The effects of the global financial crisis on the Turkish financial sector

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1. Introduction

In order to understand the recent global financial crisis and to see what impact it will have on the future of the world economy, it is important to study the changing world economic landscape over the last two decades. The global economic landscape will continue to change in the same direction at an even faster rate in the post-crisis era. The forces that have been reshaping the world economy, and which are just gaining momentum, are rapid technological change, mainly due to the information technologies, globalisation and convergence processes, and changing world demographics. There is an asymmetry in the way, the timing, and the magnitude with which both advanced and emerging economies have been affected by these forces. This asymmetry has the potential to become even more pronounced in the future.

The productivity gains provided by the rapid technological change, globalisation and convergence processes were an important factor in the creation of the era of Great Moderation. During that era, countries, one by one, starting with advanced economies, achieved a low, stable level of inflation together with rapid growth performance. It was a perfect environment for central bankers since they had the best of two worlds – low inflation and rapid growth – at the same time. Inflation volatility and output growth significantly shrank for more than two decades up to the current crisis. With the help of rapid productivity gains and the introduction of many new goods to the world economy, central banks had no difficulty in keeping interest rates at historically low levels when global economic activity was booming. In turn, low inflation and real interest rates, combined with high economic growth over a substantial period of time, created strong upward pressure in global asset prices. One of the main implications of the classical growth theory is the so-called convergence process. Capital would flow from the richer to the poorer countries where the marginal product is higher. Initially, poorer countries, having higher marginal productivity, would grow faster than the richer ones until convergence was achieved. However, the instances where this process was observed were so rare that the countries actually achieving this were seen as having achieved a miracle, as Lucas' (1993) seminal work "Making a miracle" suggests. This was the case until the last two decades – successful examples have now become more common.

The financial sector has been one of the sectors that has benefited most from the advances in computer and information technologies. The rapid innovation of new instruments together with the decreasing transaction costs facilitated by these new technologies have significantly changed the risk structure of this sector. As a result, on the one hand, idiosyncratic risks are better diversified but, on the other hand, excessive systemic risks were accumulated and greatly underpriced.

The recent global economic developments led to a rapid contraction in the world economy and financial markets and a deceleration in trade volume. Starting from the last quarter of 2008 in particular, the developments in the global financial markets had a considerable impact on Turkey. The Turkish banking and financial sector has been quite robust: unlike

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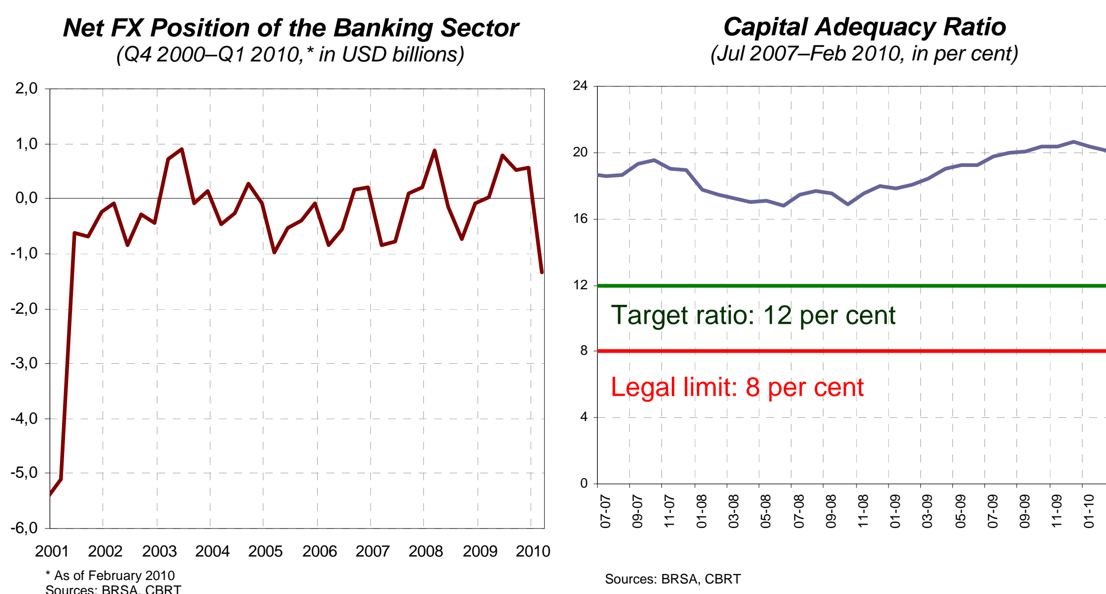
many economies, Turkish financial institutions have not required any capital support. In fact, the average capital adequacy ratio in the Turkish banking sector has risen during the crisis, currently fluctuating at around 20%, well above the target level of 12% and the legally required level of 8%. The profitability of Turkish banks generally increased in 2008 and 2009, and a significant increase in profitability is expected for 2010. Turkey is one of the few countries whose credit rating has improved significantly during the crisis.

The net foreign exchange (FX) position of the banking sector (see Figure 1) has been close to zero, indicating that Turkish banks carry no significant FX risk. The main factor enhancing the Turkish economy's resilience to the crisis has been its sound and stable banking sector structure.

Figure 1:

Banking Sector is Standing Tall

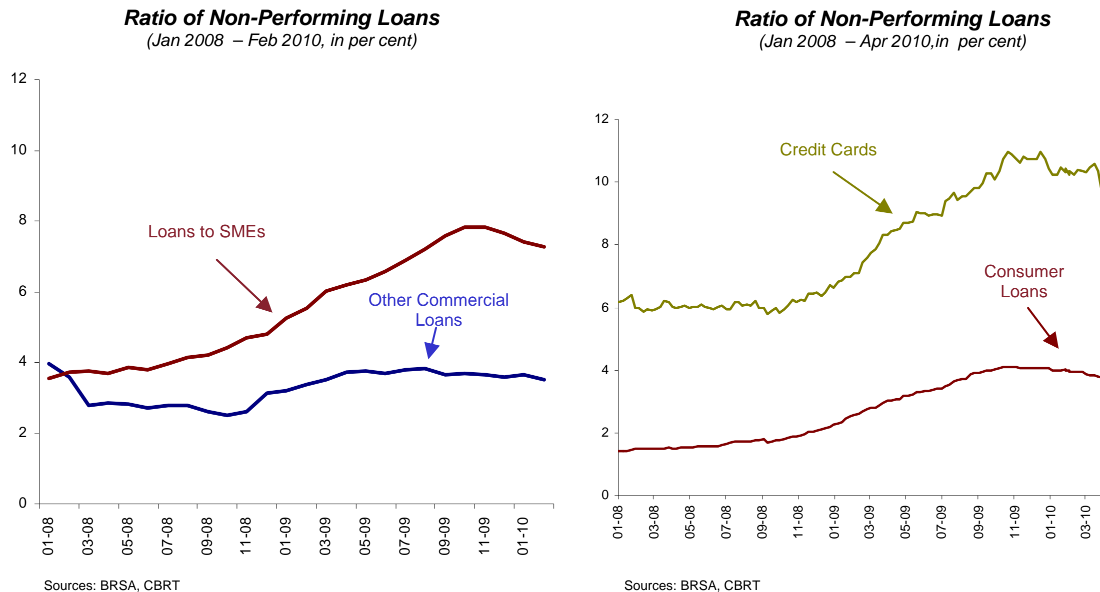


The financial strength index of the banking sector in Turkey, which is computed from sub-indices on a monthly basis by the Central Bank of the Republic of Turkey (CBRT), shows that the sector has remained relatively strong during the crisis.

Although the banking and financial sector has remained relatively robust during the crisis, the real economy has been significantly affected, mostly through the international trade channel. External demand contracted rapidly in the last quarter of 2008 and the first quarter of 2009. The annual volume of exports amounted to USD 136 billion as of September 2008 but dropped to USD 100 billion as of September 2009. Likewise, the annual volume of imports dropped to USD 139 billion from USD 212 billion over the same time frame. In the same period, the current account deficit decreased from USD 48 billion to USD 13 billion. Capital inflows turned from USD 49 billion into an outflow of USD 4 billion. After peaking in the last quarter of 2009, the ratio of non-performing loans (NPLs) has been gradually declining (see Figure 2).

Figure 2

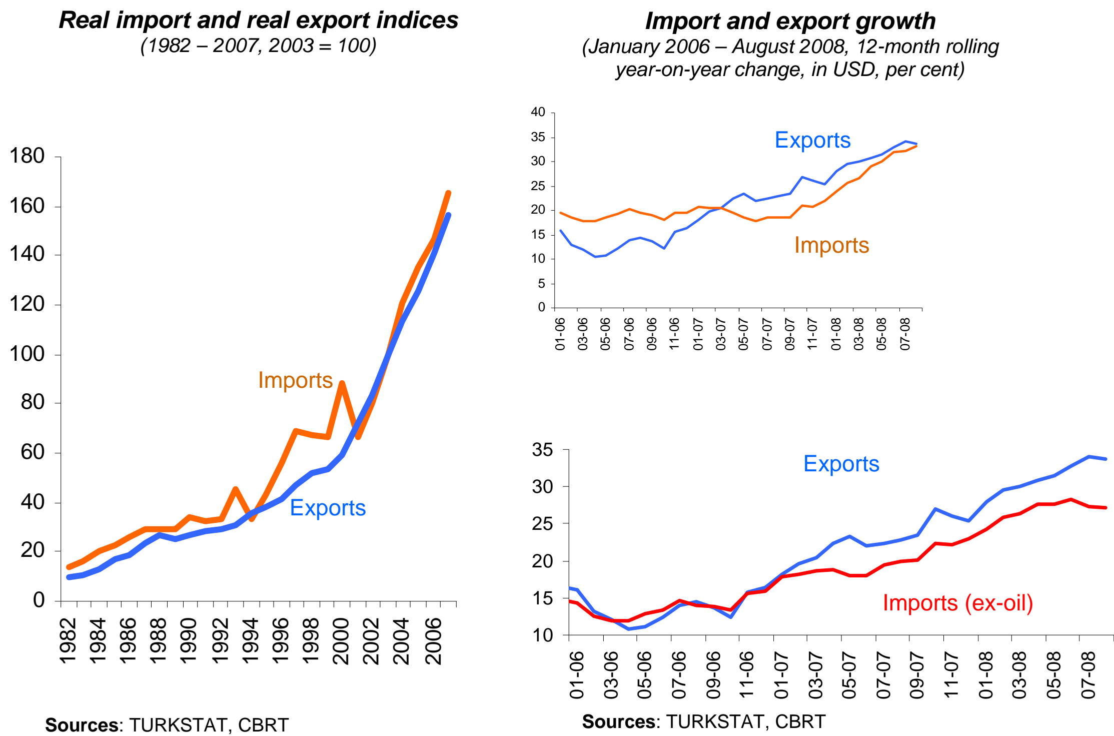
Improvements in loan quality



The following figures show the dramatic growth in the Turkish export sector prior to the crisis. Between 2002 and 2008, the average annual growth rate of Turkish imports and exports was more than 25%. During the same period, Turkish exports and imports measured in US dollars almost tripled. The Turkish economy used to be a more closed economy, but in less than one decade, international trade has become an important factor. The change in the sectoral composition of exports has been even more dramatic. Figure 4 shows that, before 2002, textiles, yarn, and food-related sectors dominated Turkish exports, whereas by 2008, sectors such as automobiles and parts, electrical machinery and appliances, and industrial machinery started to become more important. This reflects the rapid transformation achieved by the Turkish production and export sectors in the last decade. The Turkish production sector rapidly climbed the technology ladder during that period. However, this outstanding success also increased the sensitivity of Turkish exports to business cycles. The sectors that have become more dominant are demand-sensitive sectors such as investment and durable goods. It is estimated that if overall demand falls by 1%, the demand for textiles and food products will fall by around 1–2%, while the demand for durable goods, including automobiles, will fall by around by 4–5%. The Turkish export sector has also become more specialised over time. For instance, Turkey's average export bundle is much closer to the average domestic consumption bundle in 2002 when compared to the average export bundle and domestic consumption bundle in 2008. When external demand for Turkish export products shrinks, the specialisation in the export bundle leads to a sectoral shock as opposed to an overall demand shock in the economy. Studies have shown that sectoral shocks negatively affect resource utilisation in the economy since they require significant resource reallocation between sectors. Therefore, following a sectoral shock, capacity reallocation and unemployment are disproportionately negatively affected. As a result, the unemployment rate in Turkey rapidly increased during the early phase of the global financial crisis: it was 10.3 % in September 2008, but increased to 16.1 % in February 2009. The unemployment rate began to fall, reaching 12.8% in July 2009, partly due to the effect of the tax reductions implemented in certain sectors and partly due to seasonality factors. Compared with the same period in the previous year, the unemployment rate had increased by 2.9 percentage points as of July 2009.

Figure 3

Foreign Trade



Sources: TURKSTAT, CBRT

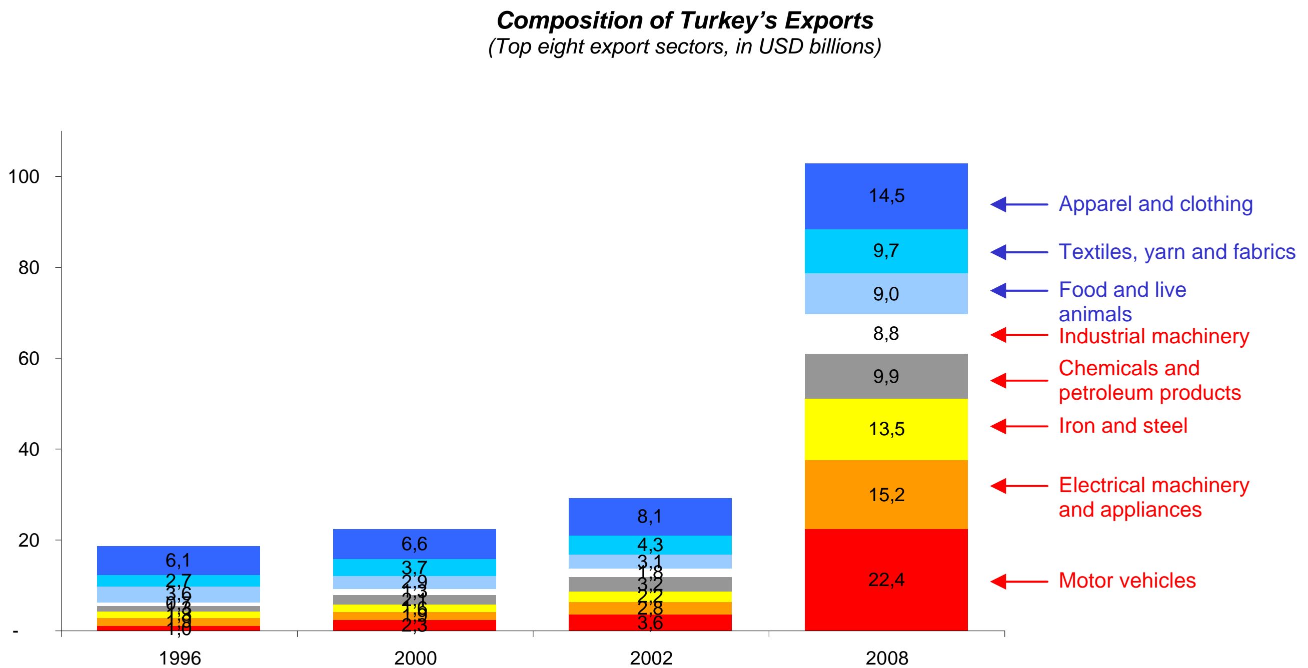
Sources: TURKSTAT, CBRT

Figure 4

Export performance

Composition of Turkey's Exports

(Top eight export sectors, in USD billions)



*** 12-month rolling as of May 2008**
Sources: TURKSTAT, CBRT

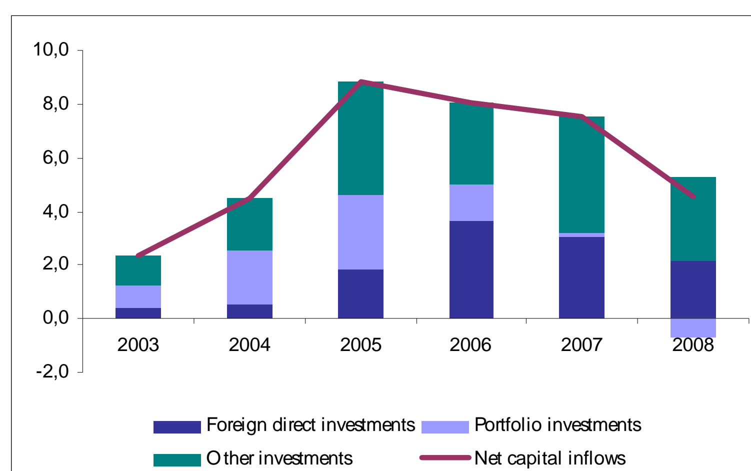
Due to the global economic developments, the external borrowing possibilities for banks and non-bank entities became more limited. Demand for banking services decreased sharply as a result of the contraction in economic activity, and bank intermediation slowed down. This paper examines these two effects in detail. In the second section, cross-border lending to Turkey before and during the crisis is analysed. In the third section, we look at how the crisis led banks operating in the domestic markets to change the key aspects of their business models. Section four examines whether the foreign banks operating locally responded differently during the crisis. Finally, the fifth and sixth sections explain the impact of the financial turmoil on the local money and debt markets and the CBRT's interventions to deal with the crisis.

2. Cross-border lending

Turkey benefited most from the recovery in foreign direct investment and other investments, which mainly covers bank-related inflows after 2002.

Figure 5

Net capital inflows (as a percentage of GDP)



Sources: BRSA, CBRT.

However, net capital outflows started to occur in late 2008 after the onset of the global crisis due to the decline in portfolio investments and other investments. In the second quarter of 2009, although portfolio inflows started to rise, net capital flows were subdued by other investment outflows until the end of the second quarter. The contraction in other investment flows that reflected a decline in external debt rollovers both for banks and for corporates appeared to be reversing gradually in the third quarter.

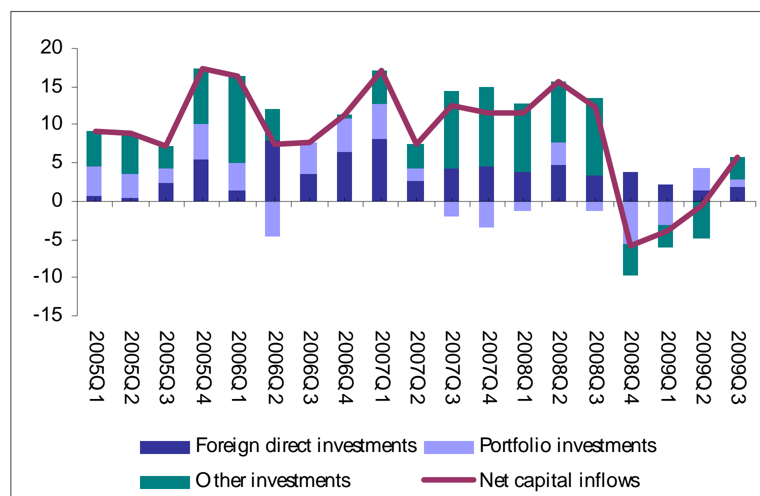
Over the nine-month period to September 2009, net capital inflows were only USD 1.4 billion. During that period, foreign direct investment amounted to USD 5.3 billion and net portfolio investments totalled USD 0.9 billion. On the other hand, outflows in other investments amounted to USD 4.8 billion.

Over the past five years, the external debt of both financial and non-financial entities has risen significantly. The total external debt of private entities to GDP increased by 9.3 percentage points, reaching 25.3% in 2008. The financial sector's external debt accounted for 8.6% of GDP and that of non-financial entities accounted for 16.7% of GDP.

As tensions in the financial markets began to increase, international credit to Turkey, as in other emerging markets, was trimmed, and the outstanding amount of external liabilities started to decline. The total external debt of the private sector dropped to USD 177.0 billion in the second quarter of 2009 from USD 185.9 billion in 2008.

Figure 6

Net capital inflows (in billions of US dollars)



Sources: BRSA, CBRT.

Private sector statistics regarding the international investment position and outstanding loans received from abroad give detailed information about the type of borrowing instruments as well as more timely information regarding the external liabilities of the private sector. According to these statistics:

- Long-term external credit to banks rose to USD 30 billion in 2008 from USD 3.1 billion in 2003. However, a USD 2.4 billion fall in long-term external credit to banks was registered in the first eight months of 2009 and long-term external credit to banks declined to USD 27.6 billion as of August 2009.
- Short-term external credit to banks reached USD 9.5 billion in 2008 from USD 5.3 billion in 2003. It subsequently dropped by USD 3.7 billion, standing at USD 5.8 billion as of August 2009. This implies that interbank deposits, which do not require collateral and are assumed to be more liquid than loans, replaced short-term external credit to banks.
- Cross-border deposits increased to USD 15.3 billion in 2008 from USD 4.4 billion in 2003. They continued to increase in 2009 and rose by USD 3.6 billion in eight months, reaching USD 18.8 billion as of August 2009.
- Thus, total external liabilities, including both loans and deposits, which showed a USD 42 billion increase over the past five years (33.1% average annual growth), dropped by USD 2.5 billion during the first eight months of 2009 (4.8%).
- Regarding non-financial entities, long-term external credit to non-financial entities rose to USD 99.5 billion in 2008 from USD 24.8 billion in 2003. However, a fall of USD 3.7 billion in long-term external credit to non-financial entities was registered in the first eight months of 2009 and long-term external credit to non-financial entities declined to USD 95.8 billion as of August 2009.

Table 1

External debt of the private sector

(in billions of US dollars)	2003	2008	2009Q2
Short-term external debt	18,8	45,4	43,0
Financial entities	8,4	21,9	21,2
Banks	8,4	21,6	20,9
Non-banks	0,0	0,2	0,3
Non-financial entities	10,5	23,5	21,8
Long-term external debt	30,1	140,6	133,9
Private sector	30,1	140,6	133,9
Financial entities	5,3	41,1	37,4
Banks	3,1	30,0	27,8
Non-banks	2,2	11,0	9,6
Non-financial entities	24,8	99,5	96,5
Total external debt of the private sector	48,9	185,9	177,0
Financial entities	13,6	63,0	58,6
Banks	11,5	51,7	48,7
Non-banks	2,2	11,3	9,9
Non-financial entities	35,3	123,0	118,4

- The amount of short-term credit to non-bank entities was small and has not changed substantially over the past few years. It stood at USD 1.7 billion as of August 2009, USD 1.4 billion of which was related to non-financial entities.
- Trade credits rose to USD 22.7 billion in 2008 from USD 9.1 billion in 2003 but fell by USD 1.5 billion in the first eight months of 2008, decreasing to USD 21.2 billion in August 2008.
- Thus, total external liabilities, which includes both loans and trade credits and which showed an increase of USD 88.3 billion over the past five years (28.5% average annual growth), fell by USD 5.2 billion during the first eight months of 2009 (4.3%).
- Long-term external credit to non-bank financial entities rose to USD 9.6 billion in 2008 from USD 2.2 billion in 2003. However, a fall of USD 2.1 billion in long-term external credit to non-bank financial institutions was registered in the first eight months of 2009, and long-term external credit to non-bank financial institutions declined to USD 8.9 billion as of August 2009.
- Looking at the creditor side, foreign banks' long-term credit claims rose to USD 77.2 billion in 2008 from USD 16.4 billion in 2003 and fell to USD 72.3 billion in August 2009.

All in all, before the crisis, both financial and non-financial entities raised their outstanding amount of external liabilities due to the abundant global liquidity. After the crisis, the refinancing of the private sector's total external liabilities became difficult. The private sector started to become a net payer. During that period, banks and non-financial entities were not reluctant to add new loans to their balance sheet because of the low investment needs

related to the contraction in domestic and external demand. Their main concern was only to rollover the existing debt. In addition, banks abroad started to become more conservative and did not want to take on more risk related to the financial difficulties in their home country. As a result, the outstanding amount of the private sector's external liabilities fell. However, it should be underlined that the total decline was not as substantial as expected at the beginning of the crisis.

3. Banking intermediation

Banking intermediation grew mainly due to the sustained credit expansion over the previous five years, during which double-digit real growth rates were observed in the size of banks' balance sheets. The average real growth rate of banks' total assets stood at 13.8% between 2003 and 2008 and the ratio of total assets to GDP grew from 54.9% to 77.1%. During that period, the growth rate of loans was more than double that of total assets, and the ratio of total loans to GDP rose to 38.7% from 14.6%.

The asset structure of the banking sector changed in favour of loan portfolios. While the share of loans in total assets rose to 50.2% in 2008 from 26.5% in 2003, the share of securities declined to 26.5% from 42.8%. Over recent years, the concentration of the banking sector's loan portfolio in segments related to households increased. In addition, while the share of foreign currency denominated loans decreased, the maturity of the loan portfolio lengthened. In 2003, the share of loans to households was 19.4%, the share of foreign currency loans was 45.4% and the share of short-term loans was 55.8% of total outstanding loans. At the end of 2008, the corresponding percentages were 32.1%, 28.7% and 42.9%, respectively. Household loans were in domestic currency. Turning to the structure of the securities portfolio, 97.3% of total securities included national government debt instruments, the share of which has not changed significantly over recent years.

Banks did not rely heavily on market funding in Turkey and continued to fund their balance sheets mainly through customer deposits, which were assumed to be more stable in most circumstances. In 2003, deposits accounted for around 62.2% of total liabilities, with funding from other banks and repo transactions accounting for 14.9%. The corresponding percentages were 62.1% and 18.2%, respectively, in 2008. The increase in borrowings from banks and repo funding was mainly against the share of capital in total assets. The share of capital in total assets dropped to 11.8% in 2008 from 14.9% in 2003. Thus, banks' leverage expanded rapidly from 2003 to 2008, mainly through borrowings from other banks, which covered most of their external liabilities. The outstanding amount of external liabilities increased to USD 55.4 billion in 2008 from only USD 13.2 billion in 2003, indicating an average annual increase of 33.1% in US dollars. During that period, long-term loan borrowings from abroad rose to USD 30.6 billion from USD 3.5 billion, indicating an average annual increase of 53.9% in US dollars. The share of long-term loan borrowings in total external liabilities increased to 63.3% in 2007 from 26.5% in 2003, subsequently declining to 55.2% in 2008. Thus, although the total outstanding amount of external liabilities did not decline in 2008, the structure of the amount started to change in favour of short-term loans and deposits.

The maturity of deposits in banks was very short. The amount of deposits that were due in three months constituted 91.2% of total outstanding deposits in 2008. The longer-term loan borrowings from abroad contributed to extending the maturity of loans granted during that time. The magnitude of loans did not surpass that of deposits in most banks, which decreased the funding liquidity risk. However, the loan to deposit ratio rose significantly to 81.6% in 2008 from 48.2% in 2003.

Banks' asset quality improved and has remained strong over the past few years. Non-performing or doubtful assets, while increasing, tended to drop as a share of total loans

mostly due to the strong growth of the loan portfolios. The share of NPLs in total loans decreased to 3.7% in 2008 from 11.5% in 2003. Measures of capital adequacy for the banking sector showed an overall decline in recent years. The decline in the overall solvency ratio was mainly due to the expansion in lending activities. The solvency ratio decreased to 18.0% in 2008 from 30.9% in 2003.

Over the past few years, another important observation was related to the de-dollarisation of banks' balance sheets. The share of foreign currency assets in total assets declined to 34.0% in 2008 from 44.6% in 2003. Turning to the liability side, the share of foreign currency liabilities in total liabilities declined to 34.7% from 44.7%. During that period, when the global financial developments began to affect the banking system, banks' currency risk remained very limited.

As the stress in the financial markets unfolded, the growth of total assets decelerated in comparison with previous years. The rate of growth in real terms during the first nine months of 2009 was only 6.7%. Two significant developments took place that affected the total assets of credit institutions: a drop in the outstanding amount of loans and an increase in the financing of government borrowing needs. In the fourth quarter of 2008, banks' aggregate loan portfolio started to decrease. As the intensity of the crisis became evident, banks were becoming increasingly risk-averse and tightened their lending conditions. In addition to supply constraints, the demand for loans also decreased as a result of weakening external and domestic demand and rising unemployment. As a result, loans granted to firms and households were curtailed. As of September 2009, loans increased by only 0.1% in real terms, compared to the previous year-end. Rising demand for funds from the government also lead to the slowdown in bank lending activity. While loans were declining, the growth rate of securities investments, which consisted mainly of government debt instruments, rose by 21.8% in real terms from December 2008 to September 2009. Consequently, while the share of loans in total assets dropped to 47.1% in September 2009 from 50.2% in December 2008, the share of securities in total assets rose to 30.2% from 26.5%. Regarding the distribution of the loan portfolio, the share of loans to households in total loans increased to 33.1% in August 2009 from 32.1% in the previous year-end. This was due to the fact that loan growth remained on a downward path in the case of non-financial corporations, while in the case of households, the earlier downward movement in loan growth levelled off in recent months. Turning to the maturity and currency structure of the loan portfolio, the share of short-term loans in total loans decreased slightly (42.7%) and foreign currency loans continued to decline (26.6%).

During the crisis, borrowings from other banks, which consisted mainly of external liabilities, seized up and the growth rate of deposits slowed down, leading to a sharp decline in leverage. As of September 2009, the share of deposits in total liabilities decreased slightly to 61.2% from 62.1% at the end of 2008 and the share of funding from other banks dropped to 10.7% from 12.7%. The outstanding amount of external liabilities decreased to USD 53.0 billion in August 2009 from USD 55.4 billion in 2008 and the share of long-term loan borrowings in external liabilities continued to decline and stood at 53.6% as of August 2009. Total syndication and securitisation loans decreased by USD 3.7 billion in the first nine months of 2009, amounting to USD 20.0 billion by the end of September 2009. Banks partly offset the decline in borrowings from other banks by increasing the funding from repo markets. The share of repo funding in the balance sheet rose slightly to 6.9% in September 2009. As a result, the capital to asset ratio increased to 13.2% from 11.0%.

Due to the decline in lending to households and non-financial corporations, the loan to deposit ratio, a measure of funding liquidity risk, decreased to 81.2% in September 2009 from 83.9% in 2008. The average credit quality of borrowers deteriorated as a result of the general economic slowdown. As of September 2009, NPLs increased rapidly, with their share in the loan portfolio moving up from 3.7% to 5.3%. The deterioration was mainly in the segments of loans to households and loans to small- and medium-sized enterprises.

Regarding the dollarisation of the balance sheet, the share of foreign currency funding and foreign currency assets in the balance sheet continued to decline (32.9% and 31.4%).

As of September 2009, the capital adequacy of banks improved compared with the previous year-end. The overall solvency ratio of banks amounted to 20.1%, mainly on account of the high profits gained during the first nine months of 2009 and the decrease in risk-weighted assets. Over the past five years, the average return on equity (ROE) and return on assets (ROA) were 2.1% and 15.8%, respectively. As of September 2009, despite the high impairment charges due to the rise in problem loans, the annualised figures for ROE and ROA rose to 2.6% and 20.4%, mainly due to the increase in net interest margins and gains from trading activities. The decrease in interest rates led to a rise in net interest margins due to the maturity mismatch in the balance sheet. The sharp decline in interest rates also contributed to the valuation gains for treasury securities.

All in all, the global crisis also affected the banking sector in Turkey. Demand for banking services decreased sharply as a result of the contraction in economic activity. Banks were rather conservative in their lending due to the increased risks and the slowdown in loan demand as well as the rising demand for funds from the government. Credit risks also increased as the ratio of NPLs to total loans rose. Due to the global economic developments, the external borrowing possibilities for banks became more limited. However, the global crisis affected the Turkish banking sector to a relatively limited extent in comparison with many other countries because of its high capital adequacy ratio and low leverage and currency risks. Despite the high loan growth rates over the past few years, customer deposits still remained the main funding source, and the amount of deposits were higher than the amount of outstanding loans. The share of foreign currency loans, which could have caused an indirect credit risk during the crisis, was also limited, especially for households. Nevertheless, the interest risk was higher due to a maturity mismatch caused by long-term assets against short-term liabilities. The rapidly falling interest rates had a positive effect on interest margins and profitability. Finally, it should be underlined that there were no bank failures or public support programmes for the Turkish banking sector during the crisis. Although some key aspects of banking sector operations in Turkey changed, the banking sector remained resilient during the crisis.

Table 2

Financial situation of banks before and during the crisis

	Before the crisis	**During the crisis**
Loan growth	Increase	Decrease
Share of loans to households	Increase	Increase
Share of foreign currency loans	Decrease	Decrease
Share of short term loans	Decrease	Decrease
Investment in government debt securities	Decrease	Increase
Loan to deposit ratio	Increase	Decrease
Non-performing loan ratio	Decrease	Increase
Share of customer deposit funding	No change	No change
Share of external liabilities due to banks	Increase	Decrease
Leverage	Increase	Decrease
Capital adequacy ratio	Decrease	Increase
Dollarisation	Decrease	Decrease

4. Domestically owned versus foreign-owned banks

Foreign banks expanded their presence in Turkey quite significantly during the last five years. However, the market share of foreign-owned banks in total assets, loans and deposits was only 17.0%, 20.2% and 15.5%, respectively, as of September 2009. The proportion of foreign banks in the Turkish banking sector was not very large in comparison with many other emerging countries.

The proportion of customer loans in total assets for foreign banks remained above that of domestic banks while the share of securities was below. Loans to households accounted for a higher share for foreign banks and the share of loans to small- and medium-sized enterprises was close to that of private domestic banks. Looking at the liabilities side, customer deposits were the most important funding source for foreign banks. Liabilities due to banks represented a substantial part of funding sources in comparison with domestic banks. However, funds raised from repo markets were not as important for foreign banks.

Table 3

Ratio analysis – domestic versus foreign banks

	2008/12			2009/9		
	Public	**Private**	**Foreign**	**Public**	**Private**	**Foreign**
Asset structure (% of total assets)						
Loans	41,3	52,2	59,6	40,4	47,5	59,1
Securities	38,2	24,0	13,1	40,6	28,5	15,3
Liability structure (% of total assets)						
Deposits	69,9	59,3	56,5	67,2	58,4	58,6
Due to banks	5,7	14,6	19,1	5,2	12,5	15,8
Repo	5,0	7,2	1,5	7,7	8,1	1,5
Currency structure (%)						
Foreign currency assets to total assets	23,0	37,0	23,0	21,6	32,8	21,6
Foreign currency loans to total loans	21,5	35,9	18,1	21,6	33,7	15,3
Foreign currency liabilities to total liabilities	23,6	39,0	42,4	21,8	37,0	38,7
Foreign currency deposits to total deposits	25,2	40,3	41,6	24,3	41,2	40,3
Leverage (%)						
Capital to assets	12,1	11,3	12,9	12,7	13,1	14,6
Liquidity (%)						
Loan to deposit ratio	61,4	91,3	110,0	62,8	85,9	108,1
Asset quality (%)						
Non-performing loans to total loans	3,7	3,5	4,1	4,3	5,4	6,7
Loans to households to total loans	29,7	30,9	38,3	30,6	32,0	39,0
Loans to SMEs to total loans	18,6	25,3	23,2	17,3	23,5	23,8
Profitability (%)						
Return on equity	17,6	15,8	11,3	23,1	20,2	16,2
Return on assets	2,1	1,8	1,5	2,9	2,6	2,3
Capital adequacy (%)						
Overall solvency ratio	22,9	16,4	16,9	23,9	18,9	18,5

With regard to the currency structure of foreign banks' assets and liabilities, the share of foreign currency balance sheet liability items tended to be highest among foreign banks. Borrowing in foreign currency was more typical for foreign banks. On the other hand, the share of foreign currency assets in total assets and the proportion of foreign currency denominated loans as a percentage of total loans were not substantial in foreign banks. The loan to customer deposit ratio was higher than 100%, unlike the other banking groups, which made them more vulnerable to funding liquidity risks. Looking at the differences in profitability performance across banking groups, foreign banks did not outperform domestic banks. For foreign banks as a whole, the ratio of NPLs and other doubtful loans as a percentage of total loans was high compared to domestic banks.

As regards banks' capital structure and solvency measures, for foreign banks as a whole, the overall solvency ratio remained close to that of private domestic banks and the leverage was lower than for all domestic banks.

One of the potential concerns related to foreign ownership is that foreign banks may react differently from domestic banks to adverse changes in business cycle conditions – either at home or in a host country – or in the case of a host country banking crisis. There may be various explanations for such destabilising behaviour. Parent banks may reallocate their capital across regions or countries on the basis of expected risks and returns. Differences in business cycle conditions may cause activities of subsidiaries in low-growth countries to be scaled down substantially in favour of other countries. Similarly, deteriorating economic conditions in the home country may force parent banks to downsize their operations abroad. On the other hand, parent banks may provide financial support for their subsidiaries during crisis times in host countries, thereby ensuring a smoothing effect on their subsidiaries' credit supply.

The potentially destabilising behaviour did not hold for Turkey during the crisis. As of September 2009, the real growth rates of loans had declined to 0.3% compared with the previous year-end for foreign-owned banks. In the meantime, private domestic banks' loan portfolio amount shrank by 4.6% in real terms. Therefore, both private and foreign-owned banks decelerated their loan growth during the crisis, but the deceleration was higher for private domestic banks. However, public ownership in Turkey had a stabilising effect on credit supply. The real growth rate of public banks' loan portfolios increased by 10.1% in nine months. Looking at the liability side, there was no evidence that foreign banks were more successful in refinancing their liabilities to other banks than domestic banks. Foreign banks tried to replace borrowings from banks with retail deposits. The leverage and loan to deposit ratios decreased for foreign banks as a whole, similarly to private domestic banks. Though the credit quality deteriorated across all banking groups, the NPL ratio for foreign banks increased more than for domestic banks during the crisis.

5. Local money and debt markets

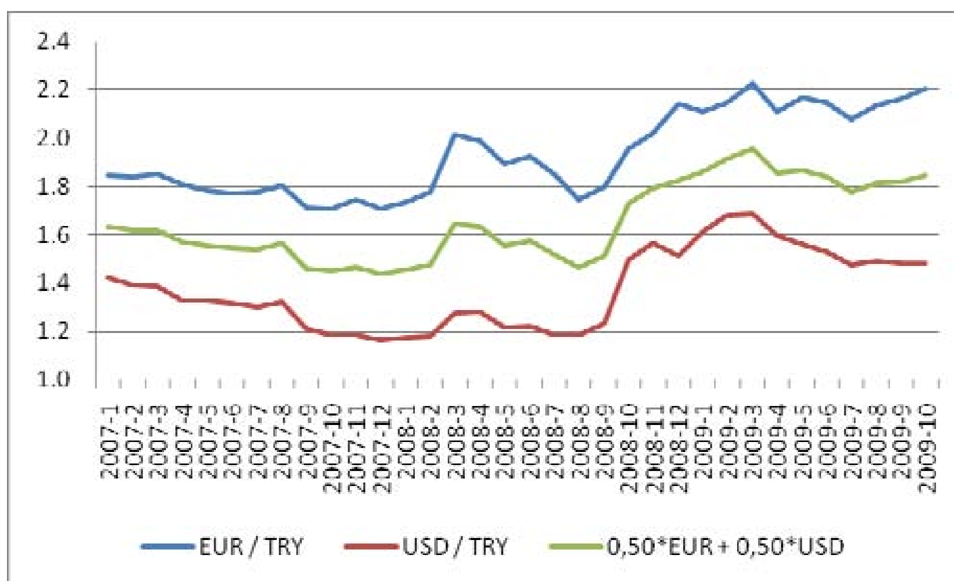
The floating exchange rate regime, implemented as a precondition for the inflation targeting regime since 2001, has made a significant contribution to the stability of the Turkish economy. Under the floating exchange rate regime, the exchange rate is neither a target nor a policy tool and is determined by the supply and demand conditions in the market. Nonetheless, by closely monitoring exchange rate developments, the CBRT can directly intervene in the markets in case of speculative transactions leading to unhealthy price formation and excess volatility in the FX market due to a decrease in depth. However, the CBRT has not directly intervened in the FX market since the selling intervention in June 2006. The Turkish lira depreciated 27.5% against the euro and 42.8% against the US dollar during the period between August 2008 and March 2009. The financial markets started to recover in the second quarter of 2009 and the Turkish lira appreciated against the major

foreign currencies. Between March and October 2009, the appreciation was 12.2% against the euro and 5.8% against the US dollar.

Although there is no exchange rate level to be maintained in a floating exchange rate regime, holding a strong FX reserve position is very important for emerging economies like Turkey to eliminate the unfavourable effects of potential internal and external shocks and to boost investors' confidence in the country. Therefore, the CBRT holds FX buying auctions to build up reserves at times when the FX supply increases relative to the FX demand. The CBRT has been buying FX via transparent FX buying auctions with preannounced terms and conditions. However, with the aim of maintaining liquidity in the system, which was being permanently withdrawn from the FX market through the auctions, the FX buying auctions were suspended as of October 2008. Meanwhile, as unhealthy price formations were witnessed due to a decrease in the depth of the FX market, the CBRT started to inject FX liquidity into the market through FX selling auctions as of October 2008. However, after they were held on two working days, the FX selling auctions were suspended as a result of the easing concerns pertaining to the depth of the market. The CBRT resumed FX selling auctions from March to April 2009. In the beginning of August 2009, it was observed that, as a result of the positive expectations related to the global economy, the liquidity and risk appetite had regained strength, capital flows to Turkey had increased (as in other emerging markets), and the FX market had become relatively stable. Having determined that this process had contributed to a suitable environment in which the CBRT could build up FX reserves, the FX buying auctions were resumed as of August 2009.

Figure 7

Exchange rates



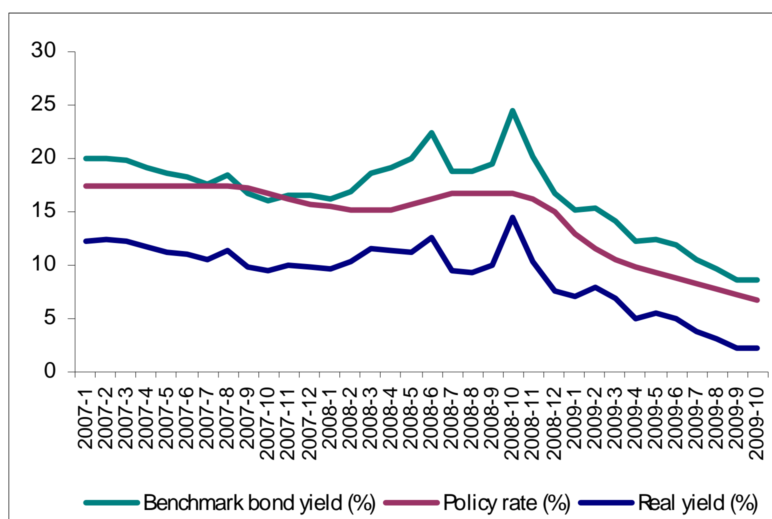
Sources: BRSA, CBRT.

Due to negative perceptions about the global financial crisis and its effects on the Turkish financial system, the benchmark government bond yield rose to 24.42% in October 2008 from 16.26% in early 2008 and 18.83% in August 2008. During that time, the CBRT raised the policy rate by 125 basis points to 16.75%. Starting from November, the CBRT began easing its monetary policy in an attempt to support the Turkish financial market and economy in addressing the spillovers from the global financial crisis. The policy rate fell by 1,000 basis points and stood at 6.75% as of October 2009. The 1,000 basis point fall was reflected in the government bond yields, which dropped to 8.70% in October 2009. Thus, in the early stages of the global crisis, interest rates first rose substantially and then started to decline as a result

of the CBRT's rate cuts and the low inflation expectations engendered by the weak external and domestic demand. Banks increasingly invested in government debt securities in order to minimise the risks associated with extending credit to the private sector, leading to the reduced interest rates during this period.

Figure 8

Interest rates



Sources: BRSA, CBRT.

Finally, it should be added that the CBRT started repo auctions after May 2008 due to the unbalanced distribution of liquidity in the Turkish financial system. These auctions were intended to provide an efficient and stable functioning of the money markets by preventing excessive volatility in the short term. The interest rates materialised in the repo markets were close to the policy rates.

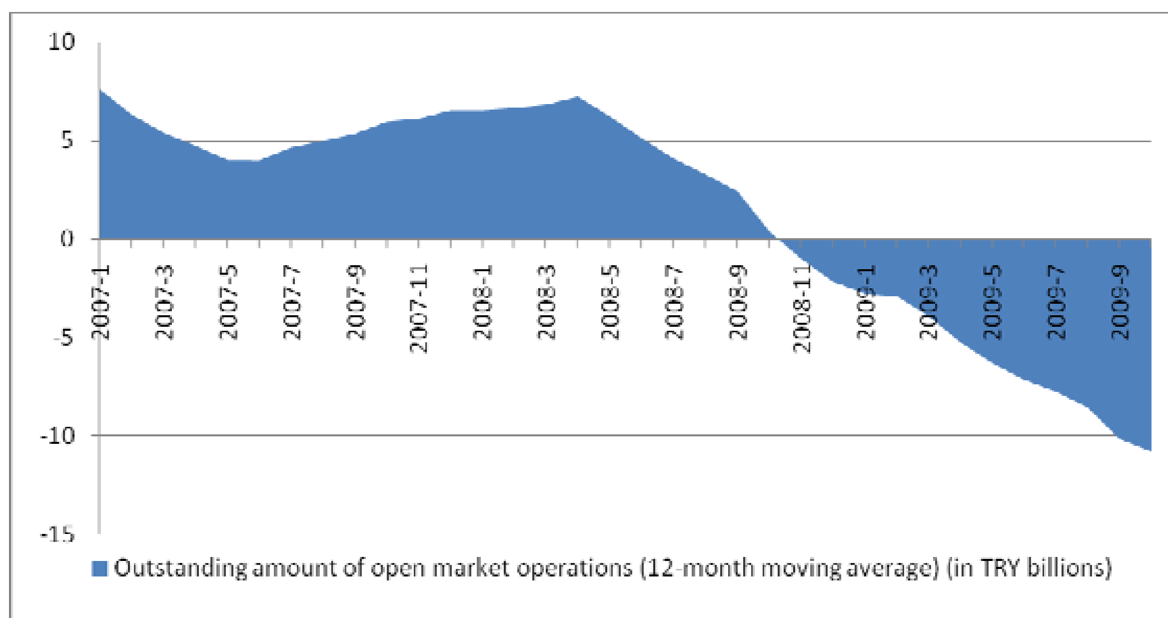
6. Central bank instruments to deal with the crisis

The authorities and organisations adopted a series of measures to ease the negative effects of the global financial crisis on Turkey.

- The CBRT cut its interest rates and extended the maturity in the FX deposit market in order to prevent a possible FX squeeze in the financial market. Accordingly, the lending rate was reduced to 5.5% from 7.0% for USD and to 6.5% from 9.0% for EUR. The maturity of interbank transactions was extended to three months from one month.
- The CBRT resumed its activities as an intermediary in the FX deposit market until the removal of uncertainties in the international markets.
- The CBRT raised its transaction limits twofold to USD 10.8 billion and extended the lending maturity to one month from one week in the FX deposit market.
- It also adopted a strategy to use FX reserves to primarily support the FX liquidity needs of the banking system.
- The reserve requirement ratio was lowered to 5% from 6% in TRY liabilities, and to 9% from 11% in FX liabilities. With this measure, the CBRT provided additional liquidity of TRY 3.3 billon and USD 2.5 billion to the banking system.

Figure 9

Open market operations



Sources: BRSA, CBRT.

- It increased the export rediscount credit limit by USD 500 million to USD 1 billion in order to contain the effects of the global crisis on various industry sectors. Additionally, the rules and principles applicable to the export rediscount loan limit were rearranged in order to facilitate the use of these loans. Therefore, the condition setting forth the assignment of the reserves for letters of credit to the CBRT was repealed.
- The Central Bank Regulation on the Liquidity Support Facility governing the principles and procedures for the utilisation of credit facilities as stipulated in subparagraph (c) of paragraph (I) of Article 40 of the Central Bank Law was published. Accordingly, the loans will be available:
    - As advance payments, with one-month maturities for a maximum one-year period;
    - At the lending rate set for the intraday transactions carried out at the Interbank Money Market; bearing in mind the principle that interest rates applicable to credits of this nature are higher than those applicable to normal central bank open market transactions;
    - Against collateral accepted in the interbank money market;
    - Being limited to an amount equal to twice the size of the equity capital of the applying bank.

7. Banking regulation in Turkey

In this section we will discuss the macroprudential policy framework in Turkey. Following the establishment of a separate supervisory and regulatory agency (the Banking Regulation and Supervision Agency (BRSA)) for banks in September of 2000, the Law on the Central Bank of the Republic of Turkey was amended to state that the CBRT's main goal is "achieving and

maintaining price stability". To facilitate this objective, under the terms of its Law, the CBRT has also been assigned with the mandate of taking necessary measures to "safeguard financial stability". Thus, pre-emptively identifying and minimising any major risk that may endanger financial stability is one of the CBRT's main objectives. Additionally, the CBRT's vital function as a lender of last resort and its role in the management and supervision of payment systems can also be considered significant reasons to effectively focus on macroprudential surveillance. In the same context, with its macro perspective and ability to analyse the effects that macroeconomic developments have on the financial sector, the CBRT is in a better position to detect imbalances or cycles in the system that might cause excessive risk-taking by some market participants and which might eventually lead to a system-wide failure. In this respect, in its financial stability report published twice a year, the CBRT shares its views and concerns with the public on issues that might adversely affect market conditions and endanger financial stability.

The CBRT and other relevant authorities work in close cooperation on issues related to financial stability. In that regard, according to Article 99 of the Banking Law, the Financial Sector Commission, which consists of representatives of the BRSA, the Ministry of Finance, the Undersecretariat of the Treasury, the CBRT, the Capital Markets Board (CMB), the Savings Deposits Insurance Fund (SDIF), the Competition Board, the Undersecretariat of the State Planning Organisation, the Istanbul Gold Exchange, the securities stock exchanges, the futures and options markets and the associations of institutions under the body of the BRSA, ensures the exchange of information, cooperation and coordination among institutions, proposes joint policies and expresses views regarding matters that relate to the future of the financial sector, with a view to establishing and ensuring confidence and stability as well as development in the financial markets. In Turkey, non-monetary measures that are prudential in nature consist of discretionary variations of regulatory requirements by the authorities. Such variations were not specifically designed to tackle the recent crisis, but they were already in place. And we believe that such variations, which are intended to avoid the origination of systemic risk and any further deterioration in financial conditions, are significant macroprudential instruments.

The measures in place in the Turkish financial regulatory system include the Regulation on Measurement and Evaluation of Capital Adequacy of Banks, published on 1 November 2006, which sets the minimum standard capital adequacy ratio at 8% and the minimum Tier 1 capital ratio at 4% for banks operating in Turkey. Additionally, since November 2006, the BRSA requires banks to hold a target ratio of 12%, which is stipulated as a prerequisite to opening a new branch. This policy might be considered a variation of a capital buffer by recognising that more capital is required in good times if a bank tends to exploit favourable market conditions by opening new branches. On the other hand, during periods of unfavourable economic conditions, this prerequisite becomes a slack condition since banks will have less incentive to open a new branch.

Another more macro-based approach is to adjust the risk weights assigned to assets in order to control credit. To this end, to control the credit supply for credit cards, the risk weights for credit card limit commitments were increased from 50% to 100%, which pushed down the capital adequacy ratio, thereby encouraging banks to decrease the limits they assigned to credit cards. Additionally, in order to curb the risk arising from instalments of credit card receivables, the risk weights for receivables with a remaining maturity of six–12 months and of more than 12 months, which used to be 100%, were increased to 150% and 200%, respectively, leading to an increase in the required capital. Thus, these amendments to the risk weights can be considered an indirect limitation on the instalments of credit card expenditures.

According to the Bank Cards and Credit Cards Law, which became effective on 1 March 2006, the total credit card limit determined for all cards of a customer should not be greater than two times his or her average net total monthly income for the first year and four times for the second year. The customer should supply the necessary documents, which are

confirmed by related institutions, as evidence of his or her monthly income. Otherwise, the total limit for all the customer's cards is set at TRY 1,000. Such controls on credit card limits are intended to curb systemic risk by forestalling households' exposure to excessive risk.

The loan to value ratio applicable for mortgage loans is another effective macroprudential tool. Based on the Law Amending the Laws Related to the Housing Finance System, dated 6 March 2007, the loan to value ratio is set at 75% for receivables secured by authorised residential property and 50% for receivables secured by other authorised real estate. As an additional measure, in 2008 and 2009 the BRSA temporarily made the distribution of banks' profits subject to permission in order to contribute to the strengthening of banks' capital structure. This may also be considered a tool for increasing banks' resilience to vulnerabilities. In fact, 20% of the profit for 2008 was distributed, whereas this rate decreased to 15% for 2009, when the Turkish banking sector enjoyed significant profits.

Loan loss provisioning is another tool to ensure that banks build up buffers against their loans. Although the current provisioning system in Turkey is not "dynamic" in nature, by changing the required provisioning rates it is possible to control the cyclicality of the loan supply. Three liquidity ratios that are used to measure and assess the liquidity adequacy of banks can also be considered among the macroprudential instruments implemented by the CBRT. These ratios were put into effect in 2007 and, therefore, Turkish banks have been operating within the framework of liquidity regulations, which the Basel Committee is currently trying to implement at an international level; these ratios had a strong positive effect on the resilience of Turkish banks when facing the global financial stress.

Reserve requirements are a monetary policy instrument that can also be used for macroprudential policy purposes. They are used to manage liquidity in the market and control credit expansion in order to prevent asset price bubbles. The reserve requirement ratio may be increased or decreased if there is a surplus or shortage of funds, or a permanent liquidity surplus or shortage in the market. Thus, it is one of the countercyclical measures that can be implemented by the central bank. Reserve requirements are used in a discretionary way, when necessary, taking account of the liquidity and credit supply conditions in the market. As an example, in order to support the upward trend in credit growth by way of reducing intermediation costs and injecting permanent liquidity into the market, in addition to the measures already implemented by the CBRT, the Turkish lira (TRY) required reserve ratio, which stood at 6%, was reduced by 1 percentage point to 5% in October 2009. Changes in policy interest rates, even though they are made for monetary policy purposes, may also be regarded as macroprudential tools, since they can affect the credit channels.

As a tool to discourage excessive risk-taking, a risk-based deposit insurance premium tariff model, which obliges credit institutions to pay risk premia in line with the risks they pose to the banking system, was designed by the SDIF and put into effect as of January 2009 by an amendment on the Regulation on Deposits and Participation Funds Subject to Insurance and Premia to be collected by the SDIF. One of the macroprudential instruments that may be used to affect credit expansion and capital inflows into Turkey is the Resource Utilisation Support Fund (RUSF), which can be seen as a tax-like charge on loans. RUSF may be used: (i) to lessen (or expand) the loan demand by increasing (or decreasing) the cost of loans via RUSF rate changes; or (ii) to restrict capital inflows by increasing the RUSF rate on loans received from abroad.

As a measure to limit currency mismatch and ensure that banks maintain their FX positions in line with their own funds, according to the Regulation on the Calculation and Implementation of the Foreign Currency Net General Position, the absolute value of the weekly simple average of the ratio of the foreign currency net general position to the bank's own funds cannot exceed 20%.

In addition to the Bank Loans Tendency Survey, published every three months, the recently initiated project on a survey to monitor price movements in the real estate sector can be used

to detect the cyclicality in this sector within the framework of the CBRT's macroprudential surveillance. There is also a Business Tendency Survey (BTS) and Real Sector Confidence Index, as well as a Consumer Tendency Survey and Consumer Confidence Index, both of which are published every month. The CBRT and BRSA regularly perform macro stress tests in order to assess the resilience of the banking sector to several shocks and publish the results in their reports as a tool for communicating macroprudential risk assessments. Additionally, the CBRT has an extensive risk centre database, which provides feedback to banks about their customers' default history.

Finally, with a recent amendment dated June 2009 to Decree no 32 on the Protection of the Value of Turkish Currency, in order to avoid FX risk, households are prohibited from using foreign currency or foreign currency indexed loans. All the above-mentioned instruments are intended to avoid failures that might adversely affect the entire financial system. They are general and are applied to all institutions with no distinctions between size or systemic importance.

8. Concluding remarks

The recent global developments led to a rapid contraction in the world economy and financial markets and a deceleration in trade volume. The global crisis affected the Turkish economy mainly through four channels, the first of which was the trade channel – exports declined substantially. The second was the expectations channel. With the financial turmoil, households' expectations worsened, thereby reducing their consumption. The third was the foreign capital flows channel – cross-border lending abated during the crisis period. The last one was the credit channel, as banks trimmed their lending during the crisis, the result of which was a sharp fall in economic activity and a rise in unemployment.

As a result of the global financial developments, the external borrowing possibilities for banks and non-bank entities became more limited. The outstanding amount of the private sector's external liabilities declined. However, it should be underlined that the total decline was not as substantial as expected at the beginning of the crisis. The contraction in other investment flows, which reflected a decline in external debt rollovers both for banks and for corporates, appeared to be reversing gradually in the third quarter.

As the intensity of the crisis became evident, banks became increasingly risk-averse and tightened their lending conditions. In addition to supply constraints, the demand for loans also decreased as a result of weakening external and domestic demand and rising unemployment. As a result, loans granted to firms and households were curtailed. Loan growth remained on a downward path in the case of non-financial corporations, while in the case of households, the earlier downward movement in loan growth has levelled off in recent months.

Banks did not rely heavily on market funding in Turkey and continued to fund their balance sheet mainly through customer deposits, which were assumed to be more stable in most circumstances. In addition, the share of foreign currency loans, which might have caused an indirect credit risk during the crisis, was also limited, especially for households. During the crisis, borrowings from other banks, which consisted mainly of external liabilities, seized up and the growth rate of deposits slowed down, leading to a sharp decline in leverage.

The number of foreign banks in the Turkish banking sector was relatively small in comparison with many other emerging economies. Loan growth in both private and foreign-owned banks decelerated during the crisis. However, public ownership in Turkey had a stabilising effect on credit supply. Looking at the liability side, there was no evidence that foreign banks were more successful in refinancing their liabilities to other banks than domestic banks.

Finally, although the recovery in the real economy was gradual, the financial markets started to recover in the second quarter of 2009. As of November, the CBRT began easing its monetary policy in an attempt to support the Turkish financial market and economy in addressing the spillovers from the global financial crisis. The interest rates declined in line with the policy rates during this period. The CBRT took various measures to eliminate the adverse effects of the problems in the global financial markets on the stability of the domestic financial system and to ensure the orderly functioning of the FX and credit markets.