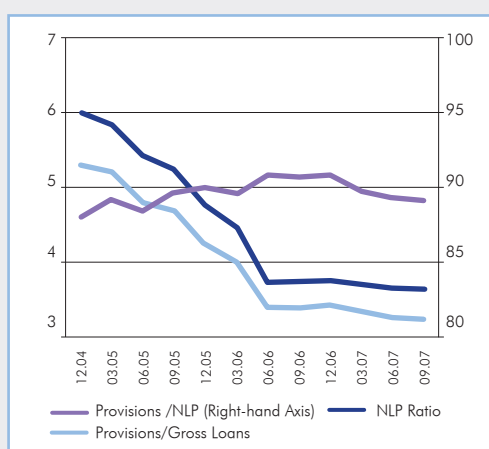
Table III.6. Total NPLs (Million YTL) <sup>1</sup>

	2004	2005	2006	09.07
Loans and Other Receivables with Limited Collectibility	595	813	1,149	1,496
Doubtful Loans and Other Receivables	415	775	820	1,343
Loans and Other Receivables Classified As Loss	5,342	5,907	6,212	6,478
Total NPLs	6,353	7,495	8,182	9,316

Source: BRSA-CBRT  
(1) Excluding İller Bank.

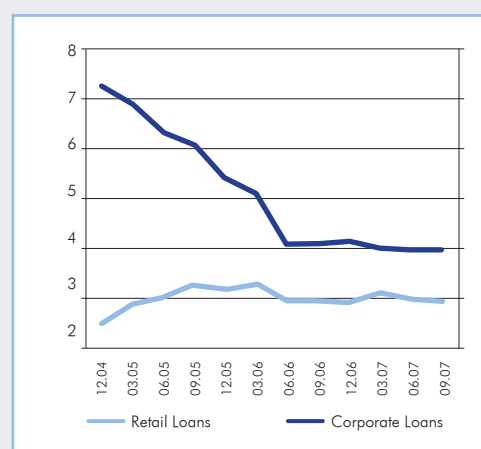
When the distribution of non-performing loans is analyzed, the share of loans and other receivables classified as loss maintains its dominance in the total non-performing loans in 2007 (Table III.6).

Chart III.10.  
NPL Ratio and Provisions to NPLs (%)



Source: BRSA-CBRT

Chart III.11.  
NPL Ratios for Retail Loans<sup>1</sup> and Corporate Loans<sup>2</sup> (%)



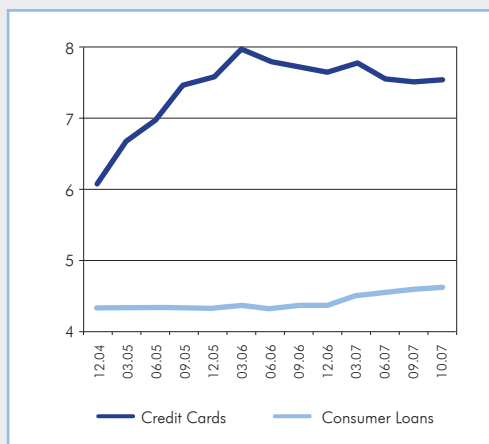
Source: BRSA-CBRT

(1) Retail Loans=Consumer Loans + Credit Cards  
(2) Corporate Loans=Total Loans -Retail Loans

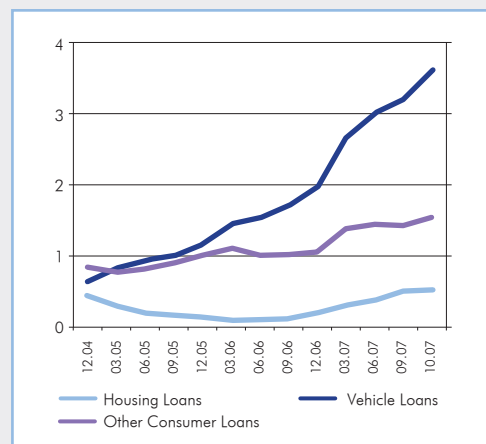
Despite the increasing amount of non-performing loans, the NPL ratio<sup>11</sup> maintained a horizontal course in 2007 due to the increase in credits. The provisions to the credits ratio remained at nearly the same level in 2007 as a result of the ongoing high provisioning policy regarding non-performing loans (Chart III.10).

When the development of non-performing loans is analyzed with respect to economic agents, it is seen that in September 2007, the NPL ratios for both retail loans and corporate loans did not change much compared to the year-end and that the NPL ratio for corporate loans is still above that of retail loans (Chart III.11).

<sup>11</sup> Non-Performing Loan Ratio = Gross Non-Performing Loans / Gross Loans

**Chart III.12.**  
NPL Ratios for Retail Loans (%)

Source: CBRT

**Chart III.13.**  
NPL Ratios for Consumer Loans (%)<sup>1</sup>

Source: CBRT

(1) Other consumer loans are consumer loans excluding housing and vehicle loans

The NPL ratio of credit cards, which increased to 7.5 percent by March 2007, entered a downward trend from this date onwards and became 7 percent in October 2007 (Chart III.12). The said decline indicates that consumers have repaid their debt via other consumer loans bearing a relatively lower interest rate.

The NPL ratio of consumer loans has displayed an upward trend since the second half of 2006 (Chart III.12). While vehicle loans dropped, their NPL ratio increased to 3.6 percent as of October 2007 due to the rise in the NPL volume (Chart III.13). Moreover, in 2007, the upsurge in the NPL volume of other consumer loans and housing loans is remarkable.

**Table III.7. NPL Ratios for Some Selected Sectors (%)<sup>1</sup>**

	2004	2005	2006	09.07
1 Wholesale and Ret. Trade, Brokerage, Repair of Mot. Veh.	5.2	3.9	2.3	3.1
2 Transport, Storage and Communication	2.1	3.4	1.3	1.2
3 Textile and Textile Product Industry	8.1	10.0	11.2	12.3
4 Construction	4.9	4.3	4.0	3.0
5 Industry of Tobacco, Beverages and Food	5.9	3.8	3.8	4.0
6 Manufacture of Basic Metals and Fabricated Metal Prod.	4.1	2.7	0.9	1.1
7 Sources of Electricity, Gas and Water	0.3	0.2	0.2	0.1
8 Agriculture, Hunting and Forestry	4.7	3.4	3.1	3.2
9 Manufacture of Machinery and Equipment	4.4	5.0	2.1	2.0
10 Hotels and Restaurants (Tourism)	5.9	3.1	2.4	2.6
Total of 10 Sectors	5.0	4.4	3.1	3.4

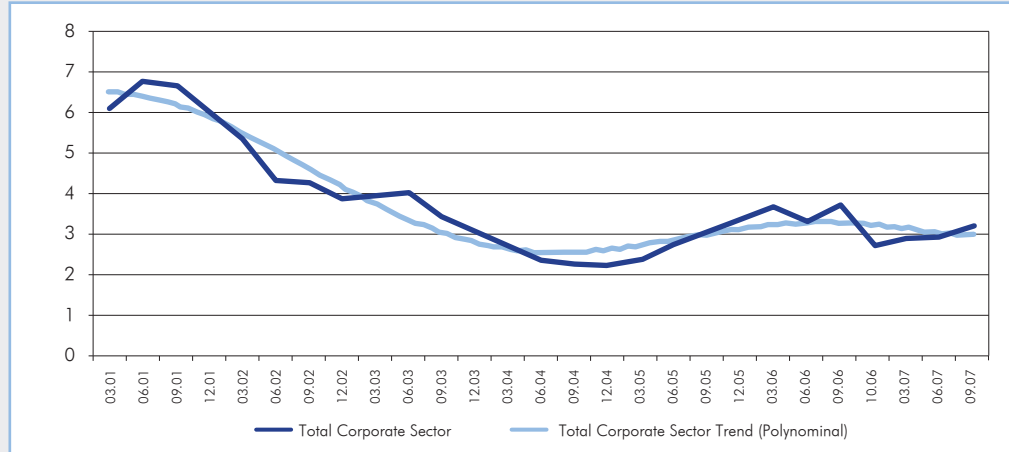
Source: CBRT

(1) Loans are compiled based on bank reporting under the scope of Central Bank Law No:1211, Article:44. They include corporate loans that are greater than ten thousand New Turkish Liras (inclusive); extended to real and legal bodies; by banks (including external loans used by firms with the intermediation of banks). Therefore, they differ from the figures in the balance sheet-based analysis.

According to the Central Bank Risk Center data, the downward trend observed in the NPL ratios of the chosen ten sectors reversed in 2007. As of September 2007, the downward trend in the NPL ratio of the "Construction" sector continues (Table III.7).



**Chart III.14.**  
**Default Rate for Total Corporate Loans (Number, %)**



Source: CBRT

In the analysis of firms by sectors, the average default rate, which is calculated by dividing the number of loans monitored in the NPL accounts to total number of credits, rose to 3.2 percent in 2007 from 2.7 percent of year-end 2006 (Chart III.14).

**Chart III.15.**  
**Default Rates for Some Selected Sectors**



Source: CBRT

A = Wholesale and Ret. Trade, Brokerage, Repair of Mot. Veh  
 B = Textile and Textile Product Industry  
 C = Industry of Tobacco, Beverages and Food  
 D = Construction

E = Transport, Storage and Communication  
 F = Manufacture of Basic Metals and Fabricated Metal Prod.  
 G = Agriculture, Hunting and Forestry  
 H = Sources of Electricity, Gas and Water

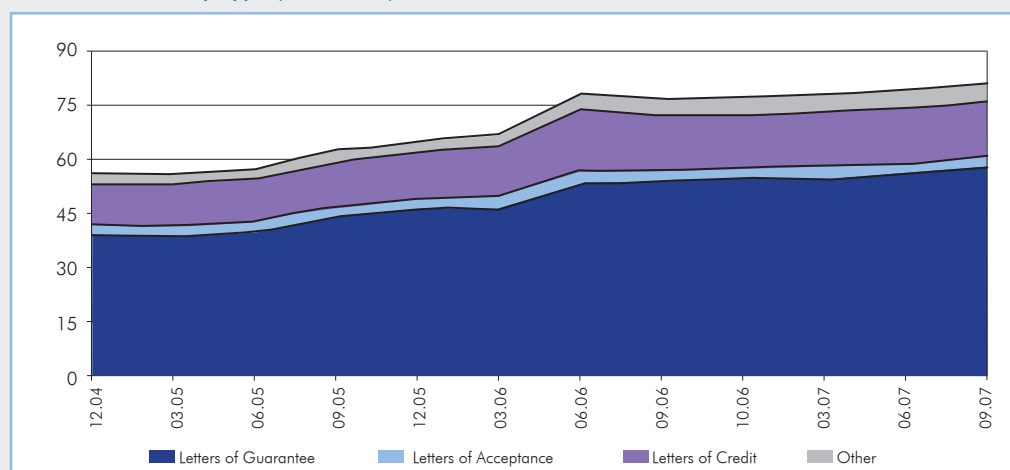
I = Manufacture of Machinery and Equipment  
 J = Hotels and Restaurants (Tourism)

The average default rate of the selected 10 sectors, which was 2.2 percent in year-end 2006, increased to 2.8 percent in September 2007. Furthermore, default rates of “Wholesale and Retail Trade, Commissions and Motor Vehicles Services”, “Textile and Textile Products Industry”, “Food, Beverages and Tobacco Industry” and “Construction” sectors remained above the average default rate of the selected 10 sectors (Chart III.15).

By September 2007, default rates of “Transport, Storage and Communication” and “Construction” sectors rose compared to year-end 2006. The NPL ratio of the credits extended to these sectors declined due to the rapid increase in the credits extended to these sectors in 2007.

### III.1.3. Non-Cash Loans

Chart III.16.  
Non-Cash Loans by Type (Billion YTL)



Source: BRSA-CBRT

The ratio of banks' non-cash loans and commitments to total assets was 15.9 as of year-end 2006 and decreased to 15.4 percent as of September 2007. The said decline stemmed from the higher rate of increase in total assets (Chart III.16).

The ratio of non-cash loans, which are mainly composed of letters of guarantee and letters of credit, to cash loans, was 35.4 percent as of year-end 2006 and decreased to 32.7 percent as of September 2007. The share of foreign currency denominated non-cash loans was 60.4 percent.

### III.1.4. Credit Risk Scenario Analysis

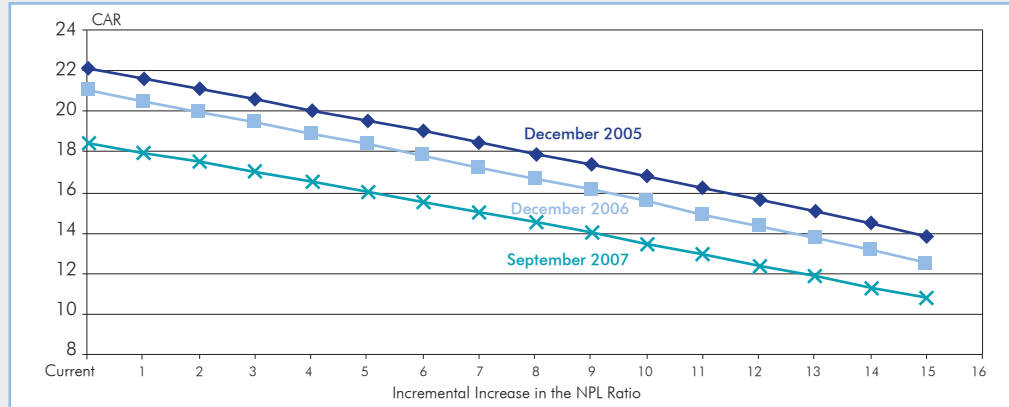
With the aim of assessing the credit risk that the banking sector might be exposed to, analyses were conducted on how the CARs of banks might be affected by a probable increase in NPL ratios as of September 2007.

Within this framework, scenario analyses were conducted under the following assumptions:

- i) The total credit amount of banks remains unchanged,
- ii) NPLs resulting from shocks have the same composition as the existing NPLs of banks. For banks, which did not have any NPLs before the shocks; in the event of a shock, their post-shock NPLs are classified as "loans and other receivables with limited collectibility", setting aside a 20 percent provision.
- iii) Post-shock NPLs are accounted in the 100 percent risk weight category for the calculation of pre-shock CARs.
- iv) There is no change in the total risk weighted assets and own funds of the sector except for the shocks.

Moreover, collateral amounts were not taken into account when calculating additional provisions.

**Chart III.17.**  
Effects of Credit Shocks on the CAR of the Sector (%)<sup>1</sup>



Source: BRSA-CBRT  
(1) Excluding the SDFIF bank, İller Bank and banks that do not have loans in their portfolio.

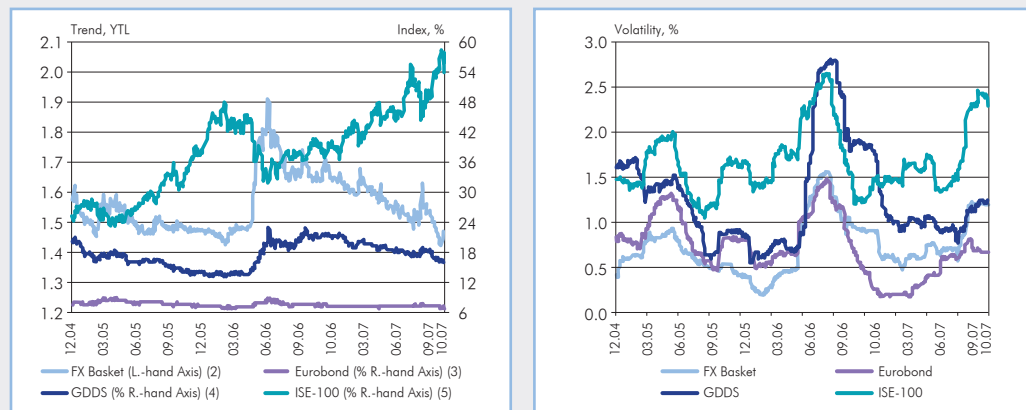
The scenario analysis focuses on the effects of 1-15 point-incremental increases in the NPL ratio on the CAR of the banking sector<sup>12</sup>. Accordingly, the 15-point increase in the NPL ratio of the banking sector reduced the CAR of the sector by 8.5 points as of December 2006 and by 7.7 points as of September 2007 (Chart III.17). As a result of the maximum shock, the CAR of the sector decreased to 10.8 percent but still remained above the legal limit of 8 percent.

### III.2. Market Risk and Scenario Analyses

In this section, along with the analysis of the effects of the developments in interest rate and FX risk on banks' balance sheets, two scenarios based on hypothesis and historical data were designed and their effects were analyzed.

#### III.2.1. Market Risk

**Chart III.18.**  
Foreign Exchange Rate, Interest Rate and Equity Price Developments and Volatilities<sup>1</sup>



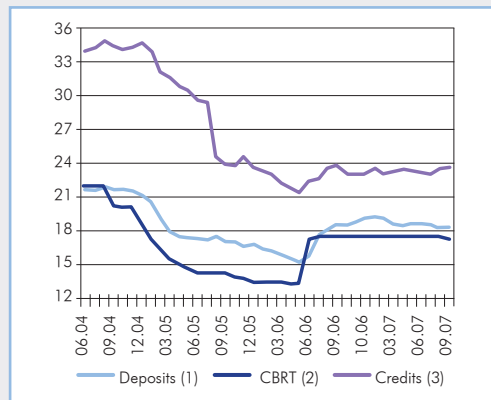
Source: CBRT  
(1) For volatility calculations, standard deviation of daily logarithmic yield of the related market instrument (60 day moving average) is used.  
(2) 50 percent of the Foreign Exchange Basket is in USD and the rest is in Euro.  
(3) Based on USD denominated Eurobond interest rate with 2030 maturity.  
(4) Based on the interest rate on the GDDS with the largest transaction volume in the secondary market.  
(5) Calculated by dividing ISE-100 by 1,000.

The ISE index, which rose after the general elections implying continued political stability,

<sup>12</sup> Following the classification of loans as non-performing loans and the allocation of additional provisions, the post-shock capital adequacy ratio is calculated as (Own funds – Additional Provisions) / (Total Risk-Weighted Assets – Additional Provisions) x 100.

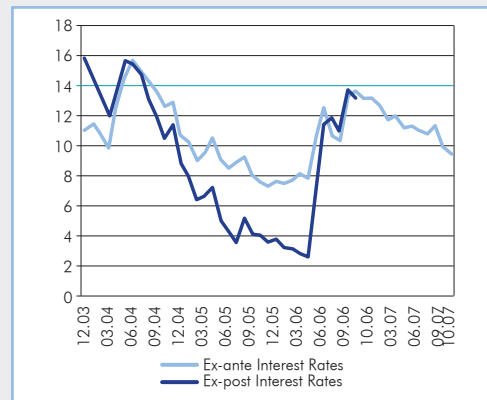
suffered a sharp decline at the end of July due to fluctuations in international markets resulting from concerns over the US subprime mortgage market. Hence, while the YTL depreciated, interest rates climbed slightly. However, the effects of the fluctuations in international markets on Turkish financial markets have been limited and short-term. Towards the end of 2007, the favorable outlook in the markets was restored. Interest rates started to decline, the ISE index started to rise and the YTL has begun to appreciate again. Nevertheless, the upward trend in volatility in financial markets continues (Chart III.18).

**Chart III.19.**  
Interest Rates (%)



Source: ISE, CBRT  
 (1) Banking sector 3-month weighted "stock YTL deposit" interest rate.  
 (2) CBRT overnight (O/N) borrowing rate.  
 (3) Banking sector weighted "stock YTL credit" interest rate.

**Chart III.20.**  
Ex-ante<sup>1</sup> and Ex-post<sup>2</sup> Real Interest Rates of GDDS (%)

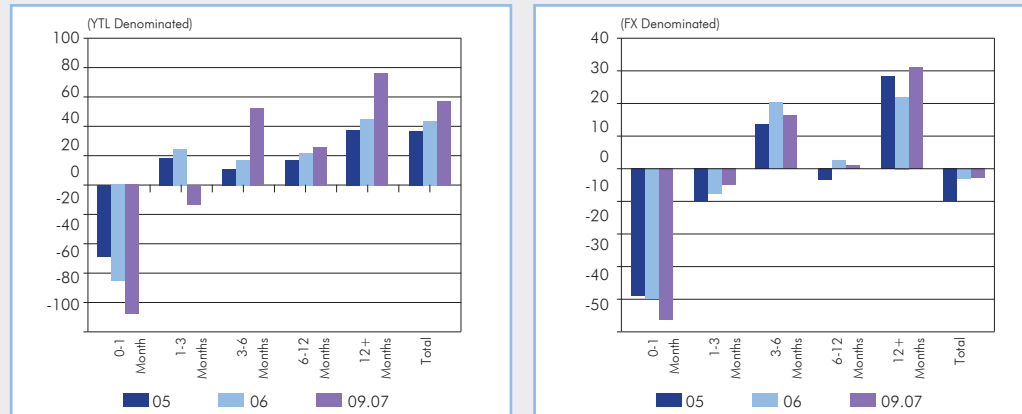


Source: Calculated by using the data of CBRT, ISE and TURKSTAT.  
 (1) Ex-ante interest rate =  $\left( \frac{1 + \text{nominal interest rate}}{1 + \text{expected inflation rate}} \right) - 1 \times 100$   
 (2) Ex-post interest rate =  $\left( \frac{1 + \text{last year's nominal interest rate}}{1 + \text{realized inflation rate}} \right) - 1 \times 100$   
 As expected inflation rate, yearly ex-ante CPI figures in the bi-weekly Survey of Expectations published by the CBRT are used.

In 2007, interest rates of deposits and loans followed a stable course (Chart III.19). The rise in the difference between interest rates of deposits and those of loans mainly stemmed from the increased share of loans with high interest rates in total loans extended as of the second half of 2006.

The expected real interest rate declined to 9.48 percent in October 2007 from its end-year 2006 value of 13.1 percent (Chart III.20).

**Chart III.21**  
Interest Rate Sensitivity Gap of the Banking Sector (Billion YTL)<sup>1,2</sup>

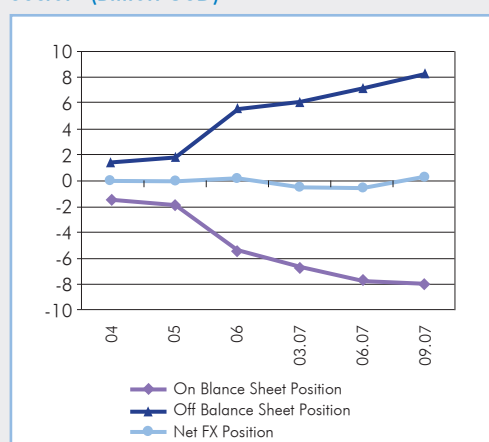


Source: BRSA-CBRT  
 (1) Time to re-pricing is used.  
 (2) Excluding SDIF bank.

In terms of the days to re-pricing period of the banking sector, it is observed that the interest-sensitive YTL and FX gaps were mainly concentrated in the 0-1 month maturity bracket in September 2007 and that there is an increase in the gap compared to December 2006 (Chart III.21).

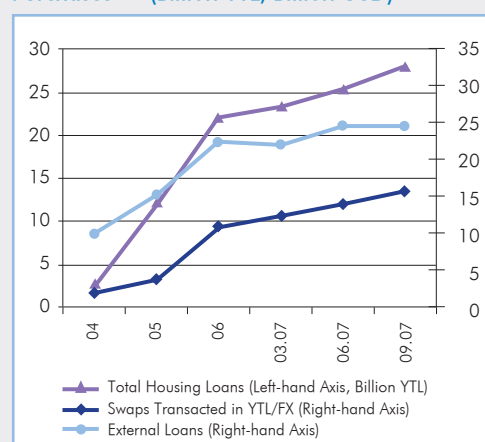
Meanwhile, the banking sector, which had a positive sensitivity gap in the 1-3 month-maturity bracket in December 2006, ran a deficit in the September 2007 period. While the total YTL denominated positive sensitivity gap rose by 14.2 billion YTL, the foreign currency-denominated negative sensitivity gap declined by 0.1 billion YTL (Chart III.21).

**Chart III.22.**  
Foreign Exchange Position of the Banking Sector<sup>1</sup> (Billion USD)



Source: BRSA  
(1) Participation Banks are included

**Chart III.23.**  
Financing of Housing Loans and Swap Purchases<sup>1,2</sup> (Billion YTL, Billion USD)



Source: BRSA – CBRT  
(1) "External Loans" consist of syndication and securitization loans.  
(2) "The banks which extend housing loans are taken into consideration"

The short position aversion tendency of the banking sector continued in 2007 as well. The on-balance sheet short position is leveled off with off-balance sheet position and the course of net general position is balanced (Chart III.22).

The main reason for the banking sector to have a high on-balance sheet short position is the funding of YTL denominated loans by foreign currency resources. Banks convert a portion of their long-term foreign currency loans from abroad into Turkish currency through swap operations, and extend long-term housing loans. This mainly stems from the fact that the short-term structure of deposits makes the funding of long-term loans, chiefly housing loans, difficult (Chart III.23).

The total amount of the banking sector's selected derivative assets in YTL (transacted in YTL/foreign currency), which balances its on-balance sheet short position with the off-balance sheet long position, was almost USD 25.4 billion by September 2007. A portion totaling USD 23.1 billion of this amount is conducted with financial sector institutions .

## III.2.2. Scenario Analyses

### III.2.2.1. Interest and Exchange Rate Shocks

In this section, the individual and collective effects of interest rate increase and appreciation of exchange rates on the banking sector are analyzed under two different scenarios assuming that the shocks occur independently.

Under Scenario A, the case where the Turkish lira depreciates by 30 percent against other currencies, the interest rates for the Turkish currency and foreign currencies increase by 6 and 5 points, respectively, and Eurobond prices decline by 5 percent, is analyzed.

Under Scenario B, the case where the Turkish lira depreciates by 30 percent, interest rate increases are twice the interest rate fluctuations during the 2006 May-June period, and Eurobond prices decrease by 5 percent, is analyzed<sup>13</sup>.

**Table III.8. Interest and FX Rate Increase Scenarios**

	SCENARIO A	SCENARIO B
A. Depreciation of YTL	30 percent depreciation of YTL against other currencies	30 percent depreciation of YTL against other currencies
B. Interest Rate Increase-YTL	Re-pricing of YTL interest sensitive assets and liabilities falling in 0-1 and 1-3 month maturity brackets at 6 points higher	Re-pricing of YTL interest sensitive assets and liabilities falling in 0-1, 1-3, 3-6 month maturity brackets at 9, 8, 11 points higher, respectively.
C. Interest Rate Increase-FX	Re-pricing of YTL interest sensitive assets and liabilities falling in 0-1 and 1-3 month maturity brackets at 5 points higher	Re-pricing of YTL interest sensitive assets and liabilities falling in 0-1, 1-3, 3-6 month maturity brackets at 1.1, 0.7, 1.1 points higher, respectively.
D. Trading Portfolio-YTL <sup>1</sup>	6 points increase in market interest rates of YTL denominated fixed income securities in the trading portfolio	Increase in market interest rates of YTL denominated fixed income securities in the trading portfolio by 9, 8, 11 points for the 0-1, 1-3, 3-6 month maturity brackets, respectively.
E. Eurobond Portfolio	Decrease in prices of Eurobonds in the trading portfolio by 5 percent	Decrease in prices of Eurobonds in the trading portfolio by 5 percent

(1) BRSA defines the trading portfolio as "Securities in the trading portfolio" and "Securities available for sale" in accordance with the description of the Basel Committee.

FXNGP data were used in calculating the effects of exchange rate appreciation on the sector. While calculating the impact of interest rate increases on the sector, the re-pricing gap method, which complements the standard method and is recommended by the Basel Banking Committee, was employed. In this framework, the difference between interest rate-sensitive assets and liabilities in the time to repricing period maturity brackets of 0-1, 1-3, and 3-6 months were used. In the scenario analyses based on repricing, it was assumed that:

- The interest rate sensitivity of banks' assets and liabilities has remained unchanged throughout the analysis period,
- Demand deposits are not interest rate-sensitive,
- There are no new fund inflows or outflows,
- The interest rate increase would last for 3 months in scenario A and for 6 months in scenario B.

The loss of value to be induced by the rise in interest rates on Turkish currency-denominated discount securities and Eurobond portfolio within the trade portfolio have also been calculated.

<sup>13</sup> GDDS interest rates have been taken into account for the interest rate increases following the May-June 2006 fluctuations.

Table III.9 Results of Market Risk Scenarios <sup>1</sup> (Million YTL)

	Scenario A			Scenario B		
	2005	2006	09.07	2005	2006	09.07
<b>A. YTL Depreciation</b>						
a. Total	-73	80.4	68.5	-73	80.4	68.5
Profit (Loss)/Equity (%)	-0.2	0.2	0.1	-0.2	0.2	0.1
b. Banks Gaining Profits	71	269.7	226.3	71	269.7	226.3
c. Banks Suffering Losses	-143	-189.4	-157.8	-143	-189.4	-157.8
Loss of Banks Suffering Loss/Equity (%)	-0.5	-1.4	-0.5	-0.5	-1.4	-0.5
<b>B. Interest Rate Increase</b>						
a. YTL	8	-172.2	-1,070	483	258.3	-276.8
b. FX	-352	-290.2	-362.7	-62	-2	-57.2
Profit (Loss) due to Interest Rate Increase (a+b)	-345	-462.4	-1,432	421	256.3	-334.0
Profit (Loss) due to Interest Rate Increase/Equity (%)	-0.8	-0.9	-2.3	1	0.5	-0.5
<b>C. YTL Trading Portfolio</b>						
Loss in Value due to Interest Rate Increase	-1,480	-1,549	-1,935	-2,583	-2,701	-3,362
Loss in Value due to Interest Rate Increase/Equity (%)	-3.6	-3	-3.1	-6.3	-5.2	-5.4
<b>D. Eurobond Portfolio</b>						
Loss in Value	-518	-632	-710	-518	-632	-710
Loss in Value/Equity (%)	-1.3	-1.2	-1.1	-1.3	-1.2	-1.1
<b>E. Total Impact</b>						
Profit/Loss	-2,415	-2,563	-4,008	-2,752	-2,997	-4,338
(Profit/Loss)/Equity (%)	-5.9	-5	-6.4	-6.7	-5.9	-6.9
<b>Current CAR of the Sector (%)</b>	<b>21.2</b>	<b>19.8</b>	<b>17.8</b>	<b>21.2</b>	<b>19.8</b>	<b>17.8</b>
<b>After-Shock CAR of the Sector<sup>2</sup> (%)</b>	<b>20</b>	<b>18.8</b>	<b>16.7</b>	<b>19.8</b>	<b>18.6</b>	<b>16.6</b>

(1) Excluding SDIF bank, T. Kalkınma Bank, İller Bank and Eximbank.

(2) After-shock profit/loss amounts under the scenarios are assumed to affect only equity but not the risk weighted assets.

### III.2.2.1.1. Depreciation of YTL

Due to the exchange rate shock, the banking sector incurs a profit in September 2007 as in December 2007 owing to its long position. Meanwhile, the amount of losses of the banks arising from their open positions caused by the exchange rate shock and the share of that loss in equities diminished as of September 2007 (Table III.9).

### III.2.2.1.2. Interest Rate Increases and Loss in Value

i) As a result of the scenarios A and B, the YTL and FX denominated net interest income declines as of September 2007.

In Scenario A, the decline in interest income in September 2007 results from the increasing short position in the 0-1 month maturity bracket and long position in the 1-3 months maturity bracket turning into a short position in Turkish currency and the increase in the open position in the 0-1 month maturity bracket in foreign currency. As for Scenario B, the long position of Turkish and foreign currency in the 3-6 month-maturity bracket leads to a more limited decline in interest income compared to Scenario A.

As of September 2007, the ratio of the impact of the interest rate rise scenario to equities displayed an increase compared to December 2006, albeit the growth in equities.

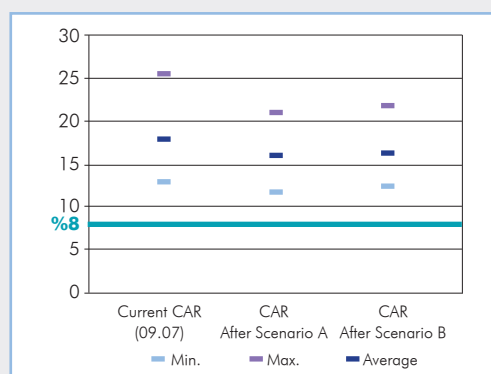
ii) As of September 2007, the loss in the market value of Turkish currency denominated discount securities arising from interest rate increases augmented in both scenarios compared to December 2006. Nevertheless, the rise in the ratio of these losses to equity was limited.

iii) Despite an increase in the loss of value in the Eurobond portfolio compared to December 2006, the ratio of the loss to equity diminished.

In conclusion, even though the effect of the scenarios strengthened as of September 2007, primarily due to the increase in interest rates, this impact was not strong enough to push down the CAR of the banking sector below the legal limit.

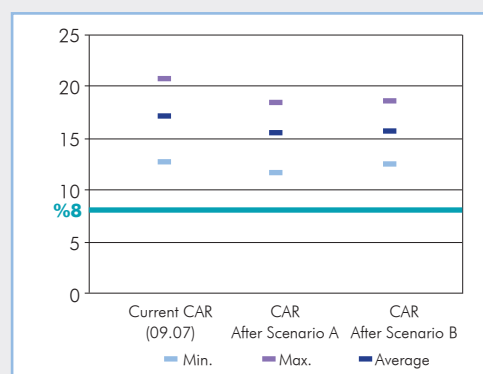
When the effects of Scenario A and B on the CARs of the 10 largest banks with respect to their asset size are analyzed, even though their maximum, minimum, and average CAR levels did not decline below the legal limits, the negative impact on the CAR is more significant compared to end-2006.

**Chart III.24.**  
Impacts of the Scenarios on the Largest 10 Banks of the Sector<sup>1</sup>



(1) Largest 10 Banks considering their share in total assets are included in the analysis.

**Chart III.25.**  
Impacts of the Scenarios on the Largest 10 Private Banks of the Sector<sup>1</sup>



(1) Largest 10 Private Banks considering their share in total assets are included in the analysis.

### Box 9.

#### Stress Tests Conducted within the Context of Financial Sector Assessment Program

Within the context of the Financial Sector Assessment Program (FSAP) stress tests have been carried out to assess the sensitivity of the banking system to the main risk factors. These analyses were made through “top-down” approaches applied to the whole sector and “bottom-up” approaches to a set of major deposit taking banks. The stress tests included sensitivity analyses which covered interest rate risk, credit risk, and liquidity risk and scenario analyses which assessed the possible impacts of the shocks applied to a group of macroeconomic variables on the financial position of banks. The Financial System Stability Assessment Report (FSSA) was published on the IMF website<sup>14</sup>. The report made the following assessments;

#### Sensitivity Analysis: Market Risk

Analysis revealed that the sector in general is resilient to market price shocks, there is a large negative gap between interest rate sensitive assets and liabilities at the short end and

<sup>14</sup> See FSSA report at ([www.imf.org/external/pubs/ft/scr/2007/cr07361.pdf](http://www.imf.org/external/pubs/ft/scr/2007/cr07361.pdf)).



interest rate increase shocks has a negative impact on profitability. However, the high initial capital level of the sector limits the impact on solvency and in respect of FX shocks, exchange rate movements exercise negligible impact owing to the sector's almost square position in FX.

The outcome is that the results of the bottom-up approach carried out for a group of deposit taking banks are similar in quality, but the results related to the bank portfolio are higher than the sector's results. The increase in the yield curve shock on its own or in combination with YTL depreciation resulted in notable capital impairment in a few banks.

#### Sensitivity Analyses: Credit Risk

Shocks were applied to assess how the banking sector would be affected in an event of a deterioration in credit quality and the results indicated that all banks were above the 8 percent legal CAR but almost half of them were below the 12 percent target CAR. The results for the whole sector revealed that only 4 percent of the regulatory capital was influenced.

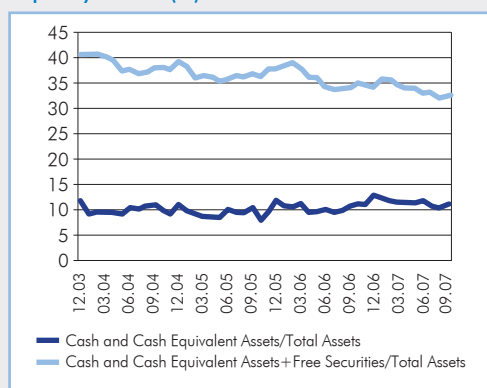
#### Scenario Analyses

The main risk factors that the financial sector might be exposed to were discussed within the context of four macroeconomic scenarios (a zero net capital inflow, permanent increase in oil prices, a boom-bust scenario, fiscal slippage). In terms of its impact on regulatory capital, the scenarios with the worst consequences are the net zero capital inflow into Turkey since it leads to a deterioration in the quality of the bank's credit book and permanent increase in oil prices.

### III.3. Liquidity Risk<sup>15</sup>

The liquid assets of the banking sector, which are comprised of cash and cash equivalent assets that fluctuate within a certain band, have been declining since early 2007, while the ratio of these assets to total assets was realized as 10.5 in September 2007. The course of this ratio was driven by the movements in the "due from the banks" item. When the free securities not used as collateral or for repo transactions are taken into consideration, this ratio displayed a tendency to decline and was 32.1 percent in September 2007 (Chart III.26).

**Chart III.26.**  
Liquidity Ratios (%)<sup>1,2</sup>

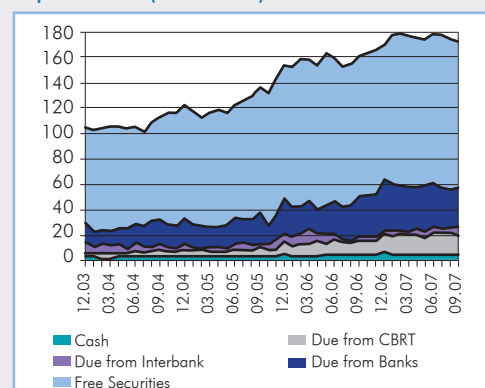


Source: BRSA-CBRT

(1) Cash and Cash Equivalent Assets = Cash + Due from CBRT + Due from Interbank + Due from Banks

(2) Free Securities = Securities that are not used as collateral or for repo transactions.

**Chart III.27.**  
Liquid Assets (Billion YTL)

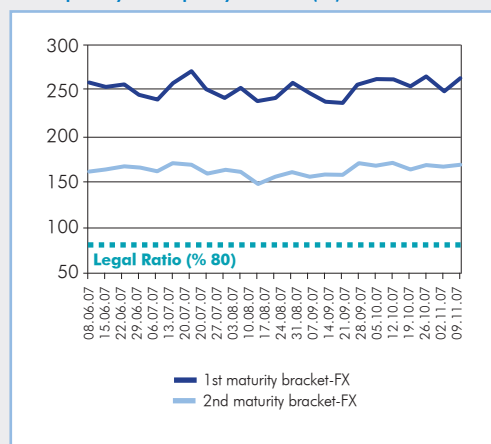


Source: BRSA-CBRT

<sup>15</sup> Participation banks were included in the assessments made in this chapter.

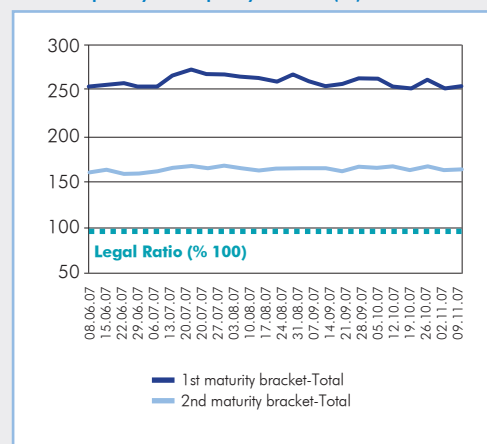
Within the cash and cash equivalent assets, due from the banks has the largest share. Free securities, which can be accepted as collateral by the Central Bank to provide liquidity in the event of a temporary liquidity shortage, continued to be an important asset item of the banks and in September 2007, the ratio of these assets to total assets was 21.6 percent. Moreover, the free portfolio/deposits ratio was 36.1 percent in September 2007<sup>16</sup> (Chart III.27).

**Chart III.28.**  
FX Liquidity Adequacy Ratios (%)



Source: BRSA-CBRT

**Chart III.29.**  
Total Liquidity Adequacy Ratios (%)



Source: BRSA-CBRT

Pursuant to the “Regulation Relating to the Measurement and Assessment of Liquidity Adequacy of Banks”, which was published by the BRSA and was put into effect on June 1, 2007 in order to ascertain that banks have adequate cash assets and inflows that will fully and duly meet their cash outflows and to ensure more efficient liquidity management by the banks, liquidity adequacy ratios of the banking sector for the 1st and 2nd maturity brackets<sup>17</sup> are well above the legal ratio<sup>18</sup> for both total and foreign currency (Chart III.28 and Chart III.29).

Although the liquidity adequacy of the banking sector is above the limits stipulated by law, recent volatilities in global markets once more highlighted the importance of liquidity risk management. Even though the Central Bank is able to provide Turkish currency liquidity in exchange for collateral within the framework of the program in implementation, it is important for banks to keep focusing on cautious and effective liquidity management.

#### III.4. Financial Strength Index

The Financial Strength Index (FSI) is computed with the aim of forming an “aggregate indicator” relating to the direction of the financial strength of the banking sector. For this purpose, ratios projecting the risks and fragilities of the banking sector were selected and these ratios were utilized to form the index with certain weights. Six sub-indices (asset quality, liquidity, exchange rate risk, interest rate risk, profitability, and capital adequacy ratio) were used in forming the index (Box 10).

<sup>16</sup> Participation banks were not included in this calculation.

<sup>17</sup> Assets and liabilities with remaining maturity between 0-7 days are included in the 1st maturity bracket and those between 0 to 31 days are in the 2nd.

<sup>18</sup> These ratios, for both maturity brackets, were defined as 100 percent for total liquidity and 80 percent for foreign currency liquidity.

### Box 10. Financial Strength Index Variables

	Financial Strength Indicators	Direction of the Impact	Weight
Asset Quality	Gross Non-Performing Loans / Gross Loans	Negative	0.33
	Net NPL / Shareholders Equity	Negative	0.33
	Fixed Assets / Total Assets <sup>1</sup>	Negative	0.33
Liquidity	Liquid Assets / Total Assets <sup>2</sup>	Positive	1.00
Exchange Rate Risk	On-Balance Sheet FX Position / Own Funds <sup>3</sup>	Negative	0.50
	FX Net General Position / Own Funds <sup>4</sup>	Negative	0.50
Interest Rate Risk	(Interest Sensitive YTL Assets with a Maturity up to 1 Month – Int. Sensitive YTL Liabilities with a Maturity up to 1 Month) / Equity <sup>5</sup>	Negative	0.50
	(Interest Sensitive FX Assets with a Maturity up to 1 Month – Int. Sensitive FX Liabilities with a maturity up to 1 Month) / Equity <sup>5</sup>	Negative	0.50
Profitability	Net Profit / Total Assets	Positive	0.50
	Net Profit / Shareholders Equity	Positive	0.50
Capital Adequacy	Free Capital / Total Assets <sup>6</sup>	Positive	0.50
	Capital adequacy Ratio	Positive	0.50

(1) Fixed Assets consist of subsidiaries, assets to be sold, fixed assets and net non-performing loans.

(2) Liquid Assets consist of cash, due from the CBRT, due from money market, due from banks and receivables from reverse repo transactions.

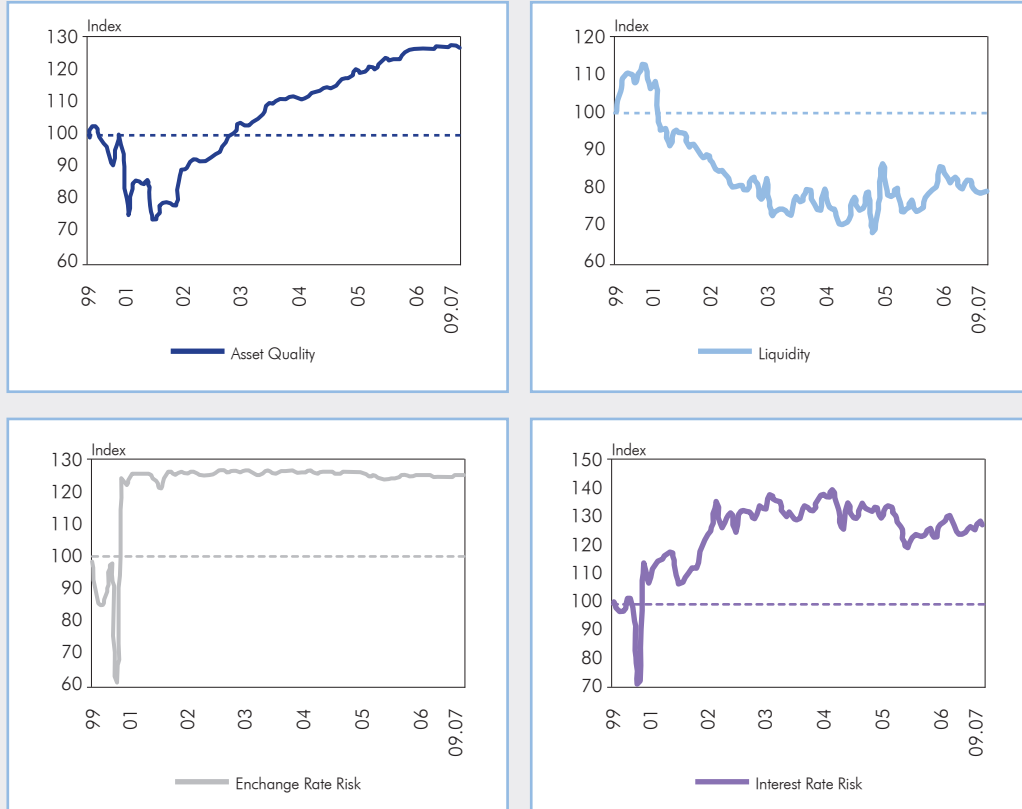
(3) Own funds is the regulatory capital, and it is different from the equity in the balance sheet. The calculation is in absolute values.

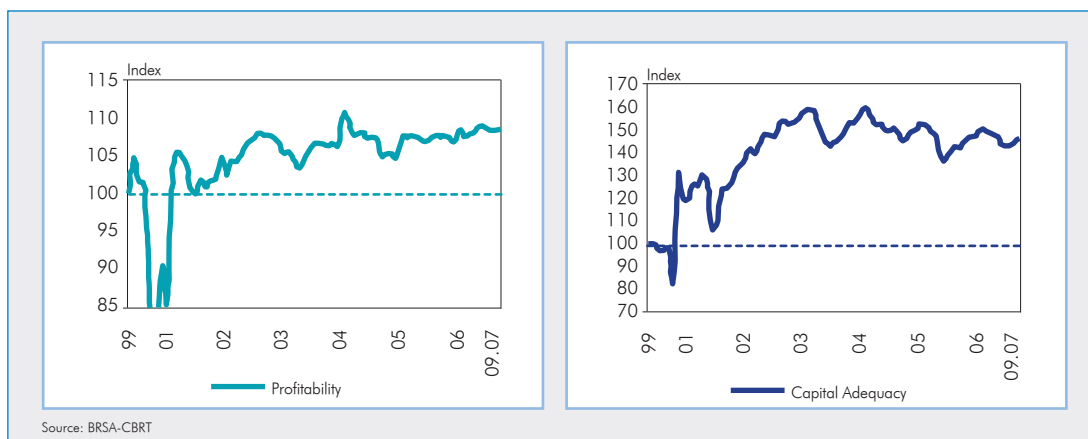
(4) Foreign exchange net open position is the sum of on and off balance sheet foreign currency positions. The calculation is in absolute values.

(5) The calculation is in absolute terms.

(6) Free capital is calculated by deducting fixed assets from equity.

### Chart III.30. Financial Strength Sub-Indices





The assessment of the sub-indices that form the FSI is as follows (Chart III.30);

**i. Asset Quality Index:** The Asset Quality Index, which was 122.6 at the end of 2006, rose slightly to 122.9 in September 2007 in response to the decline in both the share of fixed assets in total assets and NPL ratio.

**ii. Liquidity Index:** The Liquidity Index, which was 85.6 by end-2006, dropped to 78.9 in September 2007 with the decline in the share of liquid assets in total assets.

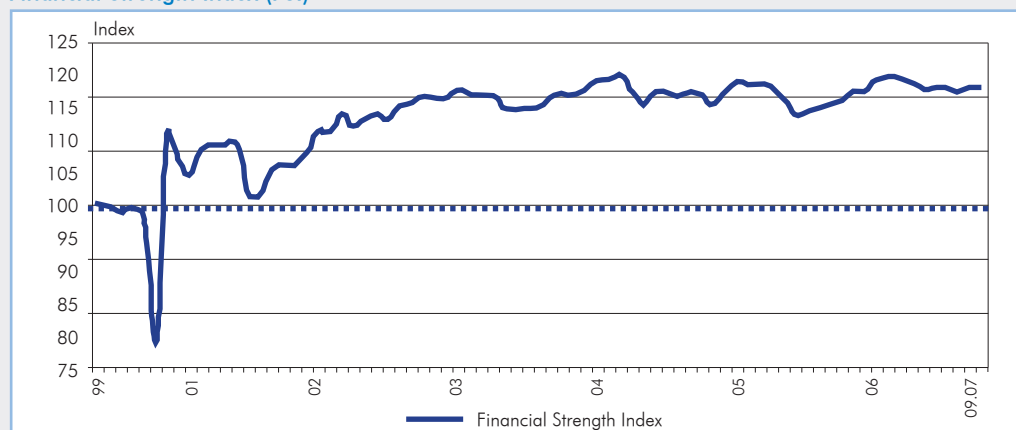
**iii. Exchange Rate Risk Index:** The Exchange Rate Risk Index, which displayed a stable course, became 125.1 in September 2007. This stability was a result of the limited open position of the banking sector.

**iv. Interest Rate Risk Index:** The Interest Rate Risk Index, which was 126.9 in December 2006, declined to 125.8 in September 2007. The increase in the ratio of the difference between YTL-denominated interest-sensitive assets up to 1 month and interest sensitive liabilities up to 1 month to equity was instrumental in this decline of the interest rate risk index.

**v. Profitability Index:** The index, which was 106.9 at the end of 2006, rose to 108.4 in September 2007 due to the increase in both the return on assets and return on equity of the banking sector.

**vi. Capital Adequacy Ratio:** With the decline in the Capital Adequacy Ratio, the index that was 146.3 at the end of 2006 declined to 145.9 in September 2007.

**Chart III.31.**  
**Financial Strength Index (FSI)**



The Financial Strength Index monitored as an indicator of the stability of the banking sector followed a high course throughout 2007 despite the decreases in the Capital Adequacy Index, Interest Rate Risk Index, and Liquidity Index

**Box 11.**  
**Turkey Financial Sector Assessment Program<sup>19</sup>**

Due to the integration of financial markets as a result of globalization that gained pace in the 1980s, financial crises do not only affect the countries where they emerge, but almost the whole world. Hence, it has been realized that country-based solutions are not enough and therefore, the strength and stability of the financial system at the global level has become an important issue. In order to stop the contagion of crises, the development of standards applicable by all countries and the strengthening of financial infrastructures have become part of the agenda. Consequently, with the cooperation of the IMF and the World Bank, the Financial Sector Assessment Program (FSAP) was initiated in 1999. The FSAP is a comprehensive assessment aimed at identifying the weaknesses by analyzing the developments of the financial sectors of countries. The FSAP is conducted with the support of national central banks, financial sector regulatory and supervisory authorities, and representatives from private sector. The goals of the FSAP are to:

- Identify the strengths and weaknesses of the financial sectors of countries and state the risks,
- Avoid the occurrence and spread of financial crises,
- Identify international best practices and compliance with standards,
- Analyze the relation between the macroeconomic structure and the financial sector
- Determine improvement and technical assistance needs,
- Support the process of building the correct infrastructure and policies to strengthen and improve the financial sector.

Turkey-FSAP assessment conducted jointly by the IMF and the World bank started in 2005 with the contribution of all the institutions and agencies involved in the financial sector under the coordination of the Undersecretariat of Treasury. Following the studies, the Financial System Stability Assessment Report (FSSA) containing an assessment regarding the Turkish financial sector was published on the IMF website.

The report underlined that Turkey's financial system has strengthened markedly over the last five years, has developed rapidly and became more integrated internationally and effective regulation, supervision and supporting infrastructure were needed to reduce the systemic impact of any shock that may impinge upon the financial system. Progress has been made on this issue but more efforts were needed. It was also stated that as policies to maintain macroeconomic stability, such as a commitment to a declining path of inflation and fiscal consolidation were the preconditions for the development of a sound financial sector, the authorities would need

<sup>19</sup> FSSA report can be reached at ([www.imf.org/external/pubs/ft/scr/2007/cr07361.pdf](http://www.imf.org/external/pubs/ft/scr/2007/cr07361.pdf)).

to remain unwavering in their commitment to sound policies to reinforce confidence and create room for the new financial markets to flourish.

Vulnerabilities determined in the report can be summarized as:

- Macroeconomic volatility that could especially stem from the large current account deficit,
- While the credibility of economic management has been strengthened over the past five years, the confidence of savers and investors may still be fragile,
- Continued risks from sustained credit expansion although credit growth has slowed since June 2006,
- Interest rate risks borne by banks mainly due to maturity mismatch between government securities and housing loans and deposits,
- Sovereign risk borne by banks due to large holdings of public sector debt ,
- Lending in foreign currency, which still accounts for almost one third of bank loans, exposing banks to foreign currency risk indirectly via credit risk.

The main recommendations for the short-term were stated in the FSSA report; to complete and implement the regulations associated with the new Mortgage Law and pass the Insurance Law, implement all regulations for the new Banking Law, ensure that foreign-currency linked domestic currency loans are subject to similar constraints as foreign currency loans, review major corporate shareholders' regulatory treatment to remove residual privileges, review and amend procedures for handling failing banks, and ensure active involvement of all relevant agencies, to ensure timely and cost-effective action.

The main recommendations for the medium-term were; to phase out transaction taxes, complete the privatization of public banks, refine data collection and analysis in the banking sector, conclude the Memoranda of Understanding (MoUs) with foreign supervision authorities, review mechanisms to ensure the financial independence of supervisory agencies, establish mechanisms to generate more reliable data on insurance companies' provisions and capital, resolve problems regarding the privatization of the ISE, and adapt the Capital Markets Law in 2008.

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**ABBREVIATIONS**

BIS	: Bank for International Settlements
BITT	: Banking and Insurance Transactions Tax
BoE	: Bank of England
BoJ	: Bank of Japan
BRSA	: Banking Regulation and Supervision Agency
CAR	: Capital Adequacy Ratio
CBRT	: Central Bank of the Republic of Turkey
CMB	: Capital Markets Board
CPI	: Consumer Price Index
CRA:	: Central Registry Agency
CRD	: Capital Requirements Directive
ECB	: European Central Bank
EMBI	: Emerging Market Bond Index
EU	: European Union
FED	: Federal Reserve Bank
FSAP	: Financial Sector Assessment Program
FSI	: Financial Strength Index
FX	: Foreign Exchange
FXNGP	: Foreign Exchange Net General Position
GDDS	: Government Domestic Debt Security
GDP	: Gross Domestic Product
GNP	: Gross National Product
IFC	: International Finance Corporation
IKB	: Deutsche Industriebank AG
IMF	: International Monetary Fund
ISE	: Istanbul Stock Exchange
NPL	: Non Performing Loans
OECD	: Organisation for Economic Co-operation and Development
PPI	: Producer Price Index

QIS-TR2	: Quantitative Impact Study TR2
ROA	: Return on Assets
ROE	: Return on Equity
SCT	: Special Consumption Tax
SDIF	: Savings Deposits Insurance Fund
SEE	: State Economic Enterprise
SPO	: State Planning Organization
TURKSTAT	: Turkish Statistical Institute
USA	: United States of America
VAT	: Value Added Tax
VIX	: Chicago Board Options Exchange Volatility Index
YTL	: New Turkish Lira