

4 STABILITY OF THE BANKING SYSTEM

4.1 Introduction

A multitude of factors tested the resilience of the banking system during CY08, and added to the strains already seen in CY07. The scale of the financial meltdown in advanced economies triggered by the global financial crisis and its subsequent spillover into the real sector in these economies as well those not directly impacted by it, significantly weakened the domestic macroeconomic environment and heightened the degree of credit risk. The significant increase in risk aversion on the part of the general investor led to a temporary period of liquidity strains in the banking sector in H2-CY08. Continued monetary tightening with a 500 bps (cumulative) increase in the SBP policy rate during the year, over 20 percent depreciation of the domestic currency against the US Dollar and imposition of a floor on KSE-100 Index for almost 4 months further added to the woes of the banking system. Drawing on its strengths gained in the past few years, primarily driven by the effective regulatory regime and building up of strong capital cushion, the banking system was able to withstand these shocks.

The after tax return on assets (RoA) of the banking system at 0.8 percent for CY08 is an indication of the unfavorable operating environment. Notably, banks' ability to absorb unexpected losses is on a strong footing. Implementation of the minimum capital requirements in a phased manner continues to strengthen the capital base. The aggregate risk-weighted capital adequacy of the banking sector as of end-CY08, despite the inclusion of the capital charge for operational risk under Basel II requirements, remained at the CY07 level of 12.3 percent against the minimum requirement of 9.0 percent.¹ Bank-wise information indicates that only 3 commercial banks with market share of 10.5 percent in total assets fell short of the minimum requirement, and that 2 of these banks have their CAR at more than 7.0 percent. The distribution of CAR across banks also indicates that 24 out of 40 banks had their respective CAR at over 12.0 percent in CY08. These banks can be termed as well-capitalized banks.

In term of changes in risk factors, CY08 can be termed as an eventful year for the banking sector. The element of credit risk increased significantly, and despite the slowdown in economic activities and 500 bps increase in the benchmark policy rate, the loan portfolio of the banking sector grew by 18.4 percent to Rs 3.2 trillion by end CY08, against YoY growth of 12.6 percent in CY07. Two distinct factors contributed to credit expansion during the year. First, there was increased demand for bank loans from the non-financial public sector enterprises (PSEs) due to the building up of *circular debt*.² Second, private sector's appetite for bank loans strengthened during the year as mounting inflationary pressures pushed the real lending rates into the negative territory.

While rapid credit expansion, as seen in recent years, is one of the leading indicators of credit risk, the sharp slowdown in economic activities in CY08 emerged as the main cause of the deterioration in the quality of banks' loan portfolio. The NPLs of the banking system witnessed an astonishing rise of 64.8 percent during CY08 to Rs 359.3 billion by the end of the year. This is the biggest increase in a single year since CY97. Therefore, the NPLs to loans ratio increased by 290 bps, from 7.6 percent in CY07 to 10.5 percent by end-CY08. Bank level information reveals that 31 out of 40 banks with asset share of 89.7 percent in overall assets, recorded an increase in the NPLs to loan ratio. This suggests that the increase

¹ BSD Circular No. 30, dated November 25, 2008.

² Details in Box 4.1, Chapter 4, The State of Pakistan's Economy, First Quarterly Report FY09, State Bank of Pakistan.

in NPLs is fairly widespread and is driven primarily by cyclical factors i.e. generated by the economic cycle instead of structural weaknesses in the banking system.³

Irrespective of the reasons, the substantial rise in the volume of NPLs has had an adverse impact on the financial performance of the banking sector, given that it required banks to create provisions amounting to Rs 105.9 billion during CY08, which was Rs 46.0 billion higher than the provisioning amount of the previous year. This is despite the concession given by SBP to consider the benefit of 30 percent of the forced-sale value (FSV) of collateral for calculating provisioning requirements, as against the more stringent requirement for CY07.⁴ The effect of this benefit remained marginal as most of the banks could not fully meet the requirements of the directive before the finalization of annual financial statements. Nevertheless, latest available statistics suggests that some of the leading banks, taking a conservative stance, are not fully availing the FSV benefit.

Despite the increase in provisions, the provisions to NPLs ratio plunged to 69.6 percent by end CY08, compared to 86.1 percent a year ago. This reduction in the coverage ratio is primarily attributed to the partial provisioning requirements for NPLs in the initial categories of classification (OAEM, sub-standard & doubtful). As of end CY08, 44.0 percent of NPLs were classified in these initial categories.

Although the banking sector had surplus provisions of Rs 13.8 billion as of end CY08,⁵ a significant proportion of NPLs in the initial categories highlights the potential for incurring incremental provisioning expense in CY09. The increased risk to the solvency position is also visible from the surge in the net NPLs to capital ratio of the banking system to 19.4 percent in CY08, compared with only 5.6 percent for CY07. The distribution across banks indicates that 4 banks with asset share of 5.3 percent have this ratio in excess of 50 percent. In the previous year, there were only 2 specialized banks in this category with an asset share of 2.1 percent only. It is encouraging to note however that 29 banks, with asset share of 86.2 percent, have their net NPLs to capital ratio at less than 19.4 percent (average for the banking industry). Moreover, none of the big five banks have this specific ratio in excess of the industry average.

Another key development in CY08 was the emergence of temporary liquidity strains in the banking sector, especially during the second half of the year. The seasonal liquidity squeeze usually seen around the Eid festival was compounded by: (1) low confidence in the overall economic position of the country due to the weakening economic fundamentals in the midst of a prolonged period of political transition and the spillover impact of the international financial meltdown; (2) the imposition of the floor on the KSE-100 Index from late August CY08 to mid-December CY08 to halt the rapid decline in the equity market; (3) rumors about certain banks' financial health, and (4) the re-emergence of dollarization given the rapid depreciation of the Pak rupee against major currencies. The SBP, given its ongoing monitoring of the liquidity position of the banking system, quickly stepped in to address these liquidity concerns by taking a series of policy actions largely focused on quantitative easing while still maintaining a tight monetary posture.⁶ Although the various measures taken helped in easing off liquidity strains in the banking system, deterioration in the liquidity indicators for CY08 is evident from the sharp decline in the liquid assets to total asset ratio to 28.6 percent as against 33.6 percent for CY07. Liquidity strains are also reflected in the higher advances to deposit ratio which increased from 69.7 percent in CY07 to 75.5 percent in CY08.

³ An analysis of the rising volume of NPLs is given in the Special Section "NPLs of the Banking System: Cyclical or Structural" in this edition of the FSR.

⁴ BSD Circular No. 2, dated January 27, 2009.

⁵ Held as general provisions over and above the specific provisioning requirements of various NPLs categories.

⁶ BSD Circulars issued from October 13 to November 1, 2008.

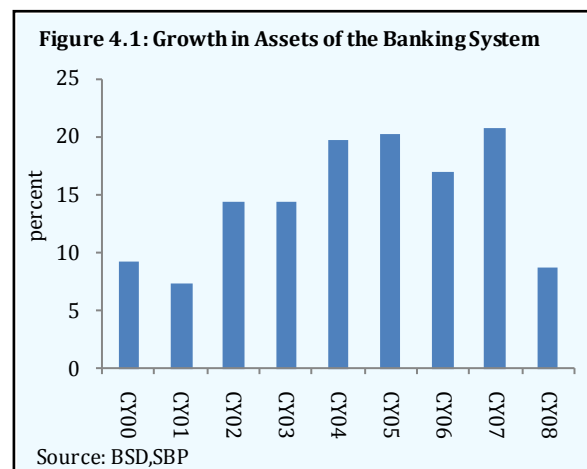
Banks' deposit base, the key source of funding for banks in Pakistan and inextricably linked to their liquidity position, grew by only 9.4 percent during CY08 compared to the annual average growth of 18.1 percent during CY03-07. Moreover, this meager growth in deposits was concentrated in H1-CY08, as deposits grew by less than 1.0 percent during H2-CY08. In addition to liquidity problems due to deposit withdrawals, the erosion of incremental deposit growth also constrained the balance-sheet expansion of the banking sector. Banks' asset growth dipped to a single digit level (8.8 percent) for the first time since CY01. As in the case of deposits, asset growth was also concentrated in the first half of CY08. The assets of the banking sector grew by only 2.1 percent during H2-CY08. Low growth in assets along with strong credit expansion during the year indicates a change in the asset mix of the banking sector. Investments, the second largest component of assets, witnessed negative growth of 4.0 percent during the year. Their share in overall assets plummeted to 19.2 percent by end CY08, from 24.7 percent as of end CY07. A major portion of this decline is attributed to the temporary liquidity strains observed during the second half of the year, which forced banks to convert a portion of their investment holdings into cash for liquidity management purposes, in a bid to honor their obligations.

The impact of the increased element of credit risk and corresponding changes in the assets and funding structure on the bottom line of the banking sector is clearly visible. The ROA dipped to 0.8 percent in CY08 compared to 1.5 percent in the previous year. While a decline in profitability was generally observed across the banking sector, 24 banks with asset share of 85.5 percent were still able to achieve positive returns on their assets. Furthermore, 12 out of 40 banks with asset share of 61.6 percent, were able to record ROA of more than 1.0 percent which is a generally accepted benchmark for banks. Encouragingly, the Financial Soundness Index (FSI)⁷ of the banking sector for CY08 remained in the positive zone despite significant negative developments during the year.⁸ All this is reflective of the resilience of the banking sector to real time shocks of a significant nature, and its modest performance as a consequence.

Having given an overview of the key developments during the year, the rest of the chapter analyzes the details of these developments. The chapter is organized into five sections; section 4.2 assesses the asset and funding structure of banks. The impact of these changes on various risks to the banking sector is analyzed in section 4.3. Section 4.4 examines the ability of the banking sector to absorb losses stemming from changes in the risk factors, whereas the final section concludes the chapter.

4.2 Asset and Funding Structure

After recording double-digit growth in assets with an average of 17.8 percent over the past six consecutive years, assets of the banking sector grew by only 8.8 percent during CY08: this is less than half of the growth realized in the previous year and the lowest since CY01 (**Figure 4.1**). Given the inflationary pressures in the economy, the bank' assets to GDP ratio dipped to 48.1 percent as against 54.6 percent for the year CY07. The sharp deceleration in asset growth is primarily attributed to: (1) slowdown in overall economic activities; (2) temporary liquidity strains, which forced banks to scale back their asset expansion in a bid to



⁷ Devised by the Financial Stability Department for the banking sector in Pakistan, details in Chapter 6, FSR 2006.

⁸ Details in section 4.4.3.

honor their liabilities and the consequent reduction in the credit creation capacity of the banking sector in H2-CY08; and (3) strong competition from the Central Directorate of National Savings (CDNS) for mobilizing funds.

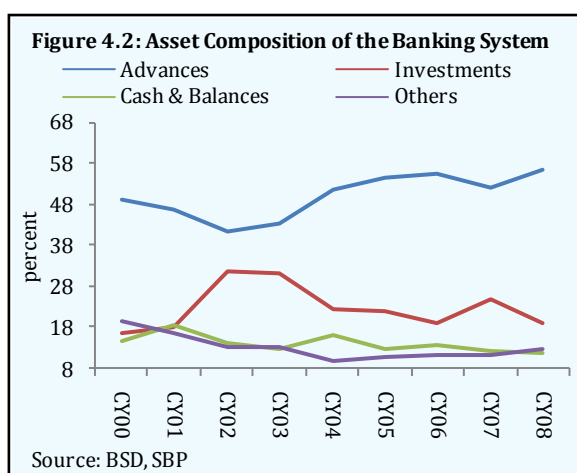
Bank-wise information indicates that 8 small banks⁹ with asset share of 7.4 percent registered negative asset growth in the range of 2.0 to 24.3 percent during CY08. The M-concentration ratio, a traditional measure of concentration, shows that the smallest 5 banks have a cumulative market share of less than one percent. On the other hand, the big 5 banks were able to increase their market share by 47 bps to 52.4 percent during the year. The Herfindahl-Hirschman Index (HHI), another widely used measure of market concentration which takes into account relative shares of banks in the industry, shows that concentration in the banking sector continued to reduce during CY08, albeit at a slower pace in comparison with previous years (**Table 4.1**).

Table 4.1: Measures of Concentration

	CY00	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
HHI	1023.4	992.8	973.1	911.7	850.1	762.1	744.9	739.3	735.5
Coefficient of Variation	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.4	1.4
M-Concentration Ratios									
Share of big 5 banks (percent)	63.2	61.2	60.8	58.8	56.0	54.0	52.3	52.0	52.4
Share of small 5 banks (percent)	0.7	0.6	0.4	0.3	0.5	0.5	0.6	0.6	0.6

Source: SBP Calculations

Weak growth in assets during CY08 was accompanied with significant changes in the asset mix and liability structure of the banking sector. **Figure 4.2** shows that the share of advances in total assets surged to 56.6 percent, reflecting an increase of 4.6 percentage points during CY08. This increase was primarily at the cost of a reduced share of investment holdings of the banking sector, while the share of cash and balances and other assets registered a small change during the year. The significant degree of swing in the composition of assets from investments to advances is attributed to a number of distinct factors. First, increase in reserve requirements as a part of monetary tightening in January and May CY08 forced banks to convert some of their investments to cash for meeting enhanced minimum requirements.¹⁰ Second, the demand for bank loans was strong during the first half of the year, as real lending rates became negative in face of high inflation, and corporate sector loans and commodity financing grew by 21.3 percent and 42.6 percent respectively in H1-CY08. Third, temporary liquidity squeeze during the second half of CY08 also forced banks to convert their investment holdings into cash to meet deposit withdrawals. SBP facilitated this process by slashing the cash reserve requirements by 400 bps on demand liabilities and abolishing the statutory liquidity requirements of 19 percent on time liabilities (of 1 year and above).¹¹



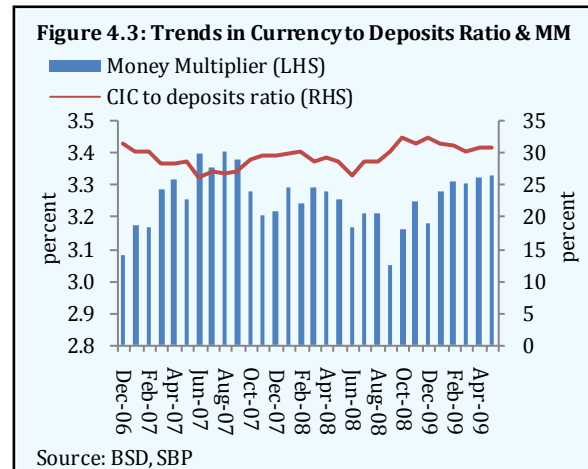
On the liability side, deposits of the banking sector grew by 9.4 percent only compared to the 20.4 percent increase during CY07. It is important to note that this decline in deposit growth was observed despite an increase of 17.2 percent (in US\$ terms) in home remittances, which

⁹ These include 3 domestic private banks, 3 specialized banks and 2 public sector commercial banks.

¹⁰ Outstanding investments of the banking sector decreased by Rs 152.6 billion during the first half of CY08.

¹¹ BSD Circular No. 25 dated October 17, 2008.

is one of the important sources of banks deposits. Trends in deposit mobilization during the year indicate that the reduction in growth was primarily concentrated in the second half of the year, as deposits grew by 8.7 percent in H1-CY08. While overall deposit growth decelerated due to stiff competition from National Savings Schemes, the process of deposit withdrawals around the Eid festival compounded by low confidence in the banking sector, badly affected banks' deposit mobilization during H2-CY08. These adverse developments even overshadowed the potentially positive impact of introducing the minimum rate of return of 5.0 percent on all PLS savings deposits by the SBP, w.e.f. June CY08. A visible increase in the currency to deposit ratio and a slowdown in the money multiplier during H2-CY08 also highlights the challenging operating environment of the banking sector (**Figure 4.3**).



Borrowings from financial institutions, another key component of liabilities, also witnessed significant changes during the year. While overall borrowings grew by 1.6 percent only, there were significant swings during the course of the year in line with contrasting developments in the first and second half. Borrowings declined by 7.8 percent during H1-CY08 and asset expansion of Rs 341.4 billion was primarily funded by increase in deposits of Rs 334.2 billion during this time. This situation then reversed during H2-CY08. Borrowings from financial institutions surged by 10.2 percent, as deposit mobilization was severely affected during this period. In particular, during the liquidity strains experienced by the banking sector in September-October CY08, smaller banks' reliance on borrowings increased considerably. Additionally, SBP's efforts to ease liquidity conditions and to meet credit requirements of the exporters, the resumption of 100 percent refinancing to banks under the Export Refinance Scheme (EFS)¹² also contributed to the substantial increase in borrowing of the banking sector from SBP. Details indicate that banks' secured borrowing from the SBP under EFS increased by Rs 53.1 billion during CY08 to Rs 165.5 billion, indicating YoY growth of 47.3 percent. Among other components, call borrowing (unsecured) also increased by Rs 12.2 billion during the year to Rs 48.6 billion.

Lastly, the equity base of the banking sector increased by only 3.4 percent during CY08 compared to 37.0 percent in the previous year, and an average growth of 38.6 percent over the last five years. Despite the phased implementation of the enhanced minimum capital requirements for banks, the substantial slowdown in the growth of equity again reflects the challenging operating environment faced by the banking sector in CY08. Compositional break up of equity shows that 'revaluation losses' on investments and 'accumulated losses' undermined the 21.2 percent YoY rise in 'share capital and reserves' in CY08. Notably, a significant increase in interest rates led to revaluation losses of Rs 18.0 billion on investments in government securities, and the free fall of equity markets from April CY08 onwards reduced the value of investments in shares by Rs 9.9 billion. The banking sector also booked revaluation losses of Rs 3.7 billion on other investments as well as losses on derivatives' transactions, due to the sharp increase in interest rates and depreciation of the domestic currency.¹³

¹² SMEFD Circular No. 3 dated November 12, 2008.

¹³ Details in Chapter 7, Stability Assessment of Financial Markets, Section 7.3.

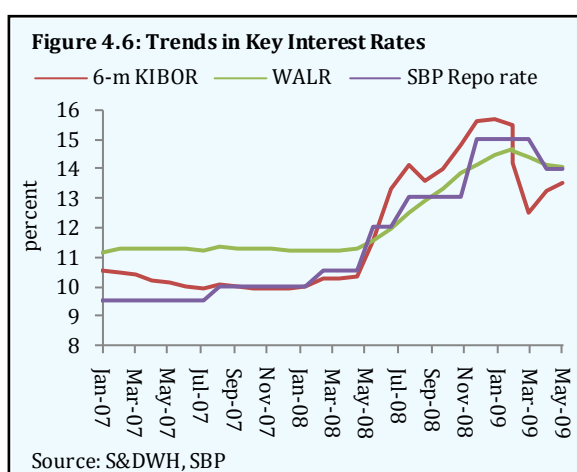
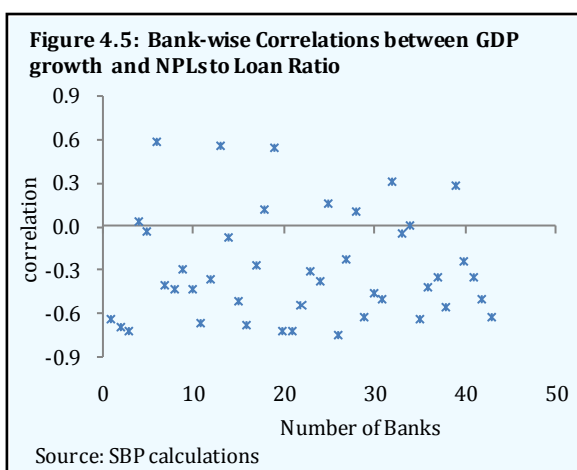
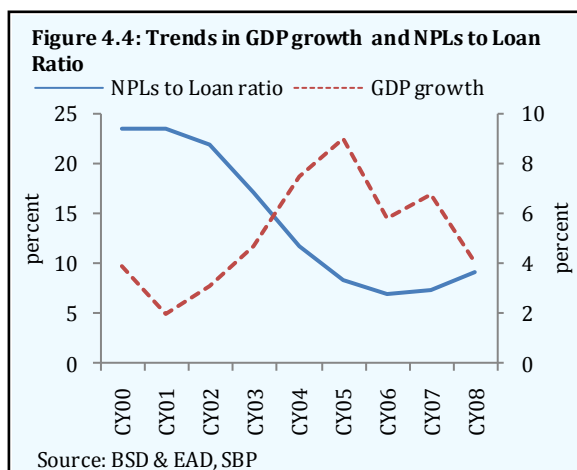
4.3 Assessment of Risks

Both the exceptional developments in the international and domestic operating environment and the visible changes in the asset and funding structure of the banking system, carry strong implications for the risk profile of the banking sector. Impact of these developments on various risks to the stability of the banking sector is analyzed in the following section.

4.3.1 Credit Risk

The indirect impact of the global recession and slowdown in domestic economic activities increased the potential risk of losses due to default on repayment of loans. Global economic growth reduced by 200 bps to 3.2 percent in CY08 and is projected to be negative in CY09.¹⁴ Domestic economic growth also decreased by 270 bps to 4.1 percent in FY08, and plunged further to 2.0 percent in FY09, reflecting a cumulative decline of 480 bps from July FY07 to June FY09. The negative relationship between credit risk and overall economic activities is well established in literature, and serves as a key input in Macro Stress Testing techniques. As depicted in the graphical representation of the NPLs to loans ratio of the banking sector and GDP growth (lagged by 6 months), a similar link also exists in case of Pakistan (Figure 4.4).¹⁵ Bank-wise information lends credence to this argument as negative correlation between the NPLs to loan ratio and GDP growth is observed for 34 out of 43 banks operating for at least six years from CY96 to CY08 (Figure 4.5). These details give ample evidence of the fact that economic activities are one of the key determinants of credit risk in the banking system.

Another important determinant of credit risk is the structure of interest rates in the economy. Interest rate volatility, besides affecting interest rate risk, alters the cost of borrowing which is inextricably linked to the repayment capacity of the borrowers. Significant rise in key interest rates following the further tightening of the monetary policy stance during CY08 is visible from interest rate trends prevalent during the year (Figure 4.6). Among other factors, fluctuations in the exchange rate and equity prices also affect the credit risk element, besides having implications for market risk. Huge volatility in these prices is evident from



¹⁴ World Economic Outlook April 2009, IMF.

¹⁵ Special section on "Framework for Macro Stress Testing" in SBP FSR 2007-08.

the Rupee-US Dollar parity ranging from 61.83 to 83.46 and KSE-100 from 15,676.3 to 5,856.0 points during CY08.

Given the increased degree of credit risk during CY08, an assessment of the loan portfolio of the banking system will help in understanding the movements in asset quality indicators during the year. Audited financial data of banks indicates that the loan portfolio of the banking sector grew by 18.4 percent during CY08 compared to 12.6 percent in the previous year. This relatively strong growth in the loan portfolio, given the slowdown in economic activities, is surprising at least on face value. Notably, a number of factors contributed to this strong growth. First, over 25 percent increase in WPI inflation during CY08 highlights the demand for extra funds from the business community simply to maintain their operations at the level prevalent during CY07. This is also evident from the 41.7 percent YoY increase in working capital loans to the corporate sector during CY08, as against 15.6 percent for the previous year. Second, CPI inflation of over 20 percent pushed real lending rates into the negative zone, which also revived the demand for bank loans during the year. A 26.4 percent YoY growth in fixed investment loans during CY08, as compared to the 19.0 percent increase in CY07 also supports this assertion. Third, there was increased demand for credit from the non-financial public sector enterprises (PSEs) due to the building up of circular debt. Finally, increased financing requirements of the government for commodity operations due to both healthy crops and higher prices, also contributed to the growth in banks' loan portfolio.

The contribution of these factors is also evident from the classification of advances by borrowers (**Table 4.2**), which shows that government loans for commodity operations almost doubled during the year, while banks' loans to non-financial PSEs increased by 49.0 percent, largely on account of mounting inter-corporate receivables. This massive government borrowing also entails a certain degree of crowding out as it reduces the availability of funds for the private sector.

Banks' loans classification by major segments indicates that loans to the corporate sector grew by 32.6 percent during the year. As a result, its share in total loans increased from 56.3 percent in December CY07 to 63.2 percent by end-CY08 (**Table 4.3**). This substantial increase was primarily on account of loans to the PSEs, which are categorized as corporate sector loans, and large private sector businesses. On the other hand, loans to SMEs registered a YoY decline of 14.2 percent. The outstanding consumer finance loans also reduced to 10.4 percent during CY08. These contrasting growth rates for major segments suggest that: (1) the large businesses (corporate sector) were able to borrow from banks despite the increase in market rates; (2) the SMEs and consumer sectors were the worst hit due to their increased vulnerabilities during the economic downturn.

These segment-wise shares in total loans are a depiction of the operating environment, given that economic slowdown and monetary tightening generally affect the small businesses (SMEs) and credit to individuals more severely compared to big businesses. Notably, increase in lending rates during the year and erosion of purchasing power due to inflationary

Table 4.2: Classification of Advances by Borrowers

	billion Rupees		
	YoY growth (%)		
	CY08	CY07	CY08
Government	150.5	-17.1	93.6
Non-financial PSEs	186.9	29.4	49.0
Private Sector	2,240.8	14.5	18.9
o/w manufacturing	1,299.4	12.6	19.0
All others	478.3	13.4	-8.9

Source: Statistical Bulletin, SBP

Table 4.3: Segment wise Distribution of Loans

	percent share in total loans				
	Dec-07	Mar-08	Jun-08	Sep-08	Dec-08
Corporate	56.3	56.4	60.2	63.6	63.2
SMEs	16.2	17.4	13.3	11.7	11.7
Agriculture	5.6	5.1	5.0	5.1	4.9
Consumers	13.8	12.5	12.2	11.1	10.4
Commodity	5.5	6.2	6.9	6.1	7.4
Staff Loans	1.9	1.8	1.9	2.0	2.0
Others	0.8	0.6	0.5	0.4	0.4

Source: BSD, SBP

pressures forced consumers to reconsider their consumption expenditure and borrowing options. Banks also revisited their lending options given the reduced funding liquidity due to slow deposit growth, and the opportunity to lend to the corporate sector, especially the PSEs and the government, which generally requires a lower capital charge. In this way, both the demand and supply side factors were at play in reducing the outstanding loans to the SME and the consumer sectors.

On the other hand, loans to the agriculture sector grew by only 3.1 percent during the year. Despite the healthy performance of the agriculture sector, deceleration in loans' growth indicates banks' reluctance to provide financing for the agriculture sector, which is generally considered to be a risky area, given its historically high (though declining) infection ratio.

The changes in the classification of loans by borrowers and segments seem to be in line with banks' general approach to credit risk management during a period of economic downturn by reflecting a preference to transact business with strong counterparties to contain credit risk. Notably, these changes in the overall loan portfolio have increased the element of *credit concentration risk* in the banking system. Classification of loans by size of accounts indicates that 0.5 percent of the number of borrowers with loan size of Rs 10.0 million (and above) accounts for 71.7 percent of banks' outstanding loans in CY08, as against 67.7 percent in CY07 (**Table 4.4**). The average loan size for this particular category has also increased from Rs 68.6 million in CY07 to Rs 77.6 million for CY08. On the other hand, 96.9 percent of borrowers with loan size of Rs 1.0 million (or below) have a share of 15.6 percent only in the total loans of the banking sector.

Table 4.4: Distribution of Loans by Size

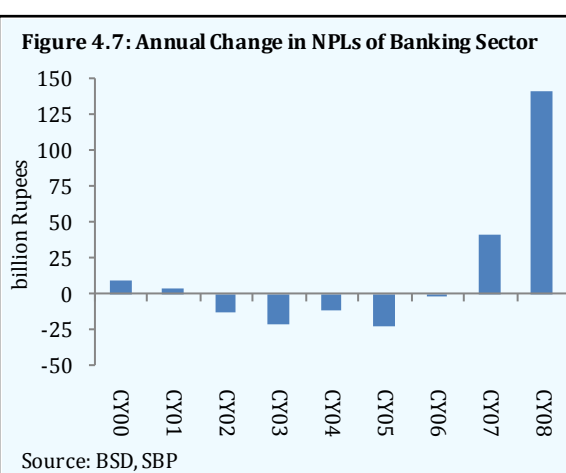
Loan Size (million Rupees)	CY07		CY08	
	Accounts	Amount	Accounts	Amount
Up to Rs 0.1	65.9	6.2	70.3	5.0
Up to Rs 1.0	97.0	19.0	96.9	15.6
Up to Rs 10.0	99.5	32.3	99.5	28.3
Over Rs 10.0	0.5	67.7	0.5	71.7

Source: SBP calculations

Sectoral distribution of loans also highlights credit risk concentration as loans to the textile sector alone constitute 19.5 percent of banks' loan portfolio. Hence both the high infection ratio of these loans and the small number of big borrowers reflect the increased element of credit concentration risk.

Non-performing loans, one of the key indicators of asset quality, increased by 64.8 percent during CY08 to Rs 359.3 billion. This is the biggest increase in NPLs since CY97 (**Figure 4.7**). This increase in NPLs was observed across the banking system as 36 out of 40 banks registered a rise in their NPLs during CY08, such that 3 out of the 4 remaining banks were specialized banks, whose lending facilities are inactive as most of them are under restructuring.

Given the strong correlation of NPLs with economic activities, a major portion of the increase in NPLs is primarily of a cyclical nature as real GDP growth has decelerated visibly during FY08 and FY09, with negative implications on incomes and hence the repayment capacity of the average borrower. The classification of NPLs into various categories lends credence to this observation as 62.4 percent of the increase in NPLs during CY08 falls into the initial categories of NPLs (i.e. OAEM, sub-standard and doubtful), which is reflective of fresh NPL flows during the year. However, the influence of structural weaknesses in the



banking sector on the substantial rise in infected loans cannot be out altogether ruled out. Notably, a portion of the increase in NPLs was actually expected to transpire as a consequence of the aggressive credit expansion of the banking sector in the recent past (CY03-CY07).

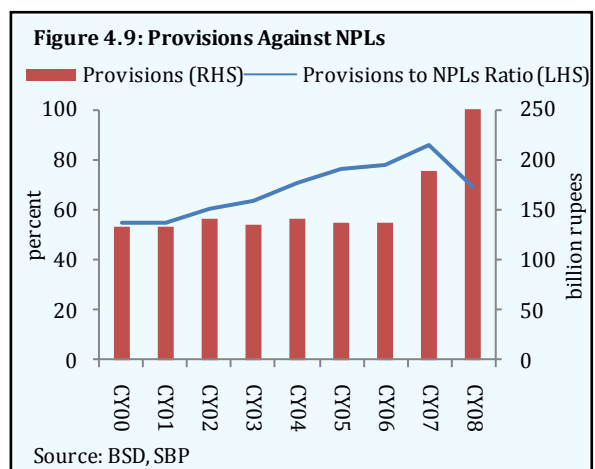
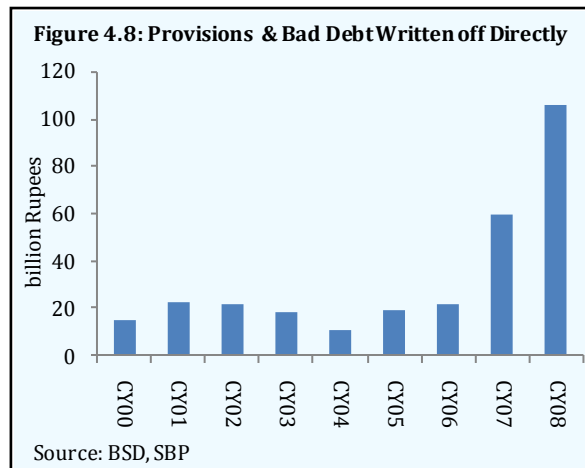
NPLs as a proportion of the loan portfolio of the banking sector also increased to 10.5 percent by end CY08, as against 7.6 percent for CY07. Bank-wise information indicates that this increase was widely shared by banks. Specifically, 31 out of 40 scheduled banks with a share of 89.7 percent in the assets of the banking sector, registered an increase in their NPLs to loans ratio during CY08. The distribution of banks based on this ratio indicates that the number of banks with double-digit values of the ratio was 17 in CY08 compared to 10 in CY07. Moreover, 9 banks have their NPLs to loan ratio over 20.0 percent (**Table 4.5**). Notably, the big 5 banks' NPLs to loans ratio ranged between 6.2 percent to 12.3 percent, and between 0 and 11.5 percent in case of foreign banks.

	CY06	CY07	CY08
NPLs to Loan Ratio-	6.9	7.6	10.5
Number of Banks			
< average	12	13	15
> average	27	26	25
< 5.0	21	20	13
5 < 10	10	9	10
10 < 15	2	2	5
15 < 20	0	3	3
> 20.0	6	5	9

Source: SBP calculations

Irrespective of the factors responsible for the mounting volume of NPLs, the high infection ratio has strong implications for the overall financial performance of banks. The banking sector has booked loan loss expenses of Rs 105.9 billion during CY08 on account of provisions required against NPLs and bad debts directly written off (**Figure 4.8**). While these expenses have dampened banks' profitability for CY08, the breakup of NPLs reflects the potential for further provisioning expenses during CY09, given that 44.0 percent of the outstanding NPLs fall in partial classification categories namely OAEM, sub-standard and doubtful. A similar conclusion can be drawn from the decline in the provision to NPLs (coverage) ratio from 86.1 percent in CY07 to 69.6 percent by end CY08 (**Figure 4.9**). Bank-wise information indicates that 7 out of 40 banks with asset share of 6.2 percent have a coverage ratio of less than 50.0 percent. This implies that the earnings of these banks may be severely constrained during CY09 and onwards, until the economic cycle reverses trends.

The amount of net NPLs, another important indicator of asset quality, has also reached Rs 109.3 billion by end CY08 as against Rs 30.4 billion in the previous year (**Figure 4.10**). This three-fold increase in net NPLs reflects the influx of fresh NPLs during the year and the



potential extent of future provisioning expenses. Consequently, the net NPLs to loans ratio also deteriorated during the year, increasing by 230 bps to reach 3.4 percent by end CY08.

While deterioration in all asset quality indicators and the increased degree of concentration risk is patently obvious, a review of segment-wise NPLs shows that loans to the agriculture sector have proved to be a risky venture for the banking sector. Despite the steep decline in the NPLs to loans ratio for the agriculture sector in recent years, it is still considerably high as compared to the overall infection ratio of 10.5 percent (**Table 4.6**). Banks' reluctance to extend credit to this sector, visible from the deceleration in credit expansion for agricultural loans in the presence of positive growth, is an indication of their efforts at containing the overall credit risk. Given the low infection ratio for commodity financing, substantial credit expansion for commodity operations during CY08 also bodes well for limiting credit risk.

In terms of credit risk, the SMEs segment has emerged as second in rank after the agriculture sector. The infection ratio for SMEs has deteriorated to 15.8 percent by end CY08, as against 9.4 percent for the previous year (**Table 4.6**). This increase is hardly surprising as SMEs are generally more vulnerable to initial phases of economic downturn than large corporations. Although banks might pull back their exposure on SMEs by reducing their supply of credit to contain their overall credit risk, such tendencies may serve to exacerbate the financial problems of SMEs and has credit risk implication for the banking sector. While the strategy of managing credit risk by containing credit expansion to riskier sectors such as SMEs makes sense from a single bank's point of view, the risk for the banking sector as a whole may increase as some of the financially viable SMEs will be forced to default due to non-availability of credit.

The NPLs to loans ratio for consumer financing also increased to 6.9 percent by end CY08 compared to 4.4 percent in CY07. Notably, a certain degree of increase in NPLs in this particular segment was expected due to aggressive credit expansion in the recent past and especially since consumer finance is a relatively new area for the banking sector. Although the outstanding exposure to this segment has registered a YoY decline of 10.6 percent due to both supply and demand side factors, banks need to reassess their lending strategies and build on their credit assessment expertise to take advantage of the potential that this sector presents. Given the contribution of the household sector in the overall economic activities of the economy, only a 10.4 percent share of consumer loans in the total loan portfolio of the banking sector indicates that this segment can be penetrated further, though within reasonable and prudential limits.

The NPLs to loans ratio of the corporate sector, on the other hand, increased by only 1.7 percentage points during CY08 to 8.9 percent (**Table 4.6**). Despite this increase, the corporate sector has consistently had a lower infection ratio relative to other segments, as

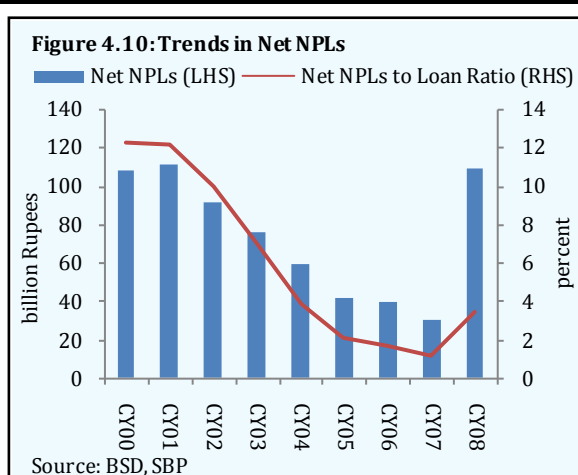


Table 4.6: Segment-wise NPLs to Loan Ratio
percent

	CY05	CY06	CY07	CY08
Corporate	7.2	6.5	7.2	8.9
SME	11.9	8.8	9.4	15.8
Agriculture	31.2	20.8	18.7	15.8
Consumers	1.9	2.2	4.4	6.9
Commodity finance	1.2	0.6	1.0	1.4
Overall	8.3	6.9	7.6	10.5

Source: BSD, SBP

well as the overall infection ratio. This makes the corporate sector relatively less risky in comparison with the SME, agriculture and consumer sectors. Notwithstanding, exposure to the corporate sector needs to be monitored closely given that both the large average loan size and its aggregate size as a proportion of total loans, makes it a likely source of systemic risk.

It may be further noted that the aggregate ratio for the corporate sector tends to conceal important information about various sub-sectors. The sector-wise distribution of the NPLs to loans ratio reveals that the textile sector is the most risky among the major businesses. Its NPLs to loan ratio as of end CY08 was 14.6 percent, i.e. highest among the major sub-sectors (**Table 4.7**). While the sugar sector also has a high infection ratio of 9.1 percent, its share in total loans is only 1.9, dispelling concerns of concentration risk.

In sum, the detailed analysis of asset quality indicators and the classification of the loan portfolio by various dimensions point towards the increased element of both credit and concentration risks. All asset quality indicators have deteriorated during the year. The impact of the significant increase in NPLs during CY08 is likely to undermine the financial performance of banks during CY09 and subsequent periods. Concentration risk, both in terms of few big borrowers, exposure to the corporate sector (and the consequent lack of diversification in financing options) and sectoral concentration of loans, as in case of the textile sector, carries significant implications for the overall risk profile of the banking sector.

4.3.2 Market Risk

A considerable degree of volatility in both international and domestic financial markets during CY08 contributed to the increase in market risk for banks. However, its impact on their financial performance is likely to be well-contained given SBP's stringent prudential requirements on various market risk exposures. The direct impact of three major components of market risk including interest rate risk, exchange rate risk and equity price risk is analyzed in the following section.

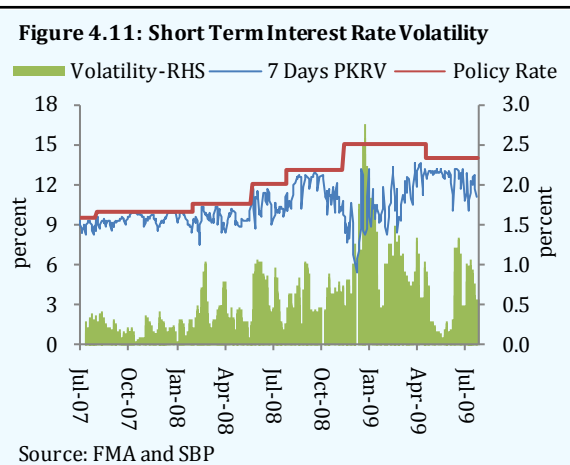
Interest Rate Risk: Among the various market risk factors, interest rate risk is the most significant risk for banks in Pakistan, as 70.6 percent of their investments are in fixed income government securities. On the liability side, although 34.8 percent of banks' deposits are categorized as fixed deposits, the PLS nature of these deposits tends to give banks flexibility in managing their cost of funds.

Short term interest rates increased significantly during CY08, in addition to exhibiting high volatility. The SBP policy rate was increased by 500 bps in four successive rounds to 15.0 percent during CY08. The

Table 4.7: Infection Ratio by Sectors as of end CY08

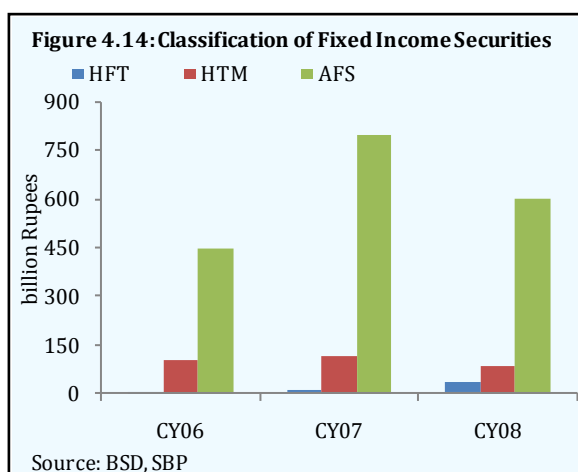
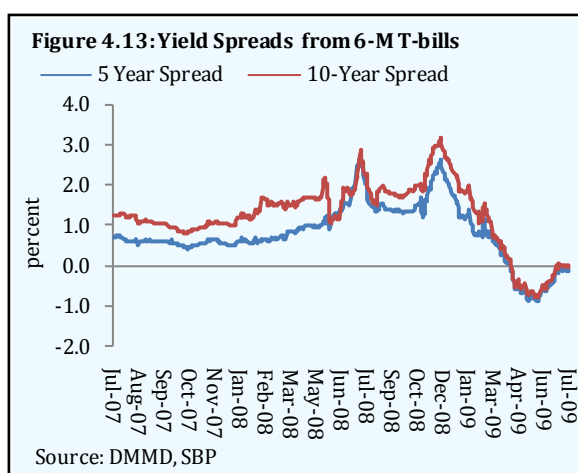
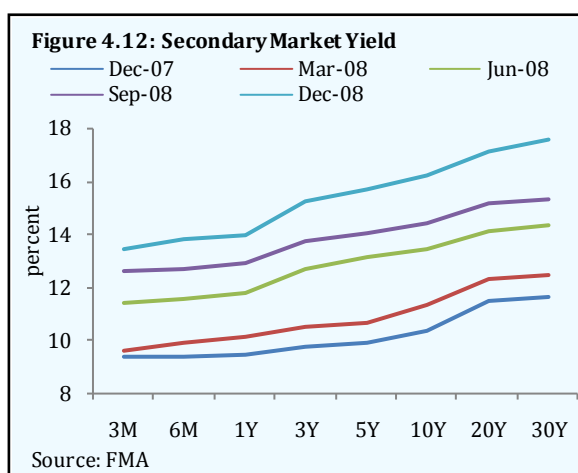
Percent	NPLs to Loan ratio	Share in Loans
Chemical & Pharmaceuticals	7.7	3.5
Agribusiness	8.9	4.5
Textile	14.6	19.5
Cement	6.6	2.6
Sugar	9.1	1.9
Shoes & Leather garments	8.6	0.7
Automobile & Transportation	7.5	2.3
Financial	5.4	1.8
Insurance	0.0	0.1
Electronic & transmission of energy	3.4	9.9
Others	8.6	39.4

Source: BSD, SBP

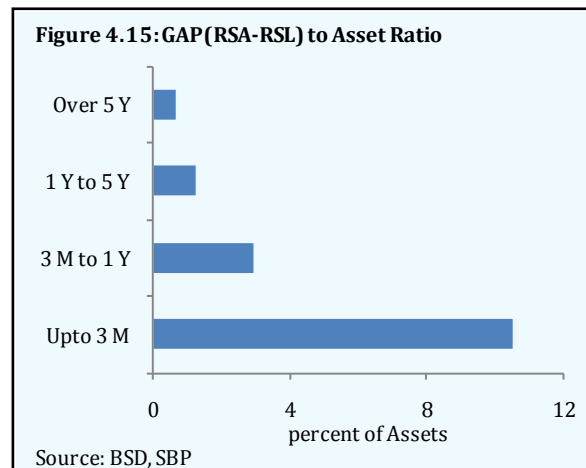


corresponding increase in the short-term revaluation rate along with increased volatility (proxied by 7 days standard deviation) is visible from **Figure 4.11**. Besides impacting short term interest rates, the hike in the policy rate also affected the secondary market yield of government securities. The yields for all type of government securities have gone up, as shown in **Figure 4.12**, however, the shift in the yield curves is not parallel. Steepening of the yield curve indicates that the term premium increased significantly during the year. Specifically, the secondary market yield spread between 10-year PIBs and 6-month T-bills surged to a maximum of 3.2 percentage points in December-CY08 (Figure 4.13), compared to 1.3 percentage points in H2-CY07. The major contributory factors for this increase are the hike in the SBP policy rate by 200 bps in November CY08, liquidity strains in September and October CY08, and deterioration in the fiscal and BoP position of the country prior to signing on the Stand By Arrangement (SBA) program with the IMF.

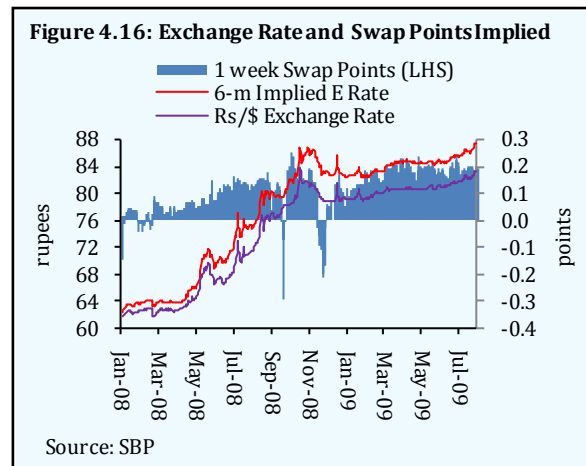
Irrespective of the reasons, increase in interest rates is a source of *revaluation risk*, while a shift in the yield curve along with the steepening of its slope creates *yield curve risk*. The impact of these risks on the financial performance of banks depends on the extent and nature of their investments in fixed income securities. Composition of the investment portfolio shows that the share of fixed income government securities (PIBs & T-Bills) in total investments declined from 71.5 percent in CY07 to 66.3 percent by end CY08. The classification of fixed income government securities indicates that more than 90.5 of these securities are classified in the ‘held to maturity’ (HTM) and ‘available for sale’ (AFS) categories (**Figure 4.14**). This classification clearly suggests that the impact of any revaluation of these securities on the income statement of banks was likely to be minimum (for CY08) as only a small fraction of investments is classified in the ‘held for trading’ (HFT) category. However, the impact of the revaluation of securities classified as AFS is taken to the ‘surplus/deficit on revaluation of securities’ account which is charged against banks’ capital. Given the high proportion of securities categorized as AFS, the banking sector has booked revaluation deficit of Rs 18.0 billion on investments in federal Government securities during CY08, which is 6.8 times high than the revaluation losses during CY07. However, this situation is likely to be reversed in CY09 with the advent of monetary easing and reversal of the interest rate path.



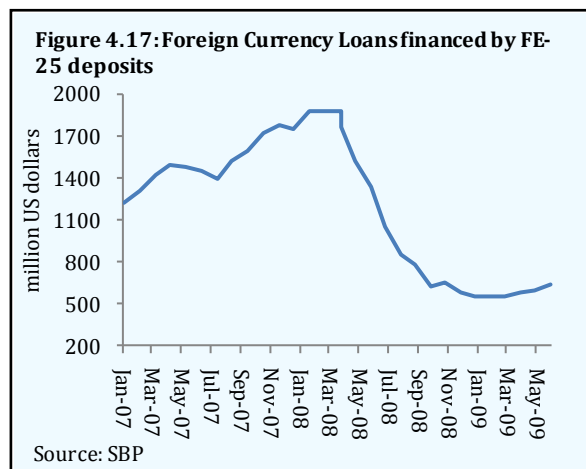
While the classification of investments helps in understanding the extent of revaluation surpluses/deficits, the overall impact of movements in interest rates on banks' financial position depends on the gap between rate sensitive assets (RSA) and rate sensitive liabilities (RSL). A positive gap in a declining interest rate environment is an adverse development for the banking sector as the RSA of banks (which is re-priced at lower interest rates) generally exceeds the RSL. Given banks' tendency of funding fixed maturity assets generally by demand liabilities, the existence of the GAP is inevitable. Experience suggests that GAP in the range of ± 10.0 percent of total assets is considered to be normal for the banking sector. The GAP position of the banking sector for all categories, with the exception of one, is in the normal range of ± 10.0 percent of total assets (Figure 4.15). The GAP in the up to 3-month time bucket is slightly above the normal range at 10.5 percent for end CY08. Hence, on an overall basis, re-pricing risk is being managed well by the banking sector.



Exchange rate risk: Another component of market risk is the *currency or exchange rate risk*, which arises from a change in the value of foreign currency assets and liabilities of banks due to movements in the exchange rate. The Pak Rupee has been shedding value against the US Dollar since CY06, due to the deterioration in the current account balance. The pace of this depreciation picked up momentum in CY08, as evidenced by the trends in the exchange rate and swap points during CY08 (Figure 4.16). The monthly average exchange rate indicates that the Pak Rupee depreciated by 22.6 percent against the US Dollar during CY08, and by 14.8 percent in just the second half of the year. This almost continuous depreciation (over a short period of time) stabilized by the end of the year on account of the SBA with the IMF, which helped in stemming the erosion of the foreign exchange reserves and easing off concerns about the mounting BoP problems.



In addition to exchange rate movements, currency risk also depends on the amount of foreign currency assets and liabilities of the banking sector. On the asset side, foreign currency loans against FE-25 deposits witnessed continuous decline with the exception of the first two months of CY08 (Figure 4.17). The decline was more pronounced during H2-CY08, given that the rapid depreciation of the Pak Rupee served to increase the effective cost of borrowing in foreign



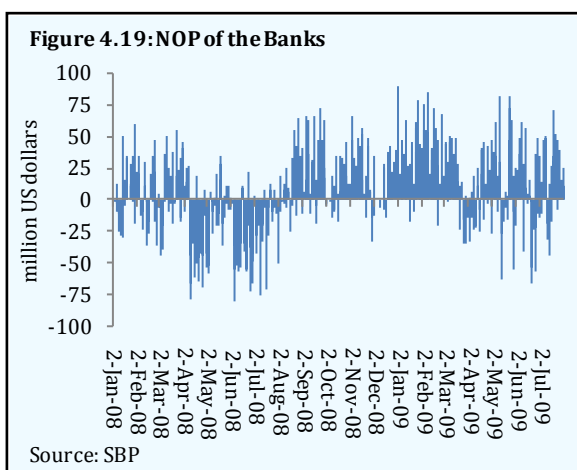
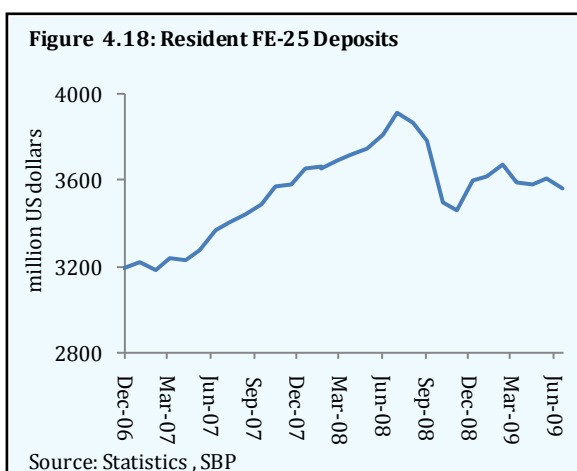
currency. Specifically, foreign currency loans were only US\$ 591.0 million as of end-Dec CY08, compared to US\$ 1.9 billion at the start of the year (January CY08), indicating that the banking sector is not inordinately exposed to loans denominated in foreign currency.

On the liability side, foreign currency deposits and banks' borrowings in foreign currency are the two major components. The currency composition of deposits indicates that the share of foreign currency deposits (Rupee value) in the total deposits of the banking sector was 15.3 percent at end-CY08, as against 12.8 percent in CY07. One of the key reasons for this increase is the depreciation of the Pak Rupee over the period of analysis, as the level of FE-25 deposits in US\$ terms was almost unchanged at end-CY08 when compared with end-CY07. Growth in FE-25 deposits observed during January to July CY08, in

wake of the rapidly depreciating domestic currency, lost its momentum in subsequent months due to exceptional developments in economy and the banking sector in particular. Notably, substantial withdrawal of deposits during September-October CY08 included withdrawal of FE-25 deposits, added to the liquidity strains faced by the banking sector (**Figure 4.18**), as also evident from the amount of FE-25 deposits' withdrawal of US\$ 453 million during July to November CY08.

Another component of liabilities which can potentially give rise to currency risk is the quantum of banks' borrowings in foreign currency. The currency composition of borrowings indicates that the share of foreign currency borrowing in total borrowing is only 7.8 percent for CY08. Given the deposit-based funding structure of the banking sector, foreign currency borrowing constituted only 0.7 percent of banks' total liabilities in CY08.

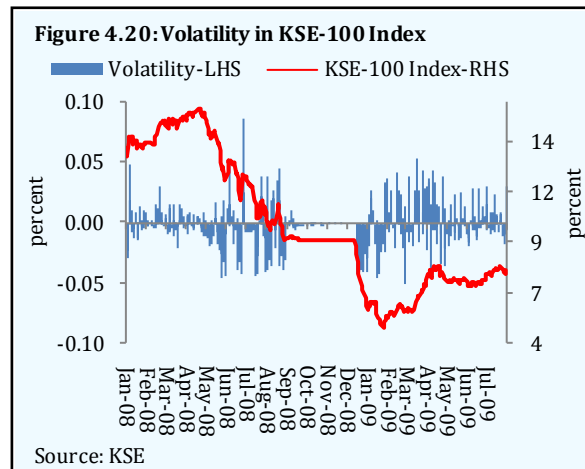
While the discussion on foreign currency assets and liabilities gives information on banks' gross exposure towards foreign currency risks, a more useful indicator of banks' foreign exchange exposure is the Net Open Position (NOP) which includes both on and off-balance sheet foreign currency assets and liabilities. NOP is used because a portion of gains (losses) on foreign currency liabilities are naturally hedged by losses (gains) on foreign currency assets. As in case of CY07, the NOP of the banking sector during CY08 continued to fluctuate within the generally acceptable narrow range of \pm US\$ 100.0 million (**Figure 4.19**). In case of positive NOP, banks actually gain from the depreciation of the local currency, given that foreign currency assets are in excess of foreign currency liabilities in such a case. This implies that the overall direct exchange rate risk is well contained by the banking sector. The sensitivity analysis also indicates that 25 percent depreciation or appreciation is likely to affect the CAR of the banking sector by 3 bps only.¹⁶ It is important to note that there might also be an indirect impact of a change in the exchange



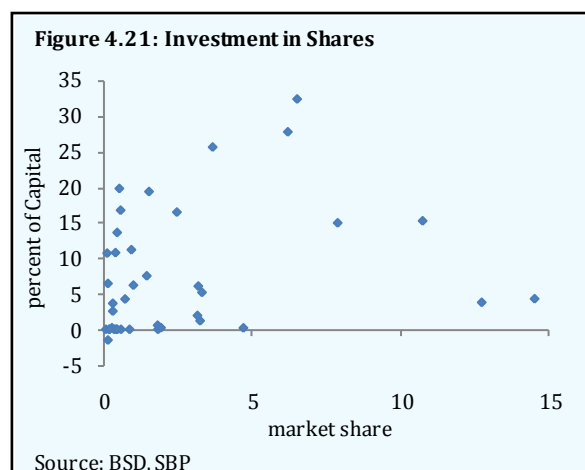
¹⁶ Details in section 4.4.3.

rate as it can affect the repayment capacity of borrowers through overall changes in the economy.¹⁷

The third important source of market risk is **equity price risk**, which is primarily driven by banks' investments in equities and adverse movement in equity prices, in addition to the indirect exposure from the quantum of bank loans collateralized by shares. Notably, the KSE-100 index reached an all time high level of 15,676 points in April CY08 (**Figure 4.20**). From April 21 onwards, it started its descent, losing nearly 41 percent of its value prior to the imposition of the floor on the index in August CY08. A host of factors including prolonged political transition, deterioration in domestic economic fundamentals, increased uncertainty and the global financial meltdown contributed to the almost free fall of equity prices. However, the decision to place a floor on the index only heightened the uncertainty faced by investors. The KSE-100 index declined by 47.7 percent within a month of lifting the floor in December CY08. Hence equity prices faced unprecedented volatility during CY08.



In so far as banks' investment in shares is concerned, the overall exposure of such investments is capped by SBP's prudential regulations. Specifically, the total investment of banks in shares cannot exceed 20.0 percent of their respective equity.¹⁸ Composition of banks' investment portfolio reveals that the banking sector investments in fully paid up ordinary shares stood at Rs 49.5 billion at end CY08, which is only 4.6 percent of the total investments of the banking sector, and less than 1.0 percent of the total assets for CY08. In terms of banks' equity, the exposure was 8.8 percent as against the ceiling of 20.0 percent.¹⁹ Bank-wise information indicates that 3 commercial banks with asset share of 16.4 percent have their exposure in excess of the 20 percent (**Figure 4.21**). These 3 banks hold 30.8 percent of their total investments in shares, compared to their aggregate shares in overall investments and equity of the banking sector at 18.0 percent and 9.3 percent respectively. Notably, one of these banks is a systemically important bank.



The analysis indicates that the overall equity exposure of the banking system is considerably well-contained as against its risk taking capacity and the prescribed limit in prudential

¹⁷ This impact is primarily analyzed by relating changes in the exchange rate to the NPLs of the banking sector. A preliminary exercise carried out in FSR 2007-08 indicates that gradual depreciation in the domestic currency from 1990 to 2007 has had a favorable impact on the NPLs to loans ratio of the banking sector. Details in the Special Section on "Framework for Macro Stress Testing", FSR 2007-08, SBP.

¹⁸ Equity for the purpose of prudential regulations means tier-I capital or core capital and includes paid-up capital, general reserves, balance in the share premium account, reserve for the issue of bonus shares and retained earnings / accumulated losses, as disclosed in latest annual audited financial statements.

¹⁹ Regulation R-6, Prudential Regulations for Corporate/Commercial Banking, State Bank of Pakistan.

regulations.²⁰ The sensitivity analysis also indicates that a decline of 50 percent in the KSE-100 index from its end December CY08 level will reduce the CAR of the banking sector by 87 bps only. This situation has considerably improved in CY09 with the restoration of regular functioning of the equity market amidst macroeconomic stability.

4.3.3 Operational Risk

Operational risk has always been important for the banking sector due to the strong role of customers' confidence in the banking business. Its' importance has been increased manifold over the last two decades. The use of highly automated information technology systems, complex business products ranging from simple derivatives to asset securitization, mergers and acquisitions, and developments in e-banking are some of the factors which have altered the traditional view of operational risk as a price of increasing business efficiency. Specifically, a sudden blackout, a terrorist attack, e-banking and IT systems failure due to any reason, fire incidents, frauds and forgeries, earthquakes, etc. can occur at any point in time and interrupt the continuity of business. Even an isolated incident could have a domino impact due to the increased interdependence of financial institutions. Recent episode of international financial crises accompanied with massive volatility in financial markets and increased frequency of unforeseen bankruptcies (especially of financial institutions) also highlight the significance of operational risk.

In practice, it is quite difficult to predict disruptions to the continuity of business and associated losses. However, this is not to say that such events can not be dealt with appropriately. Efforts can be exerted to identify key operational risk indicators and put in place potential safeguards to minimize the occurrence of unforeseen events. The first step in this direction could be to classify operational risk into various possible categories. Some of these categories are:

1. Employee errors- also called people risk. This generally arises due to lack of proper training, non-compliance to stipulations of procedural manuals, lack of business awareness etc. This type of operational risk is generally of a minor but persistent nature.
2. Systems failures-also called system risk. This primarily emerges from banks' increasing reliance on IT systems and e-banking. Fatal virus in the systems may lead to complete shutdown of the system and/or miscalculations, system down due to any other reasons, and loopholes in system designs and systems breaches by causal hackers are some of the specific events related to system risk.
3. Internal/external events, which include loss of data or physical assets due to incidents of fire, earthquakes, floods, terrorist activities, etc.
4. Fraud and forgeries by external and internal agents, which include system or procedural breaches with criminal intent.

SBP, being cognizant of the potential for losses caused by operation risk, has issued broad guidelines for the development of a sustainable risk framework, which also provide details on managing operational risk. The guidelines elaborate key principles of operational risk management. The focus is on: (1) the development of an adequate control and risk management framework; (2) the formulation of business continuity plan; (3) the management of IT security; (4) the identification of gaps in operational risk policies and procedures; (5) the strengthening of policies related to Anti- Money Laundering (AML),

²⁰ It may be noted that the banking sector booked revaluation deficit of Rs 9.9 billion on its investments in shares during CY08 as against revaluation surplus of Rs 5.8 billion in the previous year. It is also pertinent to note that the revaluation deficit also include the change in value of strategic investments in subsidiaries and associates, which were Rs 45.7 billion as against investments in ordinary shares of Rs 49.5 billion as of end CY08.

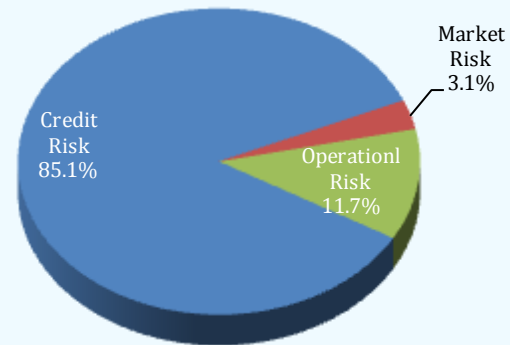
including Know Your Customers (KYC); (6) the examination of physical controls; (7) the insurance policies of banks; and (8) the use of ATMs/credit/debit cards by customers. It is important to note that these guidelines were issued well before the implementation of Basel II, which also requires a capital charge for operational risk. Data for CY08 indicates that the share of risk weighted assets (RWA) assigned to operational risk is 11.7 percent in total risk weighted assets of the banking system (**Figure 4.22**), whereas the RWA related to the market risk is only 3.1 percent. Given the capital adequacy ratio of the banking sector at 12.3 percent, the banks' capital charge for operational risk is Rs 58.7 billion for CY08.

In addition to capital charge for operational risk under Basel II requirement, the SBP also monitors the gravity of threats stemming from lapses in banks' internal control environment. For this purpose, banks are advised to provide information on the frequency and volume of frauds and forgeries. Data for CY08 indicate that the number of incidents of fraud & forgeries and the associated amount involved has witnessed gradual increase of 11.4 percent and 44.5 percent respectively during the year (**Figure 4.23**). In absolute terms, the outstanding amount receivable against fraud & forgeries cases has increased to Rs 6.6 billion as against Rs 4.5 billion a year ago. In terms of total assets of the banking sector, the amount receivable is 0.12 percent for CY08.

Further details on fraud and forgeries indicate that significant increases have been observed in serious (involving amount of more than Rs 10 million) and low (involving amounts of less than Rs 1 million) gravity cases (**Table 4.8**). Frauds and forgeries' cases during CY08 were largely near the upper limit of classification as the average amount involved in all three categories of classification has increased during the year (**Table 4.8**). The possible reasons for the increasing number of fraud and forgeries cases are the deteriorating law and order conditions and a high level of corruption in the economy.²¹

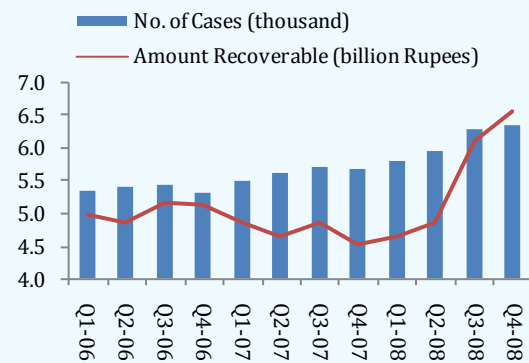
In sum, although banks are maintaining capital for operational risk under Basel II and the receivable amount in cases of frauds and forgeries is a tiny fraction of banking assets, the increasing number of such incidents is a source of concern for both the banking sector and the central bank. Lack of sophisticated techniques and insufficient data on actual loss events aggravates the challenges faced by the regulator and banks for managing operational risks. SBP, along with Pakistan Banks' Association, is working to create an environment conducive for the effective management of operational risk. Specifically, banks are encouraged to collect data on actual loss events and gather information related to risk identification and assessment. SBP's Institutional Risk Assessment Framework (IRAF) includes a questionnaire

Figure 4.22: Composition of Risk Weighted Assets



Source: BSD, SBP

Figure 4.23: Outstanding Frauds & Forgeries



Source: SBP

²¹ Pakistan is ranked as 134 out of 180 countries by Transparency International, with the Corruption Perception Index (CPI) at 2.5 for the year 2008. The CPI ranges between 10 (highly clean) and 0 (highly corrupt).

for the self assessment of internal control guidelines, which also helps in managing operational risks in the banking system.

Table 4.8: Frauds & Forgeries in the Banking System

Amount in million Rupees

Category	CY07			CY08		
	No. of Cases	Amount Involved	Average Size	No. of Cases	Amount Involved	Average Size
Cases Reported During the Year						
Serious	22	879.2	40.0	51	2511.2	49.2
Medium	143	502.1	3.5	179	647.5	3.6
Low	2159	278.7	0.1	2696	307.1	0.1
Total	2324	1660.0	0.7	2926	3465.9	1.2
Cases Outstanding As On December 31						
	No. of Cases	Amount recoverable	Average Size	No. of Cases	Amount Involved	Average Size
Serious	162	2852.9	17.6	186	4017.0	21.6
Medium	385	982.6	2.6	399	1112.0	2.8
Low	5150	702.2	0.1	5753	1425.8	0.2
Total	5697	4537.6	0.8	6338	6554.8	1.0
Criteria for frauds and forgeries categories						
Serious Frauds	More than Rs 10 million					
Medium Severity Cases	Rs 1 to 10 million					
Low Severity Cases	Less than Rs 1 million					

Source: SBP

4.3.4 Liquidity Risk

Temporary liquidity²² strain experienced by the banking sector during the second half of CY08 was in a way a real time stress testing of liquidity risk of the banking sector, given that banks' gross demand and time liabilities underwent a cumulative reduction of Rs 121.4 billion in four successive weeks from September 27 to October 25, CY08. This reduction constituted approximately 3.0 percent of the demand and time liabilities of the banking sector. Due to a series of policy interventions by the central bank, the banking sector was able to fend off this temporary liquidity stress.

Both this short episode of liquidity stress in the domestic banking sector and the liquidity crunch seen in the global financial market turmoil, have reinforced the realization of the need for prudent management of liquidity risk. Notably, there were hardly any specific guidelines at the international level (akin to the Basel II capital framework) for managing liquidity risk, prior to the 2007 crisis. In the domestic regulatory framework, standard indicators of the liquidity position of the banking sector under the CAMELS supervisory framework are deemed sufficient to assess elements of liquidity risk. While the Basel Committee on Banking Supervision (BCBS) is now exploring issues related to liquidity risk management and related supervisory challenges,²³ SBP has also introduced a cap on the advances to deposit ratio in a bid to strengthen liquidity management.²⁴ Notably, statutory liquidity requirements (CRR & SLR), primarily used as a monetary policy tool, appear to be the key determinant of banks' liquidity positions

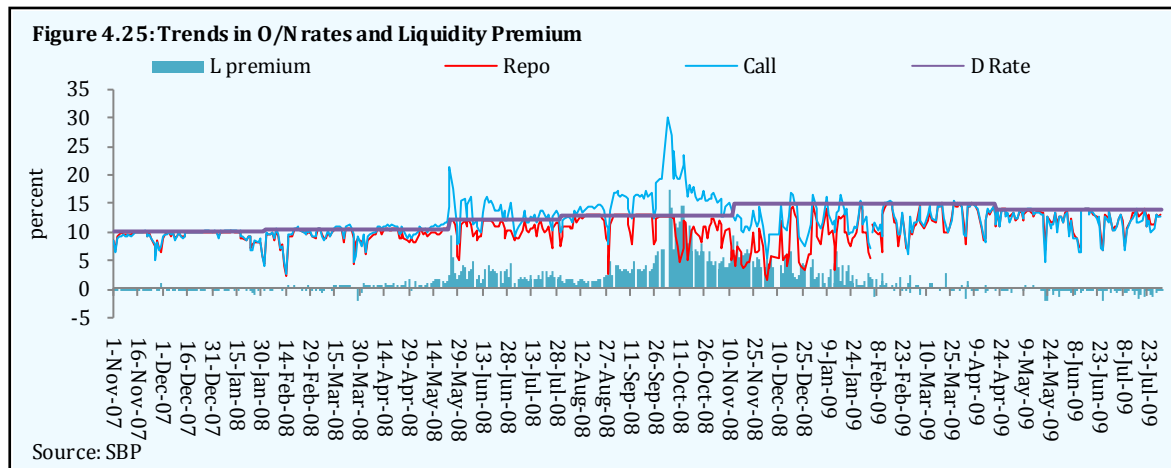
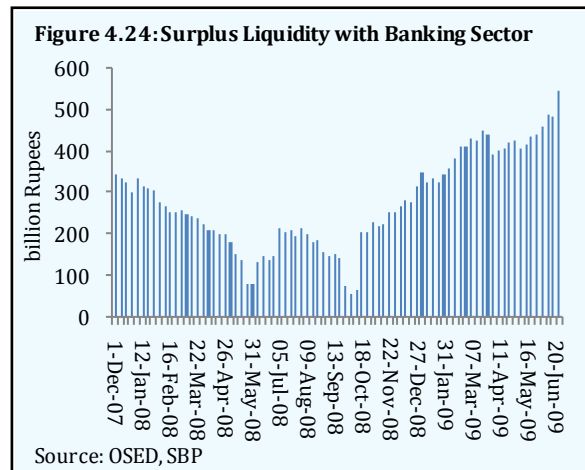
To give a brief background, the year CY08 consisted of periods of both excess liquidity as well as liquidity strains. At the start of the year, SBP was in a monetary tightening mode, and

²² For the purpose of analysis, liquidity can simply be defined as the ability of the banking system to fund its growth in assets and to honor its obligations (liabilities) as they fall due, without incurring unacceptable losses (BCBS, September 2008).

²³ "Principles of Sound Liquidity Risk Management and Supervision", Basel Committee on Banking Supervision, September 2008.

²⁴ BSD Circular No. 27 dated October 17, 2008, and No. 28 dated October 26, 2008.

the discount rate was revised upward by 50 bps at end January CY08.²⁵ This measure was also supplemented by a 100 bps increase in the cash reserve requirements (CRR) on demand liabilities²⁶ to drain liquidity from the system, which helped in reducing surplus liquidity to some extent. However, the overall liquidity position of the banking sector remained comfortable even subsequent to this policy measure, though with a declining trend over subsequent weeks (**Figure 4.24**). Trends in the overnight rates also indicate a normal liquidity position until May CY08 (**Figure 4.25**). The weighted average O/N repo rate and call rates moved in a narrow band during this time and liquidity premium was almost non-existent.²⁷



Despite monetary tightening in January CY08, the loan portfolio of the banking sector grew by 8.7 percent during the first half of the year. The banking sector was able to fund this asset growth with relatively cheap liquidity available in the form of a growing deposit base, which increased by Rs 334.2 billion during H1-CY08, and helped maintain a comfortable liquidity position.

Mounting inflationary pressures and persistent excess demand in the economy forced SBP to resort to further monetary tightening and the policy rate was hiked up by 150 bps in May CY08 to 12.0 percent.²⁸ In addition, SBP also increased the CRR on demand liabilities by 100 bps to 9.0 percent and SLR to 19.0 percent from the previous level of 18.0 percent.²⁹ This policy move helped SBP in draining liquidity from the banking system, which is also visible from the dip in the amount of surplus liquidity (**Figure 4.24**) and emergence of liquidity premium in the market (**Figure 4.25**). However, the impact of this monetary tightening on the liquidity position was mitigated by the Rs 200.7 billion increase in bank deposits in June CY08. As a result, the liquidity premium narrowed and surplus liquidity in the banking system increased to the level which existed prior to policy change. These developments,

²⁵ BPRD Circular No. 1 dated January 31, 2008.

²⁶ BSD Circular No. 3 dated January 31, 2008.

²⁷ It may be noted that the negative gap between the O/N call and repo rates for a few days is attributed to the process of calculating weighted average call and repo rates.

²⁸ BPRD circular No. 5 dated May 22, 2008.

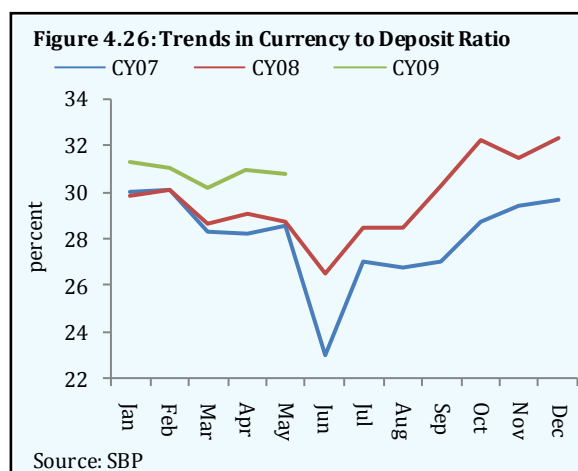
²⁹ BSD circular No. 10 dated May 22, 2008.

along with persistent inflationary pressures, paved the way for the third round of monetary tightening in July CY08, when the policy rate was increased by 100 bps to 13.0 percent.³⁰ The statutory reserve requirements were kept unchanged, given that the banking sector was expected to witness seasonal reduction in deposits during July CY08 and the currency in circulation was likely to increase in the period leading up to the Eid festival. Notably, the average surplus liquidity with the banking sector was Rs 207.3 billion (5.6 percent of demand and time liabilities) during July CY08.

Banks' liquidity position continued to remain comfortable during August CY08. However, deposits of the banking sector increased by Rs 11.3 billion only as against Rs 64.2 billion in August CY07. This deceleration in deposit growth ahead of the expected seasonal demand for currency in circulation squeezed the liquidity position of the banking system. The impact was further compounded by: (1) low confidence in the overall economic position of the country due to the spillover impact of the international financial meltdown, emerging macroeconomic instability and a prolonged period of political transition; (2) the imposition of the floor on the KSE-100 Index from late August CY08 to halt the rapid decline in the equity market; and (3) rumors about the financial health of certain banks. Consequently, the banking sector was subjected to a rush for deposit withdrawals³¹ and underwent a severe liquidity stress during the last week of September and the first week of October. The surplus liquidity held with the banking sector dipped to Rs 58.9 billion (**Figure 4.24**) for the week ending on October 4 CY08, which was only 1.6 percent of the DTLs of the banking sector, compared to the normal range of 5 to 6 percent. The liquidity premium also surged to 1720 bps in the call market on that day, compared to the normal range of 0 to 100 bps (**Figure 4.25**). Bank-wise information indicates that 4 to 5 small and mid-sized banks were unable to meet their minimum weekly liquidity requirements during October CY08.

SBP quickly moved in to address these liquidity concerns by taking a series of policy actions. Major policy interventions included: (1) the release of liquidity by reducing cash reserve requirements (CRR) by 400 bps to 5.0 percent on demand liabilities in a phased manner starting from October 11 to November 1 CY08; (2) exemption of time deposits (of 1 year and above) from the statutory liquidity requirement (SLR); (3) provision of 100 percent refinancing to banks against EFS; (4) enhancing the maximum eligible amount of PIBs for SLR purpose; and (5) allowing the use of securities in the 'held to maturity' portfolio of banks' investments portfolio for availing the SBP repo facility. All these measures helped in easing off liquidity strains as evidenced by the decline in the liquidity premium, and the surplus liquidity held by the banking system was restored to normal levels (**Figure 4.24 & 4.25**) subsequently.

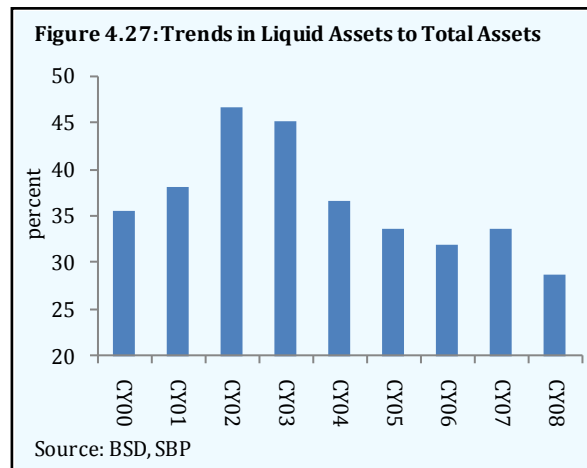
Notably, while the short-term liquidity strains were managed by easing of reserve requirements and providing liquidity against EFS, the low deposit growth continued to be a cause for concern. Consequently, the currency to deposit ratio (CDR) was visibly higher in Q4-CY08 (**Figure 4.26**); the average CDR was 32.0 percent in Q4-CY08 as against 29.3 percent in the corresponding quarter of the previous year.



³⁰ BPRD circular No. 8 dated July 29, 2008.

³¹ The banking sector deposits saw a reduction of Rs 79.9 billion in October 2008, of which Rs 12.7 billion (US\$ 155 million) decline was on account of FE-25 deposit withdrawals. It is important to note that FE-25 deposit withdrawals continued in the month of November and December 2008. It implies that foreign currency deposit holders are more volatile as compared to domestic currency deposits.

Given this overview of the liquidity position of banks during CY08, the standard indicators of liquidity risk (based on annual accounts) are analyzed in the following discussion. One of the most widely used indicators of liquidity risk is the share of liquid assets in total assets. The data shows that this indicator declined to 28.6 percent by end CY08, compared to an average of 33.1 percent (Figure 4.27) for the last three years (CY05-CY07). This shows that although the banking sector was able to withstand the severe liquidity strains in the last few months of the year, the composition of banks' assets consequently tilted towards more illiquid assets. The significant increase in the share of loans in the total assets of the banking sector also reinforces this assertion, having jumped from 52.0 percent in CY07 to 56.6 percent by end CY08.



Bank-wise information on the liquid assets to total assets ratio indicates that the number of banks below the industry average of 28.6 percent increased during CY08 (Table 4.9). Moreover, 2 mid-sized banks with asset share of 4.2 percent had their liquid to total assets ratio at less than 10 percent, while 3 small banks with asset share of 1.5 percent had a ratio of less than 20 percent, indicating that some of the small and mid-sized banks continued to face severe liquidity strains.

Table 4.9: Distribution of Banks by Liquid Assets to Total Asset Ratio

No. of banks	CY05	CY06	CY07	CY08
Liquid to total asset Ratio				
Less than 10	1	1	0	2
from 10 to 20	0	2	1	3
< Industry average	16	19	16	20

Source: SBP calculations

The advances to deposits ratio (ADR), another important indicator of liquidity risk also underwent significant deterioration during CY08. Notably, the ADR (net of EFS) surged to a high level of 71.5 percent by end CY08, as against 66.8 percent in the previous year (Figure 4.28). Slowdown in deposit growth and relatively strong increase in the loan portfolio contributed to the higher ADR in CY08. The distribution of banks by ADR indicates that 3 small-sized commercial banks with asset share of less than 1.0 percent have ADRs in excess of 100 percent (Table 4.10). Further, information on these banks indicates that: (1) one of them is a foreign bank which is funding the expansion of its loan book through borrowing and strong equity; (2) another is an Islamic bank, which is in its second year of operations and had a capital to assets ratio of 42.6 percent in CY08; and (3) the third one is a small-sized private sector bank, which is also facing problems with liquidity management, as its liquid to total assets ratio was 11.9 percent in CY08. The distribution also indicates that

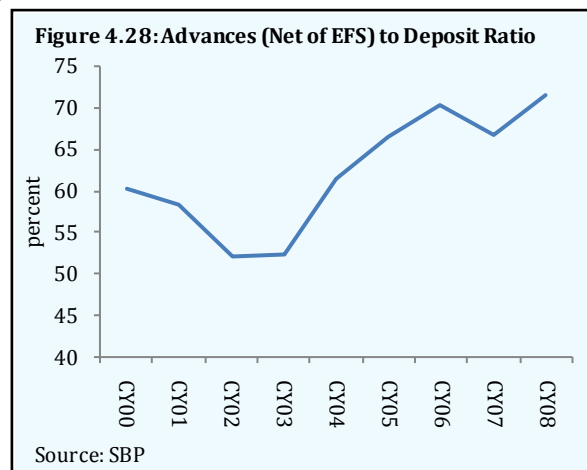


Table 4.10: Distribution of Banks by ADR

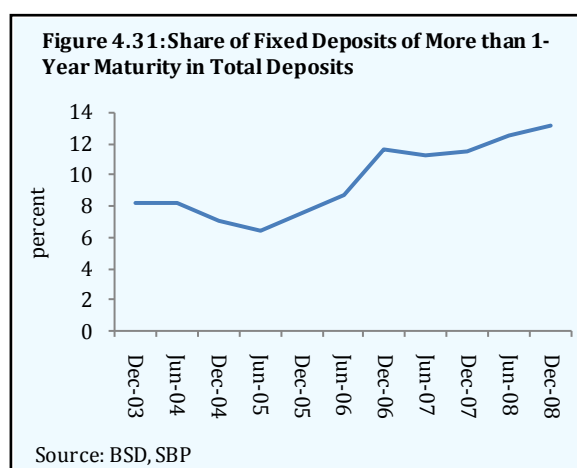
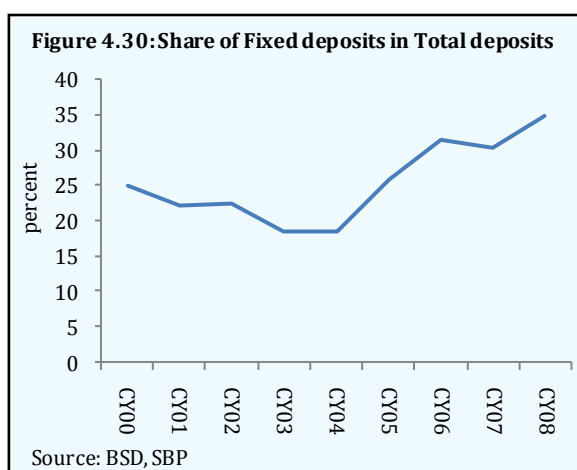
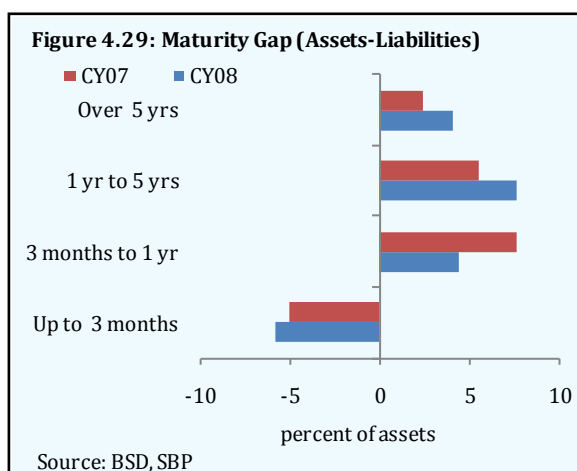
No. of banks	CY05	CY06	CY07	CY08
ADR				
>100	2	2	2	3
B/w 80 to 100	1	2	3	4
> Industry average	13	14	13	13

Source: SBP

four small-sized commercial banks, with asset share of 3.6 percent, have their ADRs between 80 to 100 percent. Two out of these 4 banks are facing severe liquidity problems, while the other two have a strong capital base and are better positioned to manage their aggregate exposure.

Analysis of the maturity gap presents another dimension for assessing banks' liquidity position. The data show that maturity mismatches in various time buckets are within standard limits of ± 10.0 percent of total assets (Figure 4.29). Moreover, banks' effort to mobilize fixed deposits of relatively longer maturities in recent years is a positive development in this context. The classification of deposits indicates that the share of fixed deposits in total deposits has risen by 4.6 percentage points to reach 34.8 percent by end CY08 (Figure 4.30). SBP's policy incentives in the form of exemption of time liabilities with tenors of one year and above from statutory reserve requirements also enabled banks to mobilize long term deposits by paying competitive returns to the depositors. Considerable increase in the share of fixed deposits (of more than one year maturity) during CY08 (Figure 4.31) lends credence to the assertion of the favorable impact of the policy intervention on the composition of deposits. All these developments bode well for managing maturity gaps in the banking sector.

In sum, the analysis of liquidity risk from various dimensions indicates that while CY08 was a year of considerable strain on banks' liquidity position, the overall banking sector was able to withstand the stress on account of a series of policy measures implemented by the SBP. However, the episode did result in reducing the liquid assets of the banking system by end-CY08. The liquid assets to total assets ratio and the loans to deposit ratio both deteriorated during CY08, reflecting a relatively weak liquidity position of banks by year-end. Notably, some of the small banks were the hardest hit by the liquidity stress. The persisting liquidity stress in these banks is clearly visible from their low level of liquid to total assets ratio and their high advances to deposits ratio. Although none of these banks is systemically important, and even their aggregate market share is less than the share of the 5th largest bank, their inability to overcome the persistent liquidity problems can have significant implications by undermining perceptions and the level of confidence in the banking sector.



4.4 Risk Absorption Capacity of the Banking System

Stability of the banking system is critically dependent on its ability to absorb losses stemming from individual bank's continually evolving risk profile. The risk absorption capacity of the banking sector is driven by its profitability and capital base. The level of profitability, in particular, is seen to be the front line of defense in absorbing losses expected to emerge from normal operations and helps in building the capital base of the banking sector. Capital then serves as the cushion available with banks to absorb unexpected losses. The capital base also has an influence on the collateral requirements for financial transactions (for instance in the inter-bank market) while addressing potential issues emerging from asymmetric information.

Given the importance of profitability and capital adequacy in the analysis of the risk profile of the banking sector, the following section provides a detailed analysis of these two indicators.

4.4.1 Profitability of the Banking System

The profit/loss accounts of the banking system for CY08 clearly indicate the role of profitability in helping the smooth functioning of the banking sector by absorbing considerably high provision expenses of Rs 105.9 billion against non-performing loans and bad debts directly written off during the year. Despite absorbing these loan losses, the banking sector earned a profit (before tax) of Rs. 63.1 billion during the year, which was significantly lower than the profit for CY07 (**Table 4.11**). Had the provisioning expenses hovered around the level of Rs 60.0 billion as for the year CY07, the banking sector would have seen a YoY increase of 2.3 percent in its profit (before tax) during CY08, indicating the significant impact of the higher provisioning expenses on the profitability of the banking sector.

Table 4.11: Profitability of the Banking Sector

billion Rupees									
	CY00	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
Profit Before Tax	4.5	1.1	19.0	43.8	52.1	93.8	120.8	106.9	63.1
Profit After Tax	-2.8	-9.8	2.9	24.7	34.7	63.3	81.9	73.1	43.2
No. of banks in loss	10	12	6	8	5	7	7	10	16

Source: SBP calculations

In line with the decrease in the profit before tax, the profit after tax of the banking sector also declined during CY08 to Rs 43.2 billion. However, the absolute decrease in the profit after tax was less than the decline in the profit before tax, given that the banking sector booked deferred tax assets³² of Rs 27.4 billion during CY08. Bank-wise information indicates that 16 out of 40 scheduled banks, with market share of 14.5 percent, booked losses during the year (**Table 4.11**). These include 3 mid-sized banks and 13 small banks, where the market share of the 13 small loss-making banks is only 6.1 percent. This large number of small sized non-profitable banks is reflective of the challenging operating environment for banks in CY08. On a positive note, all the big 8 banks, with market share of 67.0 percent, booked profits during CY08. The aggregate profit (after tax) of these banks was Rs 56.5 billion, which was only Rs 7.7 billion less than the profits earned by them in CY07. These profits numbers for small and big sized banks suggest that in line with expectations, the latter group was well positioned to meet the challenges emerging from the downturn in economic activities.

The impact of the absolute decline in banks' profit is also visible from the key indicators of profitability, i.e. return on assets (ROA) and return on equity (ROE). The ROA of the banking

³² Deferred tax assets are those assets that can be used to reduce income tax expenses in subsequent years. Deferred tax is a future tax liability or tax assets arising from the differences in book value and the market value of assets and liabilities at a specific time.

sector dipped to 0.8 percent during CY08 as against 1.5 percent in CY07 (**Figure 4.32**), and ROE followed a similar trend, declining to 7.8 percent in CY08 as compared to 15.4 percent in CY07.

The distribution of banks in terms of ROA indicates that 24 out of 40 banks with asset share of 32.5 percent have their ROA below the industry average of 0.8 percent. Further information indicates that 12 banks with asset share of 23.9 percent have their ROA in the range of 0 to 1 percent (**Table 4.12**). Comparative distribution of banks for the years CY07 and CY06 with CY08 reflects the extent of deterioration in banks' profitability.

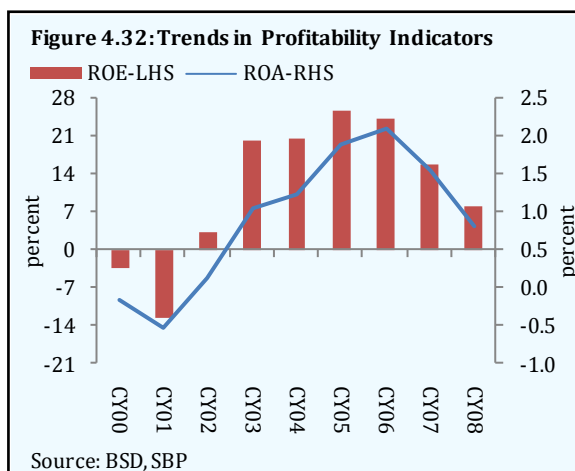
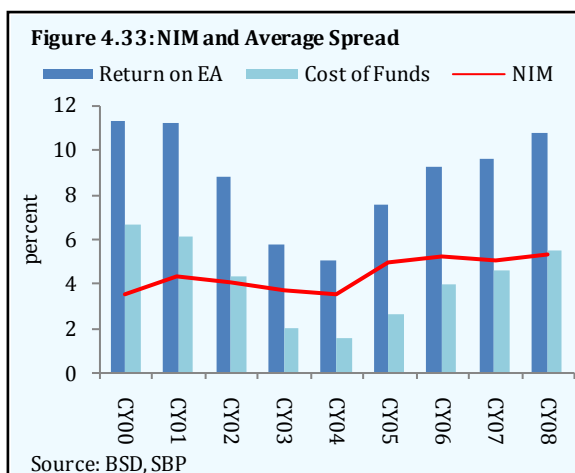


Table 4.12: Distribution of Banks by ROA

ROA	CY06		CY07		CY08	
	No. of Banks	% share in TA	No. of Banks	% share in TA	No. of Banks	% share in TA
0 & below	6	2.1	10	8.5	16	14.5
B/W 0 to 0.5	3	3.5	3	2.8	7	16.5
B/W 0.5 to 1.0	6	9.9	3	1.5	5	7.4
1.0 & above	24	84.5	23	87.2	12	61.6

Source: SBP

A look at other indicators closely related to the profitability of the banking sector reveals that the decline in ROA and ROE is actually accompanied with a small increase in the net interest margin (NIM) and average spread during the year. The NIM and average spread inched up by 27 bps and 29 bps to 5.3 percent and 5.4 percent respectively (**Figure 4.33**). Factors such as banks' efforts to absorb the mounting expense on provisions and written off bad debts, to minimize the impact of the upward revision in CRR (which lasted until October CY08), introduction of the minimum floor on the rate of return on savings deposits, considerable volatility in interest rates and their attempt to cover a fraction of revaluation losses seem to be the major contributing factors to increase in NIM and average spreads.



Further analysis of average spread indicates that the return on earning assets increased by 118 bps to reach 10.8 percent during CY08. Various factors such as the upward revision in the SBP policy rate on four occasions by a cumulative 500 bps to 15.0 percent, strong government borrowings, and liquidity strains during the second half of the year seems to be the major contributory factors for its increase. Composition of interest income shows that the mark up/interest income on loans surged by Rs 87.4 billion during the year to Rs 353.1 billion. Variation analysis reveals that 52.4 percent (or Rs 45.8 billion) of this increase was on account of the hike in interest rates, while the remaining 47.6 percent is attributed to a increase in the volume of loans (**Table 4.13**).

On the other hand, the average cost of funds increased by 90 bps during the year to 5.4 percent. This increase was primarily driven by the introduction of the minimum rate of return on savings deposits implemented with effect from June 1 CY08, and rising interest rates. The increasing share of fixed deposits in total deposits, healthy competition among banks for deposit mobilization and competition from CDNS seem to be the other contributory factors for this increase.

The composition of interest expense shows that interest/mark up paid to depositors increased by Rs 54.9 billion during CY08. Its contribution to the overall change in interest expense was 87.2 percent. The variation analysis of interest expense on deposits also shows that 60.3 percent (Rs 33.1 billion) of the total change was on account of rate variance, while the remaining 39.7 percent is attributed to volume variance.

Table 4.13: Sources of Change in Interest Income on Customers' Loans and Interest Expense on Deposits

(Billion Rs)	Amount for Previous Year	Change due to		Amount for the year
		Rate Variation	Volume Variation	
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	10.4	33.1	265.7
CY08	265.7	45.8	41.6	353.1
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
CY07	110.0	24.1	17.5	151.6
CY08	151.6	33.1	21.8	206.5

Source: SBP calculations

Lastly, the subdued growth of non-interest income and the sharp rise in non-interest expenses also contributed to low profitability during the year. Non-interest income grew by 6.5 percent only as against 30.7 percent in CY07. This sharp deceleration in growth is attributed to losses incurred on the sale or redemption of securities. It may be pertinent to mention here that banks also incurred considerable revaluation losses on their investments due to the rising interest rates and the unprecedented fall in equity prices. In case of equity investments, the price discovery process was distorted by the imposition of the floor on KSE-100 index for more than 3 months. The significant decline in the value of equity investments for a prolonged period subjected them to impairment losses. Due to these exceptional circumstances, SBP directed banks to reclassify their investments in equities, TFCs and Sukuk in the *held for trading* (HFT) category to the *available for sale* (AFS) or *held to maturity* (HTM) categories. Further, SECP and SBP allowed banks to defer the booking of impairment losses for CY08 over the four quarters of CY09. Moreover, banks were allowed to avail the benefit of 30 percent of the forced sale value (FSV) of collateral against their NPLs. It is interesting to note that few banks availed this facility, while others adopted a more conservative approach by not availing the benefit, though another reason for not availing the benefit is possibly the paucity of time for revaluation of collateral before the finalization of annual audited accounts.

In sum, the overall profitability of banks was lower in CY08 as compared to the previous year. Bank-wise information indicates that big banks experienced a marginal reduction in their profitability due to the difficult operating environment, while the small banks were the hardest hit. While the prevalent economic environment and increasing credit risk can further impact the profitability of the banking sector, reversal of monetary tightening (since April CY09) and increase in equity prices (as seen in the first half of CY09) will help banks in managing their profitability prospects better in the current year.

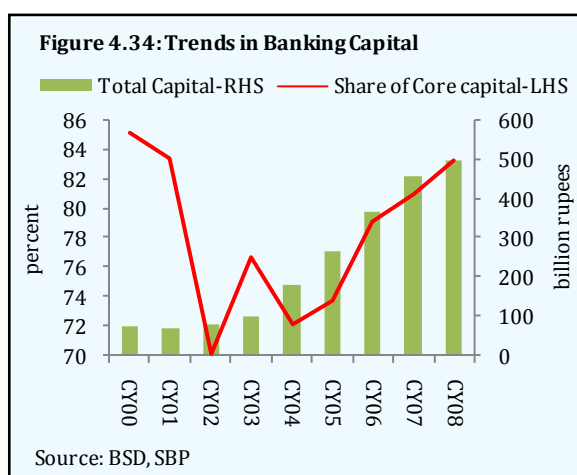
4.4.2 Solvency and Capital Adequacy

Capital is the final line of defense for absorbing losses from business operations. Accumulated losses/profits, and deficit/surplus on revaluation of assets are directly charged to a bank's capital base. Keeping in view the importance of capital for the safe and sound functioning of banks, SBP has been implementing the enhanced minimum capital requirements (MCR) in a phased manner since CY04. Specifically, MCR of Rs 1.0 billion at end CY03 has been increased to Rs 10.0 billion, to be implemented by end December CY13.³³ The MCR for the year ended December CY08 was Rs 5.0 billion and the minimum capital adequacy ratio (CAR) requirement was 9.0 percent. The implementation of Basel II is another step to strengthen the capital base of banks in line with their risk profiles. All these measures have played a key role in strengthening banks' capital base, which is analyzed in detail in the following section.³⁴

The overall equity of the banks increased, with a YoY growth of 3.4 percent, during CY08 to Rs 563.0 billion. This growth was substantially lower in comparison with the 37.0 percent increase in CY07. The components of equity show that the major contributing factors for this slowdown were: (i) the reduction in un-appropriated profits due to the decline in the overall profitability of banks, and (ii) substantial reduction in the surplus on revaluation of assets.³⁵ Corresponding changes were also visible in the qualifying capital (net of losses) for the MCR. Specifically, the capital of the banks witnessed a rise of Rs 40.2 billion during CY08.

This was less than half of the Rs 93.4 billion increase observed in CY07.³⁶ Notwithstanding, the YoY increase of 8.8 percent in capital during CY08 can be termed satisfactory, especially given the challenging overall economic environment and dismal performance of the equity markets, which creates difficulties for banks to mobilize funds (for instance through right issues) to strengthen their equity base. The bifurcation of capital into core and supplementary components according to prudential norms indicates that the former increased by Rs 43.7 billion during the year. On the other hand, the supplementary capital witnessed a decline of Rs 3.5 billion. As a result, the share of core capital in total capital has increased to 83.3 percent as against 81.0 percent in CY07 (**Figure 4.34**). The reason for the gradually improving quality of capital (as signified by the share of core capital) is the enhanced MCR.

In addition to the absolute amount of the minimum capital requirement, banks are also required to maintain capital according to their risk weighted assets (RWA). The minimum capital to RWA ratio (CAR) for CY08 was 9.0 percent as against the previous requirements of 8.0 percent. Before assessing the CAR, some details of RWA will help in understanding banks' risk bearing capacity. The RWA of all banks grew by 8.4 percent in CY08 to Rs 4,050.0 billion. While this growth is in line with the overall expansion in assets, it is substantially



³³ BSD Circular No. 7 dated April 15, 2009.

³⁴ Higher MCR requirements have also paved the way for mergers and acquisitions in the banking sector, which are discussed in detail in "Consolidation of the Financial Sector", SBP FSR 2006.

³⁵ It may be noted that the banking sector has booked a revaluation surplus of Rs 63.1 billion on its fixed assets during CY08, as against revaluation deficit of Rs 31.6 billion on its financial assets.

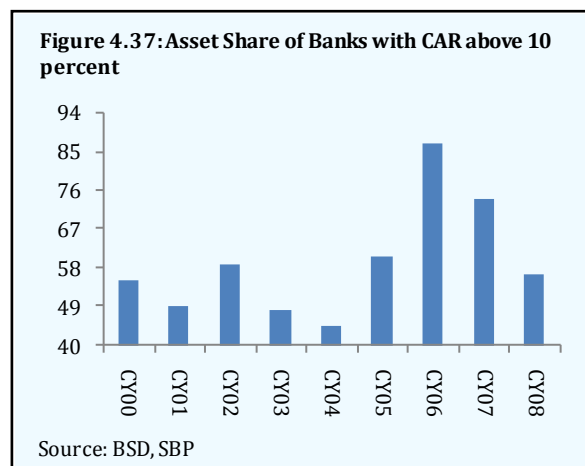
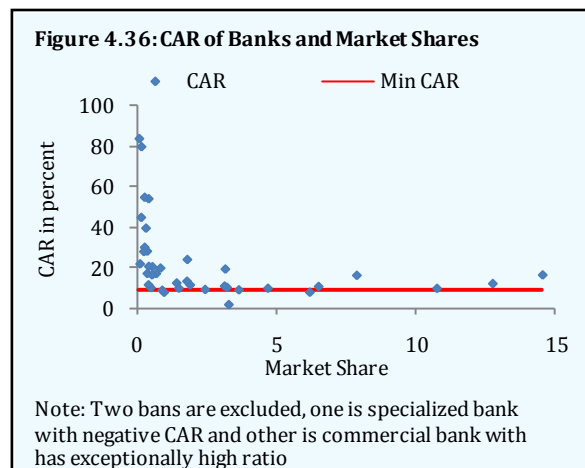
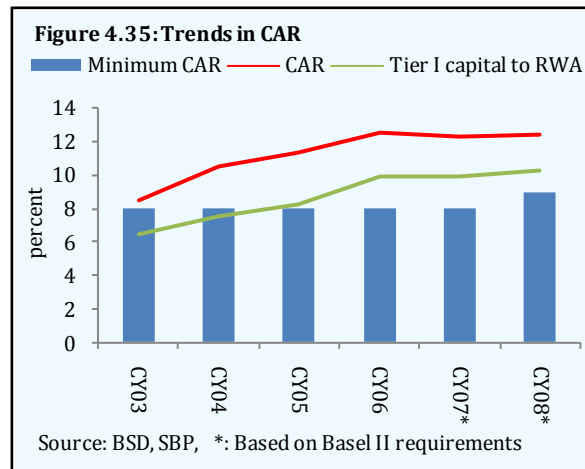
³⁶ It may be noted that CY07 was an extraordinary year as the paid up capital of a commercial bank saw an increase of Rs 32.7 billion during a year. This massive increase was on account of an acquisition transaction which resulted in the injection of huge equity into the system.

lower than the loan expansion of 18.4 percent during the year to Rs 3,182.6 billion. The reason for this differential in growth between loans and RWA is clearly visible from the sectoral distribution of loans, i.e. substantial loan expansion to PSEs and the federal government for commodity operations,³⁷ which carry low risk weights.

Moving on, the CAR of all banks under Basel II was 12.3 percent for CY08, as against the minimum requirement of 9.0 percent (Figure 4.35). Even the core capital to RWA ratio of 10.3 percent is above the prescribed requirement. Moreover, there is no change in the ratio as compared to the previous year. This is a welcome development as the overall economic fundamentals deteriorated substantially over the period of assessment. However, the lagged impact of the deterioration in asset quality might have some implications on the capital position of banks as discussed ahead.

Bank wise information on CAR indicates that 36 out of 40 banks with asset share of 89.4 percent have their CAR above 9.0 percent. The remaining 4 banks which are below the minimum required ratio include 2 public sector banks (one is a commercial bank and the other is a specialized bank) and 2 private sector banks. Both banks have their CAR in the vicinity of 8.0 percent. One of these banks is among the top 10 big banks, while the other is a small sized commercial bank with market share of 1.0 percent. The scatter graph of CAR also shows that a number of mid-sized banks have their CAR close to the minimum ratio (Figure 4.36). However, a number of small banks have their CAR well above the required ratio; these small banks are the foreign and private sector Islamic banks. It may be noted that some of the small private sector banks, which have seen visible increase in their risk profile (especially of liquidity) and have incurred losses during the year also have their CAR close to the required ratio. This reflects the presence of weak banks in the system.

The stratification of banks by CAR reveals that 5 banks with asset share of 22.5 percent have their CAR between 9 to 10 percent. All these banks are mid to large-sized private sector commercial banks. Simple calculations indicate that the asset share of banks with CAR of over 10.0 percent has declined to 56.3 percent in CY08 as compared to 73.8 percent in CY07



³⁷ For details, please see the section on credit risk.

(Figure 4.37). This gives an indication of a certain degree of deterioration in banks' capital adequacy profile.

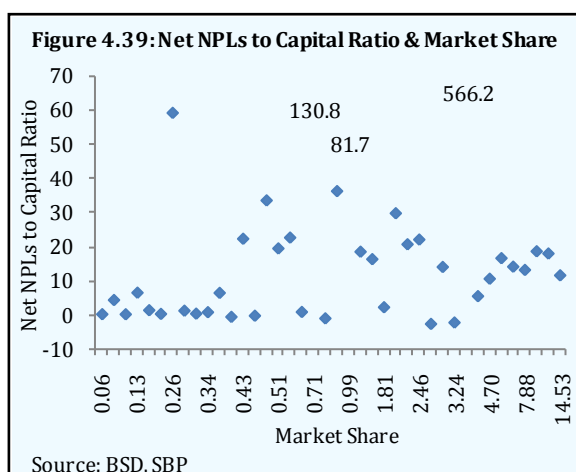
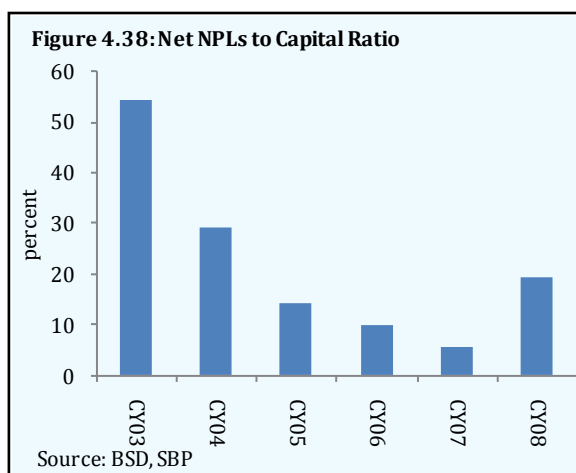
The analysis of various capital indicators suggests that the CAR of banks in aggregate was well above the minimum requirement of 9.0 percent in CY08. The quality of capital has also improved as compared to CY07. Maintaining CAR at a level almost similar to the previous year in CY08 is also a positive development. However, bank-wise information reveals some deterioration in capital adequacy. Few small private banks, which are facing financial problems, have their CAR below the minimum required level. Lagged impact of deterioration in asset quality may pose a threat to the capital base of these banks. This issue is the subject of the next section.

4.4.3 Resilience of the Banking Sector

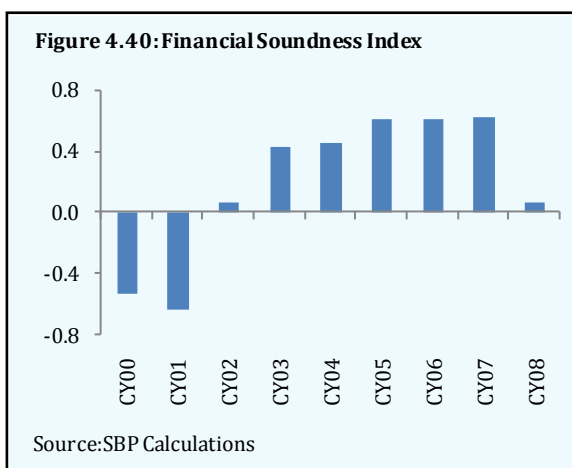
The analysis of the risk profile and the risk-bearing capacity of the banking sector indicates that the former has weakened significantly in CY08, while the latter has remained largely intact with some indications of deterioration for a few small banks. As deterioration in asset quality entails a time lag to affect the risk bearing capacity of banks, this section explores this issue in detail. The results of a single factor sensitivity analysis are also assessed to examine the resilience of the banking sector to further deterioration in risk factors.

A key indicator of risk to the capital base of the banking sector is the amount of net NPLs (NPLs less provisions). As mentioned in the section on credit risk, the net NPLs of the banking sector surged to Rs 109.3 billion by end CY08, as against Rs 30.4 billion for the previous year, indicating a rise of 3.6 times during the year. The net NPLs to capital ratio reached 19.4 percent by end CY08 as compared to 5.6 percent in CY07 (Figure 4.38). If the amount of net NPLs is written off directly against banks' capital base, the overall CAR will reduce to 9.9 percent: still higher than the minimum requirement of 9.0 percent. Hence, while the threat to the capital base in aggregate seems to be in manageable limits, a similar conclusion can probably not be derived for individual banks.

Bank-wise information reveals that 7 out of 40 banks with market share of 8.3 percent, have negative net NPLs to capital ratios. This implies that there is no immediate threat to the capital of these banks (Figure 4.39). Similarly, 20 banks with asset share of 77.9 percent have their respective ratios between 0 and 20 percent. It is expected that these banks can reasonably manage the potential impact of the net NPLs on their respective capital base. However, 2 banks' ratio is over 100 percent. One of them is a mid-sized commercial bank, while the other is a small bank. While these banks may not entail a systemic impact on the banking sector, there is a need for close interaction between the SBP and the management of these banks to resolve this particular situation. There are 2 more banks with net NPLs to capital ratios of 59.1 percent and 81.7 percent. One of them is a



specialized public sector bank, while the other is a commercial bank with asset share of 0.7 percent. All this information suggests that few small sized banks are facing a severe threat of erosion of their capital due to the high volume of net NPLs, and that there has been some deterioration in the overall soundness of the banking sector in CY08. The *Financial Soundness Index* comprising of indicators of capital adequacy, asset quality, profitability and liquidity, also highlights this factor, i.e. a certain element of deterioration with an overall positive assessment (**Figure 4.40**).



The resilience of the banking sector is further assessed on the basis of a single factor sensitivity analysis,³⁸ based on three major risk factors including credit risk, market risk and liquidity risk. The magnitude of change (or 'shock' in terms of the stress testing methodology) in the risk factors is driven by the historical volatility in each variable and an analysis of future movement. Specific shocks used in the analysis are summarized in **Table 4.14**. The impact of these shocks is calibrated to the CAR of the banking system based on the Basel II framework. Notably, this process employs a number of explicit and implicit assumptions.³⁹

Table 4.14: Shocks to Risk Factors and Impact on CAR

Shocks	Impact on CAR	After Shock CAR
Credit Risk		
C-1: 15% of performing loans moving to substandard, 15% of substandard to doubtful, 25% doubtful to loss	(2.44)	9.78
C-2: Tightening of loan classification i.e. all NPLs under OAEM require 25% provisioning, all NPLs under substandard require 50% and all NPLs in doubtful category require 100% provisioning.	(0.93)	11.33
C-3: Deterioration of loans to the textile sector (25%) directly downgraded to doubtful category	(1.48)	10.70
C-4: 25% of consumer loans (auto loans, personal loans & consumer durables only) classified into doubtful category.	(0.58)	11.62
Market Risk: Interest Rate Risk		
IR-1: An increase in interest rates by 500 basis points.	(0.77)	11.47
IR-2: Shift coupled with flattening of the yield curve by increasing 500,300 and 200 basis points in the three maturities respectively.	(0.36)	11.86
Market Risk: Exchange Rate Risk		
ER-1: Depreciation of exchange rate by 25%	(0.03)	12.18
ER-2: Appreciation of exchange rate by 25%	0.03	12.24
ER3: Depreciation of PRs against all currencies (25%) and deterioration of un-hedged FX loans	(0.86)	11.33
Market Risk: Equity Price Risk		
Eq-1: Fall in the equity prices by 50%.	(0.87)	11.32
Eq-2: Fall in the equity prices by 60%.	(0.98)	11.22
Eq-3: Fall in the equity prices by 70%.	(1.08)	11.11
Liquidity Risk*		
LR: Withdrawal of customer deposits by 2%, 5%, 10%, 10% and 10% for five consecutive days respectively.		No. of Illiquid Banks
	4	8

*: No of illiquid Bank on 4th and 5th days
Source : SBP Calculations

³⁸ Information used in this section is provided by the Banking Surveillance Department. The results are based on the unaudited quarterly data for end December 2008.

³⁹ Guidelines on Stress Testing, BSD Circular No. 5 dated October 27, 2005.

The results suggest that credit risk is the most important risk in terms of its impact on the CAR. In case of C-1, the CAR of banks in aggregate is expected to decline by 2.44 percentage points to 9.78 percent. While the overall post-shock CAR is above the minimum requirement, 15 banks may fall below the level of 9.0 percent, as compared to 4 banks in the pre-shock scenario, whereas the assumed shock wipes out the entire capital base of 2 banks. One of them is a public sector commercial bank, while the other is a specialized bank. It is important to note that the post-shock CAR of 3 out of the 5 big banks is also likely to decline below the minimum level, as will the CAR for a number of small banks.

Credit concentration risk is another concern for the stability of the banking sector. Notably, deterioration in the quality of loans to the textile sector alone, with a share of 19.5 percent in total loans, can have a significant impact on banks' CAR, as signified by the assumption that if 25.0 percent of loans to the textile sector are directly downgraded to the doubtful category, the CAR of banks will decline by 1.48 percentage points to 10.7 percent. Such a shock is likely to push 9 banks below the minimum required CAR as compared to the pre-shock position. The element of concern here is that this number includes 2 out of the 5 big banks and a number of second tier big banks.

Within market risk, a 500 bps increase in interest rates may reduce banks' CAR by 77 bps to 11.5 percent. Bank-wise information reveals that the CAR of 7 small to mid-sized banks may decline below the minimum level in this case, however the post-shock CAR of all the big five banks is likely to be above 10.0 percent. Interest rate risk seems to be significant for only one big bank with a strong capital base, while the impact is negligible for other big banks.

In case of exchange rate risk, the direct impact is quite limited. The hypothetical depreciation or appreciation of 25.0 percent in the exchange rate is likely to affect the CAR of all banks in aggregate by just 3 bps, which is not surprising given the limited direct foreign currency exposure of banks. However, when the intensity of shock is increased by considering the deterioration of the un-hedged FX loans, the impact on CAR is likely to be 86 bps. While the overall post-shock CAR may still be 11.3 percent, the number of banks with CAR below the required level can increase to 7 as compared to 4 before the shock. Banks with significant exposure to this risk factor include mid to big-sized banks.

The degree of equity risk for banks seems to be well contained. One possible reason could be prudential limits on equity investments as a percentage of bank's equity as specified by the Prudential Regulations. The relatively strong shock of the fall in equity prices by 70.0 percent reduces CAR by 108 bps to 11.11 percent. Bank level information indicates that the number of banks with CAR between 0 to 9.0 percent is expected to be 8, as against the pre shock position of 3 banks falling in this range. The list includes 3 out of the 6 big banks, 2 mid-sized banks and 3 small private sector banks.

Lastly, withdrawal of deposits for 5 consecutive days is used as the assumed shock for liquidity risk. It may be noted that the assumed duration of withdrawal is significantly higher in comparison with the actual situation observed during the temporary liquidity stress during CY08. Results indicate that none of the bank becomes illiquid for the first three days of deposit withdrawals of 2, 5, and 10 percent, whereas 4 banks face a liquidity crunch on the fourth day of the shock. On the fifth day the number of illiquid banks increases to 8. Most of these banks are small and mid-sized private banks.

In sum, details of the sensitivity analysis suggest that the banking sector can withstand various shocks of a moderate to strong nature with some difficulties projected for small and mid-sized private banks. Managing credit and concentration risks seem to be the major challenges as both these risks (assessed in an individual capacity) can affect some of the

systemically important banks. The element of market risk seems to be reasonably well contained; none of the big five banks is significantly affected by interest rate risk, while a strong shock to equity prices may deteriorate the capital adequacy of just 2 big banks. Banks are also generally well-positioned to manage a potential liquidity risk which can arise due to successive withdrawals, given that none of the banks faces a problem for the first three days.

4.5 Conclusion

Despite significant changes in the overall risk profile of the banking sector during CY08, its financial stability is assessed to be satisfactory. Notably, the banking sector was able to absorb losses of a significant nature without showing any signs of serious instability. A real time liquidity stress was generally managed well with the help of SBP policy interventions. None of the systemically important banks faced any major challenge in terms of their financial stability indicators. The overall Financial Soundness Index is still positive. However, a few small and mid-sized banks are facing major challenges. The liquidity position of these banks is yet to recover from the liquidity stress of Q3-Q4 CY08 to their pre-shock level. Lagged impact of deterioration in asset quality can also be a challenge for them. Although these banks are not systemically important, the presence of weak banks in the system reflects underlying vulnerabilities to financial stability.

Sensitivity analysis of various assumed shocks reveals that the banking sector in aggregate can withstand various shocks of a moderate to strong nature. Credit and concentration risks seem to be the primary concerns in safeguarding financial stability. Despite significant deterioration of the liquidity position of banks, liquidity risk continues to be low due to SBP's statutory liquidity requirements. Bank-wise information indicates the presence of a few weak banks, which may face severe financial problems in face of deterioration of one of the risk factors.

Going forward, substantial comfort can be drawn from the favorable movement in some of the risk factors in CY09. For starters, the reversal of the monetary stance due to the easing off inflationary pressures, the gradual path of recovery of economic fundamentals, restoration of the regular functioning of the Karachi Stock Exchange and relative stability in the exchange rate are some of the positive developments. Deposits growth has started to pick up pace and banks' asset composition has improved in the context of both credit and liquidity risk. Last but not the least, SBP's requirement of increasing capital (net of losses) by Rs 1.0 billion during the year (as part of MCR) is likely to create further room for absorbing potential losses. Besides strengthening the capital base of the banking sector, the MCR may also pave the way for more mergers and acquisitions. In either case, the ongoing implementation of various vigilant policy measures is likely to strengthen the stability of the banking sector in CY09.

Developments in the Banking Sector in H1-CY09 - A Brief Review⁴⁰

CY08 was a challenging year for the banking sector when adverse developments in various risk factors severely tested its resilience. Although the overall banking system was able to withstand these shocks by escaping any serious threat to its stability, a few small banks are still reeling from the impact, while a number of financial indicators deteriorated visibly during the year. Consequently, the banking sector stepped into CY09 with a few financially weak small banks, a potential threat to the erosion of the capital base with the lagged impact of deterioration in asset quality, heightened market and credit concentration risks, and a difficult macroeconomic environment. Notably, government's decision to implement an aggressive macroeconomic stabilization program with the help of IMF's Stand-By Arrangement from November CY08 played its role in stemming the rapid deterioration of economic fundamentals in the initial months of CY09. Gradual improvement in the economic environment observed in recent months is a source of comfort for the banking sector, as various risk factors seem to be dissipating. Some of the favorable developments include the reversal of the monetary stance due to the easing off of inflationary pressures, restoration of the regular functioning of the Karachi Stock Exchange and relative stability in the exchange rate. These developments not only helped in stemming the rapid deterioration in some of the financial indicators of the banking sector, but also signaled gradual improvement in the stability of the banking sector in H1-CY09, as against the position at end-CY08. Specifically, the Financial Soundness Index of the banking sector comprising of asset quality, capital adequacy, profitability, and liquidity indicators increased to 0.3 during Q2-CY09 as against 0.1 for the year CY08. In this backdrop, the financial performance of the banking sector during H1-CY09 is briefly reviewed in this section.

Banking sector assets increased by 8.6 percent during H1-CY09, compared to 6.6 percent in H1-CY08. This slightly higher growth in assets along with gradual improvement in economic fundamentals is a sign of the revival of banking activities in recent months. Quarterly bifurcation of data also lends support to this argument, given that the growth in assets was largely concentrated in the second quarter, whereas asset expansion during Q1-CY09 was only 2.1 percent. Encouragingly, the expansion in assets was funded by healthy growth in the deposits and capital of the banking sector during H1-CY09, which increased by 8.2 percent and 10.6 percent respectively (as against 8.7 percent and 3.1 percent for H1-CY08). As in case of assets, the increase in deposits was observed only in Q2-CY09, which can be attributed to the reviving confidence (of the depositors) in the banking sector, the multiplier impact of credit expansion for commodity finance, and banks' effort to mobilize deposits, especially to meet end June targets.

The double digit growth in the equity base is hardly surprising as banks are required to increase their minimum capital (net of losses) to Rs 6.0 billion by end CY09, compared to the Rs 5.0 billion requirement for December CY08. Another contributory factor is the improvement in the 'surplus/deficit on revaluation of assets', account which increased by Rs 26.2 billion due to the declining revaluation losses (charged to capital) on investments in government securities and equities. This encouraging development is the upshot of the reversal of the direction of interest rates following the gradual easing of monetary policy and the steady rise in equity prices during H1-CY09.

The asset composition of the banking sector has undergone significant changes during H1-CY09, as the investment portfolio grew by 30.4 percent during this time, pushing its share in assets to 23.2 percent as against 19.2 percent at end CY08. In sharp contrast to this, the loan portfolio saw a contraction of 0.2 percent during the same period, and its share in assets

⁴⁰ Detailed analysis can be seen in the *Quarterly Performance Review of the Banking System* for quarter ended March and June 2009, Banking Surveillance Department, State Bank of Pakistan.

dipped to 52.2 percent by end H1-CY09 compared to 56.6 percent at end CY08. These divergent trends in two key components of banks' asset base are attributed to a variety of factors including: (1) substantial investments in fixed income government securities in a bid to lock-in funds at higher rates in a declining interest rate environment; (2) investments in the GoP TFC issued in March CY09 to resolve the mounting problem of *circular debt*: this was primarily a shift in banks' assets from loans to investments ; and (3) banks' efforts to tighten their lending standards due to the marked slowdown in economic activities and the associated incremental quantum of NPLs. To some extent these factors contributed to what can be termed as *crowding out* of the financing needs of the private sector.

Segment-wise distribution of the loan portfolio also points towards this phenomenon. Specifically, the outstanding amount of loans to major segments including corporate, SMEs, agriculture and consumer finance saw a net retirement of Rs 14.0 billion during H1-CY09, while loans to the government for commodity financing increased by Rs 163.4 billion over the same period. The impact of these developments is also visible from the increase in the share of public sector loans in total loans at 17.4 percent by end June CY09, from 10.8 percent at end CY08. Quarterly data however shows that loans to the corporate sector grew by 1.2 percent during Q2-CY09, as against a contraction of 4.3 percent in the previous quarter.

While changes in the asset mix of the banking sector during H1-CY09 highlight a certain degree of crowding out and banks' reluctance in lending to the private sector, this strategy did help them to realign their risk profile with the gradually improving economic environment prevalent during this period. In specific terms, substantial increase in the investment portfolio contributes in containing both liquidity and credit risks for banks. In this backdrop, various financial indicators are reviewed in the following discussion.

Weak economic activities have taken a heavy toll on banks' asset quality. The NPLs of the banking sector increased by Rs 38.7 billion during H1-CY09, following the unprecedented rise of Rs 141.8 billion during CY08. The impact of both mounting NPLs and restrained lending is clearly visible from the increase in the NPLs to loans ratio, which has reached 11.5 percent by end H1-CY09 as against 10.5 percent for CY08 (**Table 4.15**). While the flow of fresh NPLs has decelerated to some extent during H1-CY09 especially during the second quarter, the outstanding stock of NPLs will continue to pull down the profitability of the banking sector, with the associated increase in provisioning expense. Specifically, the banking sector booked provisioning expense of Rs 41.8 billion during H1-CY09, which was 1.5 times higher than the provisioning expense in H1-CY08. Despite this increase in provisioning expense, the provisioning coverage ratio only increased to 70.2 percent by end H1-CY09, as against 69.2 percent for end CY08. In absolute terms, the net NPLs (NPLs net of provisions) of the banking sector have reached Rs 118.5 billion by end H1-CY09, which suggests the potential of further provisioning in coming months.

Table 4.15: Key Financial Indicators

Percent	CY07	H1-	CY08	H1-
Risk Weighted CAR*	13.2	12.1	12.3	13.5
Tier 1 Capital to RWA*	10.5	9.7	10.3	11.3
NPLs to total loans	7.2	7.7	10.5	11.5
Provisions to NPLs	85.1	84	69.6	70.2
Net NPLs to capital	5.6	6.9	19.4	19.0
ROA after tax	1.5	1.7	0.8	1.0
ROE after tax	15.5	16.7	7.8	9.7
Liquid to total assets	33.6	31.6	28.6	31.2
Advances to Deposits	69.8	69.8	75.5	69.6

* Figures for CY08 & H1-CY09 are based on Basel II

Sources: BSD, SBP

Notably, the shift in the asset composition of the banking sector from advances to investments has played an important role in improving the risk profile of the banking sector. This shift in composition has pushed up the share of liquid assets in total assets to 31.2 percent by end H1-CY09, as against 28.6 percent for end CY08. This is an indication of the

improving liquidity position of banks. In particular, an increase in investments in fixed income government securities in a declining interest rate environment not only carries a lower risk and helps in improving the liquidity position, but also entails favorable implications for market risk. In an era of declining interest rates, banks are likely to book revaluation surplus on these securities.⁴¹ Some of the realized gains then help in pushing up the profitability of the banking sector. Banks are also likely to benefit from the recent rise in equity prices, though the impact of this rise will be relatively lower as banks' investments in ordinary shares is only 4.2 percent of their total investments.

Improvement in the outlook for liquidity risk is also evident from another key indicator, i.e. the advances to deposit ratio (ADR). The ADR of the banking sector has improved considerably in H1-CY09, having declined to 69.6 percent by end H1-CY09 as against 75.5 percent at end CY08. This sharp improvement is attributed to both the revival of deposit growth and minor contraction in advances due to a variety of factors mentioned earlier.

Given the favorable developments in the risk factors, banks' risk bearing capacity has also witnessed changes during H1-CY09. The banking sector earned a profit after tax of Rs 28.6 billion during H1-CY09. While this is substantially lower than the profit of Rs 46.0 billion in H1-CY08, it still accounts for 66.2 percent of total profit after tax for CY08. Standard indicators of profitability also depict some improvement during the first half of the year. The after-tax ROA and ROE of the banking sector for H1-CY09 are 1.0 percent and 9.7 percent respectively, as against 0.8 percent and 7.8 percent for CY08 (**Table 4.15**). This modest improvement in profitability indicators bodes well for the banking sector, especially in view of the increased expense on provisioning.

Another indicator of banks' appetite for risk is the capital adequacy ratio (CAR) which takes into account the cushion (of capital) available with banks and the risk weighted assets. The regulatory capital increased by Rs 54.0 billion during H1-CY09 to reach Rs 553.8 billion. This rise was largely on account of the enhanced minimum capital requirements (MCR) for banks on the basis of which banks are required to increase their minimum capital to Rs 6.0 billion by end CY09. Bank-wise information indicates that around 20 of the 40 banks need to increase their capital during the second half of the year to meet the MCR, while the rest are already in compliance.

The risk weighted assets (RWAs), on the other hand, increased by only 1.3 percent during H1-CY09. In line with the changes in the asset mix, the credit RWAs declined by 1.5 percent during H1-CY08. Compared to the minor reduction of 0.2 percent in banks' advances, this relatively larger decline in credit RWAs is the result of the increased volume of loans to the public sector. Over the same period, market RWAs grew by 36.2 percent on account of the substantial expansion in the investment portfolio of the banking sector. It may be added here that market risk for banks is largely well contained already as the share of market RWAs in total RWAs was 4.2 percent only at end June CY09. In this backdrop, the CAR of the banking sector under Basel II requirements improved to 13.5 percent by end H1-CY09, as against 12.3 percent for CY08 (**Table 4.15**). A similar improvement is also visible in the core capital to RWAs ratio, which has reached 11.3 percent from 10.3 percent for CY08. Given this improvement in consolidated CAR, bank-wise information indicates that 6 out of 40 banks with asset share of 6.7 percent have their CAR at less than the minimum requirement of 10.0 percent for CY09. This highlights the presence of a few weak banks in the system.

The potential threat of erosion of the capital base, proxied by the net NPLs to capital ratio, has also decreased slightly during the first half of the year: the ratio has improved to 19.0

⁴¹ It may be noted that these favorable implications are based on the assumption of the continuation of the decline in interest rates.

percent for H1-CY09 as against 19.4 percent for CY08. Bank-wise information indicates that 4 small banks with assets share of 5.8 percent have their net NPLs to capital ratio at over 50 percent, such that the value of the ratio is over 100 percent for two of these banks. This implies that the entire capital base of these banks will be wiped out if the net NPLs are directly provided for from their capital under the assumption of no change in all other indicators.

In sum, key financial soundness indicators used to gauge the stability of the banking sector have shown some improvement during the first half of CY09, especially during the second quarter. This is also visible from the slight improvement in the Financial Soundness Index (FSI) from 0.1 in CY08 to 0.3 by end H1-CY09. It is important to note that although the risk profile as well as the risk-bearing capacity of the banking sector has improved during H1-CY09, its profitability is likely to remain subdued on account of the volume of provisioning expenses. The presence of a few small weak banks in the banking system is also an indication of persistent weaknesses in the banking system. Notably, banks have to focus on their core business activities i.e. channelize funds to private sector business enterprises, instead of diverting funds to government securities and extending loans to the PSEs and the government sector. While this strategy may work well in improving the risk profile of the banking system, it can have potentially negative consequences in an economy which is gradually getting back on its feet.

References

Bank of International Settlements, Basel Committee on Banking Supervision (2008),
“Principles of Sound Liquidity Risk Management and Supervision”, September 2008.

International Monetary Fund (2009), “World Economic Outlook April 2009”

State Bank of Pakistan (2006), “Consolidation of the Financial Sector”, Financial
Stability Review 2006.

State Bank of Pakistan (2008-09), The State of Pakistan’s Economy, First Quarterly
Report FY09