3 STABILITY OF THE BANKING SYSTEM

3.1 Overview

Resilience of the banking sector underwent a testing phase during CY07 when the benign macroeconomic environment of the previous four years started to show considerable signs of strain. The current macroeconomic environment is characterized by a decline in GDP growth, growing macroeconomic imbalances, relentless upsurge in inflation, depreciating domestic currency, and monetary tightening by the central bank. These domestic developments were accompanied with a deteriorating financial and business environment at the global level due to: (a) the financial markets turmoil, with a contagion effect of the US subprime mortgage crisis which emerged in mid-2007; (b) sharp increase in commodity prices, especially of oil and food during CY07 and early months of CY08; (3) and an impending slowdown in global economic growth. In terms of the monetary policy response to this difficult environment, the conventional trade-off between inflation and growth is clearly visible. While the domestic economic environment has a direct impact on the performance and stability of the banking sector, the impact of international developments is largely transmitted through indirect channels.[1]

Despite the challenging domestic and international economic environment, the banking sector in Pakistan has shown strong resilience to early headwinds on the back of a robust capital base and healthy profitability. Heavy provisioning on account of incremental NPLs during CY07 and H1-CY08, withdrawal of the benefit of the Forced Sale value (FSV) of collateral against non-performing loans during CY07,[2] and write-offs amounting to Rs 60.1 billion during the year, were all absorbed by the banking system without showing any sign of instability. Key performance indicators present a healthy picture of the sector during CY07. The bottom line continued to remain in a comfortable zone, with after tax return on assets (ROA) of 1.5 percent for the year: a more sustainable level of profitability compared with the peak level of 2.1 percent in CY06. The overall net profit of the banking sector for CY07 was Rs 73.3 billion. This was shared across a large number of banks, as 23 out of 39 banks, with a cumulative asset share of 87.2 percent, have their respective ROA at more than 1.0 percent at end CY07.

In addition to healthy profitability, progressive increase in the minimum capital requirements continued to be a major source of the strengthened capital base. Capital to risk weighted asset ratio (CAR) saw a rise of 50 bps to reach 13.2 percent by end CY07: well above the minimum requirement of 8.0 percent under the prudential regulations.[3] Distribution of CAR across the banks shows that 30 out of 39 banks, with cumulative asset share of 73.8 percent, have their respective CAR at more than 10.0 percent at end CY07. The core capital to risk weighted asset (RWA) ratio of 10.5 percent provides further comfort about the risk-bearing capacity of the banking sector. The apparent risk to the capital base has also eased off to a large extent as the net NPLs to capital ratio has dipped to an all time low level of 5.6 percent by end CY07, against 9.7 percent in CY06.

The positive changes in the risk absorption capacity of the banking system are accompanied with noticeable changes in some risk factors which require close vigilance. On the credit risk front, despite slower growth of 10.8 percent in the loans and advances of the banking sector (lowest in

[1] For a detailed discussion, please see Chapter 1 "Global Economic and Financial Developments: Financial Stability Implications for Pakistan", in this edition of the Financial Stability Review.

[2] BSD Circular No. 7, dated October 12, 2007. Benefit of FSV is still applicable for NPLs of housing finance for the first two years from the date of classification.

[3] Minimum requirement on CAR has now been increased to 10.0 percent, and banks and DFIs have been advised to meet this requirement by 31st December 2009. For details, please see BSD Circular No.19 dated September 05, 2008 and BSD Circular No 30 dated November 25, 2008.

the last five years) during CY07, credit growth in excess of 25.0 percent per annum during CY03-06 continues has been a source of concern, in terms of its implications on the quality of the credit portfolio. Credit concentration stands out as an even bigger concern, as the top 0.5 percent of total loan account holders have a 67.7 percent share in banks' advances, with an average loan size of Rs 68.6 million. Sectoral composition of loans also indicates concentration of credit in the corporate sector, which accounts for 59.0 percent of banks' loan portfolio (as of end June CY08), with an increase in share of 5.7 percentage points over CY06. Furthermore, loans to the textile sector constitute 18.5 percent of the total loans as of end CY07, indicating another source of concentration risk. The current composition of the credit portfolio, along with an obvious deterioration of macroeconomic indicators during H1-CY08, further aggravates concerns about the potential credit risk.

Traditional indicators of credit risk (asset quality) indicate that NPLs of the banking sector increased by Rs 30.6 billion (YoY growth of 17.4 percent) in CY07, to reach Rs 206.1 billion by end CY07. The NPLs to loan ratio also saw a rise of 30 bps during the year to reach 7.2 percent, as against the continuous decline seen since CY00. Fortunately, this increase is not shared across the industry, as banks with NPLs to loan ratio of less than 5.0 percent own 97.7 percent share of assets. Moreover, a single factor sensitivity analysis also reflects the stability of banking system towards credit risk. A 10.0 percent hypothetical increase in NPLs, with provisioning requirement of 100.0 percent, is likely to reduce the CAR of commercial banks by only 50 bps. Similarly, a 10.0 percentage point (assumed) increase in the NPLs to loans ratio of consumer finance (which incidentally had the lowest infection ratio of 4.4 percent in CY07) is expected to cause a decline in the CAR of commercial banks by 90 bps to 12.7 percent. All other such shocks also have a relatively smaller impact on the CAR of commercial banks.

Although indicators of asset quality do not pose an immediate threat to the stability of the banking sector, the backward-looking nature of this assessment, and the deterioration in the operating environment of the banking system in recent months (specifically since November CY07) requires strong vigilance of the loan portfolio. The latest data (as of end H1-CY08) indicates that the NPLs to loans ratio has risen further by 55 bps to reach 7.7 percent. Net NPLs to loans ratio, another indicator of asset quality, has reached 1.3 percent by end H1-CY08, compared to 1.1 percent as of end CY07. In line with the new provisioning requirements laid out by SBP, the banking system was required to create provisions of Rs 28.5 billion during H1-CY08 compared to only Rs 11.2 billion during H1-CY07. Bank-wise information reveals that this substantial increase in provisioning is again not equally shared across the banking system.[4]

There are also indications of a conscious shift in the composition of banks' asset portfolio in response to the adverse macroeconomic developments. This shift is reflected in the exceptional rise of 53.0 percent in investments during CY07, compared with growth of only 10.8 percent in loans and advances. As a result, the share of the investment portfolio in the overall assets of the banking sector surged to 24.7 percent by end CY07, as against 19.1 percent a year before. In a way, this shift in asset composition off-sets some of the concerns regarding the rapid expansion of credit in recent years and the associated impact on credit quality. It also helps in managing liquidity risk, given that short term government securities (which form two-thirds of the investments in government securities), are the most liquid financial instruments in the market. Standard indicators of liquidity risk also show an improvement during CY07: the liquid assets to total assets ratio increased by 1.6 percentage points to reach 33.6 percent by end CY07.

[4] One of the mid- sized bank with an asset share of 4.0 percent in the overall assets, accounts for 21.8 percent of the overall provisioning of Rs 28.5 billion.

These notable changes in the asset composition of banks' balance sheets during CY07, however, did not continue on this trend during H1-CY08. Healthy growth in the loans and advances portfolio of 8.7 percent during the first half of CY08 pushed its share in the overall assets of the banking sector up to 53.0 percent compared to 52.0 percent as of end CY07. Investments, the second largest component of assets, recorded a decline of 11.9 percent over the same period. However, these changes in the asset mix have had a negligible impact on the liquidity position of the banking sector due to the healthy growth of 8.7 percent in banks' deposits over the same period. However, this deposit growth is lower than the growth of 13.2 percent observed during the same period last year (H1-CY07). It may be noted that the impact of the most recent monetary tightening measures and the introduction of a minimum rate of return of 5.0 percent[5] on all types of savings deposits with effect from June 1, CY08, on various financial indicators of the banking sector, is yet to be seen. While loan growth might slow down during the second half of the year given the constrained liquidity position of banks, the minimum savings deposit rate will increase the cost of funding, especially for the big banks. This measure, aimed at ensuring a minimum return to the depositors, will also help in narrowing the high banking spreads.[6]

Having given an overview of major developments in CY07 and H1-CY08, the rest of the chapter analyzes these developments in detail. The analysis in this chapter is based on annual numbers for CY07 and half-yearly data for CY08, in total a period of 18 months, as in FSR 2006. The recent occurrence of temporary liquidity pressures in the banking sector in Q4-CY08 is analyzed separately in **Special Section 1: Liquidity Pressures in the Banking System** at the end of this chapter. The chapter is organized into five sections. While the introduction has summarized developments related to the financial performance and stability of the banking sector, section 3.2 provides an overview of the asset and funding structure. This discussion is followed by details of changes in specific risk factors in Section 3.3, as changes in the balance sheet structure are closely linked to the risk profile of the banking system. The subsequent section gives an assessment of the ability of the banking system to withstand the changes in its risk profile. The final section discusses the stability of the banking sector on the basis of results derived from simple sensitivity analysis of the risk factors to various types of shocks.

3.2 Assets and Funding Structure of the Banking System

CY07 turned out to be the fourth year in succession of strong expansion in the assets of the banking system, which grew by 18.8 percent to reach Rs 5.2 trillion by the end of the year. A key characteristic of this growth was the huge expansion in the investment portfolio, which surged to Rs 1.3 trillion, with an annual growth of 53.0 percent. This is in sharp contrast to the trend seen in previous years, where expansion in the loan portfolio was the major source of asset growth. Loan expansion during CY07 was only 10.8 percent compared to the annual average increase of 27.7 percent during CY03-CY06. Consequently, the share of the investment portfolio in the total assets of the banking sector surged to 24.7 percent by end CY07, compared to 19.1 percent in CY06. Banks' inclination to channel their funds into investments during CY07 was driven by: (1) implementation of the tight monetary policy stance, which kept liquidity in check in the inter-bank money market, and higher SLR requirements; and (2) a visible slowdown in economic activities, which reduced the demand for additional credit from the banking sector. Incidentally, banks also made heavy investments in subsidiaries during this period. The corresponding decline in the share of loans is also visible in **Figure 3.1**.

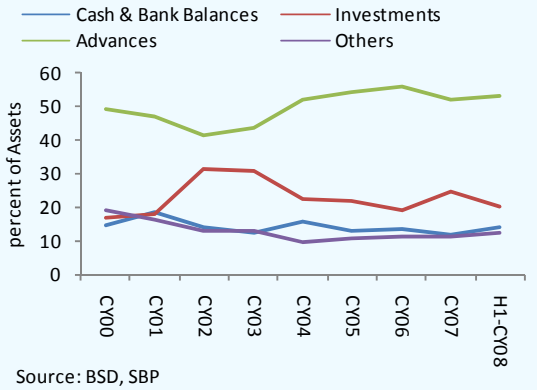
Notable changes in the composition of assets in CY07 reflect the response of the banking system towards changes in the macroeconomic environment, and monetary tightening by the SBP. **Figure 3.1** also shows that the asset mix has undergone further changes in the first half of CY08.

[5] BPRD Circular No 07 dated May 30, 2008.
[6] Banking Spread for end-June CY08 is 6.78 percent, as compiled by the Statistics Department.

Healthy growth in loans has pushed the share of the loan portfolio to 53.0 percent in the overall assets of the banking sector, which is still 3.8 percentage points lower than the peak level of 55.8 percent observed during CY06. On the other hand, the share of the investment portfolio in the overall assets, which had increased to 24.7 percent in CY07, declined to 20.4 percent in H1-CY08. These recent changes in the asset mix are primarily driven by the increase in demand for corporate sector loans in the wake of low real interest rates due to the surge in inflation during H1-CY08, and banks' reluctance to invest in longer-tenor government securities (i.e. tenors exceeding 3 months) in a rising interest rate environment.[7]

Besides the trends observed in loans and investments, another important development was the (YoY) 10.9 percent decline in lending to financial institutions during CY07. This is also one of the reasons for the strong investments in government securities during the year, which added to the liquid assets of the banking sector and reduced the demand for inter-bank borrowing for liquidity management.

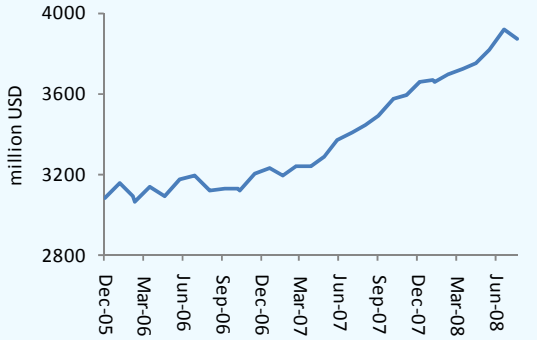
Figure 3.1: Composition of Banking Assets



Source: BSD, SBP

Asset growth during CY07 and H1-CY08 was funded by substantial growth in the deposits of the banking system, well-supplemented by the strong growth in capital. Specifically, deposits of the banking sector surged to Rs 4.2 trillion by H1-CY08, showing an increase of 28.7 percent during the 18 months of CY07 and the first half of CY08, compared to 30.1 percent over the same period of CY06 and H1-CY07. Specifically, as of end H1-CY08, 76.0 percent of total assets are funded by the deposits of the banking sector, compared to 74.8 percent at end CY06. Importantly, this healthy growth in deposits is accompanied with a visible change in the currency composition of deposits, especially during H1-CY08. Deposits' currency composition exhibited distinct trends during CY07 and H1-CY08. The share of foreign currency deposits in total deposits (in rupee terms), which had generally seen a declining trend since CY02, was 12.8 percent in CY07 on account of the stable exchange rate prevalent until October CY07. This share increased to 13.7 percent of total deposits by end H1-CY08, indicating the re-emergence of a 'dollarization' trend due to the rapid depreciation of the exchange rate in recent months. Specifically, resident FE-25 deposits increased by US$ 443 million during FY08, compared to US$ 196 million only, in FY07 (**Figure 3.2**). This increase is concentrated in Euro denominated deposits, as the Rupee parity depreciated most against the Euro during FY08.[8]

Figure 3.2: Resident FE-25 Deposits



Source: Statistics, SBP

[7] During FY08 (i.e. July 2007 to June 2008), the accepted amount in all T-bill auctions was only Rs 653.0 billion, compared to maturities of Rs 788.0 billion during the same period. Moreover, the amount offered by banks i.e. Rs 902 billion, was less than half of the amount offered during FY07.

[8] In FY08, the Rupee has depreciated by 24.1 percent against the Euro, 11.5 percent against the US Dollar, and 10.9 percent against GBP.

In terms of classification of deposits by types of account, current account (non-remunerative) deposits grew by 19.2 percent during CY07, increasing their share in total deposits to 27.3 percent (**Table 3.1**). On the other hand, growth in fixed deposits lagged behind the overall deposit growth during CY07 in comparison with previous years (CY04-CY06), during which period there was a tendency for fixed deposits to substitute savings deposits. The deposit composition remained almost unchanged in the first half of CY08, with the exception of relatively higher growth of 11.0 percent in fixed deposits compared to the overall growth of 8.7 percent in total deposits. The growth in fixed deposits is a welcome development as it will help in reducing maturity mismatches in banks' balance sheets.

Table 3.1: Composition of Banks' Deposits

percent of Total Deposits

	CY00	CY01	CY02	CY03	CY04	CY05	CY06	CY07	H1-CY08
Fixed deposits	24.9	22.1	22.5	18.5	18.5	25.9	31.3	30.1	30.8
Savings Deposits	44.5	47.3	49.1	50.9	48.3	41.2	37.1	37.3	36.1
Current deposits	19.6	21.4	21.3	26.1	28.4	27.3	26.2	27.3	27.6
Institutional Deposits	10.4	8.8	6.5	3.8	4.1	4.8	4.6	4.6	4.4
Others	0.6	0.5	0.5	0.7	0.8	0.8	0.8	0.7	1.1

Source: BSD, SBP

Equity of the banking system, another key component of the balance sheet, increased to an all time high level of Rs 561.4 billion by end H1-CY08, with a YoY growth of 35.3 percent in CY07, and 7.0 percent during H1-CY08. The implementation of the planned enhanced minimum capital requirements in a phased manner by SBP continued to be the major driving factor for the strengthening of the capital base.

3.3 Risk Assessment

Changes in both the funding structure and the asset mix are inextricably linked to potential risks in the banking system. The following discussion focuses on analyzing the changes in the key risks for banks, i.e. credit risk, market risk, operational risk and liquidity risk.

3.3.1 Credit Risk

Relative to the substantial credit expansion in the recent past (average growth of 27.7 percent during CY03-CY06), there was a visible slowdown in CY07 and H1-CY08. Banks' loan portfolio grew by only 10.8 percent during CY07, the lowest growth in the last 5 years. As an early warning indicator of asset quality, aggressive credit expansion in the past few years had raised concerns about the quality of the credit portfolio, and hence credit risk, as highlighted in last year's Financial Stability Review.[9] This deceleration in credit expansion alleviates some of those concerns. It is worth noting that the slowdown in credit expansion during CY07 is primarily attributed to a deceleration in working capital loans (growth of 6.0 percent in CY07 compared to 21.3 percent in CY06), while credit for financing fixed investments of the corporate and SMEs sector registered a YoY healthy growth of 21.1 percent during CY07 (6.1 percent growth in CY06). This shows that the deceleration in credit growth can be largely attributed to a certain degree of containment of demand pressures in line with the continued monetary tightening by the central bank, while decisions for fixed investments which are generally based on a medium to long term view of the economy, continue to be implemented. Data for H1-CY08, however, indicates that growth in working capital loans has also picked up pace, growing by 16.3 percent (-2.2 percent growth in H1-CY07) in comparison with 18.5 percent growth in fixed investment loans (6.2 percent growth in H1-CY07), indicating a certain dilution of the impact of monetary tightening measures.

[9] Chapter 6, "Stability of the Banking System", Financial Stability Review 2006, State Bank of Pakistan.

A review of the composition of the loan portfolio, as discussed ahead, will highlight the potential risk factors, which generally differ across various segments of the economy. An end-use distribution of the loan portfolio indicates that banks' exposure towards the corporate and household sectors increased during CY07 (**Table 3.2**), as growth in credit to the corporate sector and consumer financing, saw an increase of 18.9 percent and 14.1 percent respectively. Notwithstanding the growth in consumer financing in CY07, it is to be noted that as the most interest-rate sensitive type of loan, significant deceleration has been seen in consumer financing since the advent of aggressive monetary tightening in CY06 (growth of 28.8 percent), the manifestation of which is reflected in its reduced share in total credit in H1-CY08 (growth of 0.7 percent).[10]

Commodity financing, on the other hand, witnessed a YoY decline of 13.7 percent, which pushed its share in the overall loan portfolio down to 5.5 percent in CY07. Lower growth (than CY06) in SME and agriculture financing is also visible from the marginal decline of their respective shares in total outstanding credit in CY07 and H1-CY08. This decrease in shares of the SMEs and the agriculture sector is indicative of banks' effort to contain their exposure in relatively riskier areas. The NPLs to loan ratios for various sectors (**Table 3.3**) indicate that these two sectors have, over time, proved to be relatively riskier than the others. Specifically, data for H1-CY08 shows that the NPLs to loan ratios for the SME and agriculture sectors are 11.2 percent (on an increasing trend) and 16.6 percent (with a decreasing trend) respectively, in comparison with 7.6 and 5.5 percent for the corporate sector and consumer financing respectively.

Table 3.2: Sectoral Diversification of the Loan Portfolio

Percent share in loans

	CY04	CY05	CY06	CY07	H1-CY08
Corporate Sector	53.9	52.7	53.3	56.3	59.0
SMEs	17.5	17.7	17.0	16.2	13.0
Agriculture	7.4	6.8	5.9	5.6	4.9
Consumer Finance	9.4	12.4	13.6	13.8	12.0
Commodity Financing	7.5	6.9	7.2	5.5	6.8
Staff Loans	2.5	2.1	2.0	1.9	1.8
Others	1.8	1.5	1.1	0.8	2.5

Source: BSD, SBP

Notably, banks are still in the process of upgrading their credit appraisal and assessment standards for SME and agriculture financing, and the credit quality of these particular sectors is expected to improve over time.

Generally, deterioration in the macroeconomic environment and monetary tightening reduces the availability of credit for borrowers considered to be more risky for banks. In contrast, big corporate entities tend to manage their credit requirements even during difficult macroeconomic conditions, due to their strong footing and potential access to different sources of financing. Recent data also lends credence to this assertion as the corporate sector continues to retain a dominant share of 59.0 percent of the outstanding bank credit, on account of the 21.3 percent growth in corporate loans during H1-CY08.

Table 3.3: Segment-wise Infection Ratios

NPLs to Loan Ratio

	CY06	CY07	H1-CY08
Corporate	6.5	7.2	7.6
SMEs	8.8	9.4	11.2
Agriculture	20.8	18.7	16.6
Consumer Finance	2.2	4.4	5.5
Commodity Finance	0.6	1.0	0.8
Staff Loans	0.9	1.2	1.1
Others	6.2	18.0	9.9
Overall	6.9	7.2	7.7

Source: BSD, SBP

On the basis of sectoral exposure, bank credit has traditionally been more concentrated in the textile sector, in its capacity as the largest contributor to the country's export base. While the

[10] A detailed assessment of banks' consumer finance portfolio is given in Chapter 5, "Perspectives on Consumer Finance in Pakistan", in this edition of the FSR.

textile sector still holds the largest share of credit at 18.5 percent in CY07, detailed information on sectoral diversification of the loan portfolio reveals that the banking sector has diversified its loan base by also focusing more on the non-traditional private sector enterprises. Decline in the share of loans to the textile sector and the gradually increasing share of credit for construction, electricity, gas and water supply, and real estate related activities, is an indication of sectoral diversification over the period of analysis (**Table 3.4**). This diversification, besides being a direct consequence of the observed shift in sectoral demand patterns, is also likely to reduce the credit risk of the loan portfolio to some extent, particularly due to the less than perfect correlation among sector specific risk factors associated with various segments of the economy.

Table 3.4: Sectoral Distribution of Loans to Private sector Enterprises

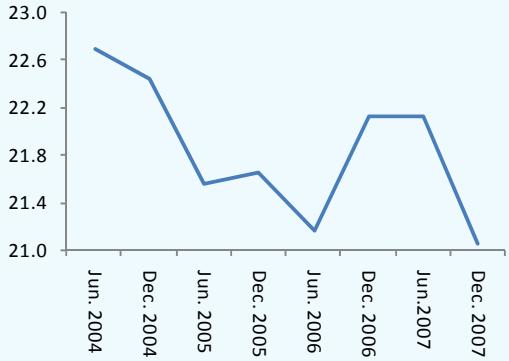
percent of total loans

	Jun-04	Dec-04	Jun-05	Dec-05	Jun-06	Dec-06	Jun-07	Dec-07
Manufacturing	46.1	45.5	43.4	43.8	41.8	42.2	40.2	41.8
O/w Textile	22.6	23.9	21.6	22.5	20.1	20.3	17.8	18.5
Construction	1.4	1.5	1.8	1.9	1.8	2.2	2.2	2.5
Electricity, gas and water supply	0.7	0.8	0.8	0.9	1.0	1.2	1.8	2.6
Real estate, renting and related activities	1.5	2.6	2.8	3.4	3.6	3.3	3.9	4.3
Commerce and Trade	7.9	8.3	7.4	8.5	8.7	9.2	8.8	8.5
Private Sector Enterprises	73.2	74.0	70.9	72.6	69.8	71.6	70.3	72.1

Source: Statistical Bulletin, SBP

Despite these developments, continued concentration of credit in the textile sector is also a significant risk factor, and needs to be carefully monitored. This is particularly so given the relatively high infection ratio of these loans, at 12.6 percent as of end H1-CY08 (10.7 percent for end CY07), compared to 7.7 percent for the overall loan portfolio. Economic slowdown in the US and the Euro zone (major export markets for the textile sector) and the difficult domestic macroeconomic environment, both indicate that the textile sector faces a challenging environment in the short to medium term.

Figure 3.3: Overall Margin for Loan Portfolio



Source: Statistical Bulletin, SBP

Another important dimension of credit risk emanates from the distribution of loans by rates of margin.[11] **Figure 3.3** shows that the overall rate of margin for the loan portfolio of the banking sector has generally been over 20.0 percent. In specific terms, the rate of margin declined to 21.1 percent by end CY07, compared to 22.1 percent for CY06. This 100 bps decline in the margin rate can have significant implications in a deteriorating macroeconomic environment. This issue is explored further by the assessment of a detailed classification of scheduled banks' advances by rates of margin. **Table 3.5** shows that the share of the loan portfolio with zero margin has witnessed a steady increase in recent years, increasing by 3.7 percentage points in CY07 alone to reach 23.9 percent. This rise is primarily attributed to the increase in the volume of personal loans under

Table 3.5: Classification of Loans by Rates of Margin

Percent of loan portfolio

Margin	CY04	CY05	CY06	CY07
0	16.8	18.8	20.2	23.9
5	2.1	0.9	0.7	0.5
10	6.9	6.9	4.1	5.3
20	9.8	8.2	8.8	8.9
Up to 20	35.5	34.8	33.8	38.6

Source: Statistical Bulletin , SBP

[11] Margin is the amount of the market/assessed value of the collateral over the actual amount of loan.

consumer finance, which do not require collateral, and the steady increase in the share of other unsecured loans (e.g. credit cards) in the overall loans portfolio.[12]

Credit concentration is also one of the important sources of credit risk. A view of **Table 3.6** reveals that the share of loans of amounts in excess of Rs 10.0 million has increased to 67.7 percent by end CY07, compared to 64.7 percent in CY06. Moreover, the average loan size in this category has also increased from Rs 65.7 million in CY06 to Rs 68.6 million by end CY07. These developments are consistent with observations made earlier that banks' exposure towards the corporate sector (generally big borrowers) continues to follow a rising trend. The extent of credit concentration is also visible from the fact that less than 1.0 percent of total borrowers hold 67.7 percent of banks' loan portfolio. This implies that default by a small number of big borrowers can have a significant impact on the financial health of the banking system.

Table 3.6: Distribution of Loans by Size

percent share

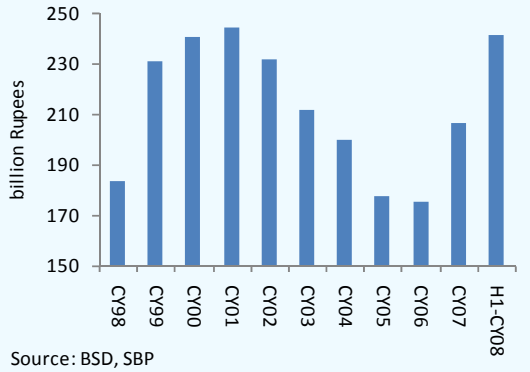
Loan Size (Rs Mln)	CY03	CY04	CY05	CY06	CY07
Up to 0.1	9.3	7.9	7.5	7.1	6.2
0.1 to 0.5	7.9	8.5	10.2	10.7	10.0
0.5 to 1.0	2.8	3.3	3.6	3.0	2.8
1.0 to 5.0	7.0	7.7	12.9	9.8	8.7
5.0 to 10.0	4.6	5.0	5.5	4.7	4.5
Over 10.0	68.5	67.7	60.3	64.7	67.7

Source: SBP Calculations

To summarize, an assessment of the loan portfolio from various dimensions indicates that: (1) banks' exposure towards the corporate sector has increased during CY07, and H1-CY08; (2) sectoral distribution of credit remains skewed towards the textile sector, with gradual expansion of credit to some non-traditional sectors; (3) the overall rate of margin has declined slightly, and the share of loans with zero margin has increased; and (4) credit is largely concentrated among few large borrowers. While the gradual process of credit diversification is likely to have a favorable impact on credit risk in a strained macroeconomic environment and on-going monetary tightening, exposure to a small number of large borrowers has the potential to inflict significant losses on the banking system and is also a potential source of systemic risk. An assessment of how well the banking system is positioned to accommodate these losses is discussed in the section on solvency (section 1.4.1), while changes in standard indicators of asset quality during CY07 and H1-CY08 are discussed in the rest of this section.

Although the banking system has effectively managed credit risk in recent years, the re-emergence of non-performing loans from CY07 onwards, has started to test its risk-management capacity. Specifically, NPLs of the banking system increased by Rs 30.6 billion to reach Rs 206.1 billion during CY07, after having seen a consistent decline during CY01-CY06 (**Figure 3.4**). However, bank-wise information reveals that this increase in NPLs is not equally shared across the banking system. Four commercial banks account for 81.7 percent of this increase on account of: (1) the merger of a DFI into a local commercial bank which caused its infected portfolio to raise the NPLs of the banking system; (2) increase in the infection ratio of the consumer finance portfolio of one of the local private banks; and (3) the acquisition by a foreign bank of a local private bank and subsequent re-classification of some of the acquired loans according to a more conservative credit risk policy.

Figure 3.4: NPLs of the Banking System



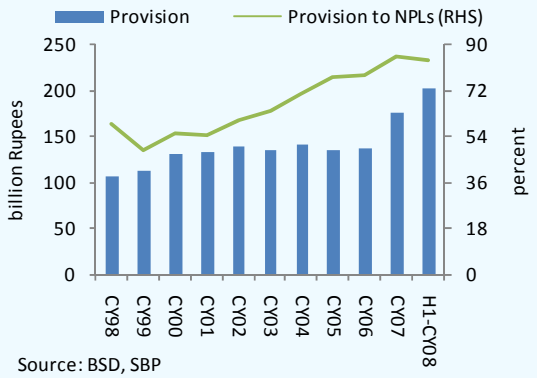
Source: BSD, SBP

[12] Exposure against Credit cards increased by 18.3 percent during CY07, compared to the growth of 10.8 percent in overall advances.

Figure 1.4 also depicts a visible increase in the NPLs of the banking system during the first half of CY08. Specifically, NPLs increased by Rs 35.8 billion during H1-CY08 to reach Rs 241.9 billion: a level comparable to the years CY00 and CY01. Although the increase in NPLs has emerged in tandem with the observed deterioration in the macroeconomic environment in recent months, this trend is not shared by all banks, and is consistent with the observations made for CY07 where a small number of banks were the main source of the increase in NPLs. Bank-wise information reveals that three banks with an asset share of 30.9 percent account for 73.2 percent of the increase in NPLs during H1-CY08.

Nevertheless, the increased volume of NPLs not only reflects a certain degree of deterioration in asset quality, but also has negative implications for the overall performance of the banking sector. In specific terms, it reduces banks' earning assets while increasing their expense in the form of provisioning. Cognizant of the underlying developments in banks' loan portfolio, SBP amended the loan classification criteria during CY07[13] in line with international best practices, and keeping in view the strong growth in the loan portfolio during CY03-06. In addition to the measures taken by SBP to strengthen the provisioning requirements for infected loans, banks themselves have also become more vigilant over time in monitoring the quality of their respective loan portfolios. Consequently, the provisions held against NPLs increased sharply to Rs 175.0 billion by end CY07, from Rs 137.0 billion in CY06. As a result, the coverage ratio (provisions to NPLs) improved to an unprecedented level of 85.1 percent in CY07 though slightly decreased during H1-CY08 to 84.0 percent (**Figure 3.5**). Foreign banks remained more proactive in managing their credit risk, as the provisions held by these banks in aggregate are higher than their NPLs. As a cumulative impact of these developments, the net NPLs of the banking system registered a decline of Rs 8.4 billion to reach Rs 30.6 billion by end CY07, despite an increase in the absolute amount of NPLs during the year, thus diffusing the potential risks to the capital base of the banking sector.

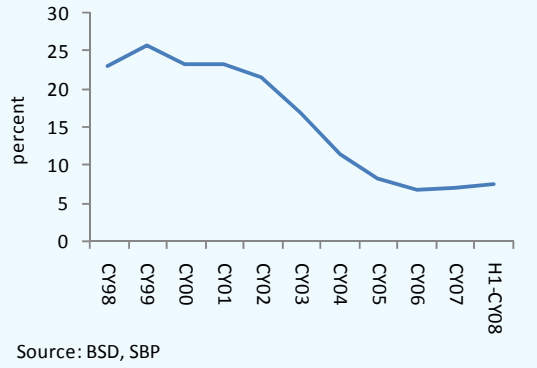
Figure 3.5: Provisions against NPLs



Source: BSD, SBP

While the analysis so far, on the absolute levels of NPLs, provisions and net NPLs, highlights the extent of the potential credit risk in the banking sector, it remains incomplete without a reference to the size of the loan portfolio. The NPLs to loans ratio (Gross) of the banking system saw an increase of 30 bps during CY07 to reach 7.2 percent by end CY07. Data for H1-CY08 also shows an increase of 50 bps in this ratio (**Figure 3.6)**. This indicates that the rise is NPLs outpaced the growth in the loan portfolio over the period of analysis due to the reasons discussed earlier in this section, with negative

Figure 3.6: NPLs to Loans ratio (Gross)



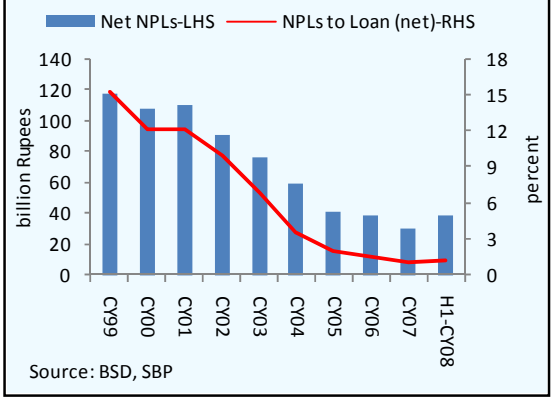
Source: BSD, SBP

[13] BSD Circular No 07 dated October 12, 2007.

implications for the earnings base of the banking sector. This negative impact on earnings is visible from a decline in the after tax ROA of the banking system during CY07.[14] It should be noted though that the increase in provisions in CY07 was also due to the one-off impact of the withdrawal of the benefit of the FSV.

Due to the considerably higher amount of provisions during CY07, the NPLs to loans (net) ratio dropped to an all time low level of 1.1 percent by end CY07, before registering a marginal increase of 20 bps during H1-CY08 (**Figure 3.7**). Bank-wise information indicates that 16 banks have this ratio in the range of zero and below. These banks hold 28.0 percent of banking sector assets. Furthermore, 97.7 percent of the overall asset base is held by banks with the net NPLs to loans ratio of less than 5.0 percent at end-CY07.

Figure 3.7: Net NPLs of the Banking System



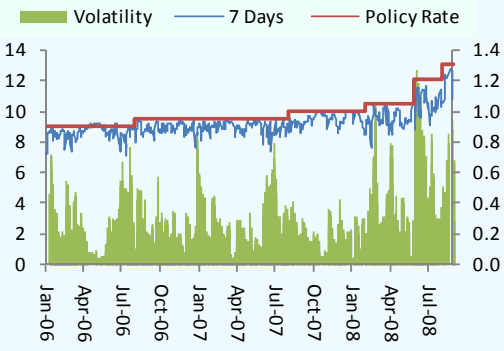
Source: BSD, SBP

This analysis clearly suggests that the banking system has been fairly successful in managing the credit risk of its loan portfolio, despite the large expansion in the loan base in recent years. Whereas an increase in NPLs during CY07 and in subsequent months gives rise to concerns about asset quality, the relative concentration of the source of these NPLs among few banks, and stringent provisioning requirements by SBP, are indications of a corresponding practice of prudent risk management. Credit concentration on the other hand is a bigger concern, both among a few large borrowers[15] and the textile sector, and may carry systemic implications in the currently prevalent difficult macroeconomic environment. However, the sensitivity analysis of credit risk factors based on historical trends, and hypothetical but plausible shocks, indicates that the banking sector is well positioned to withstand shocks of a moderate nature.[16]

3.3.2 Market Risk

The nature of the financial products offered by the banking system, and the composition of its investment portfolio, suggests that the *interest rate risk* is the major risk among the various market risk factors that banks face. Specifically, investments in fixed-income government securities constitute over 70.0 percent of banks' overall investments. On the liability side, the share of fixed deposits in total deposits was only around 30.0 percent as of end CY07, and increased to 30.8 percent by end H1-CY08. For a more specific analysis, the 'GAP' between rate sensitive assets and rate sensitive liabilities is used to analyze the impact of interest rate changes on banks' balance sheets.

Figure 3.8: Short Term Interest Rate Volatility



Source: FMA and SBP

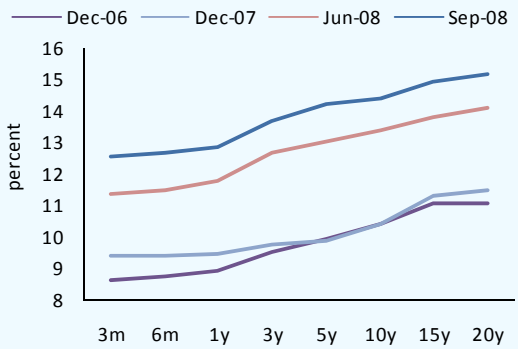
In so far as interest rate changes are concerned, the benchmark policy rate (3-day SBP Repo Rate) has been increased considerably since June CY07, in the wake of

[14] This issue is discussed in more detail in section 1.4.2 on the Profitability of the Banking System.
[15] Large corporate clients generally have access to lines of credit from several banks, hence the potential of systemic risk.
[16] For details, please see section 1.5, Resilience of the Banking System.

mounting inflationary pressures in the economy. In specific terms, it increased from 9.5 percent as of end June CY07, to 13.0 percent as of end July CY08 (**Figure 3.8**).[17] The impact of this increase in the benchmark rate is visible from the increased secondary market yield on government securities of various tenors. Interest rates along all of the maturities have gone up since December CY06 (**Figure 3.9**). This increase in interest rates is a source of *revaluation risk*, especially for banks with positive duration gaps (i.e. where the effective maturities of rate sensitive assets are longer than the effective maturities of rate sensitive liabilities).

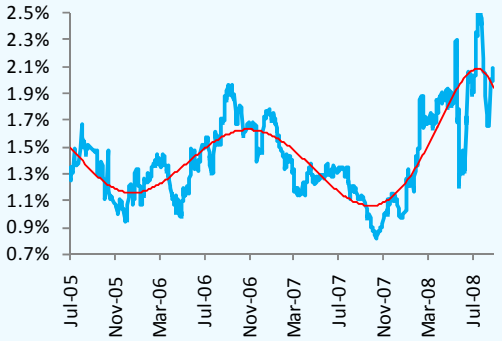
Besides the increase in interest rates, movements along the yield curve have also been observed during the year (**Figure 3.9**). This gives rise to the *yield curve risk*, as the increase in the interest rates was not equal for the various maturities. Volatility in short term rates remained significant especially around July CY07 and during H1-CY08. YoY movements in the yield curve also recorded notable changes. On the lower end, the slope of the yield curve shifted from steep to flat, while for the longer term it showed slight steepening during CY07. The dip in the 10-year yield is a reflection of a higher preference for this tenor by the banks up until the first half of CY07, in line with markets' perceptions that interest rates had peaked, which resulted in a higher price of the 10-year PIB in auctions and in the secondary market. The term premium continued to decline until November CY07, while the 3-month MTB yield started rising in the wake of the 50 bps hike in the policy rate with effect from August 1, CY07 (**Figure 3.10**). Preference for the 3-month tenor depicts a U-turn in banks' investment preferences in subsequent months when they took a more short-term view of interest rates, given the more frequent increases in the discount rate by SBP.[18] Changes in the yield spread between the 10 year and the 3 month PKRV rates reflect the shape of the yield curve: rise in the spread reflects yield curve steepening and vice versa.

Figure 3.9: Shift in Yield Curve



Source: FMA website

Figure 3.10: Yield Spread b/w 10y & 3m PKRV rates



Source: FMA website

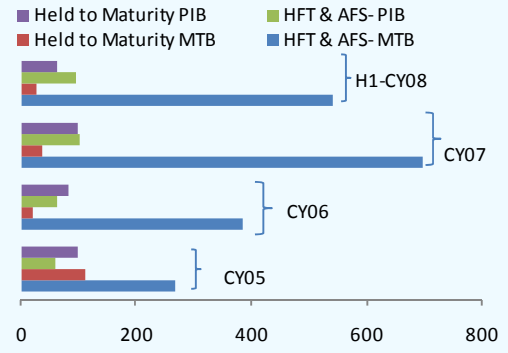
The impact of the *revaluation* and *yield curve* risks can be significant for banks holding a sizable amount of fixed income securities of different maturities. A decomposition of the investment portfolio reveals that the proportion of investments in the fixed income government securities has increased significantly on account of the YoY growth of 57.6 percent during CY07. The classification of these investments indicates that the share of securities in the held-for-trading (HFT) and available-for-sale (AFS) categories has increased to 85.6 percent in CY07, from 81.4

[17] The discount rate was increased by 200 bps to 15.0 percent with effect from November 13, 2008.
[18] SBP has increased the policy rate on 4 occasions in CY08, by 50 bps in January, by 150 bps in May, by 100 bps in July, and by 200 bps in November.

percent in CY06 (**Figure 3.11**).[19] Since the securities held in these categories are required to be marked to market, this composition of investments in a rising interest rate environment suggests that the banking sector faces the potential risk of revaluation losses. Since government securities in the HTM category were not allowed to be used as collateral in repo transactions during the period of analysis.[20] Therefore for liquidity management purposes, banks have preferred to hold a large chunk of their investments in government securities, particularly MTBs, in the HFT and AFS categories during CY07. While this particular categorization can still be seen in the first half of CY08, however, **Figure 3.11** shows that the overall volume of fixed income securities held by the banking system has declined during H1-CY08, given the higher growth in the loan portfolio. This change will have favorable implications for the revaluation risk.

In terms of gap analysis, changes in yields create *re-pricing risks* especially for banks with significant negative gaps between the maturities of rate sensitive assets and liabilities. Data shows that the gaps in terms of total assets are within the standard limits of 10.0 percent (positive or negative) of total assets. The maturity of rate sensitive assets is less than that of rate sensitive liabilities (percent of total assets) in the one month time bucket, which signifies interest rate risk for banks in this time horizon (**Figure 3.12**). Such negative gap may give rise to a higher cost of funding these mismatches in an increasing interest rate environment.

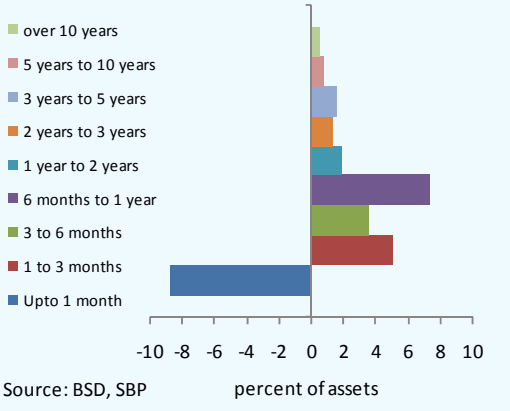
Figure 3.11: Investments in Fixed Income Securities



Source: BSD, SBP billion Rupees

Moving on to another important market risk factor, a *Currency risk* arises with the movements in the exchange rate. Specifically, a direct currency risk exists when there is a change in the value of the foreign currency denominated assets and liabilities. The Pak rupee shed some value against the dollar during CY06 (1.8 percent) and the trend continued in CY07 on account of the deteriorating position of the current account balance.[21] Specifically, the rupee-dollar parity which was Rs 60.9 at the beginning of CY07, increased to Rs 62.0 by the end of the year. In subsequent months, however, the Pak rupee depreciated sharply, and traded at levels beyond Rs 80 (during November CY08) against the US$, on account of growing pressure on the external current account, and rising amount of net foreign exchange outflows (**Figure 3.13**).

Figure 3.12: GAP (RSA-RSL) to TA of All Banks



Source: BSD, SBP percent of assets

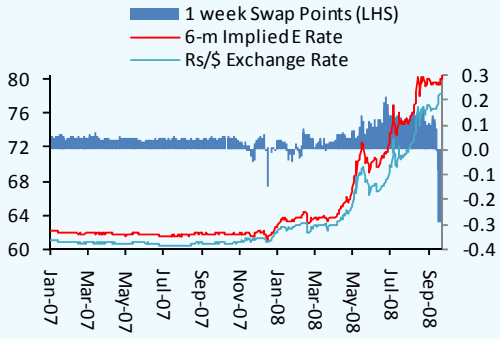
[19] Banks' investment portfolio is classified into various categories as specified by SBP. The rationale for this classification is to ensure a fair value of the investment portfolios. Different categories of investments have different rules for mark to market valuation and for accounting of revaluation surplus/loss.

[20] Banks are now allowed to use securities classified under the "Held to Maturity" category for borrowing under the SBP Repo facility / discount window, to the extent that such investments are in excess of the limit prescribed for SLR. The restriction on repo transactions against HTM securities in the inter-bank market is still in place – BSD Circular No. 23, dated October 13, 2008.

[21] SBP interventions and inflows of foreign exchange in terms of remittances and investments continued to support the value of the local currency to some extent during CY06 and CY07. However, the growing current account deficit and reduced inflows in H2-CY07, and H1-CY08, posed as a continuous source of pressure on the rupee dollar parity.

The foreign exchange exposure of the banking sector is summarized in a key measure namely the Net open position (NOP).[22] **Figure 3.14** shows that the NOP of banks continued to fluctuate within the range of USD 100 million (+/-) over the period of analysis. In case of positive NOP, banks actually gain from the depreciation of the local currency, as this implies that their foreign currency assets are in excess of foreign currency liabilities. In case of negative NOP, however, the depreciation of the domestic currency carries negative implications for banks. Moreover, a continued short position may also exert pressure on the exchange rate. Negative NOP during March-June CY08 highlights this factor, as the rupee depreciated by 8.2 percent over this period. The sensitivity analysis based on H1-CY08 data indicates that the *direct* exposure of banks towards currency risk has a rather favorable impact, as the banking system largely maintained positive NOP during CY07: a 13.0 percent depreciation of the domestic currency increases CAR by 10 bps. Notably, the Pak Rupee has depreciated by 9.6 percent during H1-CY08.

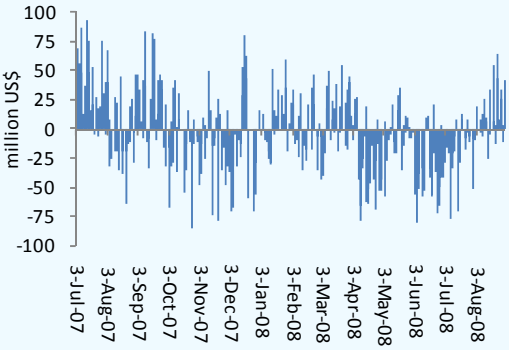
Figure 3.13: Exchange Rate and Swap Points Implied Rate



Source: SBP

While the direct impact of fluctuations in the exchange rate on banks' foreign exchange exposure is negligible, the *indirect* currency risk, which deals with the inability of the borrower to pay the foreign currency denominated loans due to significant exchange rate depreciation, may become a potential source of concern.

Figure 3.14: NOP of the Banks



Source: SBP

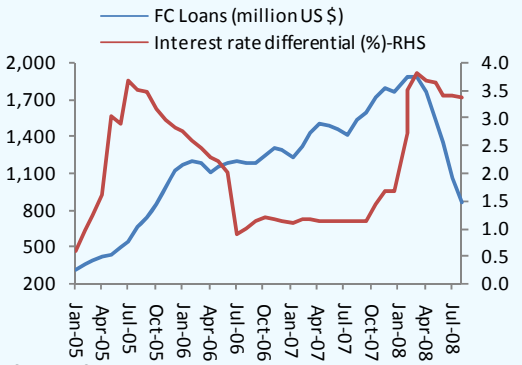
To give a bit of background,[23] it was only subsequent to the events of 9/11 when the value of the dollar started depreciating against the rupee that the demand for foreign currency loans appeared. Prior to that, SBP's Export Refinance Scheme (EFS) used to be the primary mode of export financing in Pakistan. Trends in foreign currency loans show a considerable growth in FY03, while the demand for EFS remained low. FY04 saw a retirement in these loans, mainly due to the interest rate differential between EFS rates and LIBOR, which remained below 1.0 percent during this period as a result of which the demand for EFS loans re-emerged. During the first half of FY05, the widening trade deficit continued to exert an upward pressure on the exchange rate and foreign currency loans continued to decline. The pace of decline was faster in comparison with FY04, in line with the movements in the exchange rate. This trend was discontinued once the exchange rate stabilized after reaching its peak in October FY05, and the interest rates on EFS loans widened the interest rate differential again. From July to December FY05, foreign currency lending declined by Rs 33.6 billion and EFS lending increased by Rs 14.9 billion. Subsequently, from January to April FY05, foreign currency lending increased by Rs 9.2 billion whereas EFS lending increased by Rs 8.4 billion.

[22] The Net Open Position is the difference between foreign currency assets and liabilities, including off-balance sheet items.
[23] The discussion in this paragraph is on FY basis in line with availability of data, and is largely drawn from Chapter 3, Financial System Credit, Financial Sector Assessment 2004, State Bank of Pakistan.

Due to the continued pace of monetary tightening by SBP since April FY05, and the widening interest rate differential accompanied with a largely stable exchange rate, foreign currency loans against FE-25 deposits witnessed steady increase in FY06 and FY07. Specifically, foreign currency loans for trade financing saw an increase of US$ 697 million during FY06, and US$ 268 million in FY07. In FY07, gross disbursements for EFS surged to Rs. 328.6 billion. The decline in the average interest rate differential to 1.12 percent in FY07 compared to 2.82 percent in FY06 played an important role in lowering the volume of foreign currency loans during FY07. This trend reversed subsequently and the demand for foreign currency loans persisted up until January FY08 on account of the widening interest rate differential, subsequent to which the volatility in the exchange rate led to a substantial decline in the utilization of foreign currency loans for trade financing, as both exporters and importers were eager to repay their foreign currency loans in the wake of the sharp depreciation of the Rupee. As of end August FY09, trade financing to importers against FE-25 deposits has declined to US$ 188 million only, compared to the peak level of US$ 270 million as of end January FY08. Similarly, trade financing for exports has dipped to US$ 407 million, compared to the peak level of US$ 733 million as of end March FY08.

Data on foreign currency denominated loans indicates that the banking sector is not heavily exposed towards foreign currency borrowing, as the outstanding amount of total foreign currency loans availed by domestic borrowers (Rs 228.4 billion) constitutes only 7.3 percent of the gross loan portfolio of the banking system as of end June CY08, in comparison with 9.8 percent at end CY07. As already discussed in detail, a portion of these loans is financed by the foreign currency deposits mobilized by banks under the FE-25 deposit scheme.[24] FE-25 deposit utilization data shows that foreign currency loans against these deposits have witnessed steep decline since February CY08 in the wake of the factors discussed above (**Figure 3.15**). Specifically, the outstanding amount has declined to US$ 862.0 million by end August CY08, compared to the peak level of US$ 1,881 million as of end February CY08. Over 60.0 percent of these loans are provided for export financing, and hence have a natural hedge against adverse foreign exchange fluctuations. This information suggests that the currency risk for banks from this channel is within manageable limits.

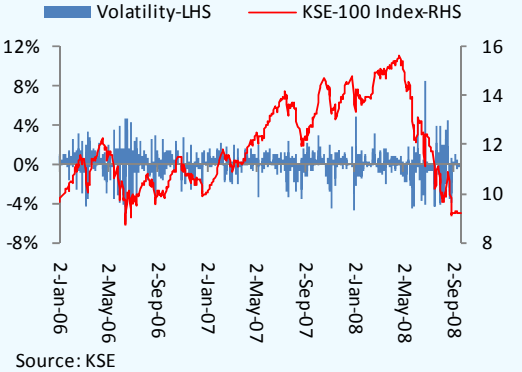
Figure 3.15: FC Loans financed by FE-25 deposits



Source: SBP

Moving on to other sources of market risk, *Equity price risk* emanates from the inherently volatile nature of the stock market, and remains a source of concern for the regulators. While the KSE-100 index witnessed relatively low volatility during most of CY07, the volatility increased sharply from November CY07 onwards (**Figure 3.16**) on account of prolonged political instability along with sharp deterioration in overall macroeconomic environment.[25]

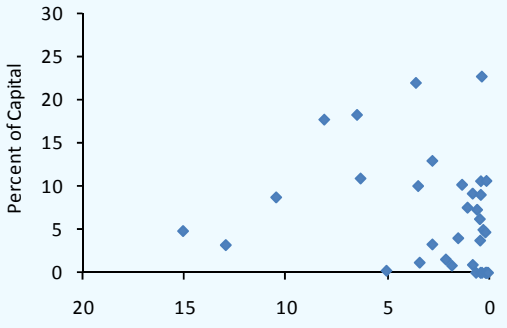
Figure 3.16: Volatility in KSE-100 Index



Source: KSE

[24] FE Circular No. 25 dated June 20, 1998.
[25] Chapter 6, "Stability Assessment of Financial Markets", section 6.4.

Figure 3.17: Investment in Share as Percentage of Capital of Commercial Banks



Source: SBP calculations

The direct equity exposures of banks grew by 37.0 percent during CY07, in comparison with 27.4 percent in CY06. In absolute terms, it reached Rs 59.4 billion as compared to Rs 43.3 billion in the previous year. Data for H1-CY08 show that banks' equity exposure has declined to Rs 48.3 billion on account of the continuous decline in the equity market since touching its peak level of 15,676 points in April CY08. Prudential norms laid out by the SBP require the equity exposure of banks to be linked to their respective capital base. From this perspective, the increase in the equity exposure during CY07 has had little impact on the ratio of investments in shares to banks' capital.[26] Specifically, the total investments in shares increased marginally to 10.9 percent of the total capital as compared to 10.8 percent in CY06. Bank-wise position shows that some of the middle-tier banks hold a significant share of their investments in equities (**Figure 31.17**). Such investments are prone to the *equity price risk*. A sensitivity analysis based on CY07 data reveals that, on a consolidated basis, banks can sustain the (hypothetical but plausible) shock of a 40.0 percent fall in the KSE-100 Index, since they actually have sufficient cushion available in the form of the surplus booked against such shares. The total surplus booked against the investment in shares increased to Rs 5.7 billion during CY07, compared to Rs 4.8 billion in the previous year. H1-CY08 data shows that the banking sector still holds Rs 4.8 billion revaluation surpluses, at a time when the KSE-100 Index had declined by 27.6 percent from its peak level (in April) by end June CY08. Moreover, the sensitivity analysis based on H1-CY08 data also suggests that even a 50.0 percent further decline (i.e. subsequent to the decline upto end-June CY08) in the KSE-100 index will have an impact of 42 bps on the CAR of the banking system. Given that the KSE management has imposed a floor of 9,144 points on the KSE-100 index w.e.f. August 28, CY08, the equity risk of banks is expected to remain largely contained in the second half of the year.

To summarize the assessment of market risk, the interest rate risk is the main element driving the market risk in the banking system. Changes in the yield curve during the year have increased the interest rate risk for banks with high adverse gap between the maturities of their rate sensitive assets and liabilities. On the currency side, depreciation of the rupee does not create a direct exchange rate risk for the banking system as banks have foreign currency denominated assets in excess of foreign currency liabilities, and a relatively small (and largely hedged) exposure to foreign currency loans. Direct exposure to equity risk, despite an increase in exposure in absolute terms, is still within the stated limits in terms of capital. Thus equity price risk is also negligible and is not expected to pose any significant risk to the solvency profile of banks.

3.3.3 Operational Risk

Operational risk is an inherent feature of financial institutions by virtue of the nature of their operations, and constitutes an important component of their enterprise-wide risk management systems. Remaining productive, staying competitive, and ensuring continuous improvement means making optimal and most informed operational decisions in a timely manner. However, a sudden event, such as equipment failure, a blackout, terrorism, supply chain interruptions, or an e-commerce failure, can occur at any point in time and seriously affect the continuity of business,

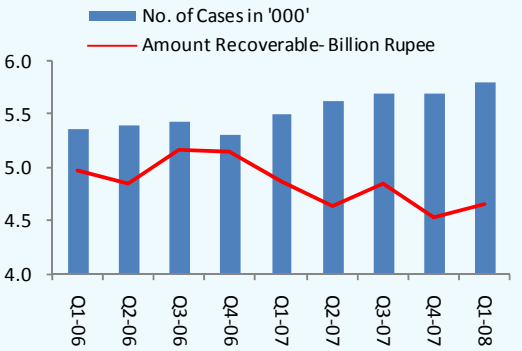
[26] Level of investments in shares is linked to banks' capital. Specifically, Prudential Regulations require that total investments of conventional commercial banks in shares should not exceed 30 percent (previously 20 percent), and 45 percent (previously 35 percent) for Islamic banks and DFIs, of their equity, as specified in BPRD Circular No. 30, dated October 26, 2008.

threaten the image of the institution, and impact shareholder value. All this could have a domino effect in the industry; therefore it is the primary responsibility of regulators to ensure that banks undertake contingency planning and have a sufficient level of preparedness for events which can potentially jeopardize the continuity of their operations.[27]

In practice, one cannot predict when or how the next event will impact the operations of financial institutions. But, with the right insight and planning, potential ramifications can be minimized and survival can be ensured. Some of the operational risks are minor and persistent, while others are large and less frequent (i.e. tail risks). To manage business risks effectively, an integrated approach is necessary. Operational risks could be broadly categorized as: (1) Employee errors; (2) Systems failures; (3) Fire, floods or other losses to physical assets; and (4) Fraud or other criminal activity.

While over the years, the operational risk indicators, causes and effects have become theoretically clearer to the industry, more work still needs to be done on the implementation of various models and techniques to measure operational risks through quantitative and qualitative approaches.

Figure 3.18: Outstanding Frauds & Forgeries in Banks



Source: BSD, SBP

Besides its endeavors to implement best practices in operational risk management within banks, State Bank of Pakistan also assesses the gravity of threats emanating from lapses in banks' internal control environment. For this purpose, it keeps track of the frequency and volume of frauds and forgeries committed in the banking system. During CY07, the number of fraud and forgeries' cases decreased from 2,949 to 2,324. The amount involved in these cases was Rs 1.7 billion. In so far as outstanding cases are concerned, these have reached 5,697 as of end CY07. Importantly, the outstanding amount recoverable against these cases declined to Rs 4.5 billion by end CY07, compared to Rs 5.2 billion in the previous year (**Figure 3.18**).

Table 3.7: Frauds & Forgeries in the Banking System

Amount in million Rupees

Category	No. of Cases	Amount Involved
Cases Reported During 2007		
Serious	22	879.2
Medium	143	502.1
Low	2,159	278.7
Total	2,324	1,660.0
Cases Outstanding As On December 31, 2007		
Serious	162	2852.9
Medium	385	982.6
Low	5,150	702.2
Total	5,697	4,537.6
Criteria for frauds and forgeries categories		
Serious Frauds		More than 10
Medium Severity Cases		1 to 10.0
Low Severity Cases		Less than 1

Source: BPRD, SBP

Based on the nature of gravity of these incidents, data collected from banks reveals that the serious fraud cases (involving an amount of Rs 10.0 million and above) constituted 0.95 percent of the total incidents reported during the year, whereas the amount outstanding against such cases was around 53.0 percent of the total amount outstanding (**Table 3.7**).

In so far as quantification of operational risks is concerned, it is a relatively new arena for financial institutions, for which banks are still in the process of developing formal models. Major

[27] SBP has introduced risk management guidelines containing a full section on managing operational risk for commercial banks and DFIs.

challenges generally faced by financial institutions across the globe, and Pakistan's financial institutions in particular, are: insufficient data on loss generated by operational risk, the lack of established methods for quantifying risks and requisite level of skills and expertise, existence of many different types of operational risks with multiple corresponding owners of the institutions and systems, and the unclear causes and effects of risks. Consequently, SBP strives to improve standards for robust systems for operational risk management amongst banks on an ongoing basis.

Table 3.8: Losses to Banking Sector

	Partially	Fully	Total
No. of Damaged Branches	409	290	699
Amount of Loss: million Rs	298.6	894.8	1193.4

Source: BPRD, SBP

During CY07 and in Q1-CY08, two cases related to operational risk made headlines. One was the series of events subsequent to the assassination of Benazir Bhutto, former Prime Minister, on December 27, CY07, which led to riots across the country due to which the financial sector was impacted in particular due to incidents of violence and damage to property. Losses reported to the SBP subsequent to this event amounted to Rs. 11.2 billion (**Table 3.8**). The second event was related to a large public sector bank. In March CY08, there were fraudulent cash withdrawals from its automated-teller machines (ATMs) by other banks' card holders, involving a total amount of about Rs 21.0 million. This event compelled the bank to suspend its One-Link service temporarily. The main reason for this fraud was the flawed mechanism of changing the code in software customization and irregular reconciliation and settlement of ATM transactions.

On its part, SBP has taken various steps to ensure the financial stability and soundness of the banking sector through its roadmap for the implementation of the Basel-II framework, which takes into account operational risk, in addition to also issuing regular guidelines to further enhance the readiness of the banking sector for the mitigation of operational risk. Even though the standardized approach is strongly recommended by SBP, banks are free to adopt either of the two i.e. the Basic Indicator Approach or the Standardized Approach from January 1, CY08 to calculate the capital charge against operational risk. Data for H1-CY08 shows that operational risk weighted assets stood at Rs 449.6 billion out of the total risk weighted assets of Rs 4,011.7 billion at end H1-CY08, which is 11.2 percent of total risk weighted assets. Encouragingly, despite the capital charge for operational risk, the capital to risk weighed asset ratio continues to be in the well capitalized range i.e. more than 10.0 percent.

3.3.4 Liquidity Risk

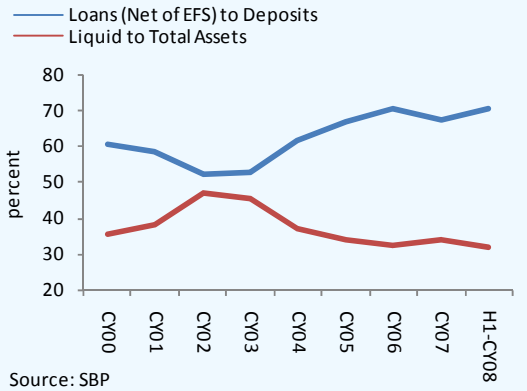
The ongoing market turmoil in global financial markets highlights the crucial nature of, and the associated need for, the close and prudent management of liquidity risk. In previous months, regulators and central banks around the globe have taken steps to strengthen the liquidity risk management of financial institutions. In Pakistan, liquidity risk is primarily assessed by using standard indicators of liquidity under the CAMELS supervisory framework. Trends in these indicators show that the liquidity position of the banking sector has improved during CY07 (in comparison with CY06), on account of changes in the asset composition discussed in section 1.2 (**Figure 3.19**).

SBP continued with its tight monetary policy stance during CY07 and H1-CY08 by increasing the discount rate and reserve requirements, but the degree of tightening through open market operations (OMOs) varied at different points during the year, given the impact of the excessive amount of government borrowing from the SBP, particularly in H1-CY08. However, some of the increased liquidity through government borrowing was offset by the massive decline in Net Foreign Assets (NFA). Specifically, the NFA of the banking sector saw a reduction of Rs 316.4 billion during FY08, compared to an expansion of Rs 274.6 billion in FY07. Despite these

developments, the major sources of liquidity continued to be the growth in deposits (in the form of increased inflows of remittances), and FDI inflows.

The ratio of advances in terms of deposits, a liquidity indicator, has followed an increasing trend, particularly since H2-CY07, despite average deposit growth of 18.0 percent per annum during CY03-CY06 (**Figure 3.19**). However, growth in advances could not maintain its pace during CY07 due to the on-going monetary tightening. The calendar year saw a 50 bps increase in the policy rate and an increase in cash reserve requirements for banks. Specifically, the 3.0 percent CRR for time liabilities was abolished, and the definition of demand liabilities was revised to include fixed deposits of up to one year maturity.[28] While the CRR remained at the level of 7.0 percent on a weekly basis, the minimum daily balance was increased from 4.0 percent to 6.0 percent with effect from January 18, CY07.[29] As a result of the various monetary tightening measures, the advances to deposit ratio (ADR) started to show a declining trend during the year, and reached 67.1 percent by end CY07 (**Figure 3.19**).

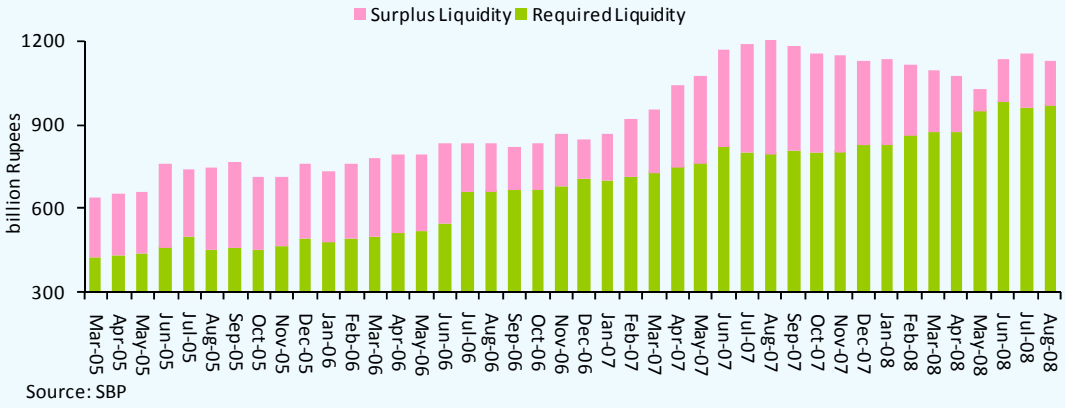
Figure 3.19: Liquidity Indicators



Source: SBP

Monetary tightening not only curtailed credit expansion during CY07, but also increased the amount of liquid assets held by the banking sector. Sharp increase in excess reserves held by the banks is also visible from **Figure 3.20.**

Figure 3.20: Excess Reserves Held by the Banking System



Source: SBP

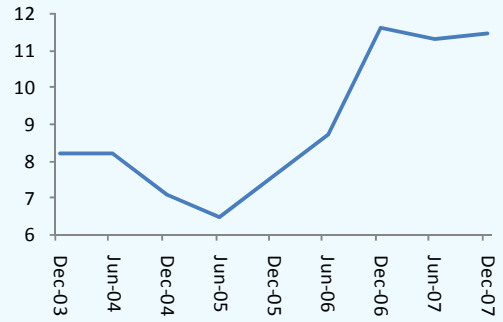
An important recent development on this front is the reversal of this decline during the first half of CY08. A sharp increase in inflation during H1-CY08 pushed real lending rates into the negative zone, which revived the interest in fresh borrowing. As a result, the ADR reached 69.7 percent by end H1-CY08, despite deposit growth of 8.7 percent over the same period. This, along with mounting inflationary pressures forced the central bank to tighten its monetary policy further in May and July CY08, when the benchmark policy rate was increased by 150 bps and 100 bps respectively to 13.0 percent.[30] Considerable decline in excess reserves of the banking sector is

[28] BSD Circular No. 4 dated August 1, 2007.
[29] BSD Circular No 1 dated January 18, 2007.
[30] The discount rate was subsequently increased to 15.0 percent in November 2008.

also visible in recent months, especially from May CY08 onwards, indicating a more constrained liquidity position of the banking sector. The liquidity position of the banking system went through a temporary phase of deterioration in October, CY08, the reasons for which are discussed in the **Special Section I: Liquidity Pressures in the Banking System** at the end of this chapter.

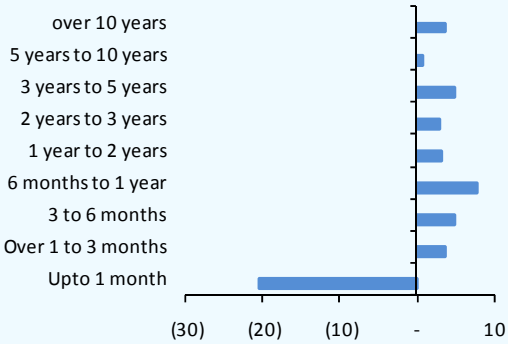
The introduction of different levels of CRR for demand and time liabilities also served as an incentive for banks to mobilize deposits of tenors exceeding one year, which is expected to reduce the asset-liability mismatch, besides mobilizing long term savings from the household sector. The impact of this policy direction and banks' conscious efforts to mobilize fixed deposits in a bid to contain maturity mismatches, is clearly visible from the increased share of deposits of more than one year maturity in the total deposits of the banking sector (**Figure 3.21**). The maturity GAP data shows that the banking system had considerable maturity mismatches in a couple of time buckets during CY07. For the one month time bucket, the negative gap was quite high at 20.4 percent of total assets (**Figure 3.22**). Generally the maturity gaps were within the range of 10.0 percent (plus and minus), as also mentioned earlier. The ongoing aggressive promotion of long term deposit schemes by a large number of banks on attractive profit rates is likely to increase the share of such long term deposits. However, government's decision to increase profit rates on National Savings Schemes (NSS) in order to shift its borrowing to the non-bank sector, is likely to impair banks' ability to mobilize long term deposits in the short to medium-term future.

Figure 3.21: Share of more than 1-Year maturity deposits in Total deposits



Source: Statistics, SBP

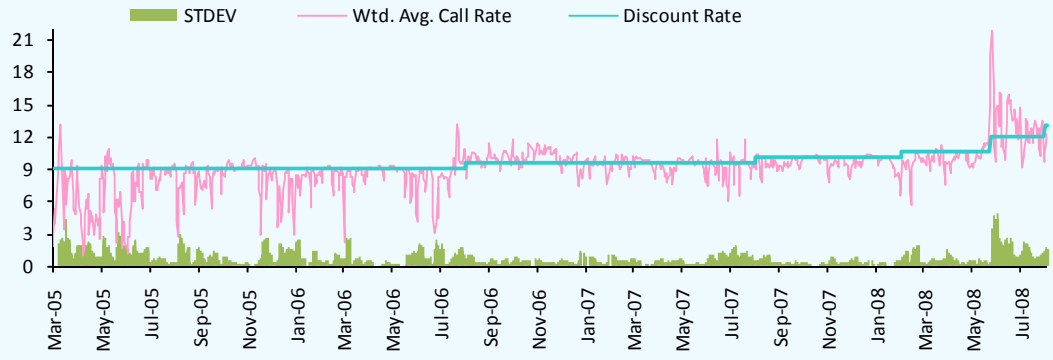
Figure 3.22: Maturity GAP (Assets - Liabilities)



Source: BSD, SBP as percent of total assets

The day to day liquidity position is generally visible from the movement of the overnight interest rate (ONIR, which is primarily a decreasing function of excess reserves). Very low excess reserves are associated with very high (close to discount rate) ONIR rates and vice versa. The volatility in ONIR shows a considerable decline with a steady rise in its average level during the year (**Figure 3.23**). Higher ONIR with lower volatility shows steady tightening of the overnight money market. The daily trend in ONIR (weighted average call rates) shows more volatility during June-July CY07 and at the beginning of CY08, i.e. periods around the announcement of the Monetary Policy Statement by the SBP.

Figure 3.23: Weighted Average Call Rates (in percent)



Source: SBP

All the above mentioned indicators suggest that the liquidity of the banking system was systematically drained out in the process of implementation of monetary tightening, more so in H1-CY08, especially when compared with trends observed in the previous year (CY07), when there was still excess liquidity available in the system. Moreover, increase in the ADR during H1-CY08 itself shows reduced liquidity, as banks were also required to maintain mandatory reserve requirements of 19.0 percent of their demand and time liabilities, and 9.0 percent of their demand liabilities as of end H1-CY08.[31] As mentioned earlier, the recent increase in NSS rates may also shift funds away from the banking sector, reducing banks' ability to mobilize deposits at a relatively low cost. This will also have negative implications for the overall liquidity position of the banking system. This, along with other unusual developments, are at the heart of the temporary liquidity strains in the banking system in Q4-CY08.

3.4 Risk Bearing Capacity of the Banking System

While the above analysis highlights changes in the risk profile of the banking sector, stability of the system critically depends on its capacity to absorb losses stemming from various risks. The capital base and profitability of the banking system act as a line of defense by absorbing the losses stemming from adverse movements in the risk profile. Specifically, the capital base serves the dual purpose of absorbing unexpected losses while reducing the problem of moral hazard. Profitability also has a direct effect on financial soundness as it provides a cushion against losses arising from normal operations, and serves to build the capital base to absorb unexpected losses. In this backdrop, this section analyzes changes in capital adequacy and profitability of the banking sector during CY07 and H1-CY08.

3.4.1 Capital Adequacy and Solvency

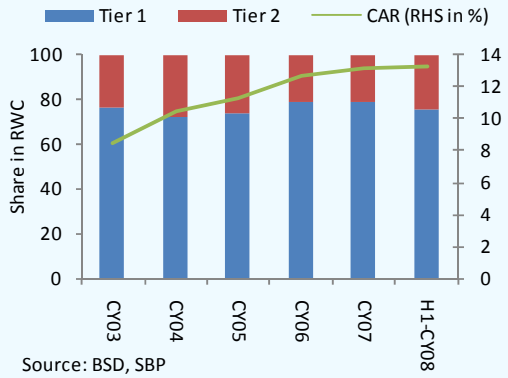
Implementation of enhanced minimum capital requirements in a phased manner continues to strengthen the capital base of the banking system. Specifically, healthy profits and capital injections to meet the minimum capital requirement of Rs 4.0 billion as of December 31, CY07 helped in improving the solvency of the banking sector. One of the key solvency indicators, the qualifying risk-based capital, witnessed an increase of Rs 101.9 billion to reach Rs 466.4 billion by end CY07. Around 80.0 percent of this rise came from the core capital, i.e. paid-up capital, general reserves as disclosed in annual balance sheets, and un-appropriated profits. This provides strength and quality to the capital structure of the banking system. In percentage

[31] Due to temporary liquidity strains in the banking system, SBP has reduced the CRR to 5.0 percent, and has exempted time liabilities of over one year tenor from SLR requirements. Both these developments are discussed in the Special Section: Liquidity Pressures in the Banking System at the end of this chapter.

terms, the core capital grew by around 28.0 percent in CY07 compared to 47.6 percent in CY06. On the other hand, the supplementary capital showed a growth of 27.0 percent due to increase in general provisions, revaluation reserves and issuance of subordinated debt. Notwithstanding the relative slowdown in the growth of core capital, its share in the total risk-based capital remained at 79.2 percent (**Figure 3.24**). Recent data shows that the risk-based capital has witnessed an increase of 3.8 percent during H1-CY08. However, the major contribution to the H1-CY08 increase came from the supplementary capital, which registered an increase of 4.9 percent during the first half of the year. Capital is likely to increase further as banks are required to enhance the minimum level of capital (net of losses) to Rs 5.0 billion by end CY08.

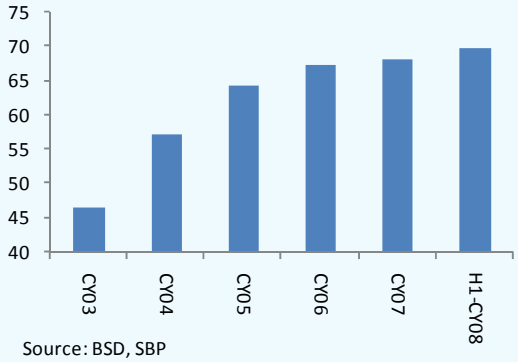
To gain further insights, developments in the risk weighted capital (RWC) need to be assessed in view of the changes in the risk weighted assets (RWA). Slower growth in the loan portfolio of the banking system (as mentioned earlier) is also visible from the deceleration in risk weighted assets, which grew by 20.2 percent during CY07 compared to 24.4 percent in CY06. This decline is also attributed to banks' preference to invest in low risk government securities, investment in which increased by 57.6 percent in CY07 compared to growth of 4.9 percent in CY06. Despite these developments, the RWA still amounts to 68.1 percent of the total assets as of end CY07, which is 79 bps higher compared to the previous year (**Figure 3.25**). Data for H1-CY08 shows further increase in the RWA to total assets ratio. This rise is primarily attributed to the growth of 8.7 percent in the loan portfolio during H1-CY08 compared to a notable decline of 11.9 percent in the overall investment portfolio of the banking sector: a notable reversal of trends observed in CY07.[32]

Figure 3.24: Capital Structure and Capital Adequacy



Source: BSD, SBP

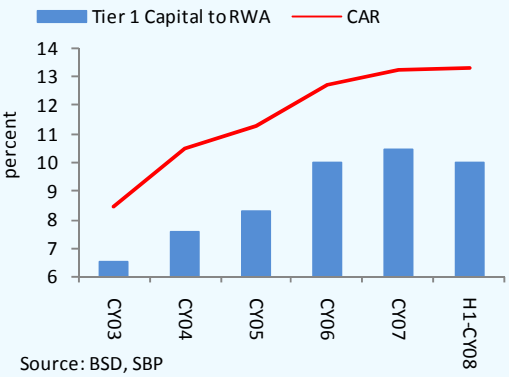
Figure 3.25: Share of RWA in Total Assets



Source: BSD, SBP

The capital adequacy ratio (CAR) of the banking system, a ratio of RWC to RWA, registered an increase of 71 bps during the year to reach 13.2 percent by end CY07. This increase in CAR, keeping in view the higher provisioning requirement and larger base effect, is quite commendable. The core capital to risk weighted assets ratio also witnessed a rise of 57 bps to reach 10.5 percent in CY07 (**Figure 3.26**). Improvement in both these benchmark ratios significantly above the generally acceptable benchmark for well capitalized banks (i.e. banks maintaining CAR above the level of 10.0 percent) places the

Figure 3.26: Trends in CAR



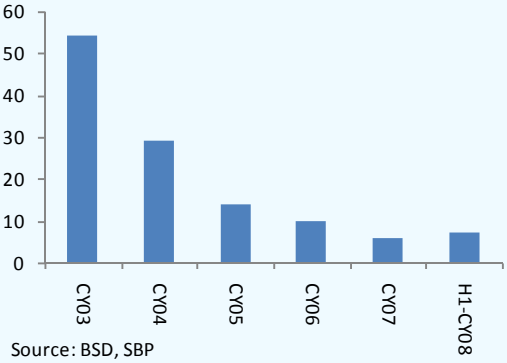
Source: BSD, SBP

[32] Although banks have started to report their capital adequacy ratios according to Basel II requirements from January CY08, discussion in this section is based on Basel I requirements.

banking system in a comfortable position and allows banks ample space to enhance their business. Data for H1-CY08 also indicates that the overall CAR has witnessed an increase of 10 bps to reach 13.3 percent. However, the tier I to RWA ratio could not sustain the trend observed until CY07, as it declined by 49 bps to reach 10.0 percent during this time. This is not a cause for concern as the overall CAR has improved. Moreover, it is comforting to know that the CAR of the overall banking sector based on the Basel-II framework (which was implemented with effect from January CY08) is 12.1 percent for H1-CY08. Notably, a key difference under this new framework is the requirement of additional capital for operational risk.

Another solvency indicator, i.e. the ratio of capital to total assets, has seen a rising trend in the last few years and reached 10.5 percent in CY07, compared to 9.4 percent in CY06. The increasing trend in this ratio signifies the decreasing leverage of the banking system, which is a welcome development from a stability point of view. Moreover, the capital coverage ratio i.e. capital (free of net NPLs) to total assets ratio has also improved to 9.9 percent from 8.5 percent in CY06. This shows that even if 100.0 percent provisioning is created against the entire existing infected portfolio, the banking system would still have sufficient buffer available to meet the minimum required level of CAR. The qualitative improvement in the asset quality due to the consistent improvement in loan appraisal standards and better compliance with regulations has also enabled the banking sector in mitigating potential threats to solvency. These various developments were responsible for bringing down the Net NPLs to Capital Ratio from 183.8 percent in CY97 to the all time low level of 5.6 percent in CY07, reflecting a reduced degree of potential risk to the capital of the banking system (**Figure 3.27**). However, this hard won achievement now faces a testing phase, as data for H1-CY08 indicates an increase in this ratio to 6.9 percent.

Figure 3.27: Net NPLs to Capital Ratio



Source: BSD, SBP

While developments in CY07 were encouraging from the point of view of the overall stability of the banking system, bank-wise information provides further insights into whether these changes are shared by a large number of banks or just a few big banks. At first, an analysis of the systemically important top 5 banks, which hold 52.0 percent of the total assets of the banking system, reveals that solvency indicators of these banks also strengthened in CY07. The CAR of this group continued to improve during the year. It reached 14.7 percent by end CY07 from 14.0 percent in CY06. Tier-1 capital in terms of RWA and balance sheet capital to total assets also witnessed visible improvements during CY07. Data for H1-CY08 data shows that the CAR for this group has declined slightly to 14.5 percent on account of heavy provisioning by one of these banks.

Table 3.9: Distribution of Banks' Assets According to CAR

percent share in total assets

Capital Adequacy Ratio	CY97	CY98	CY99	CY00	CY01	CY02	CY03	CY04	CY05	CY06	CY07
Below 8 percent	63.3	5.0	12.4	13.4	12.2	10.1	8.0	0.4	0.7	1.2	4.6
8 to 10 percent	8.7	17.8	40.0	31.6	38.7	31.1	43.8	55.1	38.8	12.1	21.6
10 percent and above	28.0	77.2	47.6	55.0	49.1	58.8	48.2	44.5	60.5	86.7	73.8

Source: SBP Calculations

Bank-wise information reveals that the number of banks with CAR above the required ratio has remained constant in CY07 and CY06. However, the share of well capitalized banks declined to 73.8 percent as compared to 86.7 percent of the total assets of the banking system in CY06 (**Table 3.9**). The number of such banks has also declined to 30 as compared to 32 in CY06 (**Table 3.10**). The main reason for this decrease in market share and increase in the number of banks with CAR below 10.0 percent is the merger of two banks, and the consequent conservative approach adopted by the new entity towards classification of the loan portfolio. H1-CY08 data shows that one more bank has joined the list of well capitalized banks. Similarly, the asset share of well capitalized banks stood at 71.6 percent compared to 73.8 percent as of end CY07.

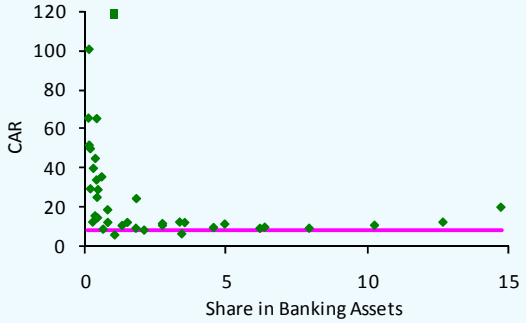
Table 3.10: Distribution of Banks by CAR

	CY97	CY01	CY02	CY03	CY04	CY05	CY06	CY07	H-CY08
Below 8%	7	5	4	4	1	2	3	3	2
8 to 10 %	5	5	4	10	13	7	4	6	6
10 to 15 %	12	11	9	5	9	13	15	12	13
Over 15 %	22	22	23	21	15	17	17	18	18
Total	46	43	40	40	38	39	39	39	39

Source: SBP Calculations

Banks with the highest market share in the total assets of the banking system have their CAR at around 15.0 percent, and banks with the lowest market share generally have a much higher CAR (**Figure 3.28**). All this suggests that the improvement in banking capital is shared by a large of number of banks, which is a welcome development.

Figure 3.28: CAR of Banks as per their Market Share



Note: One specialized bank with market share of 0.18 percent has negative capital.

In so far as meeting the MCR of Rs 4.0 billion by the end of December CY07 is concerned, 33 out of 39 banks were compliant with this requirement (including 5 foreign banks which are allowed to keep Rs. 2.0 billion instead of Rs 4.0 billion as capital). Of the remaining banks, four are under restructuring/privatization while two banks are in the process of meeting this shortfall. It is expected that most of these banks will be able to meet MCR and CAR requirements by the end of CY08.

Summing up, the above analysis indicates that the solvency profile of the banking system stayed strong despite heavy provisioning in CY07 and H1-CY08. However, banks do need to be more vigilant about their risk exposures, especially when considering riskier ventures in the quest for higher returns, and need to further improve their risk management framework to avoid potential losses from the deterioration of asset quality. The recent credit crisis in the developed economies that resulted in write-offs and losses across the financial sector, necessitating huge capital injections and institutional restructuring, highlights the importance of the need for continuous vigilance and improvement in risk management standards and procedures. Although the banking system in Pakistan is largely immune to a direct effect of the still persisting international financial market turmoil, the indirect effect through the real sector of the economy alongwith sharp deterioration in the domestic macroeconomic environment highlights the potential challenges for the banking sector.

3.4.2 Profitability of the Banking System

While a strong capital base is essential to withstand unexpected losses, the profitability of the banking system ensures smooth functioning by absorbing losses from normal banking operations. Changes in banking system profits during CY07 highlight this fact, as the sector's profitability was impaired by heavy provisioning and write-offs of around Rs. 60.1 billion during the year (Rs 22.0 billion in CY06). As a results, the after tax profits of the banking system declined to Rs 73.3 billon from their peak level of Rs 84.1 billion in CY06. Nevertheless, this level of profits was still higher than that in CY05 (**Table 3.11**).

Table 3.11: Profitability of the Banking System

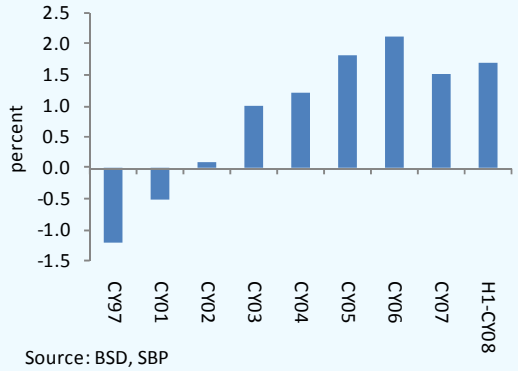
Billion Rupees

	CY97	CY01	CY02	CY03	CY04	CY05	CY06	CY07	H1-CY08
Profit before Tax	-10.8	1.1	19.0	43.7	52.0	93.8	123.6	107.1	61.5
Profit After Tax	-16.4	-9.8	2.9	24.7	34.7	63.3	84.1	73.3	46.0

Source: BSD, SBP

The above decline in profits is also visible from all standard indicators of profitability. The return on assets (ROA), both pre-tax and after-tax, declined during CY07 to more sustainable levels compared to the exceptionally high level in the previous year (**Figure 3.29**). To analyze whether this decline in ROA was experienced across the banking sector, total assets of the banking system are distributed on the basis of ROA. The distribution shows that the number of banks with ROA of 'zero and below' has increased from 6 to 10, while their share in total banking assets has also increased from 2.1 percent in CY06 to 8.0 percent in CY07. Bank-wise information reveals that this has basically resulted from losses posted by some of the newly established banks, as well as those which were recently restructured, and from two merger transactions.[33] Likewise, the number of banks with ROA in the range of '0.5 and over' has declined from 33 to 29 and their share in total assets has also declined (**Table 3.12**). Data for H1-CY08 shows that the banking sector has managed to increase its after tax ROA by 20 bps to reach 1.7 percent despite the challenging operating environment.

Figure 3.29: After Tax ROA of the Banking System



Source: BSD, SBP

Table 3.12: Distribution of Banking System's Total Assets (TA) by ROA

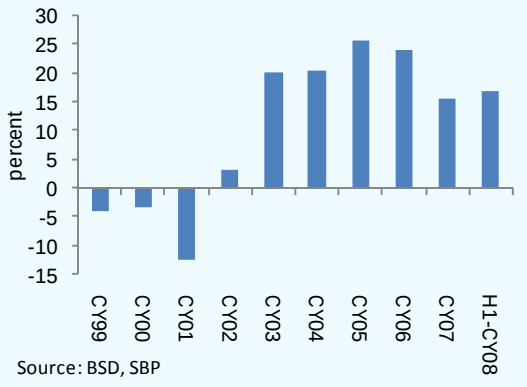
	CY03		CY04		CY05		CY06		CY07	
ROA	No. of Banks	% Share in TA	No. of Banks	% Share in TA	No. of Banks	% Share in TA	No. of Banks	% Share in TA	No. of Banks	% Share in TA
0 and below	7	1.7	6	3.9	7	3.5	6	2	10	8.5
0 to 0.5	4	5.5	2	5.2	4	2.8	3	2	2	2.4
0.5 to 1	5	48.7	11	21.3	2	7.0	6	10	4	1.9
1.0 to 1.5	9	23.0	12	45.3	5	4.0	5	10	10	34.9
1.5 and Over	15	21.1	7	24.3	21	82.7	19	77	13	52.3

Source: SBP Calculations

[33] One of the two merger transactions during CY07 involved a merger of a DFI into a local private bank, resulting in an extraordinary increase in the asset size of the new entity by around 140 percent in CY07, while posting losses for the year. Consequently, its ROA was negative.

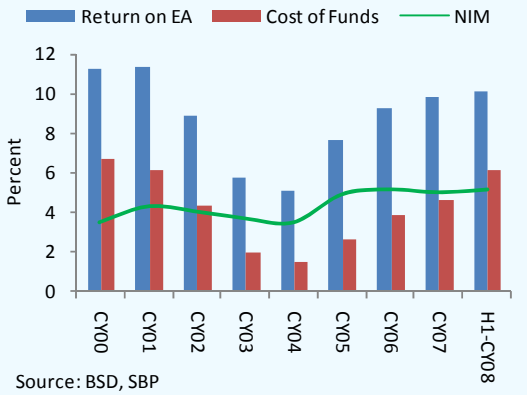
Another indicator of profitability, return on equity (ROE) of the banking system, which had been on an increasing trend in the past, has experienced a decline from 23.8 percent in CY06 to 15.5 percent in CY07 (**Figure 3.30**). Huge increase in the equity of the banking system, mergers and consolidation of some banks and the impact of higher provisioning on the profitability, contributed to this decline. Information for H1-CY08 shows that like ROA, the after-tax ROE also improved to 16.7 percent.

Figure 3.30: After Tax ROE of Banking System



Source: BSD, SBP

Figure-3.31: Interest Rate Spread & NIM



Source: BSD, SBP

The decline in the ROA and ROE of the banking system during CY07 is also accompanied with a small decline in the level of banking spreads during the year (**Figure 3.31**). As the profitability of the banking system is inextricably linked to the level of banking spreads, a disaggregated analysis of overall profitability will be instructive. On the income side, the return on earning assets saw an increase of 44 bps to reach 9.8 percent in CY07 (**Figure 3.31**). Similarly, the average cost of funding also grew to 4.6 percent with an increase of 63 bps during CY07. This increase was primarily driven by increased weighted average return on deposits, which registered a rise of 66 bps to reach 4.3 percent during the year. In absolute terms, the interest paid to the depositors increased (YoY) by 38.3 percent during CY07 on account of both healthy deposit growth and relatively higher returns paid to the depositors. The relatively greater increase in the cost of funding has resulted in a marginal decrease of 22 bps in the net interest margin (NIM). While the banking spread narrowed slightly during the year, SBP took steps to increase the minimum rate of return by placing a floor of 5.0 percent on savings deposits with effect from June 1, CY08 This measure is likely to reduce banking spread during CY08, as the banking sector is less likely to pass on the full impact of the associated increase in cost to the borrowers (an assessment of efficiency indicators of the banking sector is given in **Special Section II: Trends in Efficiency Indicators** at the end of this chapter).

Besides NIM, a significant contribution to the profitability of the banking sector was also made by the non-interest income component, which grew by 30.3 percent in CY07 to reach Rs 92.9 billion, compared to Rs 73.3 billion in CY06. Disaggregated information shows that all major components of the non-interest income including fees, commission & brokerage income, dividend income, and income from trading, posted healthy growth during CY07.

Composition of income of the banking sector shows that interest income on loans to customers increased by Rs 43.5 billion to Rs 265.7 billion in CY07. This increase was largely due to the change in the volume of business which contributed around 80.7 percent of the increase. In absolute terms, increased business volume contributed about Rs 35.1 billion whereas the increase in interest rates contributed only Rs 8.3 billion, or 19.1 percent of the total increase.

This implies that during CY07, increased business contributed to the increased interest income, and the banking sector was restrained from increasing interest rates on customer loans, as was the case in CY06 (**Table 3.13**).

Details of interest expense reveal that their level increased significantly by Rs 42.0 billion during CY07, a growth of 38.2 percent. Variance analysis of the cost of deposits reveals that 56.2 percent of the increased cost of deposits came from the increase in rates of return on (incremental) deposits during CY07, which may be termed as "rate variance", whereas, the remaining 43.8 percent of this increased cost of deposits is attributed to the increased deposit base, or "volume variance".

Table 3.13: Sources of Change in Interest Income on Customers' Loans and Interest Expense on Deposits

(Billion Rs)	Balance of the Previous Year	Change Due to Rate Variation	Change Due to Volume Variance	Balance for the year
Interest income on Customers' Loans				
CY03	87.1	(29.4)	9.4	67.0
CY04	67.0	(11.6)	21.6	77.0
CY05	77.0	46.7	25.4	149.0
CY06	149.1	37.5	35.7	222.2
CY07	222.2	8.3	35.1	265.7
Interest Expense on Deposits				
CY03	65.0	(41.7)	10.1	33.4
CY04	33.4	(11.7)	6.5	28.2
CY05	28.2	26.2	5.6	59.9
CY06	59.9	40.1	9.9	110.0
CY07	110.0	23.6	18.5	152.0

Source: SBP Calculations

To conclude, although the level of profitability was lower when compared with CY06, the banking system performed quite well in CY07, given the fact that tightening of loan loss provisioning criteria by SBP led to a one-off significant increase in provisioning expenses. The strong profits that the banking system had enjoyed in the recent past have been prudently deployed in enhancing capital and providing for loan losses, and in the deployment of better risk management systems and automated infrastructure. These measures have strengthened banks' capacity to withstand shocks. Data for H1-CY08 shows that the banking sector was able to maintain its profitability in the first half of the current year despite challenges posed by the macroeconomic environment.

3.5 Resilience of the Banking System: Sensitivity Analysis

The analysis in the preceding sections clearly suggests that changes in the risk profile of the banking system are accompanied with considerable improvements in its risk bearing capacity. Banks have also successfully managed their risks in the face of mounting challenges from the deteriorating macroeconomic environment. This section assesses the resilience of the banking system by using a single factor sensitivity analysis. Using a top-down approach, the exercise discusses the impact of various types of (plausible) shocks on banks' capital adequacy.[34] The exercise assumes possible changes in three risk factors namely credit, market and liquidity risks. The shocks applied to these risks are identified on the basis of both historical trends, and informed estimates, and are summarized in **Table 3.14**. The impact of the assumed credit and market risk shocks, as summarized in **Table 3.15**, is calibrated to the CAR of the commercial banks, based on end CY07 and H1-CY08 data of commercial banks. Results for H1-CY08 are more informative, as they include the impact of adverse developments which have already actually taken place in the first half of the year. Additionally, the impact of various shocks is also calibrated to the CAR of commercial banks based on the Basel II framework.

Under ***Credit risk***, a 10.0 percent increase in the NPLs of all commercial banks, directly downgraded to the loss category, would require additional provisioning of Rs 21.4 billion based on end CY07 data. When adjusted with the existing capital adequacy ratio of these banks, the

[34] It may be noted that this exercise makes use of a large number of explicit and implicit assumptions in calculating the impact of changes in risk factors on the capital adequacy and profitability of the banking sector. In some of these it is assumed that banks' capital and profit will remain unchanged.

CAR would decline to 13.2 percent from the actual level of 13.66 percent for commercial banks (**Table 3.15)**. Bank-wise adjusted CAR shows that one bank may experience a decline in its CAR by 50 bps to 7.8 percent, which is marginally below the acceptable standard of 8.0 percent. CAR of another bank, already lower than 8.0 percent, would experience a further decline.

Table 3.14: Assumed Shocks to Risk Factors

Credit Risk
C-1: A 10 percent increase in NPLs (100% provisioning against increased NPLs).
C-2: A shift in categories of classified loans (all loans classified as OAEM become substandard, all substandard loans become doubtful, and all doubtful loans become loss)
C-3: Both C-1 and C-2 occur simultaneously
C-4: A 10 percentage points increase in the NPLs to Loans ratio of consumer finance (100% provisioning against increased NPLs)
Market Risk: Interest Rate Risk
IR-1: An increase in interest rates by 200 basis points.
IR-2: A shift and steepening in the yield curve by increasing interest rates of all the three maturities (by 50, 100, and 150 basis points)
IR-3: A shift coupled with flattening of the yield curve by increasing 150,120 and 100 basis points in the three maturities respectively.
Market Risk: Exchange Rate Risk
ER-1: A depreciation of ER by 13 percent (closer to the highest change in the monthly average PKR/US$ exchange rate (12.8) over the period from Jan 1994, in September 2000).
ER-2: Hypothetical assumption of appreciation of rupee by 10 percent.
Market Risk: Equity Price Risk
E-1: A 20 percent fall in the equity prices.
E-2: A 40 percent decline in the equity prices
Liquidity Risk
L-1: A 5 percent decline in liquid liabilities and its impact on the liquidity coverage ratio calculated after excluding Govt. securities under the Held to Maturity category from liquid assets.
L-2: A 10 percent decline in liquid liabilities and its impact on the liquidity coverage ratio calculated after excluding Govt. securities under the Held to Maturity category from liquid assets.

An adverse shift in the categories of NPLs (C-2) would comparatively have a lower impact in terms of provisioning requirements when compared with C-1. This shock would require an additional provisioning of Rs 16.5 billion. In case of C-3, the combined effect of the above mentioned two shocks would also be absorbed by the commercial banks without showing signs of instability. Except for the two banks referred to earlier, all commercial banks are fairly resilient towards this combined shock. Finally, a 10.0 percent rise in the NPLs to loans ratio of consumer finance would require additional provisioning of Rs 37.1 billion, which may lower the CAR of commercial banks by 94 bps to 12.72 percent. Individually, three commercial banks would experience a decline in their CAR to below 8.0 percent under this shock.

As observed earlier, the interest rate risk is the most important among ***Market Risks.*** In case of IR-1, the CAR of commercial banks may experience a decline by 63 bps to 13.03 percent. The bank-wise adjusted CAR indicates that only one bank may experience a decline to below 8.0 percent under this shock, while the CAR of another bank is already below the minimum level. Importantly, these are the same banks which experienced reduced CAR in case of the credit risk shock. **Table 3.15** shows that other market risk factors have a relatively smaller effect on the CAR of commercial banks. The bank-wise adjusted CAR shows that:

- A 13.0 percent depreciation of the rupee would lead to a gain of Rs 17.1 billion for the commercial banks. The overall CAR will improve to 14.08 percent on account of surplus on revaluation of foreign assets.
- In case of ER-2, one foreign bank and a local bank (which is already non-compliant) will fall below the minimum level of 8.0 percent.

- Under E-2 (40.0 percent decline in equity prices), CAR for none of the commercial banks would fall below 8.0 percent, whereas the aggregate CAR of commercial banks will decline by 23 bps only.

Table 3.15: Impact of Sensitivity Analysis

		Dec-07		H1-CY08		H1-CY08*	
		Change in CAR	CAR-After Shock	Change in CAR	CAR-After Shock	Change in CAR	CAR-After Shock
Credit Shocks							
C-1	Deterioration in the quality of loan	-0.46	13.20	-0.48	13.22	-0.48	12.06
C-2	Shift in categories of classified loans	-0.41	13.24	-0.50	13.20	-0.50	12.04
C-3	Cumulative impact of all shocks in 1 and 2	-0.87	12.79	-.98	12.72	-0.98	11.56
C-4	Deterioration in NPLs ratio of consumer finance	-0.94	12.72	-0.85	12.85	-0.85	11.69
Market Shocks - Interest Rate Shocks							
IR-1	Shift in the yield curve	-0.63	13.03	-0.44	13.26	-0.44	12.10
IR-2	Shift and steepening of the yield curve	-0.43	13.22	-0.31	13.39	-0.31	12.23
IR-3	Shift & flattening of the yield curve	-0.33	13.33	-0.23	13.47	-0.23	12.31
Market Shocks - Exchange Rate Shocks							
ER-1	Depreciation of Rs/US$ exchange rate (the historical high)	0.42	14.08	0.10	13.80	0.10	12.64
ER-2	Appreciation of Rs/US$ exchange rate (hypothetical)	-0.33	13.33	-0.07	13.63	-0.07	12.47
Market Shocks - Equity Price Shocks							
E-1	Fall in the KSE index (historical high)	-0.05	13.60	-0.12	13.58	-0.12	12.42
E-2	Fall in the KSE index (hypothetical scenario)	-0.23	13.43	-0.33	13.37	-0.33	12.21
Liquidity Shocks		**Liquidity Coverage Ratio**					
		Actual	Stressed	Actual	Stressed	Actual	Stressed
L-1	5 Percent Fall in Liquid Liabilities	37.04	33.73	34.8	31.3	34.8	31.3
L-2	10 Percent Fall in Liquid Liabilities	37.04	30.05	34.8	27.5	34.8	27.5

* Based on Basel II framework
Note: The results have not been adjusted for deferred tax benefits accrued on these losses.

Finally, the liquidity coverage ratio has been used to assess the liquidity position of the banks. The liquidity coverage ratio (calculated after excluding HTM securities from liquid assets) for end-December CY07, was 37.0 percent. The analysis shows that in case of a 5.0 percent decline in liquid liabilities, a shock assumed in case of L-1, the liquidity coverage ratio of the banking system would decline to 33.7 percent. Four commercial banks would have their liquidity requirement ratio below 25.0 percent, an acceptable level given the liquidity requirements as of end December CY07. Under L-2, i.e. a shock of a 10.0 percent decline in liquid liabilities, the liquidity coverage ratio may decrease to 30.0 percent, which when compared with the existing liquidity requirements, is comfortable. Bank-wise information shows that 12 commercial banks may see their liquidity coverage ratio decline to less than 25.0 percent. Specifically, two local private banks would have the lowest liquidity coverage ratio under this assumed scenario. Even a moderate liquidity shock to these banks may affect their profitability and liquidity significantly. .
Results based on H1-CY08 numbers show that the impact of credit risk factors is slightly higher in terms of a change in CAR, compared to the results based on end CY07 data. Encouragingly, the post-shock CAR remained quite close to the level observed for the CY07 stress-tests. This is primarily due to the increased capital of commercial banks during the first half of CY08. Another notable point is the smaller impact of market risk factors, except equity risk, on the CAR based on H1-CY08 data. In case of the equity price shock, the impact will be slightly higher (10 bps for E-2 shock) compared to the position based on end CY07. However, the CAR of commercial banks stays well above 13.0 percent even in this case.

Results for change in CAR based on the Basel II framework clearly show that the level of CAR is almost 100 bps lower when compared to the CAR on the existing i.e. Basel I framework. A key point to note is that the aftershock CAR of commercial banks never drops below 11.0 percent: a level almost 100 bps higher than the CAR of well capitalized banks, i.e. 10.0 percent.

In sum, results of the sensitivity analysis suggest that the banking sector is well positioned to withstand losses stemming from assumed shocks to various risk factors. Only two banks would require capital injections in case of the realization of assumed shocks. Importantly, none of these banks figure in the list of the systemically important top 5 banks. Notwithstanding, banks should remain vigilant to the ongoing changes in risk factors. Efforts should be exerted to improve risk management systems, reduce maturity mismatches, further diversify the loan portfolio and strengthen internal control systems.

3.6 Conclusion

The banking sector has shown strong resilience to recent and growing challenges emerging from the macroeconomic environment, on the back of a robust capital base, healthy profitability and strong deposit growth. The sensitivity analysis based on end June CY08 data also shows that banks can withstand moderate shocks without showing any sign of instability. However, both the concentration and credit risks can pose a significant challenge to the banking sector in case of any further deterioration in the macroeconomic environment. Liquidity risk may also emerge given the increase in the profit rates on NSS instruments, which are motivated by the need to mobilize funds for budgetary financing from non-bank sources. This move can potentially reduce the appeal of bank deposits. Consequently, the healthy deposit growth enjoyed by the banking sector in recent years is likely to slow down. Besides affecting the liquidity position, this development is also likely to increase the cost of funding for the banking sector, as is the minimum rate of return of 5.0 percent laid down by the SBP. The combined impact of these developments has the potential to negatively impact the profitability of the banking sector.

Bank-wise information on various risk indicators reveals the presence of a few small and weak banks in the banking system. Although these banks pose no systematic risk to the banking system, their weak financial health reflects the presence of certain vulnerabilities in the system.

Notably, factors such as SBP's new requirements for enhancing the minimum capital base to Rs 23 billion (US$ 300 million) by end CY13, and the introduction of variable CAR based on banks' CAMELS-S rating, are likely to provide fresh impetus to the process of consolidation in the financial sector, which would create strong market participants and further strengthen banks' capacity to withstand any potential decline in profits.[35]

[35] BSD Circular No 19 dated September 05, 2007.

Special Section I: Liquidity Pressures in the Banking System

The turmoil in the global financial system originating from the subprime mortgage market in mid-2007 shifted gears in September 2008, from being a liquidity crisis in the initial phase to a full-blown solvency crisis one year later. Throughout the protracted duration of the unfolding events, major central banks around the globe implemented a wide array of policy-measures to pump liquidity into the market, provide financial assistance for bailing out systemic financial institutions, and to generally re-build the badly shaken confidence in the financial system in advanced economies. Nevertheless, the spillover effect of the financial crisis into the real sector is all but evident in the ensuing economic slowdown in countries across the globe. While major central banks around the world have been easing key interest rates since the advent of the crisis, they are doing so more aggressively now to minimize the impact of the recession.

Concurrent developments in Pakistan have been such that the financial sector has not been directly impacted by the ongoing events in advanced countries, albeit the economy has had a build-up of pressures of its own, emanating from the weakening macroeconomic environment. Notably, Pakistan has been impacted most severely by the unprecedented rise in commodity prices which peaked in mid-CY08, with a direct impact on the external current account deficit, and a consequent sharp depletion of foreign exchange reserves (leading to a contraction in NFA) and weakening of the Rupee. Rising commodity prices also adversely impacted the already high fiscal deficit by adding on to the level of petroleum subsidies, which have only recently been phased out. Notably, the fiscal deficit has been financed largely by borrowings from the central bank, with a negative impact on the already high inflation (**Table 1**). Additionally, the prolonged period of uncertainty associated with the transition in the political regime has had an impact on investor sentiments, as seen in both the decline in the SCRA flows during the year, and the subsequent correction in the equity market.

Table 1: Major Indicators of the Economy

	FY08				FY09
	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Oct
CPI-YoY (end-period) in percent	8.4	8.8	14.1	21.5	25.0
Fiscal Deficit as percent of GDP	-1.5	-1.9	-1.3	-2.7	-1.0*
Budgetary Borrowing (Net) billion Rs	71.6	153.1	87.5	242.4	206.7^
Borrowing from SBP: billion Rs	-13.9	214.5	208.7	279.4	376.3^
Private Sector Credit: billion Rs	-2.9	218.5	128.8	64.0	136.6^
NFA of Banking System: billion Rs	-23.1	-103.6	-130.1	-59.6	-346.4^
Trade Deficit: billion US$	2.4	3.9	4.8	4.3	5.8
Current Account Deficit: billion US$	2.3	3.8	3.8	4.2	5.9
SBP-Reserves End Period: billion US$	13.9	13.4	11.1	8.6	6.0**
Exchange Rate	60.7	61.2	62.7	68.3	78.8**

* Upto Sep, ** end Nov, ^ Upto Nov 15
Source: SBP Database

The central bank has been in a monetary tightening phase since April 2005 – to contain demand pressures in the economy and the rising inflationary tendencies – the pace of implementation of which was more aggressive in CY08. The policy discount rate has been increased on 4 occasions during the year, by a cumulative 500 bps, in addition to raising CRR and SLR in May CY08.[36]

Notably, the economic fundamentals of Pakistan are different from those of advanced economies. The bank-centric financial sector operates on a strong footing, with very little

[36] CRR was raised by 100 bps to 9.0 percent (for all deposits of up to one year maturity), and SLR was raised by 100 bps to 19.0 percent of the total Demand and Time Liabilities.

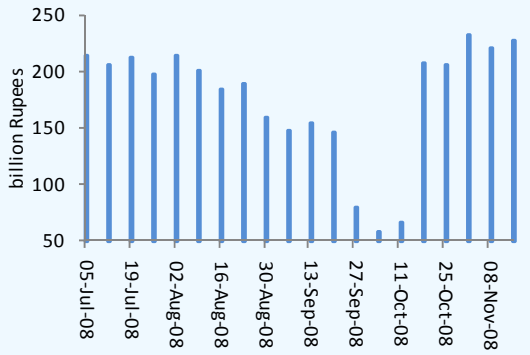
correlation with events in the global financial markets. Notwithstanding, the banking sector experienced a temporary liquidity crunch in Q4-CY08, due to a confluence of factors. The discussion in this section is focused on the analysis of the causes of the liquidity strains which prevailed in the banking system for a few weeks in October CY08.

Stepping back, the rationale for the increase in CRR and SLR in May CY08 was to, respectively: (i) directly reduce the available liquidity with banks, and (ii) ensure that banks don't end up liquidating their higher than required investments in government securities to make up for the lost liquidity: the net impact of the rise in both the CRR and the SLR was intended to translate into an increase in interest rates. The decision was implemented on the assumption that these measures would be translated into an increase in market interest rates, and that it would force banks to mobilize more deposits to cope with their regular liquidity needs.

Despite various measures taken, the banking sector had sufficient liquidity upto June CY08, given that: (1) the banks' deposit base increased by Rs 333.5 billion (8.7 percent) during H1-CY08; (2) the excess liquidity over and above the required amount (of CRR and SLR) averaged around 6.0 percent of the demand and time liabilities (DTL) of the banking system; (3) and the liquidity spread (gap between overnight weighted average call and repo rates) exhibited normal trends.

While banks faced some liquidity constraints in subsequent weeks, as evidenced by more frequent visit to the discount window, with higher amounts raised, the liquidity position of the banking system continued to be strong during July and August CY08 (**Figure 1**), as indicated by the excess liquidity with banks, of around 5.5 percent of DTL (on average) during these months, with regular trends observed in other liquidity indicators.

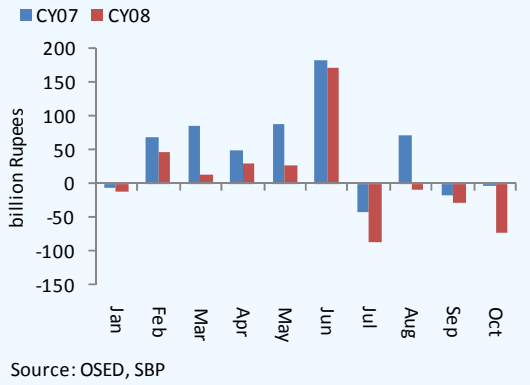
Figure 1: Excess Liquidity with the Banks



Source: OSED, SBP

Notwithstanding, while the decline in the deposits of the banking system in July was seen as a regular phenomenon,[37] the magnitude of the decline and its continuation in August and September, was the first indication of an irregular development (**Figure 2**). The decline in growth in deposits, in the presence of strong credit demand from the Public Sector Entities (PSEs) and the private sector, was therefore construed to be one of the major factors contributing to liquidity strains in the banking sector in ensuing weeks.

Figure 2: Monthly Change in Deposits



Source: OSED, SBP

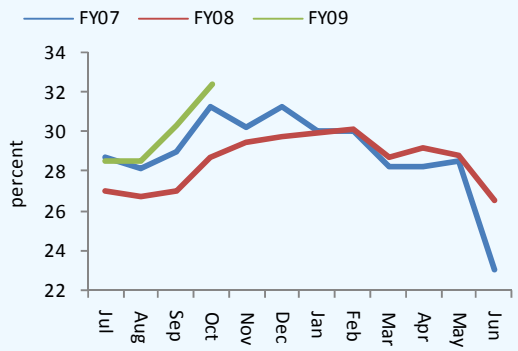
The other factor which impinged on the liquidity position, was the surge in global commodity prices, as discussed in Chapter 1 (section 1.1), with consequent impact on the external current account and the fiscal deficit, and finally on the foreign exchange reserves with the central bank. The monetary impact of this huge reduction in FX reserves is clearly visible from the contraction in NFA of the banking system, which saw a reduction of Rs 346.4 billion

[37] Due to the tendency of window-dressing balance sheets at June-end.

during July-November 15, CY08, compared with contraction of only Rs 23.1 billion over the same period last year. This was then the underlying factor which caused liquidity pressures in the banking sector.

As the first line of defense in case of liquidity strains, excess liquidity held by banks declined to Rs 79.1 billion (2.1 percent of DTL) by the last week of September, CY08, in comparison with Rs 145.6 billion in the preceding week (**Figure 1**). Bank-wise data shows that all banks[38] were compliant with the minimum liquidity reserve requirements during this week. During the same week, the liquidity spread in the money market also inched up to 443 bps, compared to 333 bps in the previous week. The liquidity situation at this stage was further complicated by the seasonal demand for withdrawals due to the Eid-festival, and a rise in the CIC/Deposit ratio (**Figure 3**), indicating a certain degree of dollarization in the economy, resulting from the weakening of the domestic exchange rate against the US$. In the first working week after Eid, banks witnessed unexpected deposit withdrawals due to rumors in the market regarding the potential impact of the global crisis on the financial position of a few banks. Specifically, the demand liabilities of the banking system saw a reduction of Rs 80.8 billion during the period from the last week of September to the second week of October (two weeks), while liquidity spreads reached 2990 bps as of October 4, 2008 (**Figure 4**).

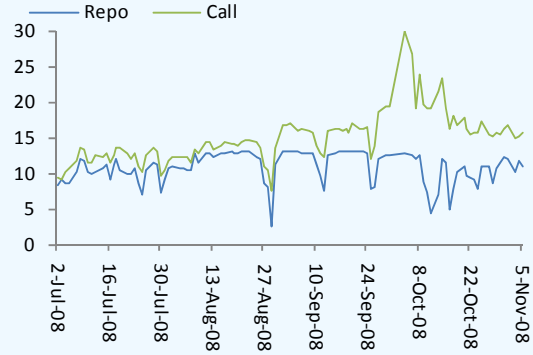
Figure 3: Trends in Currency to Deposit Ratio



Source: OSED, SBP

At this stage, the central bank stepped in to address liquidity concerns by taking a series of major policy actions, which ranged from a reduction in cash reserve requirements by 400 bps to 5.0 percent on demand deposits (including time deposits of one year maturity) in a phased manner starting from October 11 to November 1, 2008; exemption of time deposits (with one year and higher maturity) from SLR requirements; provision of 100.0 percent refinancing to banks against EFS; enhancing the list of SLR eligible securities;[39] allowing securities classified in the held to maturity portfolio to be used for SBP repo facility,[40] and liquidity injections through OMOs.

Figure 4: Trends in Overnight Rates



Source: MPD, SBP

While reducing CRR serves to pump in liquidity directly (amounting to Rs. 270 billion) into the banking system, exemption of time deposits with tenors of over one year from SLR requirements, allowing GoP Ijara Sukuk to be SLR eligible, and other related measures were aimed at ensuring that banks had sufficient government securities to undertake repo transactions for ongoing liquidity management.

[38] Excluding one Public Sector Commercial Bank, which has been facing liquidity shortfall since April CY08.
[39] BSD Circular No. 22, dated October 10, 2008.
[40] This facility is against Market Treasury Bills (MTBs) and Pakistan Investment Bonds (PIBs) to the extent that such investments are in excess of the SLR requirements. The restriction on entering into repo transactions against HTM securities in the inter-bank market is still in place.

Bank-wise information reveals that liquidity pressures were evident across the banking system as the excess liquidity (over and above the minimum requirements) held by banks had reduced sharply in a matter of two weeks. Although the big 5 banks were compliant with their minimum liquidity requirements during this short-lived liquidity crunch, the excess liquidity held by these banks declined to a relatively low level of Rs 25.3 billion (only 1.3 percent of DTL) as of October 4, 2008 (**Table 2**). Liquidity strains were, however, more severe for the small to mid-sized banks. Incidentally, a few small private banks continue to face issues with maintaining the required level of liquidity, while all other banks have since then regained their position of strength in meeting the minimum liquidity requirements. Improved liquidity position subsequent to SBP's measures is also clearly visible from the trends in overnight rates in **Figure 4**.

Table 2: Distribution of Excess Liquidity[1]

Amount in billion Rupees

	06-Sep-08	13-Sep-08	20-Sep-08	27-Sep-08	04-Oct-08	11-Oct-08	18-Oct-08	25-Oct-08	01-Nov-08	08-Nov-08	15-Nov-08
No. of Banks*	0	1	0	0	1	3	4	3	2	3	2
Amount of Liquidity Shortfall	0.0	0.5	0.0	0.0	1.7	12.0	3.5	2.4	2.9	3.5	2.5
Excess Liquidity with big-5 banks	62.2	62.3	53.7	27.2	25.3	29.0	94.6	95.6	104.2	99.5	103.7
Excess Liquidity with the Banking Sector	147.7	154.2	145.6	79.1	58.9	67.1	206.8	205.8	232.0	220.0	227.4

[1] The analysis does not take into account one of the PSCBs.
*Unable to meet the minimum liquidity requirements

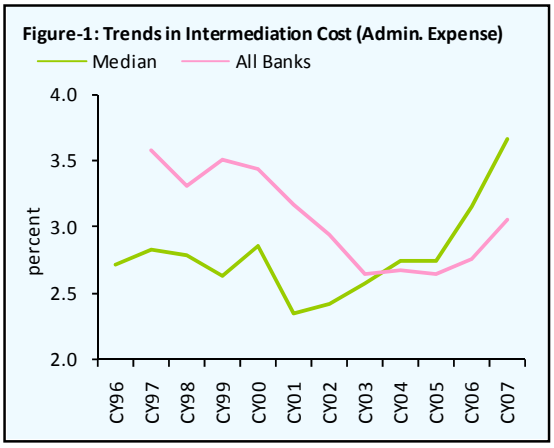
Liquidity Position Going Forward

While liquidity strains have eased off in recent weeks after substantial quantitative easing by the central bank, low growth in deposits coupled with continued increase in the CIC/Deposits ratio indicates that banks need to make concerted efforts to enhance their deposit and to bring back the CIC into the formal system. This might be a challenge going forward, due to the concomitant rise on rates on NSS instruments (by 320-420 bps), with potential disintermediation from bank deposits to NSS.

Special Section II: Trends in Efficiency Indicators of the Banking System

Sustainable growth of the banking sector, equipped to play an active role in the development of a growing economy like Pakistan, critically depends on its efficiency, i.e. the ability to provide high quality financial services at an optimal cost. This simple concept of efficiency is quite difficult to quantify in the presence of a wide range of financial services provided by the banking system to a large number of heterogeneous customers with varying degrees of risk preferences. Nonetheless, some measures that can be used to quantify the efficiency of the banking system generally include indicators of operating costs, profitability, interest rate spreads, etc. This section provides a descriptive analysis of these efficiency measures for the banking system.

The banking system in Pakistan has witnessed substantial changes over the past ten years. The primary objective of the broad-based financial sector reforms initiated in the 1990s was to infuse competition in the banking system, improve the efficiency and quality of banking services and ensure the financial stability of a sector that was marred with high non-performing loans, and large-scale mismanagement of public sectors banks. Since the early 2000s, the reform process, which encompassed privatization, liberalization, deregulation, and strengthening of the prudential regulatory framework, has significantly transformed the banking system. Banks have attained considerable financial strength and robustness which is well reflected in the improved financial soundness indicators. Additionally, the banking sector now offers a significantly improved range of services to customers, in terms of both the quality and efficiency, and has strived to increase its outreach. To assess whether these structural changes in the banking system have achieved their intended purpose, an analysis of the trends in selective indicators of operating efficiency is detailed below.



The indicators of operating efficiency have certainly improved over the last decade. Cost of intermediation has reduced significantly since the mid-1990s. Administrative expenses, in absolute terms, experienced a consistent decline until CY03 as the industry collectively implemented a cost rationalization and stabilization strategy. Subsequently, the banking system started to expand at a fast pace and administrative costs witnessed concomitant increase as most of the banks started to explore new areas for generating revenue, and invested in building the necessary human resources and physical infrastructure. Since the fund base of the system expanded at a faster pace, intermediation costs remained contained in CY04 and CY05. In CY06 and CY07, growth in the fund base started to stabilize, falling short of growth in administrative expenses. Resultantly, intermediation cost indicators started to inch up again, while staying well below the mid 1990s level (**Figure 1**). Nonetheless, strong growth in banks' earnings has more than covered the increase in administrative expenses, and the cost to income ratio, i.e. operating expense to gross income, has witnessed persistent decline over these years.

Category-wise, the five large banks, which were initially saddled with high intermediation costs, showed the most conspicuous effectiveness in curtailing their intermediation cost, while other local banks also registered slight improvements. Foreign banks that were most efficient in terms

of intermediation costs, have witnessed deterioration in their operating efficiency. This deterioration mainly emanates from the squeeze in the fund base of the sector on account of the significant restructuring that the sector has undergone over the last few years. Further, remaining operating banks had to incur a higher amount of operating expense for capturing and maintaining their market share. A cross -sectional analysis reveals that the difference in the intermediation cost across the banks that continued to reduce until CY03 has been gradually increasing since then as the inter-quartile range depicted in **Figure 2** increased during CY04-CY07. This development is a reflection of the high intermediation cost that small and medium sized banks are facing due to limited potential for economies of scale (**Figure 3**).

Figure 2: Trends & X-Sectional Dynamics of Intermediation Cost

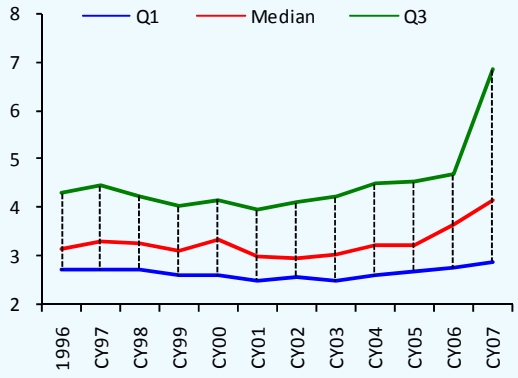
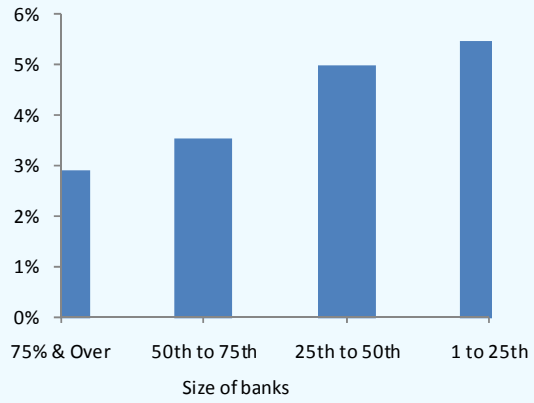
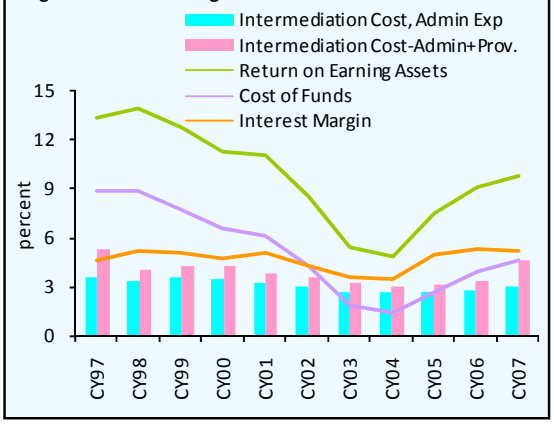


Figure 3 : Avg. Intermediation Cost by Size of Banks



Interest Margins:[41] The trend in intermediation costs of the industry is reflected in its cost of funds and return on earning assets. The industry experienced a sharp decline in both return on earning assets and cost of fund until CY04. These were the years of historically low interest rates with considerable liquidity flowing into the banking system. The traditional user of bank credit i.e. the corporate sector, however did not show much inclination for bank credit as it was itself going through a consolidation and stabilization phase. Therefore, banks had to focus mainly on investments in government papers, the share of which increased to 30.9 percent of the system's total assets by the end of CY03. The situation reversed in CY04 when low interest rates and promising economic outlook re-ignited the corporate sector's interest in expansion in business, and in turn, bank credit. Banks, laden with surplus liquidity, also started to venture into previously untapped areas such as consumer and SME financing that offered higher returns. Resultantly, the share of investments in the total asset base started to decline and reached 19.1 percent in CY06, and the return on earning assets again started to rise sharply after CY04. Besides the change in banks' asset mix towards high-yield assets, the tightening of monetary policy to address inflationary pressures in the recent couple of years also pushed up the returns on earning assets. The cost of funds for banks followed a similar pattern. However, the rise in the cost was less

Figure 4: Interest Margin & Intermediation Costs

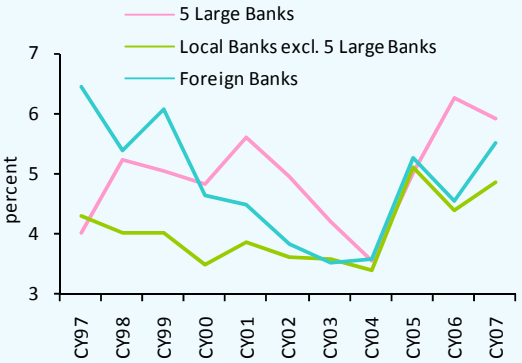


[41] Interest Margin is defined as a percent calculated by subtracting cost of funds (rupees of interest paid divided by the rupee amount of overall interest costing liabilities) from the return on earning assets (rupees of interest earned divided by the rupee amount of interest earning assets).

pronounced due to multiple reasons such as less interest-rate sensitivity of an average Pakistani depositor, higher preference for liquidity vis-a-vis returns, and the continued flow of funds into the system. In this backdrop, the return on assets increased sharply as compared to the cost of funds and the gap between both widened after CY04 (**Figure 4**).

Category wise break-up shows that the interest margins of all the three sub-categories have risen since CY04. The five large banks have the highest margins, which have declined slightly during the last year (**Figure 5**). The five large banks continue to enjoy a competitive advantage in mobilizing ample funds at economical rates as compared with the rest of the industry. Since they contribute more than one-half of the industry's deposits, they tend to push down the overall cost of deposits of the industry, thus widening the margins.

Figure 5: Category-wise Interest Rate Spread



A detailed cross-sectional analysis of the industry shows that the inter-quartile ranges for the interest margins, after remaining squeezed up until CY04, have gradually widened. This suggests that the banks across the industry now vary more significantly in terms of the asset profile and the cost of funds to finance these assets (**Figure 6**).

Figure 6: X-sectional Dynamics of Interest Margins

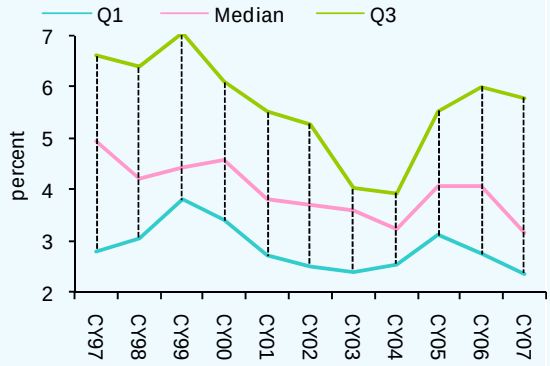
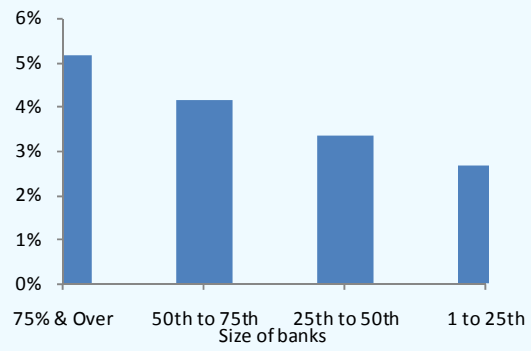


Figure 7: Avg. NIM by Size of Banks



The dispersion in the interest margins is also reflected in the trends and dynamics of the Net Interest Margin (NIM). The inter quartile range of NIM after decreasing until CY04, has again increased significantly. This phenomenon signifies that the large banks generally enjoy a higher NIM while medium and small sized banks are operating with lower NIM (**Figure 7**).

Improvements in the operating efficiency and expansion in both the scale and scope of banks' operations have gradually raised the profitability of the system to strong levels. Earnings of the sector, which were in the red around mid 1990s, became positive in CY98 and since then have gradually inched up to the highest level in CY06. Most of the banks shared this improvement as reflected by increase in the median and decline in inter quartile range until CY04. Subsequently, however, dispersion in the pre-tax ROA of individual banks has again increased (**Figure 8**) suggesting that medium and small sized banks are facing a deterioration in their earning capacity (**Figure 9**).

Going forward, factors such as the dictates of economies of scale and the regulatory framework aimed at ensuring a sound banking system, are likely to speed up the process of mergers and acquisition of small and medium-sized banks who will otherwise not be able to survive on a stand-alone basis and raise their capital to the minimum required level.

Figure 8: Trend and X-sectional Dynamics of Pre-Tax ROA

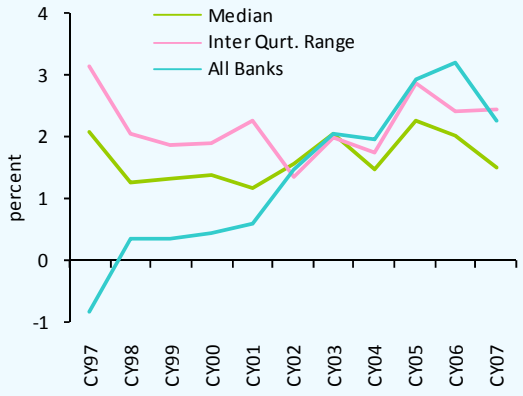
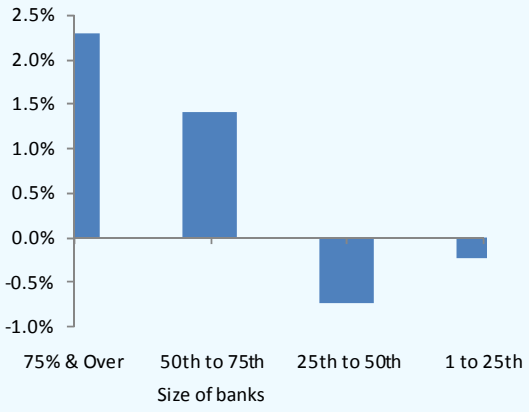


Figure 9: Avg. Pre Tax RoA by Size of Banks



The performance of the banking system in terms of profitability has improved since the late 1990s and banks have performed exceedingly well in recent years. Non-performing loans and provisioning charges that marred the solvency of the banking system a decade ago, have also come down as the result of the adoption of strong prudential measures by the SBP, that were well responded to by the market in terms of improved risk management practices and controls. However, the key efficiency indicators for intermediation costs and interest rate margin reflect a mixed trend. The banks' ability to withstand the effects of increased interest rates by paying proportionately lesser returns to depositors and widening their interest margins shows the restricted reach of the capital market and the relative monopoly of the banking sector in the financial system. Nevertheless, the rate of return on incremental deposits has started to increase, thus lowering the pace of increase in the margins. Further, factors like growing competition among banks, regulatory initiatives for providing minimum returns to the depositors and greater rate sensitivity exhibited by large depositors, are likely help in squeezing the margins and rationalizing the cost structure of the banking system.