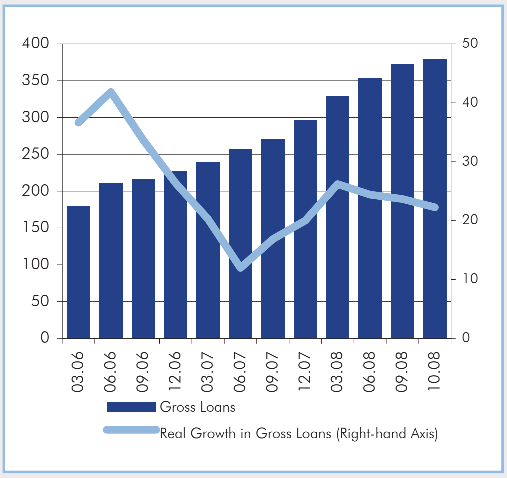
III. BANKING SECTOR RISKS

III.1. Credit Risk and Scenario Analysis

III.1.1. Credit Portfolio

Favorable international liquidity conditions in the post-2002 period increased the external borrowing facilities of the banking sector, boosting credit growth. However, considering that external borrowing will be harder due to the global financial crisis, the rate of increase in credits is expected to slow down in the upcoming period.

Chart III.1.
Gross Loans and Real Annual Growth Rates (Billion YTL, %)[1,2,3]



Source: BRSA-CBRT
(1) Expressed in real terms using CPI (1994=100).
(2) Annual percentage change as compared to the same month of the year.
(3) Figures for October 2008 are provisional.

The gross credit volume of the banking sector, whose real rate of increase has slowed down since March 2008, stood at YTL 379.3 billion by end-October (Chart III.1).

Retail loans grew more rapidly than corporate loans until the second half of 2008 and their share in total loans increased. However, the real rate of increase in corporate loans exceeded that of retail loans starting from August, which stemmed from the slowdown in retail loans due to interest rate hikes and FX loans of firms that seem higher on banks' balance sheets as a result of the rapid depreciation of YTL (Chart III.1).

Table III.1. Some Selected Credit Ratios[1] (Million YTL, %)

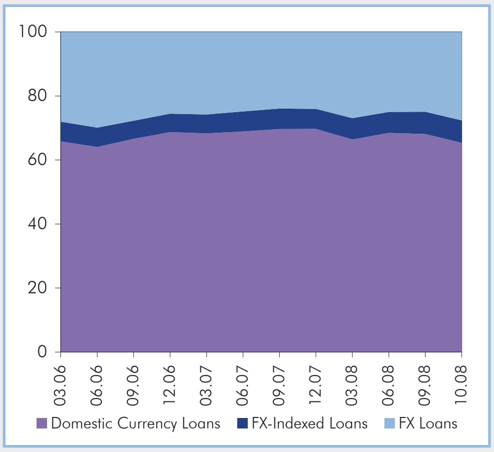
	2006	2007	09.08	10.08
First 5 Banks				
Total Gross Loans	127,494	162,452	204,063	209,182
Share in Total Gross Loans	58.5	57.7	57.6	58.0
NPLs / Total Gross Loans	4	3.8	3.1	3.1
Loans / Deposits	79.9	88.8	93.6	91.9
First 10 Banks				
Total Gross Loans	183,154	236,833	298,601	305,225
Share in Total Gross Loans	84.1	84.2	84.3	84.7
NPLs / Total Gross Loans	3.8	3.6	3.0	3.1
Loans / Deposits	68.5	77.2	82.6	82.3
Sector				
Total Gross Loans	227,537	295,962	372,716	379,252
NPLs / Total Gross Loans	3.8	3.5	3.1	3.2
Loans / Deposits	74.0	82.9	89.0	87.9

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

By October 2008, the share in total loans of the first five banks that extended the majority of loans increased by 0.3 percentage point compared to the end of the previous year, while the share of first ten banks rose by 0.5 percentage point.

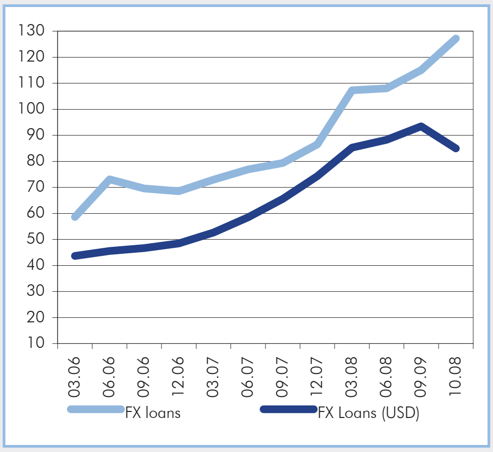
The loans to deposits ratio of the banking sector, which is on the rise owing to the growing credit volume of the sector, fell in October. The said ratio, which reached its highest value of 89 percent in September 2008, declined to 87.9 percent in October (Table III.1).

**Chart III.2.
Currency Composition of Loans
(%, Excluding NPLs)[1]**



Source: BRSA-CBRT
(1) Figures for October 2008 are provisional.

**Chart III.3.
FX Loans [1,2]
(Billion YTL-USD, Excluding NPLs)**



Source: BRSA-CBRT
(1) Figures for October 2008 are provisional.
(2) They were converted to USD using the CBRT buying exchange rate as of month-end.

An analysis of the Domestic Currency-FX composition of loans extended and the FX loan portfolio shows that the share of FX loans[5] increased by 4.3 percentage points to 34.6 percent

[5] FX-indexed loans are considered within the scope of foreign currency loans.

in October 2008 compared to end-2007, and amounted to YTL 127.2 billion. However, the USD equivalent of FX loans decreased in October (Chart III.2 and Chart III.3).

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

	Total Loans			Number of Customers		
	2006	2007	09.08	2006	2007	09.08
Greater than 1 Million YTL	42.4	40.6	43.5	0.05	0.06	0.06
Betw. 501 Thous. YTL-1 Mil. YTL	4.9	5.0	4.8	0.05	0.06	0.06
Betw. 101-500 Thousand YTL	12.5	13.6	12.6	0.45	0.56	0.56
Betw. 51-100 Thousand YTL	6.8	7.8	7.6	0.69	0.89	0.94
Less than 51 Thousand YTL	33.5	33.1	31.5	98.77	98.43	98.38
Total	100	100	100	100	100	100

Source: BRSA-CBRT

The distribution of loans by size suggests that only the share of loans over YTL 1 million increased in September 2008, while the shares of the other loan groups declined. This development can be attributed mainly to the fact that the majority of FX loans belong to the group of loans over YTL 1 million (Table III.2).

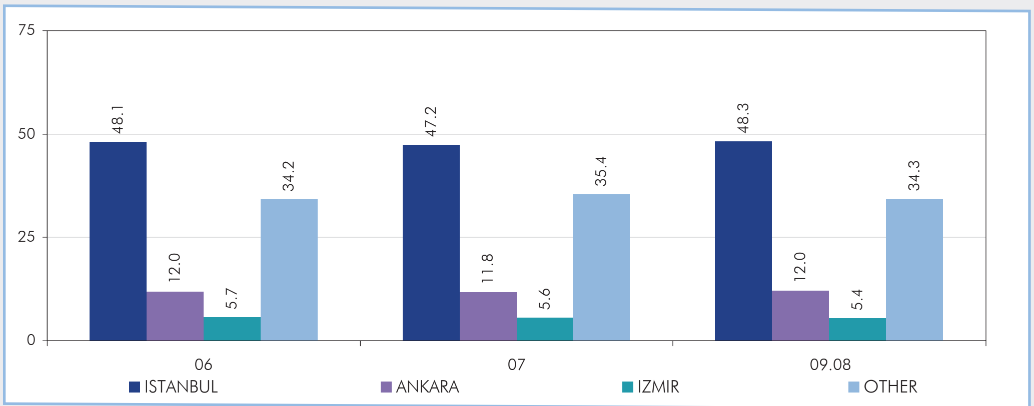
Table III.3. Maturity Structure of the Loans (%, Excluding NPLs)

	2006	2007	09.08
Short Term Loans	46.8	45.9	44.6
Medium and Long Term Loans	53.2	54.1	55.4

Source: BRSA-CBRT

The share of long-term loans has been increasing in recent years, especially owing to the fact that the share of retail loans in total loans increased and most of the housing and other consumer loans making up retail loans have maturities longer than 24 months. This tendency continued in September 2008, as well (Table III.3).

Chart III.4.
Distribution of Loans by Provinces (%)[1]

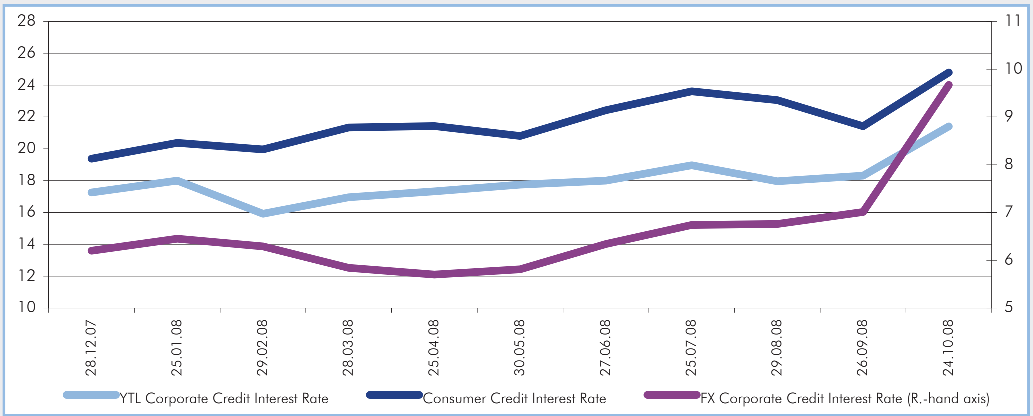


Source: CBRT

(1) Loans are compiled based on bank reportings 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. Since October 2007, firms have been disclosing their NPLs without any limits.

The geographical breakdown of loans shows that shares of Izmir and other cities in total loans decreased, whereas the share of Istanbul and Ankara increased in September 2008 compared to end-2007 (Chart III.4).

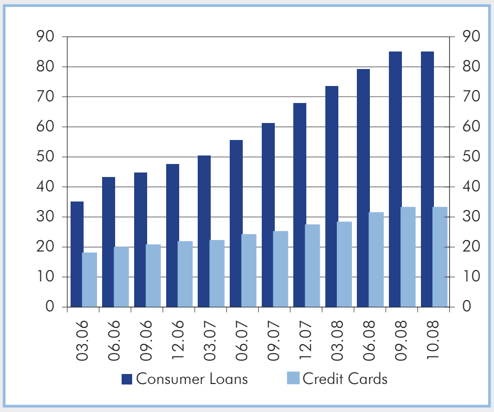
Chart III.5.
Loan Interest Rates (%)[1]



Source: CBRT
(1) Weighted average flow interest rates.

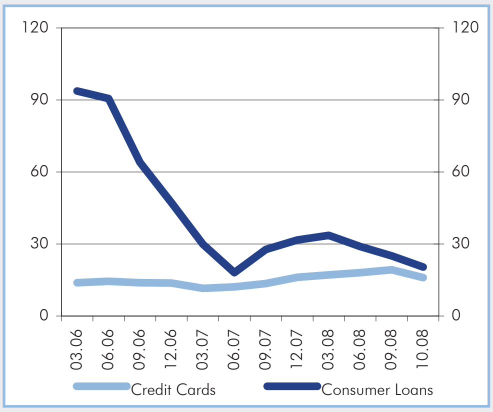
The effects of increased funding costs of the banking sector and tightened credit conditions are visible on loan rates. As a matter of fact, interest rates on both domestic currency and FX-denominated commercial loans increased in the last one-month period by 3.1 basis points and 2.7 basis points, respectively and became 21.4 and 9.7 percent by 24 October 2008. Interest rates on consumer loans were 24.8 percent by the same date (Chart III.5).

Chart III.6.
Retail Loans[1]
(Excluding NPLs, Billion YTL)



Source: CBRT
(1) Figures for October 2008 are provisional.

Chart III.7.
Real Annual Growth Rates of Retail Loans (%)[1,2,3]

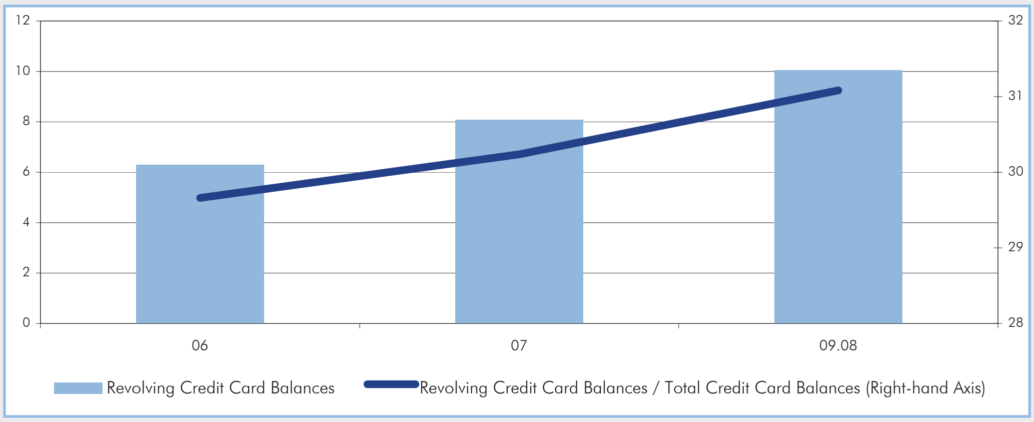


Source: CBRT
(1) Growth rates were brought to real terms by using CPI (1994=100).
(2) Annual percentage change as compared to the same month of the previous year.
(3) Figures for October 2008 are provisional.

Retail loans composed of consumer loans and credit cards amounted to YTL 118 billion as of October 2008. The real rate of increase in consumer loans, which started to decelerate in March 2008, declined to 20.4 percent in October. The real rate of increase in credit cards[6], which was on the rise until September, started to slow down from then on and declined to 16 percent (Chart III.6 and Chart III.7).

[6] Refers to the balance in the cash loans item, until credit card spending and cash withdrawals are paid back to the bank by the cardholder.

Chart III.8.
Credit Card Revolving Rate[1] (Billion YTL, %)

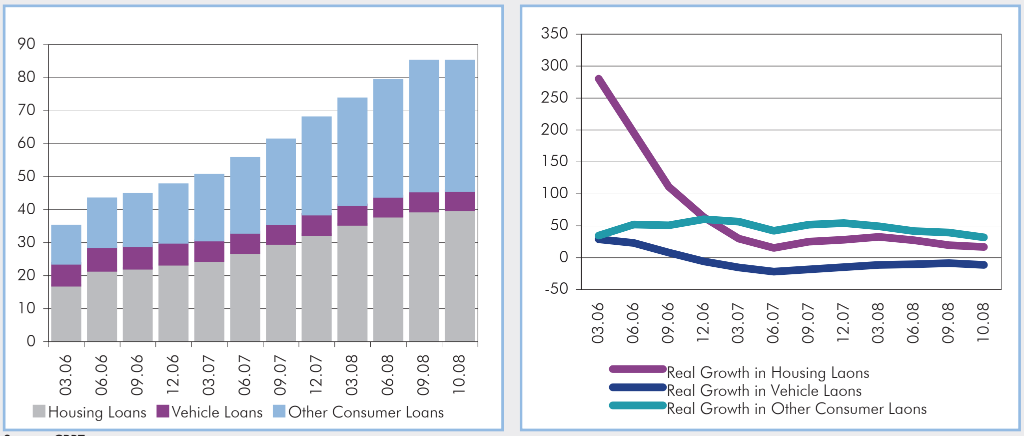


Source: CBRT
(1) Excluding participation banks.

An analysis of the part of the credit card balance on which interest is charged shows that the related amount increased to YTL 10.1 billion as of September 2008 from YTL 8.1 billion at end-2007, making up 31.1 percent of the credit card balance. (Chart III.8).

On the other hand, it is likely that individuals will increasingly resort to credit cards as an instrument of credit in the upcoming period, as banks will apply stricter terms when providing consumer loans. This tendency of consumers to meet their credit needs with credit cards, which charge higher interest rate compared to consumer loans, will possibly lead to an increase in the number of defaulters. Therefore, being cautious of using credit cards in line with their essential function as a payment instrument is critical for maintaining the soundness of financial markets.

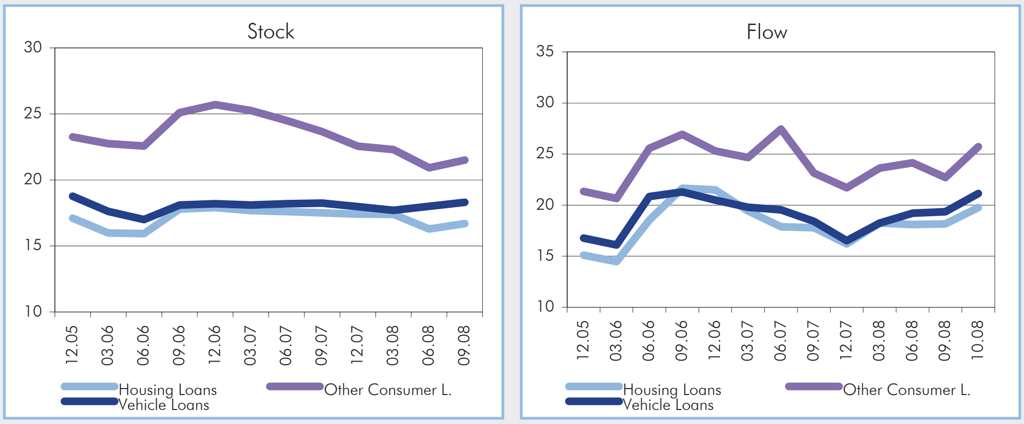
Chart III.9
Consumer Loans by Type and Real Growth Rate (Excluding NPLs, Billion YTL, %)[1,2,3]



Source: CBRT
(1) Other consumer loans are consumer loans excluding housing and vehicle loans.
2) They were brought to real terms by using CPI (1994=100).
(3) Figures for October 2008 are provisional.

The share of vehicle loans in consumer loans, which has been declining in real terms since end-2006, fell to 6.9 percent in October 2008. In the same period, the share of housing loans and other consumer loans, whose real rate of increase slowed down, became 46.9 percent and 46.2 percent, respectively (Chart III.9).

Chart III.10
Consumer Loans Interest Rates (%)[1,2]



Source: CBRT
(1) Other consumer loans are consumer loans excluding housing and vehicle loans.
(2) Weighted average interest rates.

Flow interest rates referring to interest rates on newly extended consumer loans increased in October 2008 compared to end-2007, mainly owing to political uncertainty in the first half of 2008 and the global financial crisis in the following period (Chart III.10).

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

	Housing Loans / Total Loans		Housing Loans / GDP	
	2006	2007	2006	2007
Portugal	39.8	39.2	59.1	62.1
Estonia	37.4	36.5	32.1	36.0
Latvia	30.4	32.6	29.3	34.0
Greece	31.3	31.8	24.4	27.7
Germany	32.0	30.8	42.0	39.9
France	30.2	29.8	31.5	34.0
Czech Republic	26.4	28.8	12.0	15.2
Lithuania	24.4	27.5	12.7	17.3
Belgium	27.6	27.2	33.9	34.3
Irland	27.6	25.8	63.8	66.3
Poland	21.3	24.5	7.5	10.7
Hungary	19.1	18.9	11.9	12.3
United Kingdam	22.6	18.9	60.3	54.5
Slovenia	9.1	9.1	6.4	8.0
EU 27	27.9	26.0	41.1	40.8
Turkey[1]	10.6	11.4	2.9	3.6

Source: EU Banking Structures, October 2008
(1) Housing Loans/ Total Loans ratio for Turkey is 11,2% and Housing Loans/GDP ratio is 4,0% in June 2008.

An analysis of the share of housing loans in total loans by selected EU countries points to a general downward tendency in 2007. The only countries with an ongoing albeit limited increase in their shares are Central and Eastern Europe countries, which had rapid credit growth especially in the recent period. The said share continues to grow in Turkey as well, albeit at a decreasing rate (Table III.4).

Table III.5. Sectoral Composition of Corporate Loans (Excluding NPLs) (%)[1,2]

		Loans			FX Loans / Total Loans		
		2006	2007	09.08	2006	2007	09.08
1	Wholesale and Ret. Trade, Brokerage, Repair of Mot. Veh.	22.9	19.7	19.0	37.5	35.6	38.5
2	Construction	6.4	8.5	9.0	50.3	51.0	55.1
3	Transport, Storage and Communication	7.9	8.5	8.3	54.7	58.3	54.9
4	Manuf. of Basic Metals and Fabr. Metal Prod.	5.5	5.8	6.1	73.5	70.6	74.3
5	Ind. of Tobacco, Beverages and Food	5.5	5.8	5.7	46.2	43.5	44.6
6	Textile and Textile Product Industry	6.5	5.9	5.3	66.7	63.9	64.3
7	Agriculture, Hunting and Forestry	4.6	5.6	5.3	17.3	24.4	23.2
8	Sources of Electricity, Gas and Water	5.2	4.1	4.2	93.4	90.3	90.2
9	Hotels and Restaurants (Tourism)	3.4	3.1	3.2	75.8	71.2	76.5
10	Manuf. of Machinery and Equipment	3.6	3.2	3.1	45.9	41.7	43.0
	Total of 10 Sectors	71.4	70.2	69.2	51.7	50.3	52.2

Source: CBRT
(1) Loans are compiled based on bank reportings under the scope of Central Bank Law No:1211, Article:44. They include corporate loans that are greater than ten thousand NewTurkish 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.
(2) Excluding Financial Intermediation.

According to Central Bank Risk Center data, the share of ten selected sectors in total corporate loans continued to decline and stood at 69.2 percent as of September 2008. The sector with the largest share in total corporate loans is the "Wholesale and Retail Trade, Brokerage and Motor Vehicles Maintenance and Repair Services" with 19.0 percent, albeit its share is in decline. Shares of the "Construction", "Manufacturing of Basic Metals and Fabricated Metal Products", "Electricity, Gas and Water Sources" and "Hotels and Restaurants (Tourism)" sectors in total corporate loans increased, while those of other sectors declined. The rise in the share of FX loans in total loans by September 2008 actually stemmed from the depreciation of the Turkish currency, rather than the increase in FX loans (Table III.5).

III.1.2. Non-Performing Loans

Non-performing loans, which were YTL 10.3 billion at end-2007, increased by 12.4 percent in September 2008 compared to the year-end and became YTL 11.6 billion.

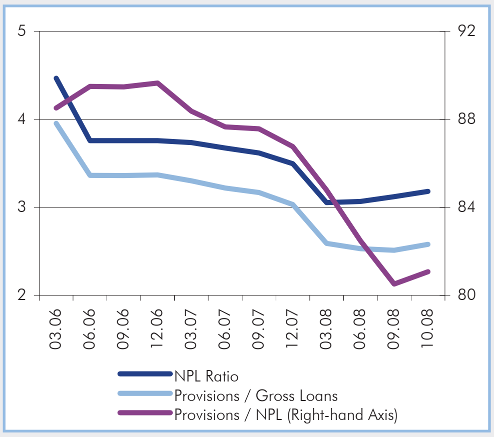
Table III.6. Total NPLs (Million YTL)[1]

	2006	2007	09.08
Loans and Other Receivables with Limited Collectibility	1,209	1,442	2,043
Doubtful Loans and Other Receivables	880	1,814	2,543
Loans and Other Receivables Classified As Loss	6,461	7,089	7,047
Total NPLs	8,551	10,346	11,633

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

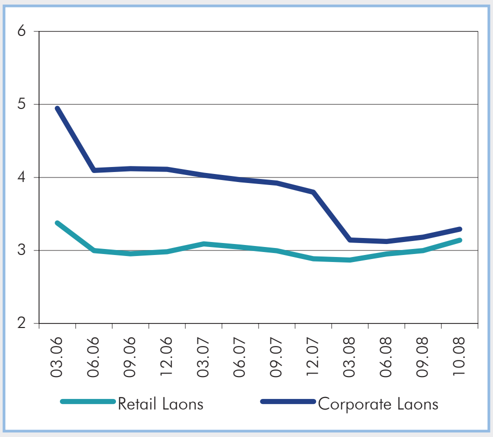
The increase in total NPL was moderate, mainly due to the fact that some banks sold their YTL 1.4 billion worth of non-performing loans to asset management companies within the first nine-month period of 2008. An analysis of the distribution of non-performing loans reveals that "Loans and Other Receivables with Limited Collectibility" and "Doubtful Loans and Other Receivables" increased by approximately 40 percent in the same period, while "Loans and Other Receivables Classified as Loss" declined by 0.5 percent due to the above-mentioned sale (Table III.6).

Chart III.11.
NPL Ratio and Provisions to NPLs[1] (%)



Source: BRSA-CBRT
(1) Figures for October 2008 are provisional.

Chart III.12.
NPL Ratios for Retail and Corporate Loans[1,2,3] (%)



Source: BRSA-CBRT
(1) Retail Loans=Consumer Loans +Credit Cards
(2) Corporate Loans=Total Loans –Retail Loans
(3) Figures for October 2008 are provisional.

Though the amount of non-performing loans increased in a limited manner in 2008, the NPL ratio[7] has been increasing albeit moderately since March, due to the slow down in the rate of increase in loans. The provisions to non-performing loans ratio declined to 81.1 percent in October 2008 from 86.8 percent of end-2007. The provisions to credits ratio also displayed a parallel decline. Considering the 34.6-percent share of FX loans in the loans extended by banks and the recent depreciation of YTL, non-performing loans are expected to increase in the upcoming period, possibly leading to a negative effect on the profitability of banks (Chart III.11).

The NPL ratio for retail loans increased to 3.1percent as of October 2008 from 2.9 percent of end-2007. The NPL ratio for corporate loans, which was 3.8 percent at end-2007, declined to 3.1 percent in March 2008 as a result of the growth in total loans triggered by the increase in FX loans due to the depreciation of YTL. However, this ratio rose to 3.3 percent as of October 2008, despite the ongoing depreciation of YTL (Chart III.12).

Table III.7.
NPL Ratios for Selected Countries

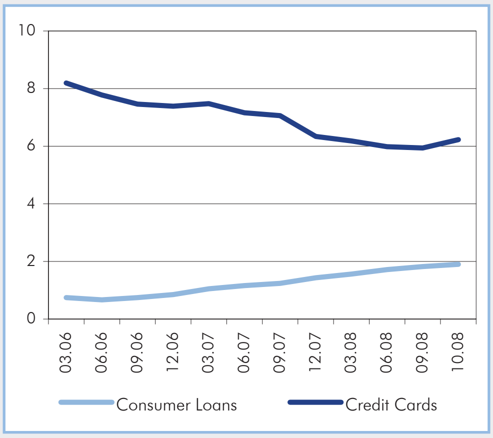
	2006	2007	2008	Last Data
Argentina	3.4	2.7	2.8	May
Brazil	3.5	3	2.9	March
Bulgaria	2.2	2.1	2.1	March
Czech Republic	3.6	2.6	2.8	March
Croatia	5.2	4.8	4.8	March
Serbia	4.1	3.8	4.8	March
Latvia	0.4	0.4	0.5	March
Poland	3.6	3.1	9.7	April
Romania	7.9	9.7	9.7	April
Russia	2.6	2.5	2.4	March
USA	0.8	1.4	1.7	March
Turkey	3.8	3.5	3.2	October

Source : IMF Global Financial Stability Report. October 2008. BRSA - CBRT

In 2008, the NPL ratio of Turkey remained below that of Poland, Romania, Serbia and Croatia, but it was still higher than the NPL ratios of other selected countries (Table III.7).

[7] Non-Performing Loan Ratio = Gross Non-Performing Loans/ Gross Loans

Chart III.13.
NPL Ratios for Retail Loans[1] (%)



Source: CBRT
(1) Figures for October 2008 are provisional.

Chart III.14.
NPL Ratios for Consumer Loans [1,2] (%)

Source: CBRT
(1) Other consumer loans are consumer loans excluding housing and vehicle loans.
(2) Figures for October 2008 are provisional.

The NPL ratio for consumer loans maintained its upward course and rose to 1.9 percent as of October 2008. The NPL ratio for credit cards, which had been declining since the enforcement of the Law on Bank Cards and Credit Cards, started to increase and reached 6.2 percent in the same period (Chart III.13). Based on types of consumer loans, vehicle loans have the highest NPL ratio with 4.6 percent as of October 2008. In the said period, the NPL ratio for housing loans stood at 1 percent, while the NPL ratio for other consumer loans increased to 2.3 percent (Chart III.14).

Table III.8.
NPL Ratio for Some Selected Sectors (%)[1]

		2006	2007	09.08
1	Textile and Textile Product Industry.	11.2	11.7	9.8
2	Agriculture, Hunting and Forestry	3.1	3.2	3.7
3	Wholesale and Ret. Trade, Brokerage, Repair of Motor Vehicle	2.3	3.3	3.3
4	Industry of Tobacco, Beverages and Food	3.8	4.7	3.2
5	Hotels and Restaurants (Tourism)	2.4	2.4	2.5
6	Construction	4.0	2.4	2.3
7	Manufacture of Machinery and Equipment	2.1	2.1	1.7
8	Transport, Storage and Communication	1.3	1.2	1.4
9	Manufacture of Basic Metals and Fabricated Metal Prod.	0.9	1.1	0.9
10	Sources of Electricity, Gas and Water	0.2	0.1	0.1
	Total of 10 Sectors	3.1	3.2	3.0

Source: CBRT
(1) Loans are compiled based on bank reportings 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. Since October 2007, firms have been disclosing their NPLs without any limits.

According to Central Bank Risk Center data, by September 2008, the NPL ratios of "Transportation, Storage and Communication", "Agriculture, Hunting and Forestry" and "Hotels and Restaurants (Tourism)" sectors showed an upward trend, while the NPL ratios of "Wholesale and Retail Trade, Commissions, Motor Vehicles Services" and "Sources of Electricity, Gas and Water" sectors remained unchanged. Those of other sectors declined compared to end-2007 (Table III.8).

Table III.9.
Default Rates for Some Selected Sectors (Item. %)[1,2]

		10.07	12.07	09.08
1	Wholesale and Ret. Trade, Brokerage, Repair of Motor Vehicle	14.2	12.2	10.0
2	Transport, Storage and Communication	2.4	2.5	3.2
3	Textile and Textile Product Industry.	6.5	6.5	7.6
4	Construction	5.1	4.7	5.7
5	Industry of Tobacco, Beverages and Food	5.9	5.9	6.1
6	Manufacture of Basic Metals and Fabricated Metal Prod.	2.7	2.8	3.6
7	Sources of Electricity, Gas and Water	3.1	3.5	4.7
8	Agriculture, Hunting and Forestry	8.3	8.6	8.8
9	Manufacture of Machinery and Equipment	2.7	3.1	3.9
10	Hotels and Restaurants (Tourism)	4.5	4.7	5.3
	Total of 10 Sectors	5.5	5.4	5.9
	Total Corporate Sector	5.9	6.1	6.7

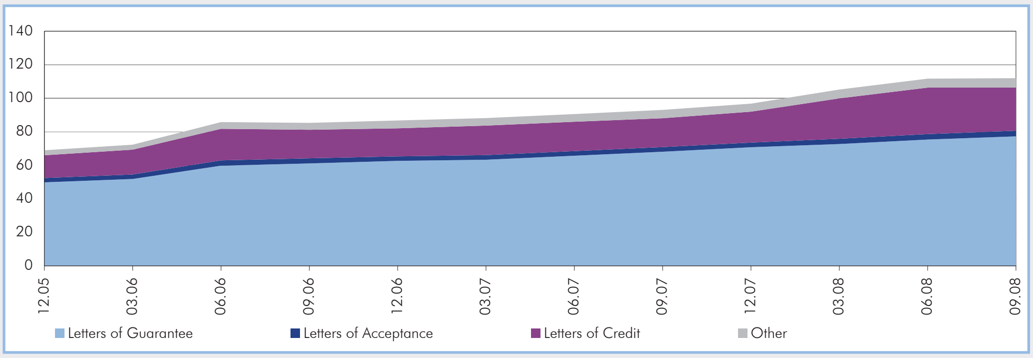
Source: CBRT
(1) Loans are compiled based on bank reportings under the scope of Central Bank Law No:1211, Article 44. They include corporate loans that are greater than ten thousand New Turkish Liras (inclusive) and retail loans that are greater than 5 thousand New Turkish liras (inclusive); extended 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. Since October 2007, firms have been disclosing their NPLs without any limits.
(2) Excluding Financial Intermediation.

The analysis of firms by sector reveals that the average default rate, which is calculated by dividing the number of loans monitored in NPL accounts to total number of credits, rose to 6.7 percent as of September 2008 (Table III.9).

The default rates of "Wholesale and Retail Trade, Commissions and Motor Vehicles Services", "Textile and Textile Products Industry", "Food, Beverages and Tobacco Industry" and "Agriculture, Hunting and Forestry" remained above the average default rate of the selected 10 sectors as of September 2008 (Table III.9).

III.1.3. Non-Cash Loans

Chart III.15
Non-Cash Loans by Type (Billion YTL)



Source: BRSA - CBRT

The ratio of off-balance sheet liabilities, comprising of banks' non-cash loans and commitments, to total assets dropped from 16.6 percent of year-end 2007 to 16.5 percent in September 2008.

The ratio of non-cash loans, which are composed chiefly of letters of guarantee and letters of credit, to cash loans decreased from 33.9 percent at year-end 2007 to 31 percent as of September 2008 (Chart III.15).

III.1.4. Credit Risk Scenario Analysis

With the aim of assessing credit risk, which the banking sector might be exposed to, analyses were conducted on how CARs of banks might be affected by a probable increase in NPL ratios as of September 2008.

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

i) The total credit amount of banks remains unchanged.

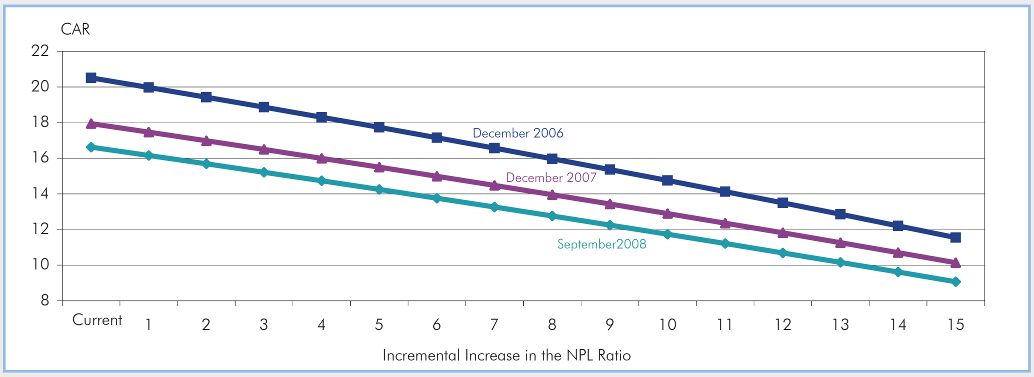
ii) NPLs resulting from shocks have the same composition as the existing NPLs of banks. For banks, which did not have any NPLs before the shocks, in the event of a shock, their post-shock NPLs are classified as "loans and other receivables with limited collectibility",setting aside a 20 percent provision.

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.16.
Effects of Credit Shocks on the CAR of the Sector (%)[1]



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

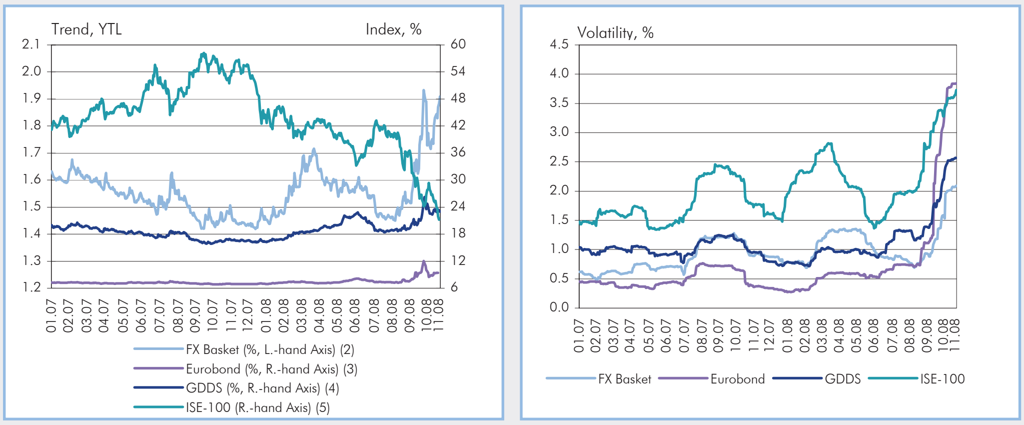
The scenario analysis focuses on the effects of 1-15 point-incremental increases in the NPL ratio of the CAR of the banking sector. Accordingly, the 15-point increase in the NPL ratio of the banking sector reduced the CAR of the sector by 7.8 percentage points as of December 2007 and by 7.6 percentage points as of September 2008. As a result of the maximum shock, the CAR of the sector remained above the legal limit of 8 percent but remained below the target ratio of 12 percent. As a result of the shocks up to 9 percentage points, the CAR of the sector remained above the target ratio (Chart III.16).

III.2. Market Risk and Scenario Analyses

In this section, where the implications of the developments in interest rate and FX risk on bank balance sheets are assessed, the impact of two scenarios based on hypothetical data are analyzed.

III.2.1. Market Risk

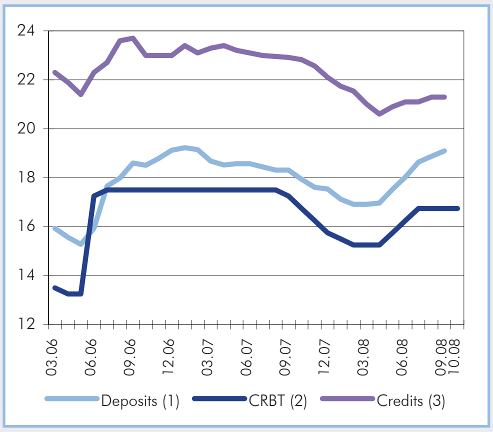
Chart III.17.
Foreign Exchange Rates, Interest Rates and Equity Prices[1]



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.

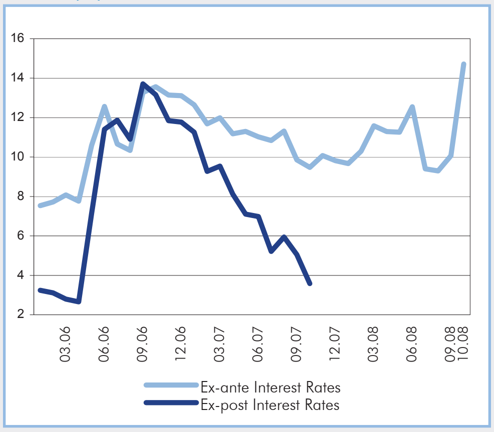
The financial crisis, which has emerged in developed markets and then spread to all markets, started to influence Turkish financial markets as well. Starting in September 2008, the ISE index declined; interest rates on GDDS rose; YTL depreciated as did all currencies of other emerging market economies; and the volatility in financial markets intensified significantly from September 2008 onwards (Chart III.17).

Chart III.18.
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.19.
Ex-ante[1] and Ex-post[2] Real Interest Rates of GDDS (%)



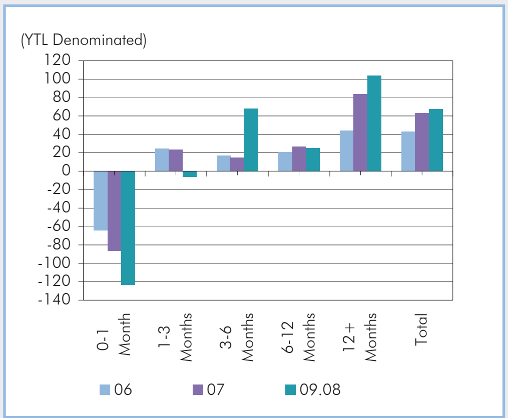
Source: Calculated by using the data of CBRT, ISE and TURKSTAT.
(1) Ex-ante interest rate=(((1+ nominal interest rate)/(1+expected inflation rate))-1)*100
(2) Ex-post interest rate=(((1+ last year's nominal interest rate)/(1+realized inflation rate))-1)*100
As expected inflation rate, yearly ex-ante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

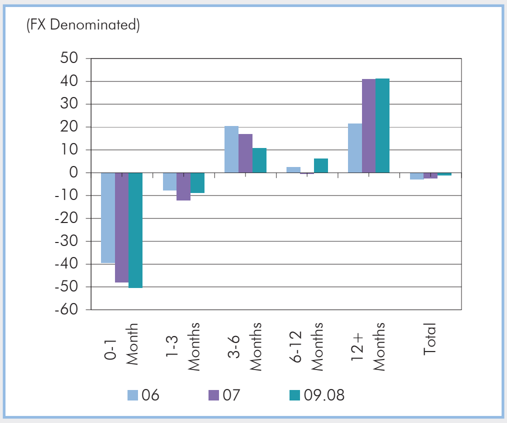
The Central Bank raised overnight borrowing rate by 0.5 percentage point in both June and July 2008. While interest rates remained unchanged in the following two months, the Central Bank cut lending rates by 0.5 percentage point in October in order to ease the potential volatility in short term interest rates. In November, the Central Bank cut overnight borrowing and lending rates by 0.5 percentage point and 1 percentage point, respectively.

Interest rates on deposits and loans, which had displayed a downward trend since the third quarter of 2007, started to increase as of the second quarter of 2008 at first due to political uncertainties and then due to the global crisis (Chart III.18).

The expected real interest rate was realized as 14.7 percent as of October 2008 owing to the increase in interest rates (Chart III.19).

Chart III.20. Interest Rate Sensitivity Gap of the Banking Sector (Billion YTL)[1,2]



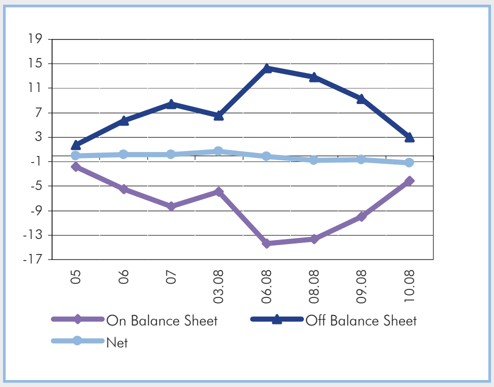


Source: BRSA-CBRT
(1) Time to re-pricing is used.
(2) Excluding SDIF bank.

In terms of days to re-pricing period of the banking sector, it is observed that the negative interest-sensitive YTL and FX gaps were mainly concentrated in the 0-1 month maturity bracket similar to previous periods, and by September 2008, the gap widened compared to previous years (Chart III.20).

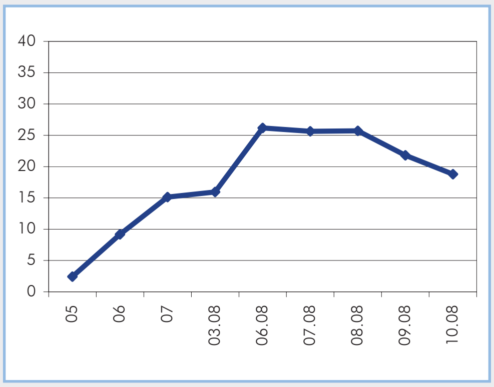
As of September 2008, the sector, which displays short position in the 0-1 and 1-3 month maturity brackets for YTL and FX, holds long position in the long term. In terms of overall position, the tendency to hold positive interest-rate sensitive total YTL gap and negative interest-rate sensitive total FX gap continues (Chart III.20).

Chart III.21.
Foreign Exchange Position of the Banking Sector[1] (Billion USD)



Source: BRSA
(1) Participation Banks are included.

Chart III.22. Swaps Transacted in YTL/FX[1] (Billion USD)



Source: BRSA-CBRT
(1) Participation Banks are excluded.

The course of net overall FX position of the banking sector, which was almost balanced, turned into a short position as of June 2008 and the amount of short position was realized as USD 1,147 million by October 2008 (Chart III.21).

The banking sector, which tended to invest its foreign currency funds in Turkish currency loans through derivatives, especially through swap operations and, therefore had an on-balance sheet short position and an off-balance sheet long position, changed its stance in recent months. Thus, the off-balance sheet long position decreased parallel to the decline in the on-balance sheet short position. The main determinants of this development has been the liquidity conditions in international markets (Chart III.22).

III.2.2. Scenario Analyses

III.2.2.1. Interest Rate and Exchange Rate Increases

Analyzing interest rate and exchange rate developments since September 2008, it is observed that the interest rates on GDDS increased by approximately 4 percentage points due to the crisis in international markets; Turkish lira depreciated by 25 percent against the US dollar and other leading currencies; Eurobond prices dropped by 14 percent.

In line with these developments, taking into consideration that the shocks that were given in the previous reports were partially realized, the magnitude of shocks, which are given in order to measure the resistance of the banking sector, was slightly increased. In this scope, the individual and collective effects of interest rate increases and appreciation of exchange rates on the banking sector are analyzed under two new scenarios assuming that the shocks occur independently.

Table III.10. Interest and FX Rate Increase Scenarios

	SCENARIO A	SCENARIO B
A. Depreciation of YTL	30 percent depreciation of YTL against other currencies	40 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 12 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 10 points higher, respectively.
D. Trading Portfolio-YTL[1]	6 points increase in market interest rates of YTL denominated fixed income securities in the trading portfolio	12 points increase in market interest rates of YTL denominated fixed income securities in the trading portfolio
E. Eurobond Portfolio	Decrease in prices of Eurobonds in the trading portfolio by 15 percent	Decrease in prices of Eurobonds in the trading portfolio by 25 percent

Source: CBRT
(1) BRSA defines the trading portfolio as "Fin. Assets at Fair Value through Profit or Loss" and "Securities available for sale" in accordance with the description of the Basel Committee.

Under Scenario A, it is assumed that the Turkish lira depreciated by 30 percent against other currencies, the interest rates for the Turkish currency and foreign currencies increase by 6 and 5 percentage points, respectively, and Eurobond prices decline by 15 percent.

Under Scenario B, it is assumed that the Turkish lira depreciated by 40 percent against other currencies, interest rate increases are twice the increases given in Scenario A and Eurobond prices decrease by 25 percent.

FXNGP data was used to calculate the effects of exchange rate appreciation on the sector. When calculating the impacts 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 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,

- Interest rate increases would last for 3 months in Scenario A and for 6 months in Scenario B.

The loss of value in the Turkish currency-denominated fixed income securities within the trading portfolio and the Eurobond portfolio stemming from the rise in interest rates has also been calculated.

Table III.11.Results of Market Risk Scenarios[1] (Million YTL)

	Scenario A			Scenario B		
	2006	2007	09.08	2006	2007	09.08
A. YTL Depreciation						
a. Total	80.3	7.3	-325.5	107.1	9.7	-434.0
Profit (Loss)/Equity (%)	0.2	0.0	-0.4	0.2	0.0	-0.6
b. Banks Gaining Profits	269.7	226.5	155.7	359.7	302.0	207.5
c. Banks Suffering Losses	-189.4	-219.2	-481.1	-252.5	-292.3	-641.5
Losses of Banks Suffering Loss/Equity (%)	-1.4	-0.1	-1.2	-1.9	-0.7	-1.6
B. Interest Rate Increase						
a. YTL	-172.2	-466.0	-1,393.6	289.2	-1,002.8	-1,532.4
b. FX	-290.2	-425.7	-466.6	-151.8	-818,6	-1,345.3
Profit (Loss) due to Interest Rate Incr. (a+b)	-462.4	-891.7	-1,860.1	137,3	-1,821.4	-2,877.7
Profit (Loss) due to Interest Rate Incr./Equity (%)	-0.9	-1.3	-2.4	0.3	-2.7	-3.8
C. YTL Trading Portfolio						
Loss in Value due to Interest Rate Increase	-1,549.0	-2,342.0	-2,557.2	-2,899.8	-4,379.7	-4,796.0
Loss in Value due to Interest Rate Incr./Equity (%)	-3.0	-3.5	-3.4	-5.6	-6.5	-6.3
D. Eurobond Portfolio						
Loss in Value	-1,891.4	-2,088.0	-2,627.6	-3,152.3	-3,480.0	-4,379.3
Loss in Value/Equity (%)	-3.7	-3.1	-3.5	-6.1	5.2	-6.3
E. Total Impact						
Profit/Loss	-3,822.5	-5,314.4	-7,370.4	-5,807.7	-9,671.4	-12,486.9
(Profit/Loss)/Equity (%)	-7.3	-7.9	-9.7	-11.2	-14.4	-16.4
Current CAR of the Sector (%)	**19.8**	**17.4**	**16.0**	**19.8**	**17.4**	**16.0**
After-Shock CAR of the Sector[2] (%)	**18.3**	**16.1**	**14.5**	**17.6**	**14.9**	**13.4**

Source: CBRT
(1) Excluding SDIF bank. T. Kalkınma Bank. Iller 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

As a result of Scenarios A and B, the banking sector incurs losses amounting to YTL 325.5 million and YTL 434 million, respectively, as of September 2008 owing to its short position. Besides, the share of losses of banks arising from their open positions in equity caused by shocks, are realized as 1.2 percent and 1.6 percent, respectively, as of September 2008 (Table III.11).

III.2.2.1.2. Interest Rate Increases and Loss in Value

i) As a result of Scenarios A and B, the YTL denominated interest income declines as of September 2008. Under Scenario A, the amount of decline in interest income increases compared to December 2007, owing to 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. As for Scenario B, based on the assumption that the shock will last for 6 months, although the decline in interest income is higher compared to end-2007, it is rather limited by the increase in the long position in the 3-6 month maturity bracket.

As for foreign currency, under Scenario A, the level of decline in interest income does not display a remarkable change as of September 2008 compared to end-2007, while it increases in the same periods due to the decline in the amount of long position in the 3-6 month maturity bracket under Scenario B.

ii) The loss in the market value of Turkish currency denominated fixed income securities arising from interest rate increases rose slightly in September 2008 compared to end-2007. Nevertheless, the ratio of these losses to equity does not mark a noteworthy change.

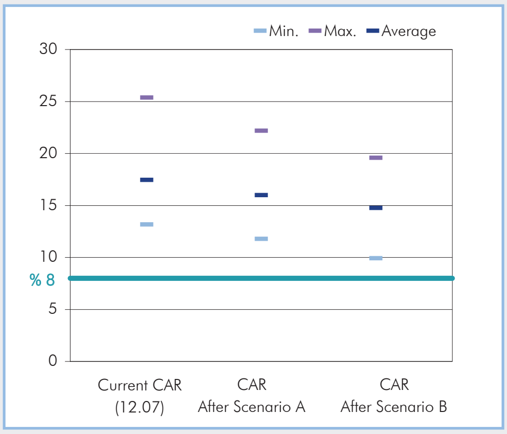
Meanwhile, the Communiqués No. 105 and No. 106 promulgated by the Turkish Accounting Standards Board in the Official Gazette No. 27040 dated 31 October 2008, and the amendment made to TMS 39 and TFRS 7 to enter into force from 1 July 2008 onwards, with the aim of easing the negative impacts of possible high market fluctuations on balance sheets, enable the re-classification of financial assets that were classified as "financial assets at fair value through profit or loss" and "securities available for sale". Therefore, if banks use this opportunity, the loss that may occur in their trading portfolio due to increases in interest rates will diminish, and the negative impact on banks' CARs will be reduced.

iii) The loss of value in Eurobond portfolio increases compared to end-2007 under both scenarios.

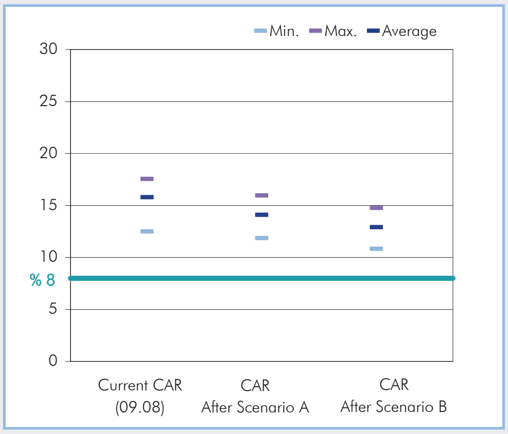
In conclusion, as of September 2008, losses resulted from Scenario A and Scenario B both increase compared to end-2007. The CAR of the sector declined by 1.5 percentage points under Scenario A and by 2.6 percentage points under Scenario B, whereas the CAR of the sector stands above the legal ratio of 8 percent and target ratio of 12 percent.

Chart III.23.
Impacts of the Scenarios on the 10 Largest Banks of the Sector[1]

December 2007



September 2008



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

When the impacts of Scenario A and B on the CARs of the 10 banks with the highest share in assets are analyzed, it is observed that their maximum, minimum, and average CAR levels remained above the legal limit under both scenarios.

III.3. Liquidity Risk

Taking the international conjuncture into account, liquidity risk stands out as one of the most important risks of this period. The Central Bank of the Republic of Turkey conducts its liquidity management operations in a very flexible manner in order to assist banks.

Box 8.
Liquidity Management Operations of the Central Bank of the Republic of Turkey

Banks, which are authorized to operate in the markets within the Central Bank of the Republic of Turkey, can obtain liquidity from the CBRT in the following ways:

- Banks may borrow in the Interbank Money Market at the overnight borrowing quotations announced by the CBRT, within their existing limits and against collateral.

- Banks may borrow in the Foreign Exchange and Banknotes Market at one month- FX deposit quotation announced by the CBRT, within their existing limits and against collateral.

- Within the framework of "the lender of last resort" function of the CBRT, banks may borrow overnight in the Interbank Money Market from the Late Liquidity Window at the offer quotation of the CBRT, without any limit and against collateral.

- Primary dealer banks may also obtain liquidity from the CBRT via overnight and weekly repo transactions within their existing limits.

Meanwhile, due to the liquidity squeeze in the market, liquidity management operations are mainly being carried out via repo auctions. The CBRT announces the amounts of the auctions to be held on the days of liquidity squeeze and provides liquidity with 1-week maturity to banks via repo auctions.

Furthermore, with an aim to enhance the flexibility of banks' liquidity management operations, the CBRT enables banks to maintain an amount corresponding to three percentage points of the FX reserve requirement ratio and the total amount of TL required reserves on an average basis.

The CBRT has also taken new measures regarding FX liquidity in order to enhance banks' FX liquidity management.

Box 9.
Measures Taken by the Central Bank of the Republic of Turkey regarding FX Liquidity Management Operations Against the Fluctuations in Global Financial Markets

In order to ease the effects of recent problems pertaining to global money markets on local financial markets and to prevent any decline in FX liquidity flow despite the fact that there exists no FX liquidity problem in the Turkish banking system, the CBRT resumed its intermediary role in its Foreign Exchange Deposit Market on 9 October 2008. Furthermore, banks' transaction limits in Foreign Exchange and Banknotes Market were increased to USD 5.4 billion in total as of 14 October 2008 and then these limits were doubled for each institution to a total of USD 10.8 billion as of 24 October 2008. The intermediary role of the CBRT in the Foreign Exchange Deposit Market will continue until the uncertainties observed in international markets and their impacts vanish.

In order to ensure orderly liquidity flow in the financial system and efficient functioning of credit markets by stimulating increased foreign exchange liquidity flow in the interbank foreign exchange market, the CBRT made certain decisions to be effective as of 21 November 2008. Within this context, the maturity of the FX deposits, obtainable by the banks from the CBRT in terms of USD and Euro within the predetermined borrowing limits, has been extended from one week to one month and the lending rate that was previously set as 10 percent was reduced to 7 percent for USD and 9 percent for Euro.

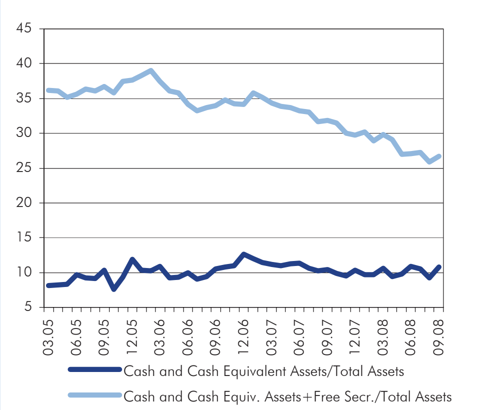
Meanwhile, foreign exchange buying auctions were suspended beginning from 16 October 2008 in order to further enhance the liquidity conditions of Turkish banks and to keep the liquidity in the system.

As unhealthy price formations have recently been witnessed in the foreign exchange market due to a decrease in the depth of the market, the CBRT started to hold daily foreign exchange selling auctions amounting to USD 50 million beginning from 24 October 2008, consistent with the basic principles of the floating exchange rate regime. The CBRT decided to suspend the foreign exchange selling auctions on 30 October 2008 after observing that favorable developments in global markets had eased concerns regarding the depth of the foreign exchange market.

The ratio of liquid assets of the sector comprising cash and cash equivalent assets to total assets has maintained a rather horizontal course in 2008 and stood at 10.8 percent by September 2008 indicating a slight increase (Chart III.24).

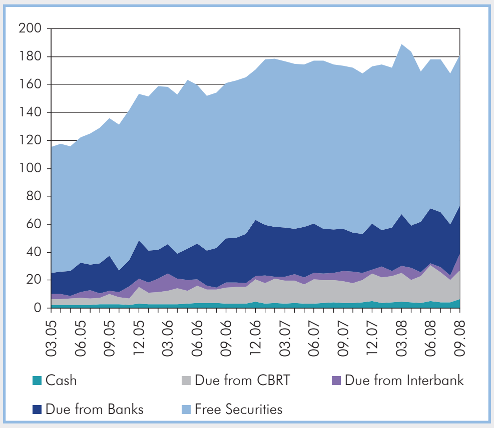
When the free securities not used as collateral or for repo transactions are taken into consideration, this ratio, which has been displaying a tendency to decline since the beginning of 2007, increased and stood at 26.7 percent as of September 2008 (Chart III.24).

Chart III.24.
Liquidity Ratios (%)[1,2]



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.25.
Liquid Assets (Billion YTL)



Source: BRSA-CBRT

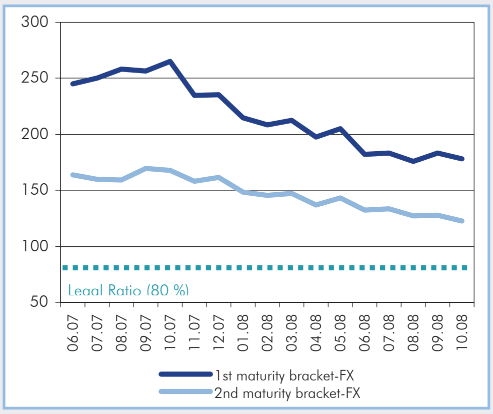
Within the cash and cash equivalent assets, the "due from banks" item has the largest share. Moreover, in September, the "due from Money Markets" item reached its highest level in the last two years. This development can be attributed to the fact that banks with excess liquidity tend to sell it to the CBRT instead of lending to banks with insufficient liquidity at the Over-The-Counter Market, as the CBRT efficiently injects liquidity to banks with insufficient liquidity at the rates close to CBRT's borrowing rate within the framework of its Turkish currency liquidity policy (Chart III.25).

Chart III.26.
Free Securities and Liabilities[1] (Billion YTL, %)

Source: BRSA-CBRT
(1) Participation banks are not included in this calculation.

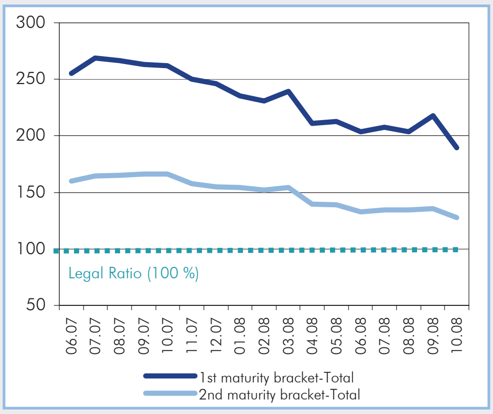
The ratio of free securities, which can be accepted as collateral by the Central Bank to provide liquidity to banks in case of a temporary liquidity shortage, to liabilities was 18.7 percent in September 2008. The free securities portfolio/deposits ratio was 26.9 percent as of the same date (Chart III.26).

Chart III.27.
FX Liquidity Adequacy Ratio (%)



Source: BRSA-CBRT

Chart III.28.
Total Liquidity Adequacy Ratio (%)

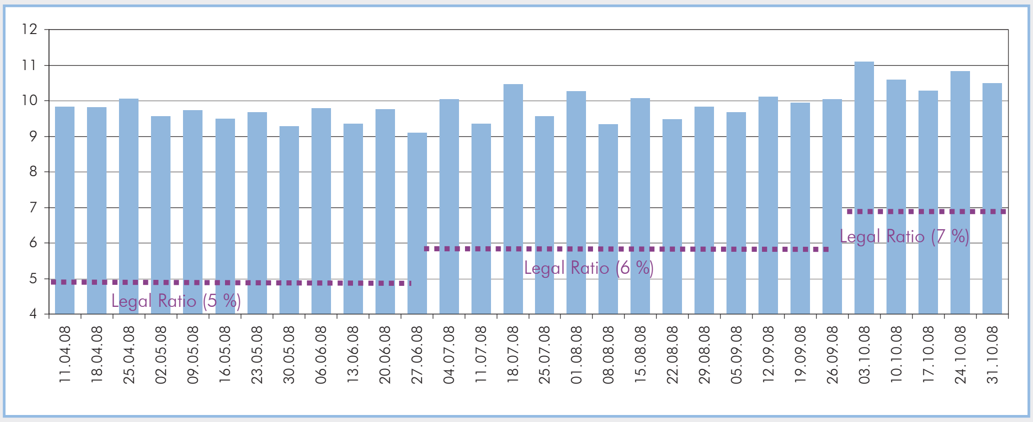


Source: BRSA-CBRT

The liquidity adequacy ratios of the banking sector, calculated pursuant to the "Regulation Relating to the Measurement and Assessment of Liquidity Adequacy of Banks", are well above the legal limits for both total and foreign currency and for the 1st and 2nd maturity brackets[8] despite their downward trend since the last quarter of 2007 (Chart III.27 and Chart III.28).

The liquidity adequacy ratio, which was introduced with the amendment to the said Regulation on 5 April 2008 and calculated by using the full stock values of selected assets and liabilities, also stands above the legal ratio of 7 percent (Chart III.29).

Chart III.29.
Liquidity Ratio of the Banking Sector Calculated By Using Stock Values of Selected Assets and Liabilities (%)



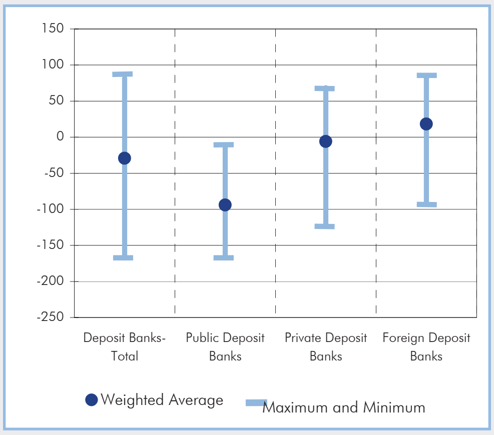
Source: BRSA-CBRT

The recent global crisis indicated how fragile the financial structures of banks that obtain liquidity from wholesale markets could be. Although retail deposits, being the most important source of the Turkish banking system, restrain this vulnerability, it is observed that deposit banks' negative funding gap, which reached YTL 57.5 million in September 2008, continues to decline.

[8] For both maturity brackets, these limits are defined as 100 percent for total liquidity and 80 percent for FX liquidity.

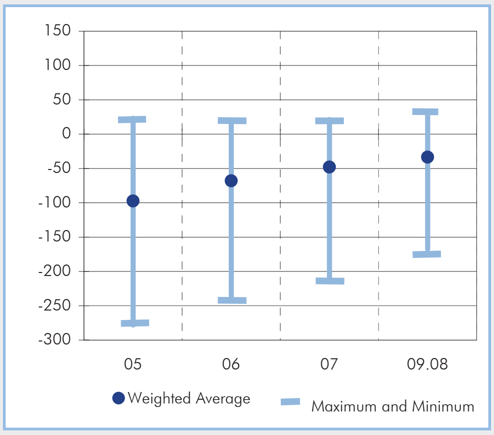
[9] Assets and liabilities with a remaining maturity of 0 to 7 days are included in the 1st maturity and those between 0 and 31 days are included in the 2nd.

Chart III.30.
Funding Gap
(%)[1,2]



Source: BRSA-CBRT, SPO
(1) Funding Gap = (Credits-Deposits)/Credits
(2) Birleşik Fon Bankası (Bank under SDIF) is excluded.

Chart III.31.
Funding Gap for the 10 Largest Banks With Respect to their Asset Size[1] (%)



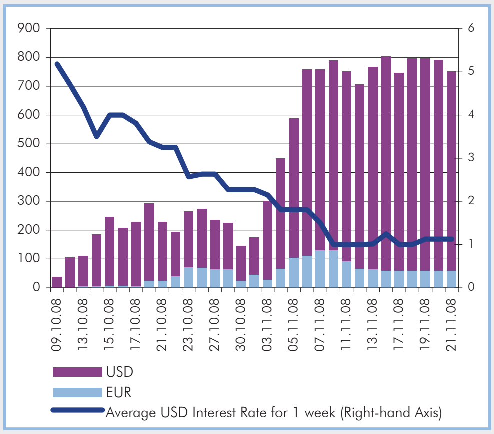
Source: BRSA-CBRT
(1) Funding Gap = (Credits-Deposits)/Credits

As of September 2008, it is observed that public deposit banks have a negative funding gap, whereas foreign deposit banks have a positive gap due to being funded by their parent company. Analyzing the first 10 banks in terms of asset size for each period from 2005 onwards, it is observed that the difference among banks diminishes but the negative funding gap tends to decline (Chart III.30 and Chart III.31).

Even though the transaction volume in the Central Bank Foreign Exchange and Banknotes Market-Foreign Exchange Deposit Market that re-started to operate on 9 October 2008 increased,it is observed that the interest rates decreased. The decline in interest rates indicates that the banking sector has an adequate amount of FX liquidity (Chart III.32).

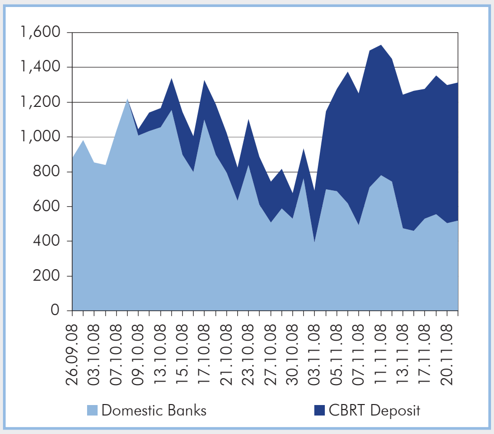
Meanwhile, it is observed that interbank operations shifted to this market from Over-the Counter-Markets (Chart III.33).

Chart III.32.
Total Foreign Exchange and Banknotes Market-Foreign Exchange Deposit Market Operations and Interest Rates (Million USD, %)



Source: CBRT

Chart III.33.
FX Interbank Operations
(Million USD)



Source: BRSA-CBRT

Developments in global liquidity conditions increase the importance of banks' liquidity management. In this framework, the Central Bank will continue to take the necessary measures in order to get through this tough period with minimal negative impact and to ensure continued functioning of the payments system. Moreover, it is necessary for banks to maintain the efficiency of their own liquidity management for Central Bank's measures to be effective.

Box 10.
Amendment to the Regulation Relating to the Measurement and Assessment of Liquidity Adequacy of Banks

As it is known, pursuant to the "Regulation Relating to the Measurement and Assessment of Liquidity Adequacy of Banks", the consideration rates for the stock value of the "securities to be held until maturity" are kept lower than the rates for the securities classified as "securities in the trading portfolio" and "securities available for sale." However, pursuant to the decision of the Banking Regulation and Supervision Agency published in the Official Gazette dated 1 November 2008, if the financial assets classified as "securities in the trading portfolio" and "securities available for sale" by banks are reclassified under "securities to be held until maturity" in the framework of the amendments made to TMS 39 and TFRS 7, the consideration rates equivalent to former classifications shall be applicable to these financial assets in the implementation of the liquidity regulation.

III.4. Financial Strength Index

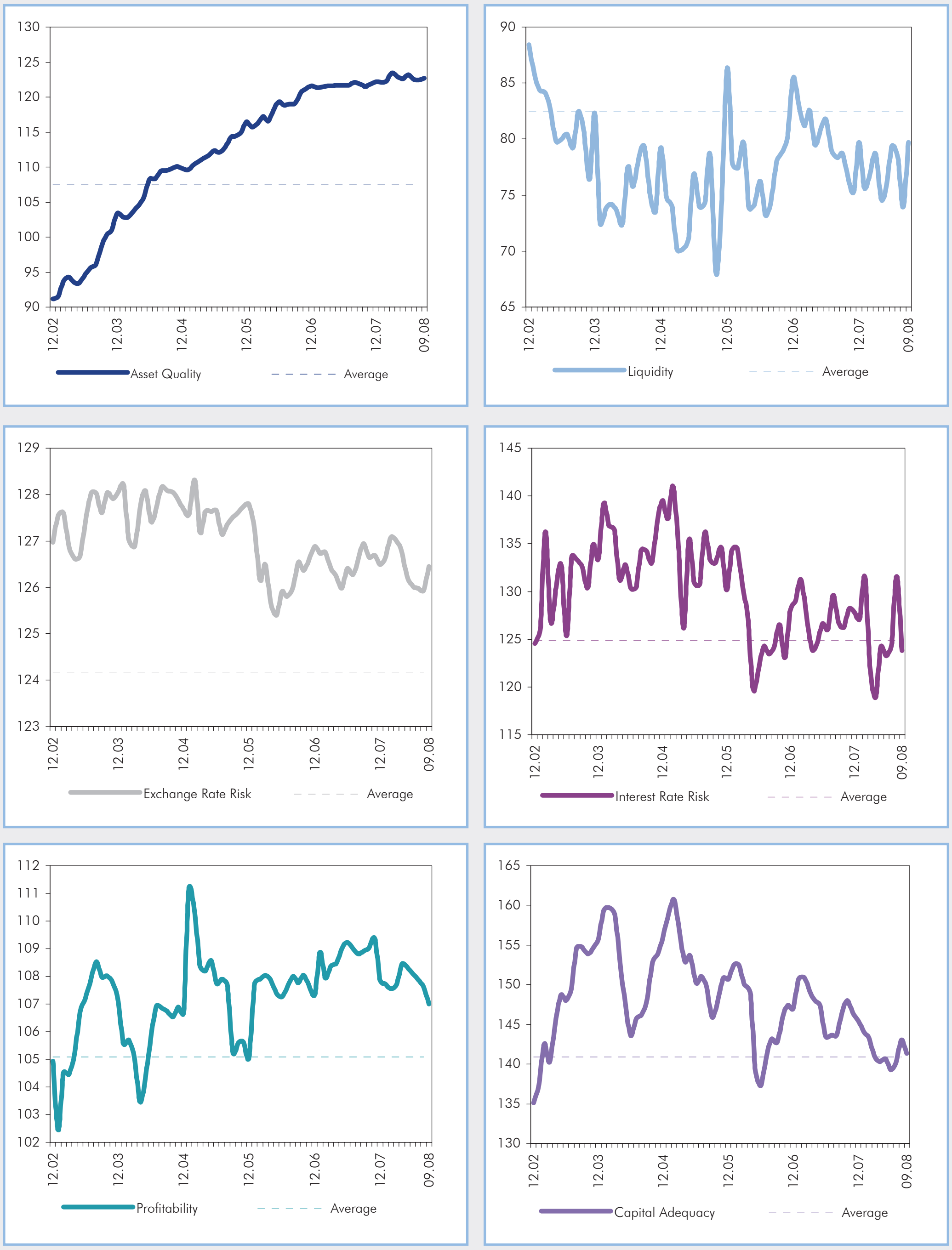
The Financial Strength Index (FSI) is computed with the aim of forming an "aggregate indicator" relating to the direction of the financial strength of the banking sector. Six sub-indices (asset quality, liquidity, exchange rate risk, interest rate risk, profitability, and capital adequacy) were used to form this index. Ratios projecting the risks and fragilities of the banking sector were selected under each sub-index and these ratios formed the index with certain weights (Table III.11).

Table III.12 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[1]	Negative	0.33
Liquidity	Liquid Assets / Total Assets[2]	Pozitive	1.00
Exchange Rate Risk	On-Balance Sheet FX Position / Own Funds[3]	Negative	0.50
	FX Net General Position / Own Funds[3,4]	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[5]	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[5]	Negative	0.50
Profitability	Net Profit / Total Assets	Pozitive	0.50
	Net Profit / Shareholders Equity	Pozitive	0.50
Capital Adequacy	Free Capital / Total Assets[6]	Pozitive	0.50
	Capital Adequacy Ratio	Pozitive	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.34.
Financial Strength Sub-Indices[1] (1999=100)



Source: BRSA-CBRT
(1) The averages used are the averages of related sub-indices between December 1999 and September 2008.

The assessment of the sub-indices comprising the FSI is as follows (Chart III.34);

i. Asset Quality Index: The Asset Quality Index, which was 122.2 at end-2007, rose to 122.7 in September 2008, mainly due to the decline in the share of fixed assets in total assets and the decrease in the NPL ratio.

ii. Liquidity Index: The Liquidity Index, which was 79.7 at end-2007, remained unchanged in September 2008, as the share of liquid assets in total assets did not change.

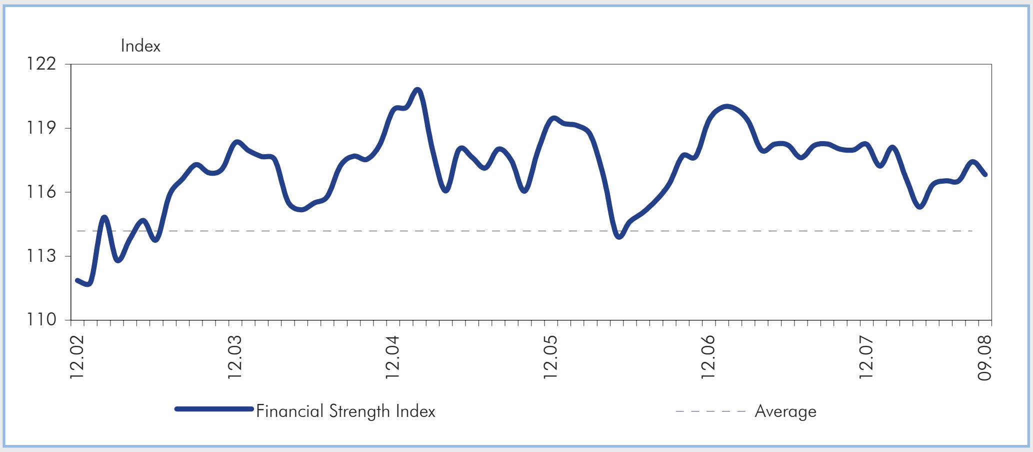
iii. Exchange Rate Risk Index: The Exchange Rate Risk Index, which was 126.5 at end-2007, remained unchanged in September 2008. This index follows a rather stable course due to the declined on-balance sheet open position and limited net general FX position of the banking sector.

iv. Interest Rate Risk Index: The Interest Rate Risk Index, which was 127.8 in December 2007, fell to 123.8 in September 2008. 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, which resulted from the shortened maturity of banks' liabilities, was instrumental in this decline of the interest rate risk index.

v. Profitability Index: The Profitability Index, which was 107.9 at end-2007, declined to 107 in September 2008, due to the decrease in the return on equity and return on assets of the banking sector.

vi. Capital Adequacy Index: The index, which stood at 145.4 at end-2007, fell to 141.4 in September 2008, due to the decline in the capital adequacy ratio and the ratio of free capital to total assets.

Chart III.35.
Financial Strength Index[1] (1999=100)



Source: BRSA-CBRT
(1) The average used is the average of financial strength index between December 1999 and September 2008.

In April 2008, the Financial Strength Index that is monitored as an indicator of the soundness of the banking sector dropped by 2.9 points to 115.3 compared to end-2007 due to the decline in the Liquidity, Capital Adequacy and Interest Rate Risk Indices. The Financial Strength Index, started to go up afterwards and reached 116.8 in September, indicating that the banking sector remains robust (Chart III.35).