

FIRST HALF  
2011

# FINANCIAL STABILITY REVIEW

**State Bank of Pakistan**



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The team bears the responsibility of all errors and omissions. The analysis and commentary in the report are entirely those of the team and do not necessarily represent the views of the SBP management.

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**Note:** As communicated in our earlier publications, quarterly performance review (QPR) of the banking system has been replaced by bi-annual Financial Stability Reviews (FSR). Our current FSR covers the developments during the first half of 2011. The next FSR will examine the trends in the second half of 2011 and will be released in May 2012. In the meantime, we would continue to post quarterly banking statistics (including Financial Soundness Indicators) on SBP website.

## Financial Stability: Overview and Outlook

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Banking trends that were highlighted in our last report<sup>1</sup> have solidified during the period under review (January-June, 2011), barring few exceptions. The asset base of the banking system has soared by 8 percent (Rs. 577 billion), the most significant rise in a half year since 2007, on the back of a robust increase in investments, overwhelmingly in government papers<sup>2</sup>. Deposits were up by 9.4 percent (Rs. 515 billion), the strongest half yearly growth in the last four years, on the back of stellar inflow of workers' remittances.

*Banking trends have entrenched further, barring few exceptions*

Banks' earnings continued to accumulate, adding another Rs. 77 billion to industry's profit before tax, compared to Rs. 59 billion during the same period last year (Table 1). Positively, concentration in profits has dropped (share of top 5 banks down from 95 percent in Dec-10 to 78 percent in June-11), ensuring that even smaller banks have a share, albeit marginal, in overall profits. Further, growing profits have also helped reduce the number of loss making banks, from 17 in June-10 to 8 in June-11. However, source of profits is shifting away from interest income through advances to investments in government papers. Specifically, returns from investments in government securities now account for almost 30 percent of banks' interest income, up from 24 percent in June-2010. This trend is neither desirable nor sustainable, first because it compromises intermediation function and second since any sharp cut in discount rate can discernibly knock these profits<sup>3</sup>. Credit risk proves intractable, with non-performing loan ratio inching up to 15.3 percent, from an already high 14.7 percent in Dec-2010. But liquidity has improved further, as does the solvency, particularly when measured in terms of capital adequacy ratio.

During the half year under review, government's dependence on the banking system has remained strong, amid poor tax collection (tax to GDP ratio of 9.4 percent) and steadily diminishing contribution of the external funds in deficit financing (9 percent in FY11 compared to above 50 percent during FY01-07). Furthermore, from Nov 2010 onwards, the commercial banks have become a major source of deficit financing as government shifted its borrowings away from the central bank. While this shift has somewhat helped the government keep its borrowings from SBP within agreed limits<sup>4</sup>, it is likely to aggravate the budget deficit as return on government securities is now being earned by commercial banks instead of SBP<sup>5</sup>.

*While fiscal slippage has offered banks' an excuse for risk-aversion....*

As a consequence, banks' appetite for investment in government papers continues unabated, pushing the share of net investments in banks' total assets to 34 percent, highest in a decade. Unsurprisingly, share of net advances has experienced a concomitant drop, further sliding down to 43.9 percent by June-11. With rise in investments (22.4 percent) outpacing the growth in advances (1.04 percent<sup>6</sup>) by a wide margin, advances to deposits ratio (ADR) of the

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<sup>1</sup> Quarterly Performance Review of the Banking System, based on the data of December 2010.

<sup>2</sup> 90.6 percent of incremental investments during H1-CY11 were in government papers.

<sup>3</sup> Incidentally, SBP have cut its discount rate by 200 basis points since June 2011. While the immediate effect on banks' balance sheet may not necessarily be negative (because of revaluation gains), it would reduce future interest income from government securities, a key earning source in recent times.

<sup>4</sup> SBP & MoF mutually agreed to keep outstanding stock of borrowing from SBP below September 2010 level of Rs. 1,155 billion (on cash basis).

<sup>5</sup> Government borrowings from the central bank helps SBP earn interest income. This translates into higher profits for SBP which are ultimately transferred to government as non-tax revenues. In case of interest income accumulated by commercial banks, the benefit to government is only partial, dictated by effective tax rate on banks' earnings.

<sup>6</sup> Credit disbursement has not been that anaemic when viewed on quarterly basis. However, many of the firms which took credit in the first quarter paid back in the second, making half yearly numbers appear slack then the actual off-take.

banking sector has further come off, dropping from 61.4 to 56.7 percent during H1-CY11. Steadily declining ADR<sup>7</sup> succinctly captures some important trends in the banking sector. First, it indicates availability of ample loan-able funds within banks and thus improved liquidity. By the same token, it underscores banks' growing risk aversion towards private sector credit which is ostensibly riskier and less attractive when risk free investments offer decent returns. Finally, it highlights banks' receding role as financial intermediaries, particularly when viewed in terms of socially and economically desirable allocation of credit<sup>8</sup>.

While these trends heighten the concerns about private sector crowding out, poor credit off-take by the private sector has other reasons as well. In fact commercial banks, sitting on enough liquidity, have the wherewithal to extend the required private sector credit, provided there is sufficient demand in place, commensurate with their risk appetite. But with severe energy crisis, poor law and order situation and a challenging economic environment, demand for such credit is subdued<sup>9</sup>. Admittedly, with government receiving growing portion of the banking credit at rates quite attractive to banks, the cost of borrowings for private sector remains high, prompting firms to confine their borrowings to immediate working capital needs. However, an improved law and order situation, uninterrupted supply of requisite energy and a healthy economic growth in general would have a more salutary effect on credit off-take than drop in the interest rates alone.

*... private sector crowding out has other reasons too*

**Table 1: Key Banking Statistics** (Rs Billion)

	CY08	CY09	Jun-10	Dec-10	Jun-11
Total Assets	5,628	6,516	6,782	7,138	7,715
Investments (net)	1,087	1,737	1,893	2,142	2,620
Advances (net)	3,173	3,240	3,231	3,349	3,383
Deposits	4,218	4,786	5,128	5,450	5,965
Equity	563	660	668	697	723
Profit Before Tax (ytd)	63	81	59	111	77
Profit After Tax (ytd)	43	54	36	65	51
Provisioning Charges (ytd)	106	97	30	70	30
Non-Performing Loans	359	446	460	548	579
Non-Performing Loans (net)	109	134	123	182	186

Of all risks that banks have to confront with, credit risk remains the most significant and intractable. Its significance is obvious from the fact that 79.3 percent of banks' risk weighted assets can be ascribed to credit risk alone. And it is intractable as the rise in NPLs continues unabated. During H1-CY11, banks accumulated another Rs. 31.4 billion to infected assets (compared to a rise of Rs. 27.8 billion during same period last year), pushing non-performing loan ratio (NPLR) from 14.7 to 15.3 percent.

*Recalcitrant credit risk would take time and effort (particularly on part of PSCBs and mid-sized LPBs) to tame*

<sup>7</sup> Alternatively, investments to deposit ratio (IDR) has been consistently rising, reaching 44 percent by June-2011.

<sup>8</sup> In strict sense, conversion of deposits into any type of lending is intermediation, whether the ultimate borrower is government or the private sector. However, lending to private sector is discernibly productive as it helps promote economic activity and job creation.

<sup>9</sup> Parallels can be drawn with an economy that is on the horizontal part of aggregate supply curve and far away from its potential level of GDP. For such an economy, increase in aggregate demand does not translate into inflation, at least in the pure Keynesian world. Likewise, crowding out would have been more potent, had there been a strong demand for private sector credit. But with banks maintaining excess liquidity amid steadily falling ADR, the possibility of a full-scale crowding out is limited.

Bank-wise break up reveals that two groups are particularly vulnerable to mounting credit risk: mid-sized<sup>10</sup> local private banks (LPBs) and public sector commercial banks (PSCBs). While slack economic growth and attendant rise in credit risk is understandable and indeed relevant for all banks, mid-sized LPBs and PSCBs have infection ratios (25.6 percent and 21.5 percent respectively) far higher than industry average (15.3 percent). The explanation lies, in case of LPBs, primarily in the choice (if they have much) of borrowers; since bulk of the quality borrowers are served by big banks, mid-sized banks are compelled to choose relatively riskier borrowers, also because they need to earn enough to compensate for their much higher cost of deposits than of the top five banks. In case of PSCBs, their credit standards partially explain above average infection ratios.

With bulk of incremental deposits being placed in investments, why the trend in NPLs is not receding? First, the rise in NPLs (at least at its current pace) can be dictated by a handful of banks. Second, as breakup of NPLs reveals, incremental NPLs are primarily in the Loss category. Since NPLs are typically classified into loss category after 360 days<sup>11</sup>, it suggests these advances were granted in the past. While growing portion of investments in asset mix is likely to decelerate the pace of NPLs, that alone would not be enough to turn the tide. Banks need to improve their credit risk management at the same time, ensuring their incremental NPLs are well contained, if not totally avoided.

Other risks to the banking system remain well contained. In fact, liquidity position of the banks has been comfortable in general, with industry maintaining excess liquidity than statutorily required, thanks to growing share of investments in banks' portfolios. Further, the increasing share of long term deposits in the funding mix has kept funding liquidity risk at bay. Market risk remains subdued, amid relatively stable exchange rate and interest rate during the period, notwithstanding the lackluster performance of the equity market.

*...though other risks are well-contained*

Solvency profile of banks has improved further, with Capital Adequacy Ratio (CAR) inching up by 10 bps to reach 14.1 percent by Jun-11. Much of the improvement took place in Tier-I or the core capital (up by 3.5 percent) as the banks, benefiting from a period of easy earnings, started to accumulate reserves and enhance their paid-up capital to meet growing minimum capital requirements (MCR). While all except five banks have CAR above the required 10 percent, almost half of the banks face the challenge of meeting MCR of Rs. 7 billion. With deadline for higher MCR of Rs. 8 billion around the corner (30<sup>th</sup> Dec-2011), this will impose further pressure on the banks to comply with growing capital requirement.

*Despite having comfortable CAR, banks struggle to meet growing MCR....*

Part of banks' difficulty in meeting MCR is on account of its growingly higher regulatory requirement: from Rs. 6 billion by Dec-09 to Rs. 7 billion by Dec-10, further Rs. 8 billion by Dec-11 and then gradually up to Rs. 10 billion by Dec-13. In the current domestic as well as international business environment, raising additional capital has been a challenge for many banks. On the other hand, the case of CAR is characterized by favorable trends both in numerator and denominator of the ratio<sup>12</sup>, helping majority of the banks stay well above the

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<sup>10</sup> These banks, when ranked on the basis of asset size, fall between top 11-20 banks.

<sup>11</sup> Classification of a loan into loss category varies in terms of loan types. For instance, corporate, SME, and consumer (auto and mortgage) loans are classified as loss after 360 days, while corporate-trade bills and consumer (credit cards & personal) loans are classified as loss after 180 days of non-payment of interest and or principal. On the other hand, agricultural loans are classified as loss after 2 years.

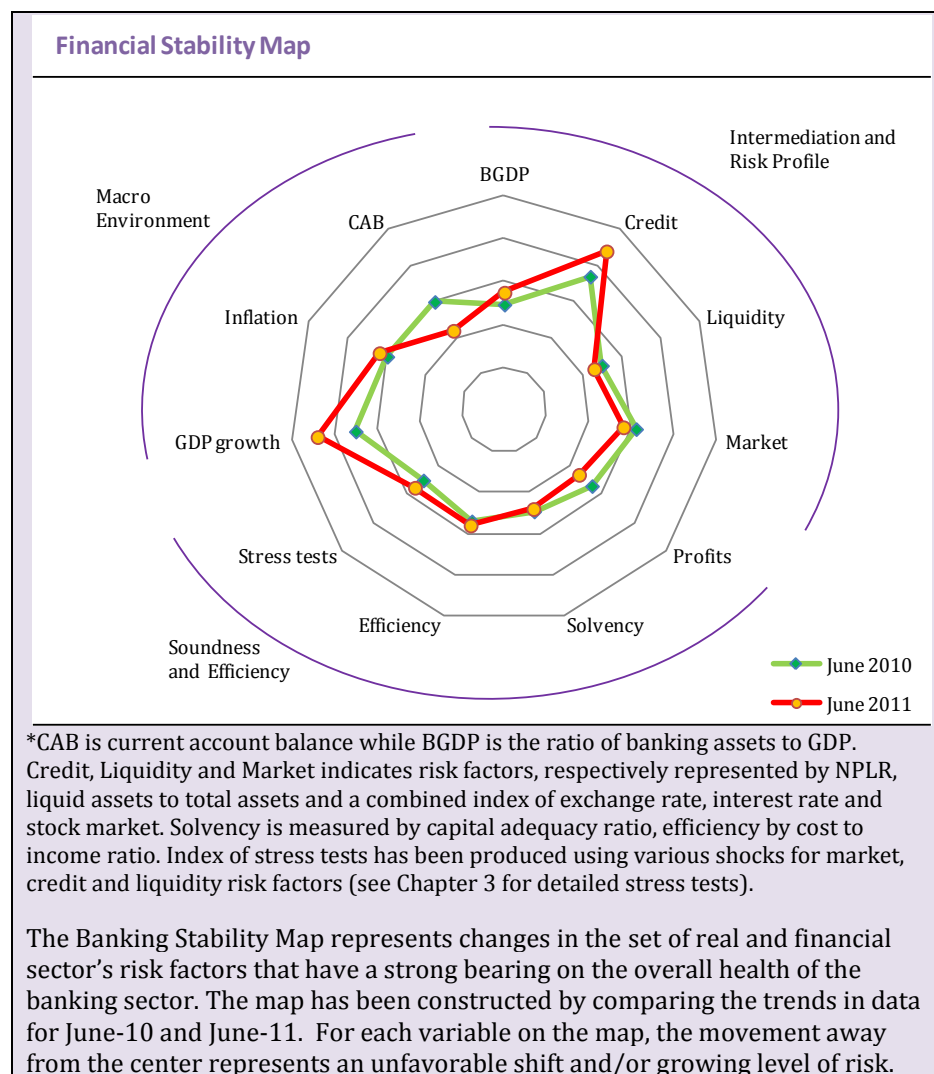
<sup>12</sup> Simply put, CAR= regulatory capital/ risk weighted assets.



minimum requirement of 10 percent. First, as changing asset mix has increased the share of safer investments in banks' portfolios, risk weighted assets have declined, shirking the denominator. Second, SBP's drive to enhance MCR has also increased capital base of the banking system, expanding the numerator. These trends collectively explain improved CAR of the banking industry, notwithstanding the challenge posed by higher MCR.

Since CAR reflects adequacy of banks' capital in the context of their risk profiles, a comfortable CAR underscores a resilient banking system against adverse shocks. Unsurprisingly, results of stress tests conducted on June-2011 data corroborate this notion of soundness of the banking industry in general. Financial Stability Map (Box-1) provides another look at the movements in key macroeconomic indicators and risk factors.

*....still the system appears sound & resilient*



Islamic banking institutions (IBIs) have registered 17.5 percent growth during H1-CY11, with bulk of incremental assets channeled into government securities. On average, IBIs are more solvent, liquid, and profitable than the rest of the banking sector and these indicators have improved during the period under

*IBIs are solvent, liquid and profitable, but face unique risks*

review. Reputational and Displaced Commercial Risk (DCR<sup>13</sup>), though dormant, can pose significant challenge to the future growth prospects of the industry. The former risk arises on account of limited size of financing portfolio based on profit and loss sharing (2.9 percent in total financing by IBIs<sup>14</sup>), the hallmark of Islamic banking. DCR on the other hand emanates from the practice that, contrary to contractual obligations with their PLS depositors, IBIs find it hard to transfer the losses to investment account holders as this may prompt withdrawals.

### *Financial Markets, NBFIs, and the Payment Systems*

Domestic financial markets remained stable during the period under review, despite some bouts of mild strain. External inflows kept the value of domestic currency almost stable, as PKR depreciated by a marginal 0.35 percent against the dollar. Healthy external inflows on the back of workers' remittances and price-led export earnings buffeted banks' deposits and liquidity profiles, apart from helping central bank accumulate reserves (up by 9.2 percent in H1-CY11). In the money market, the yield curve flattened during H1-CY11 as the short-term rates inched up with a decline in the longer term maturities. The capital market managed to post a marginal growth of 4 percent during the half year under review. However, the trading volumes and activities in the corporate debt market largely remained low. Lastly, the derivatives market, already quite small in size, shrank further as insipid credit to private sector coupled with stable exchange rate and interest rate dampened the demand for new contracts.

*Financial markets remain stable in general*

During the period under review, the asset base of the Development Finance Institutions (DFIs) managed to grow marginally by 4 percent, primarily on account of stronger growth in investments. Share of advances in total assets remained intact (around 35 percent), though at significantly lower level than what DFIs' nature of business would warrant. While all eight DFIs except one were able to post profits during H1-CY11, higher provisioning on account of growing NPLs reduced industry profits when compared with the same period last year. DFIs' solvency ratios (CAR of 56.7 percent) have been significantly better than those of banks (14.1 percent), suggesting ineffective utilization of their strong capital base. The leasing sector has kept on shrinking amid strong competition from the banking sector.

*DFIs witness marginally weak performance while leasing contracts.*

In contrast, the mutual funds industry witnessed its revival as the money market investments improved the net assets of the industry by 24 percent in H1-CY11. Finally, the insurance industry witnessed a growth of 16.6 percent in its asset base with the life business experiencing a much strong growth<sup>15</sup> (24 percent). On the contrary, the nonlife insurance has been affected by a significant drop in the consumer finance activities and a higher claims ratio, though it has still managed to post reasonable profits from rising investment income.

*Insurance and mutual funds experience strong growth*

During the half year under review, the payment systems have functioned smoothly, with amount transacted through retail payment system growing by 14 percent (YoY) against 11.6 percent in the corresponding period last year. In terms of volume, share of e-banking transactions has gained momentum, reaching 42 percent by June-11. However, in terms of value, retail payments are still dominated by paper based transactions (particularly through cheques), with 86 percent share in all transactions settled. Large value payment system in

*Though e-banking gains share in retails' volume, paper-based modes still dominate in value*

<sup>13</sup> DCR refers to the risk arising from assets managed on behalf of investment account holders. The risk is effectively transferred to the IBIs' own capital because IBIs forgo part of its *Mudarib's* share on such funds.

<sup>14</sup> As IBIs continue to rely on mark-up based and mortgage/lease type modes of financing.

<sup>15</sup> This analysis is based on published annual audited accounts of 2010.

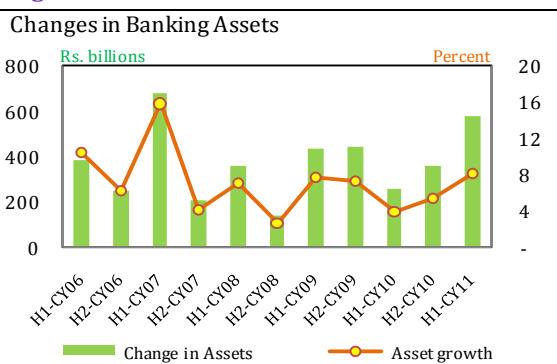
Pakistan has become efficient and more reliable with the launch of Pakistan Real time Interbank Settlement System (PRISM). In recent months, system availability on average remained around 96.5 percent, with reported downtime primarily due to securities settlement interface of PRISM. Lastly, in the area of branchless banking, Pakistan is experiencing a rapid expansion, with four banks offering services through various operational setups. As more banks are planning to enter this growing segment, there is a strong potential to significantly improve financial inclusion in the years ahead.

Going forward, a mild pick-up in private sector credit is likely as the borrowing cycle of some key industries resumes, though receding commodity prices would keep the growth in check. Further, the challenging business environment in general and banks' risk aversion amid high credit risk would limit the possibility of a perceptible reversal in asset mix away from the government papers. The current monetary policy stance will make banks' asset selection challenging in the months ahead; banks will either have to live with lower returns on their investments (a key source of profits in recent times) or to aim for greater private sector credit, which in a difficult economic environment, would truly test their ability to adroitly manage an already high credit risk.

*Going forward, major reversal in banking trends is unlikely*

During the half year under review, asset base of the banking system witnessed strongest growth since 2007 amid robust increase in investments, predominantly in government papers. Deposits were up by Rs. 515 billion, the most significant half yearly rise in the last four years, thanks to the stellar inflow of workers’ remittances. Banking system remained the main conduit for financing the fiscal deficit, particularly commercial banks as government shifted its borrowings away from State Bank. Accordingly, share of net investments in banks’ assets further inched up to 34 percent, with share of net advances sliding down to 43.9 percent. Private sector credit remained anemic (rather negative if only domestic banking operations are taken), though half yearly numbers conceal the inter-quarter borrowings. These trends pushed the ADR further down to 56.7 percent, reducing banks’ optimal role as financial intermediaries.

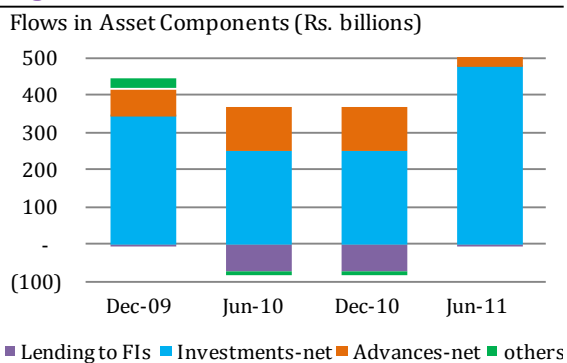
**Figure 1.1**



*Banking assets exhibit strongest half yearly growth since 2007.....*

The period under review (H1-CY11) witnessed a rise of Rs. 577 billion in banking assets, posting an impressive growth of 8 percent. This was the most significant half-yearly surge in assets, both in absolute and growth terms, since 2007 (Figure 1.1). Growth in assets was primarily led by robust growth in investments while advances managed a remotely distant second (Figure 1.2). While surge in investments in recent years have been undoubtedly stronger, growth in advances have not been as insipid as it appears in Figure 1.2. It is primarily the half yearly data that conceals a significant part of the seasonal nature of advances. A more granular analysis of disbursements suggests that some of the loans availed during the half year were also repaid, thus making the June-end figures appear more dismal than has actually been the case.

**Figure 1.2**



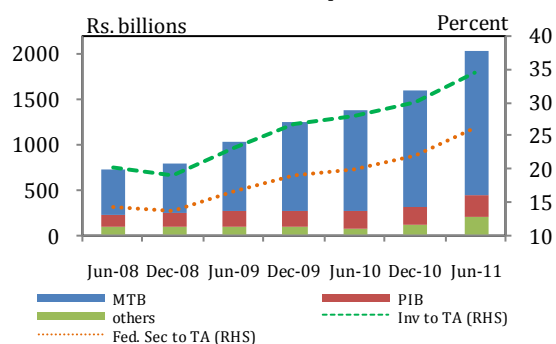
*...as the banking system continue to finance fiscal deficit*

Government’s dependence on banks have remained strong, amid abysmal tax collection (tax to GDP ratio of 9.4 percent) and steadily diminishing contribution of the external funds in deficit financing (9 percent in FY11 compared to above 50 percent in during FY01-07). Unsurprisingly, investment portfolio of the banking system increased by 22.3 percent (Rs. 478 billion) during H1-CY11, with a major portion of this rise (90.6 percent) placed into government papers including T-bills and PIBs.

Strong borrowing needs of the government in the last few years have significantly increased banks’ exposure to government papers. In fact, the amount of investments (net of provisions) has more than doubled from Rs 1.08 trillion in Dec-08 to Rs 2.62 trillion in June-11. The share of net investments

**Figure 1.3**

**Banks' Investments in Govt. Papers**



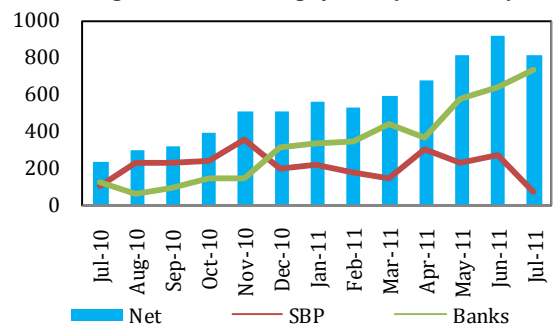
in banks' total assets has also increased from 19 percent to 34 percent during the same period (Figure 1.3). Consequently, the share of net advances has registered a concomitant drop, from 56.6 percent to 43.9 percent during the same period. Apart from traditional interest-bearing government securities, the half year under review have also witnessed 46.6 percent growth in investments by Islamic banking institutions, due to their net investment of Rs. 69.7 billion in two tranches of Government of Pakistan Ijarah Sukuk.

*.....though government borrowings turn to relatively less-inflationary source*

While it was primarily the SBP that financed bulk of the deficit in the first few months of FY11, the government started shifting its borrowings towards commercial banks from November, 2011 onwards. During H1-CY11, commercial banks took the lead in providing necessary funding to help meet the budgetary needs of the government (Figure 1.4). Thanks to this shift, budgetary borrowing from SBP turned negative during FY11 as government actually retired around Rs. 8 billion. It was a positive development as borrowing from SBP, being highly inflationary in nature, had serious implications for overall economic management.

**Figure 1.4**

**Borrowing from the Banking System (Rs. billions)**

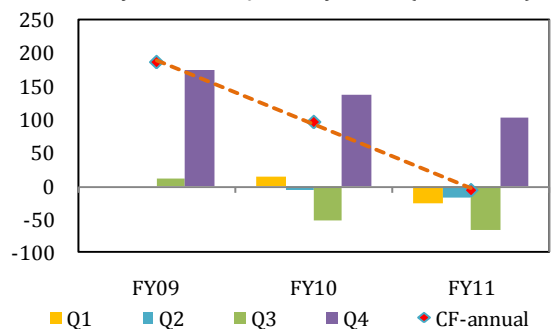


*....and expensive commodity finance marks net retirement*

Another positive development was net retirement of Rs. 5.2 billion in FY11 against commodity finance, compared to net disbursement of Rs. 96 billion in FY10. This drop was primarily on account of lower than targeted procurement of wheat, a commodity that typically takes three quarters of overall commodity financing. Given the expensive nature of commodity finance (KIBOR plus margin that have been as high as 2.75 percentage points during the last year), net retirement was helpful in reducing expensive part of the government borrowings (Figure 1.5). Similarly, lending to public sector enterprises (PSEs) also witnessed a net retirement during the period under review.

**Figure 1.5**

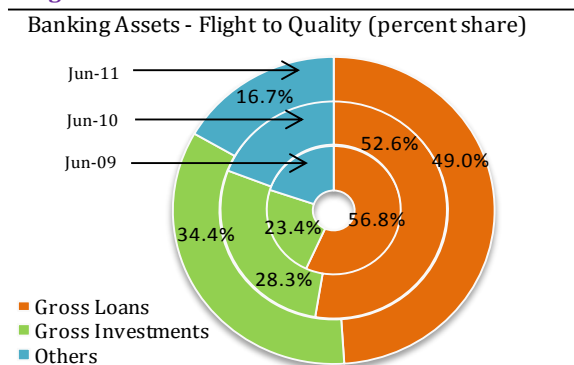
**Commodity Finance - Quarterly Flows (Rs. billions)**



*Banks' flight to quality continues unabated*

Since 2008, credit risk of the banking industry has significantly increased due to deterioration in macro-environment i.e. severe power shortages, poor law and order situation, inflationary pressures and global economic slowdown. Noticeable surge in delinquencies and loan losses have

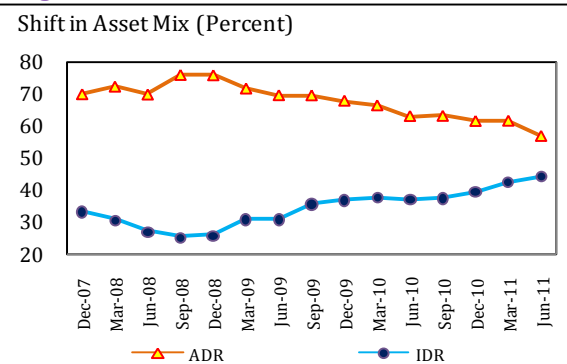
**Figure 1.6**



dampened banks' risk appetite with a consequent fall in lending to private sector, except for higher quality borrowers or for seasonal credit. During the same time, burgeoning government borrowings amid growing fiscal slippage have also provided banks a continuous stream of lucrative risk-free securities, further augmenting their risk-averse lending behavior.

Consequently, there has been noticeable flight to quality in banks' credit portfolios. For instance, investments predominantly in government papers has posted a strong growth of 22.3 percent, compared with 1.7 percent growth in lending to private sector during the half year under review. Accordingly, share of investments in total assets has consistently grown since CY08 with a concomitant fall in share of advances (Figure 1.6). Further, even within private sector credit, banks have continued to curtail the share of relatively risky areas like SMEs and consumer finance.

**Figure 1.7**



*.....with ADR steadily falling*

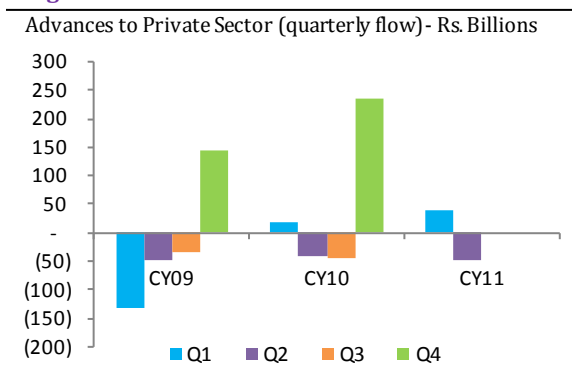
With rise in investments outpacing the growth in advances by a wide margin, it is hardly surprising that (ADR) of the banking system has been consistently declining over the last few years, highlighting their growing risk aversion. Understandably, investment to deposit ratio (IDR) exhibits a mirror image of the ADR, indicating the nature of shift in banking assets from advances to investments (Figure 1.7).

During the half year under review, ADR dropped from 61.4 to 56.7 percent amid government's increasing reliance on commercial banks for deficit financing. While dropping ADR (and rising IDR) augurs well for banks liquidity as well as profitability profiles (as government has been borrowing on attractive rates), it exposes banks' profits to any sharp cut in discount rates, apart from compromising their role as financial intermediaries.

*Private credit off take remains anemic, particularly when viewed on half yearly basis*

While overall advances were up by Rs. 35 billion during the half year under review, lending to private sector registered a net decline of Rs. 8.9 billion. While credit-off take has been apparently disappointing, it is not unusual for the first half of a given year. In fact, private sector credit declined far more significantly (Rs. 23.8 billion) during the same period last year

**Figure 1.8**



(H1-CY10). Because of the seasonal nature of borrowings by the private sector, growth in advances typically remains suppressed in the first half of a given year and 2011 was no exception (see Figure 1.10).

More importantly, subdued lending to private sector, when viewed on half yearly basis, can be explained by the fact that some industries retire their borrowings, particularly the ones taken as running finance, from one quarter to the next. So, half yearly data conceals the inter-quarter trends in lending that are dictated by seasonal nature of working capital needs. As *Figure 1.8* highlights, credit to private sector was positive in the first quarter of 2011 (and significantly better than Q1 of CY09 and CY10). But it turned negative on half yearly basis as firms retired their loans before June-2011.

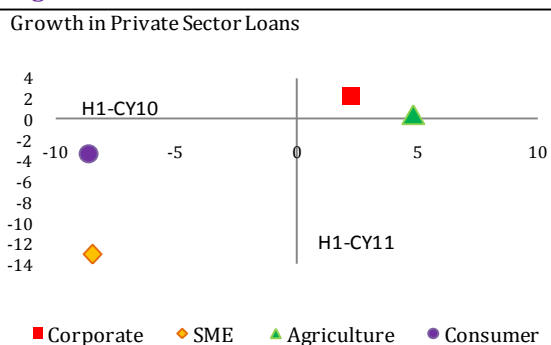
**Table 1.1**

Domestic Lending by Sector of Economy (Rs. Billion)					
	Dec-09	Jun-10	Dec-10	Mar-11	Jun-11
Textile	648	594	695	725	657
Cement	95	91	95	94	81
Sugar	62	82	73	139	122
Shoes & Leather garments	21	21	22	24	25
Automobile & Transport.equipment	52	47	36	37	41
Production & Transmission of Energy	294	327	348	368	374
Others	2,167	2,179	2,222	2,096	2,224
Total	3,339	3,341	3,490	3,484	3,523

Specifically, major borrowing industries like cotton and sugar build up their inventories in post Kharif harvest months and, with the maturity of operating cycle, retire their working capital finance in following months. For instance, lending (domestic) to textile sector after reaching its peak during Jan-Mar quarter witnessed a contraction of Rs 37.7 billion over Jan-Jun 2011 as the production cycle of leading subsectors i.e. weaving and spinning matured and cotton prices relapsed (*Table 1.1*). Lending to sugar sector substantially surged during sugarcane crushing months i.e. Q4 CY10 and Q1CY11 as higher commodity & input prices as well as increased production activity pushed up the credit needs of the sector; Q2CY11 however observed a slight contraction in bank credit.

*...as SME and consumer finance continue to contract*

**Figure 1.9**

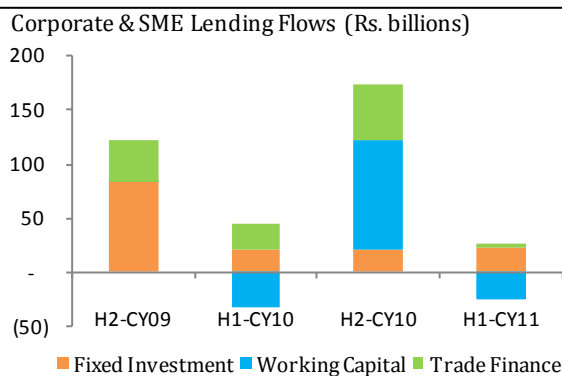


Segment wise break up reveals loans to corporate sector and agriculture registered a positive, albeit muted growth during H1-CY11 (*Figure 1.9*). On the other hand, lending to SME and consumer finance contracted by 13.1 and 3.4 percent respectively. While lending to SME segment have normally turned positive during the second half of every year<sup>1</sup>, consumer finance has been on a steadily declining trend over the last few years amid challenging macro economic conditions (higher interest rate, lower GDP growth etc). Further, growing NPLs in both consumer and SME segments have made banks risk-averse to these sectors. Accordingly, H1-CY11 witnessed contraction in both SME and Consumer, further reducing their share in total advances to 10 and 8 percent respectively.

<sup>1</sup> It is partly because higher credit off take by corporate sector in the second half year also translates into higher input needs, generally supplied by the SMEs. This improves credit demand for SME sector.

.....notwithstanding a flicker of revival in fixed investment

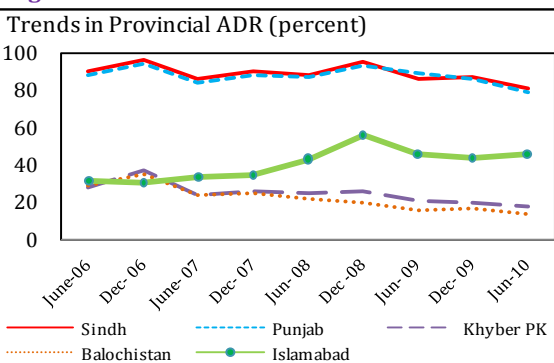
**Figure 1.10**



In terms of end use, loans to private sector were primarily disbursed in the fixed investment category, with major share in the power and sugar sector. However, the monthly breakup in fixed investment loans reveals that bulk of these loans were granted in the month of June, 2011 as earlier months of the half year under review registered a net decline. Despite some revival in June, 2011, fixed investments have been on a consistently declining trend, and actually registered the lowest annual growth (1.4 percent in FY11) in the last five years.

While loans for working capital have also declined during H1-CY11, it was primarily on account of contraction of Rs. 38.2 billion in SME sector that led to an overall decline (Figure 1.10). In case of corporate sector, while advances for working capital were up by 31.2 billion in the Q1 of CY11, bulk of these were retired in Q2, resulting in a subdued increase of Rs. 12.5 billion when viewed on half yearly basis.

**Figure 1.11**



*Provincial ADRs are in line with respective business activity*

ADR on regional basis provides some insights about how banks collect deposits and grant loans<sup>2</sup>. In general, ADRs have been on a declining trend, suggesting that banks are using most of their incremental deposits in investments than for granting loans<sup>3</sup>(Figure 1.11). Sindh province has mostly enjoyed the highest ADR over the recent years, evident from the greatest percentage of advances against collected deposits. While Punjab has trailed closely, ADR has been considerably lower for both Khyber-Pakhtunkhwa and Baluchistan provinces where banks have lend less than 20 percent of the deposits collected from these provinces<sup>4</sup>. These patterns are essentially dictated by the level of business opportunities and the consequent borrowing needs of firms and individuals in respective provinces. For example, higher ADR for Sindh can be largely explained by the business activity in Karachi alone, the financial hub of the country. The pattern for Islamabad appears

<sup>2</sup> For instance, Sindh's ADR of 80 percent in Dec-10 suggests that, if Rs. 10 million of deposits were collected from the province, around Rs. 8 million were given as loans within the same province. These numbers however should be interpreted with caution, given certain limitations of the data. Specifically, place of actual utilization of loans may be different from the place of disbursements. The provincial position may not reflect the true picture of loan utilization since large companies, with head offices in Karachi, Lahore, or Islamabad, might have used bank loans actually disbursed in these cities for their projects based in provinces like KP and Balochistan.

<sup>3</sup> ADR explains how much of the deposits were turned into advances. Since, deposits have other uses in addition to making advances/loans (like investments etc), provincial ADRs would not add up.

<sup>4</sup> As of December 2010, KP and Baluchistan have 6.2 percent and 2.1 percent share in total bank deposits, compared to 42 percent of Punjab, 35 percent of Sindh, 11.5 percent of Islamabad, and 3.2 percent of Azad Kashmir.



**Table 1.2**

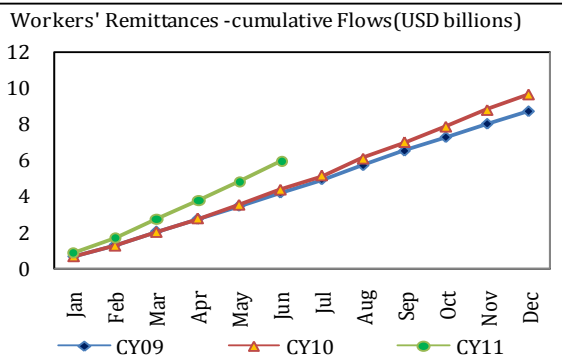
Structure of Banking Sector(percent)	Top 5	6-10	11-20	21-37	All
Market share in total assets	51.1	22.6	18.7	7.6	100
Advances to total assets	45.4	42.9	43.7	36.6	43.9
CASA to total deposits	65.8	62.1	55.1	52.9	62
Advances to deposit ratio	56.2	54.9	63.0	51.7	56.7
Public Sector Loans to total	24.1	12.7	6.3	8.1	17
Corp. Sector Loan to total	61.4	69.0	63.0	67.8	63.9
Pvt Corporate Loans to t. loans	54.6	62.1	62.2	64.6	59
SME loans to total loans	6.7	8.7	10.8	11.0	8.3
Consumer Finance to T. Loans	6.7	9.1	2.8	7.3	7
CoF to total Loans	19.6	8.5	8.2	6.4	13.8
Agri loan to T. loans (excl. ZTBL & PPCBL)	2.8	2.0	0.9	0.4	2

interesting as its ADR has surged from 2007 onwards. While a major part of the rise is due to small base effect, there appears to be relatively stronger lending activity in the capital territory in recent years, potentially on the back of real estate developments. Another possible explanation for relatively higher ADR is that some large companies, with head offices in Islamabad, may have availed the loans for onward utilization in the field offices located in other provinces.

*Size has significant bearing on banks' lending strategy*

Typically, banks' lending strategies have been contingent upon their ability to mobilize low-cost, stable deposits in the form of current and saving accounts (CASA). The big five banks, with 51% market share, conveniently mobilize greater amount of CASA, thanks to their brand recognition and extended outreach in the market. Accordingly, these banks are well positioned to target high quality borrowers, and are also relatively more into public sector lending and commodity finance (Table 1.2). On the contrary, smaller and medium sized banks generally mobilize deposits at relatively higher rate. To maintain their margins, they tend to focus more on private sector credit which yield higher returns because of greater risk of default. That also explains relatively higher infection ratios of these banks, as highlighted in the next chapter.

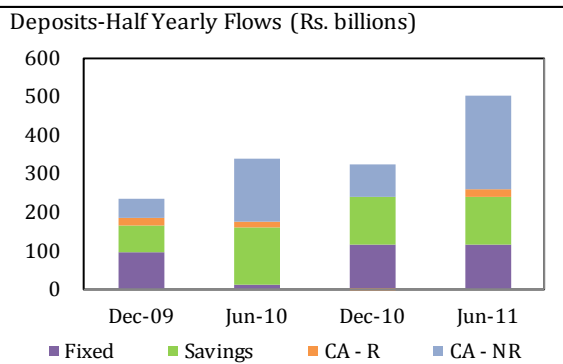
**Figure 1.12**



*Remittances help deposits post record growth in a decade*

During H1-CY11, deposit base of the banking system expanded by 9.4 percent compared to 6.3 percent in the corresponding period last year. Both in absolute (Rs. 515 billion) and growth terms, this was the most significant half-yearly rise in deposits in the last four years. Robust inflow of foreign remittances explains a large part of this stellar surge in banks' deposits. Specifically, workers' remittances during the half year under review were around \$5.9 billion, \$1.5 billion higher than that of remittances during the same period in CY10 (Figure 1.12).

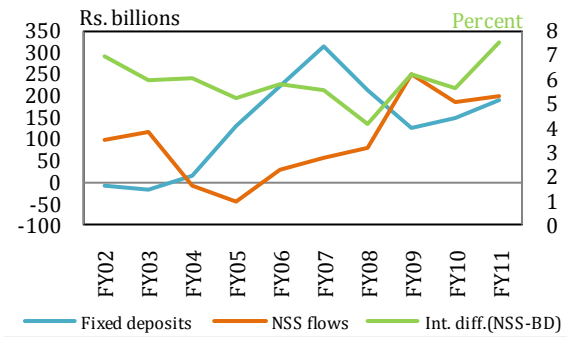
**Figure 1.13**



Break up of deposits by various categories reveal that more than 50 percent of growth in deposits was dictated by flows in current accounts (Figure 1.13). This further pushed up the share of current account in customer deposits from 33 percent to 35 percent during the half year under review. In general, current accounts show relatively greater volatility due to changing credit needs and transaction demand of the economy. Nonetheless, due to the easing of liquidity stress over the last few years, banks have been focusing more on current and

**Figure 1.14**

Substitution b/w Fixed Deposits & NSS-Net Flows



savings account then longer-term fixed accounts despite that the later offer incentives in statutory liquidity requirements.

*NSS instruments appear a key substitute to fixed deposits*

Despite the apparent difference in tenors, NSS instruments have been a key substitute of bank deposits, particularly of fixed tenor. It is partly because NSS instruments offer early encashment facility without penalty. Typically, in the presence of significant interest rate differential, movement towards NSS instruments is understandable. However, it has not always been the case, as evident from *Figure 1.14*. For instance, while interest rate differential has been around 6 percent during FY02-06, flows towards NSS instruments have actually plummeted. This was largely on account of banning institutional investments in NSS, suspension of DSCs and SSCs sales through banks and disallowing banks to lend against NSS instrument. However, with removal of ban on institutional investment in late 2006, flow towards NSS instruments resumed. In recent years, upward revision of NSS rates has attracted strong flow of investments, though fixed deposits have revived as well, particularly in FY11 amid strong growth in overall deposits.

Financial intermediation is traditionally defined as a process of channeling funds from surplus sectors of the economy towards the deficit sectors. The institutions that perform this function are known as financial intermediaries (banks are the most popular financial intermediaries in the world). The cost of performing intermediary services is termed as the cost of financial intermediation (COFI).

#### Issues in measuring banking spreads:

While the concept of COFI is straightforward, there is no single measure to gauge COFI in its true sense. In practice, it is proxy by margins or banking spreads indicating gap between some sort of representative lending and deposit rates of financial intermediaries. The most widely used indicators are the **net interest margin**--gap between interest earned and interest paid normalized by average earning assets or total assets—and the **banking spread** --gap between lending and deposits rates. However, both indicators are subject to limitations.

- NIM does not include any fee and commission paid by the customers. In practice, these charges will impact the effective rate of margin. Moreover, NIM also conceals information on marginal spreads due to inclusion of all earning assets or total assets.
- Measurement of banking spread is also subject to various limitations as the banks do not charge a single rate to all borrowers nor do they offer a uniform rate of return to all depositors. The lending and deposit rates also vary over time and from customer to customer depending on the credit worthiness of borrowers, amount and tenor of the deposit. The banks also charge fees and commissions for various services, which alter the effective cost of borrowing and returns on deposits. The measurement is further complicated by each bank's unique set of interest rates, which reflects its specific business activities, market share, and risk outlook. Against this backdrop, care must be exercised in interpreting changes in NIM or banking spread especially for policy making.

#### Banking Spreads-Stylized facts

Banking system of Pakistan is characterized by high banking spreads, which are generally linked to the efficiency of financial intermediation and competition in the banking sector. Such broad conclusions based on banking spread could be highly misleading as the level and temporal changes in banking spread depends on its definition and changes in operating environment.

**Table 1:** Indicators of Banking Spread

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##### **Narrowly defined Spread**

$$SN1 = ((\text{Interest earned on loans}/\text{Average Loans}) - (\text{Interest paid on deposits}/\text{Average Deposits})) * 100$$

##### **Broadly defined Spreads**

$$SW1 = ((\text{Interest earned}/\text{Average Interest bearing assets}) - (\text{Interest paid}/\text{average Interest bearing liabilities})) * 100$$

$$SW2 = ((\text{Interest plus commission earned}/\text{Average Interest bearing assets}) - (\text{Interest paid}/\text{Interest bearing liabilities})) * 100$$

$$SW3 = (\text{Interest earned} - \text{Interest paid}) / \text{Average Assets}$$


---

Following Brock and Suarez (2000) and Koeve (2003), four different indicators of banking spread have been computed to highlight definitional issues. These indicators are broadly bifurcated into two categories according to the coverage of banks' assets and liabilities. Specifically, narrowly defined indicator is based on banks' loans and advances. On the other hand, broad definition of indicators take into account larger share of banks' assets and liabilities compared to the narrow definition (Table 1).

Calculation of various indicators of banking spread (defined in Table 1) reveals that level of banking spread for CY10 varies from 4.2 percent to 7.5 percent depending on their definition (Table2).

**Table 2: Indicators of Banking Spread**

	CY00	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08	CY09	CY10
SN1	n.a.	3.4	5.4	4.6	3.0	2.9	4.7	5.7	5.3	6.4	6.9
SW1	4.7	5.0	4.3	3.6	3.4	4.9	5.3	5.0	5.4	5.4	5.3
SW2	5.7	5.9	5.1	4.4	4.4	5.8	6.3	5.9	6.3	6.3	6.1
Sw3	2.6	3.2	3.1	3.0	2.9	4.1	4.5	4.1	4.4	4.3	4.2
NIM	3.5	4.1	3.8	3.5	3.4	4.8	5.3	4.9	5.3	5.3	5.1
Spread-Marginal*	n.a	n.a	n.a	n.a	4.0	5.1	5.5	5.2	5.4	6.5	6.3
Spread-Stocks*	n.a	n.a	n.a	n.a	5.3	6.6	7.4	7.3	7.3	7.5	7.5

\*: Based on monthly data of weighted average lending and deposits rates

Information in Table 2 can be summarized as follow:

1. Narrowly defined banking spread appears consistently higher as compared to broadly defined levels. This difference in levels primarily arises from the use of different basis for calculation of banking spread. It implies that the behavior of banking spread over time, based on a consistent definition, is more relevant for the analysis of COFI than the actual level of banking spread at one point in time.
2. Narrowly defined banking spread have been more volatile over time as compared to the wide definitions of the term. It implies that changes in banking spread over time must be interpreted with caution.

While there is no consensus on a specific definition of banking spread and a meaningful benchmark, the SW1 definition of banking spread is more appropriate for the analysis as it takes into account the earning assets and interest bearing liabilities of the banks.

### **Why High Spreads are Undesirable?**

At macro level, high margins/spreads impede financial intermediation by discouraging potential savings with low returns on deposits, and constraining investment activities with a high cost of borrowing. Low savings and investment reduce the growth potential of the economy. This is particularly relevant for developing countries like Pakistan, where banks are the primary source of funding for private sector businesses.

Specifically, the private sector loans from the banking sector stood at Rs 3.4 trillion as of end June CY11 compared to an outstanding amount of Rs 68.9 billion in listed Term Finance Certificates (TFCs), and Rs 856.5 billion of listed capital at the Karachi Stock Exchange (KSE). This clearly indicates that banking system is the prime source of funding for the private sector businesses. Against this backdrop, the role of minimum banking spreads can hardly be overemphasized for overall business activities in the economy.

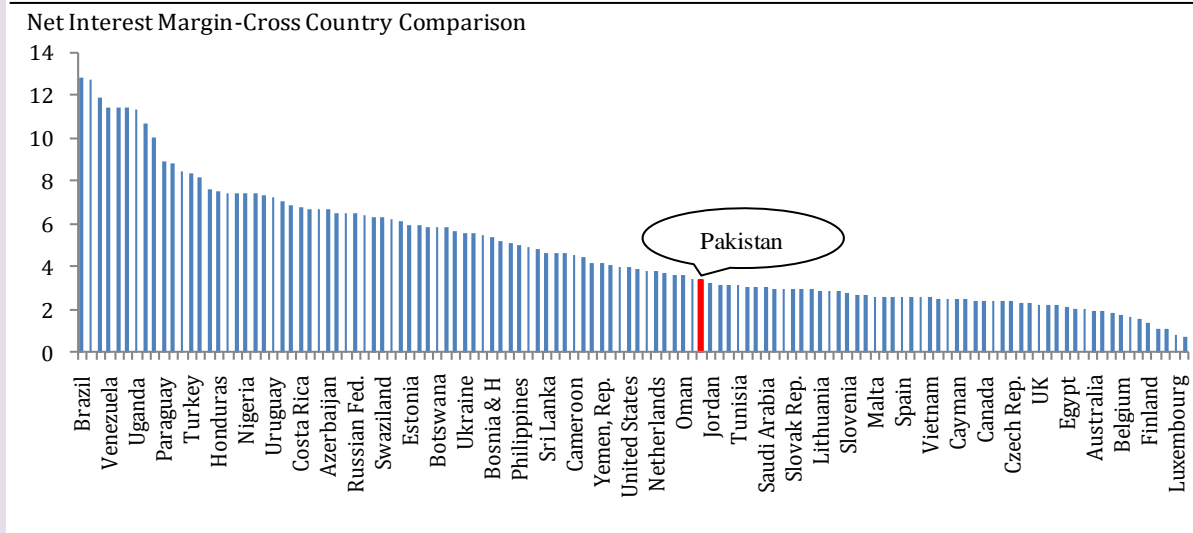
### **Do Pakistani Banks Enjoy the Highest Spread in the World?**

Short answer is, no. It may be noted at the onset that usefulness of cross country analysis of banking spreads is generally undermined by a number of factors including differences in level of financial development, regulatory environment, ease of doing businesses, charges on financial services, definitional issues etc. In spite of these limitations, it is a popular perception that banks in Pakistan enjoy the highest margins in the world. Being the regulator and supervisor of the banking sector, SBP has been vigilant of these issues. This is amply evident from the imposition of minimum 5 percent rate return on savings deposits with effect from 1<sup>st</sup> June 2008 to date, and detailed analysis of banking spreads in SBP flagship publications.

As for cross country comparison is concerned, information on net interest margin (NIM) of banking system from The World Bank database<sup>5</sup> is used to find Pakistan's ranking among the countries. Furthermore, average NIM for each country is calculated by using annual data from 2001 to 2009. This helps in avoiding unnecessarily volatility in NIM across countries. Figure 1 shows that Pakistan is nowhere close to the countries with high NIM. Specifically, Pakistan's ranking turned out to be 69 among 122 countries: not even in the list of top 50 countries with high spread. In sum, it can be safely concluded that banking spreads in Pakistan are not the highest in the world.

### What Drives Banking Spreads?

**Figure 1**



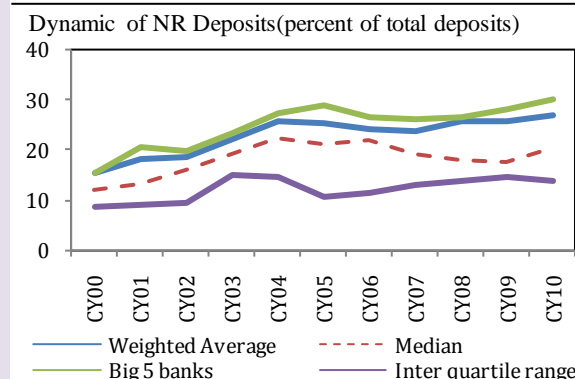
It is important to note at the onset that there is no single factor that can explain temporal and cross sectional changes in banking spreads. The factors affecting banking spreads are generally classified into three broad categories including bank specific, industry specific and macroeconomic factors. It is worth noting that banks alone cannot control their margins. Industry specific and macroeconomic factors create an operating environment for banks, which has strong bearing on banking spreads. Some of major contributory factors to high banking spreads are analyzed in the following discussion.

#### 1. Structure of Bank Deposits

Deposits are the primary source of funding for commercial banks in Pakistan. Specifically, around 75 percent of commercial banks' assets are financed through deposits in recent years. Therefore, any change in behavior of depositors or structure of deposits will significantly affect the average cost of funding: a key component of banking spread.

To analyze the impact of deposit structure on banking spread, overall deposits of commercial banks are bifurcated into two broad categories: remunerative and non-remunerative deposits. Figure 2 depicts that a quarter of total deposits of commercial banks are non-remunerative(NR). It is also visible that the share of non-remunerative

**Figure 2**



<sup>5</sup> Thorsten Beck, Asli Demircug-Kunt and Ross Eric Levine (2010) "A New Database on Financial Development and Structure" <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,contentMDK:20696167~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>.

deposits in total deposits has gradually increased in recent years as big banks are offering speedy transfer of funds facility on these accounts. The distribution of non-remunerative deposits across banks reveals that big 5 banks hold 42.5 percent of non-remunerative deposits of commercial banks against their share of 38.2 percent in industry deposits. The skewed distribution of non-remunerative across banks is also visible from high share of non-remunerative to total deposits of big 5 banks and the gradual increase in inter-quartile range--measure of dispersion around the mean (Figure 2). The comparative advantage to big banks is largely based on their huge branch network and the banking with the government.

Regardless of the underlying reasons, non-remunerative deposits reduce the effective cost of funding for the banks. Simple arithmetic shows that Non-remunerative (NR) deposits suppressed the average returns on deposits by 197 bps in CY10 (Figure 3). Similar adjustment for the calculation of banking spread indicate that non-remunerative deposits pushed up banking spread by 187 bps in CY10. Specifically, exclusion of non-remunerative deposits reduces banking spread to only 3.4 percent compared to actual level of 5.3 percent. These calculations provide ample evidence that existing deposit structure plays an important role in keeping banking spread high.

## 2. Impact of NPLs on the Banking Sector

NPLs of the banking system are driven by a number of factors including economic activities, legal system, unexpected shocks, and credit evaluation ability of the banks. Apart from of the underlying factors, increase in NPLs has strong influence on the banking spread. It not only reduces the earning assets of banks, but also imposes a cost in the form of provisions. In case of Pakistan, the banks are required to provide for the amount of non-performing loans after adjusting for permissible partial benefit of collateral. Moreover, NPLs to advances ratio has witnessed steady rise in recent years. It has reached 14.4 percent by end CY10 against 5.7 percent in CY06: more than doubled in just 4 years. Incidence of this massive rise in NPLs on banking spread has also increased over the same period (Figure 4). Specifically, NPLs contribution to banking spread<sup>6</sup> stood at 175 bps during CY07-10<sup>7</sup> compared to 50 bps during CY03-06.<sup>8</sup>

## 3. Administration Expenses

Admin expenses set a lower limit for overall banking spread. Banks have to break-even this cost by maintaining a gap between their lending and deposit rates or by charging fee or commission on financial services. The margin required to meet such expenses is also known as pure spread, which is considered a better proxy for cost of financial intermediation compared to overall spread.<sup>9</sup>

Figure 3

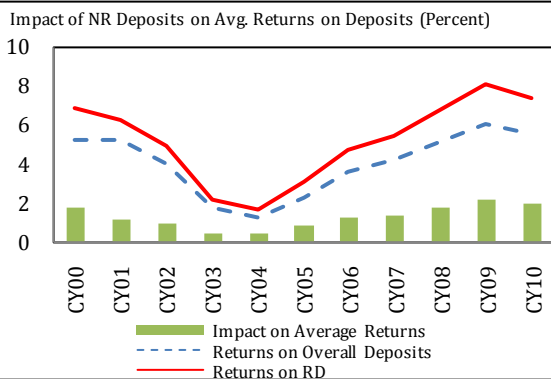
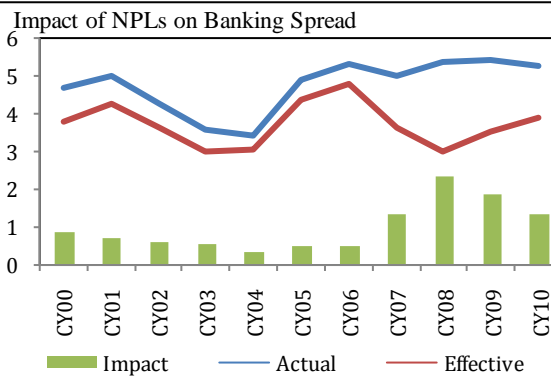


Figure 4



<sup>6</sup> To estimate the impact of NPLs on the banking spread, average returns on earning assets are adjusted for the provisions and bad debts directly written off during the year. Subsequently, these adjusted average returns are used to calculate an implied banking spread. The gap between actual and implied banking spread represent the impact of NPLs on banking spread.

<sup>7</sup> Period of low growth and high interest rates.

<sup>8</sup> Period of strong growth and single digit interest rate.

<sup>9</sup> This intuitively makes sense as administrative expenses represent the resources used by banks in providing services of financial intermediation.

While there is no specific benchmark to follow, it is desirable that admin expense to earning asset ratio should be on lower side. Figure 5 shows that admin expenses to average earning asset ratio for commercial banks in Pakistan has gradually increased to 3.5 percent in recent years. This is an unhealthy development as increase in admin expenses will be passed on to the depositors in the form of low returns or the borrower in the form of high lending rates.

Cross-sectional details reveal that individual banks are converging towards industry average (Figure 5). Both the gradual increase and narrowing dispersion suggest that admin expenses have increased across the commercial banks. This could be attributed to a number of factors including:

- Increase in financial services. Banking services especially related to fund transfer facilities have increased in recent years. Provision of these services directly contributed to admin expenses of banks.
- Cost of doing businesses has significantly increased in recent years. Besides persisting infrastructure deficiencies, energy shortages and heightened security concerns have exerted strong pressures on admin expenses.
- Double digit inflation also contributed to hike in admin expenses as the bank employees were partly compensated for high inflation and cost of office usable also jumped.

Among these factors, it seems that macroeconomic factors are at play as: (1) increase in admin cost was observed across the banks, not attributed to few big banks; (2) administration expenses of other financial intermediaries also increase, for example admin expenses on mobilizing funds through national savings schemes also increased over the same period (Figure 6); and (3) operating macroeconomic environment has deteriorated in recent years.

In spite of all these development, the banking sector of Pakistan is operating at reasonably low level of admin expenses to asset ratio (Figure 7).<sup>10</sup> Specifically, Pakistan falls in the list of top 40 countries with lowest overhead costs to asset ratio.

#### 4. Cash Reserve Requirements

Cash reserve requirements (CRR) are considered an implicit tax on financial intermediaries. It creates a wedge between lending and deposits rates by reducing the maximum loan-able funds against the amount of deposits mobilized. In case of Pakistan, schedule banks are required to hold 5 percent of their demand deposits with SBP as cash reserve requirement (CRR). Moreover, CRR is non-remunerative in Pakistan. It implies that banks can extend maximum loans of Rs 95 against demand deposits of Rs 100. If we assume lending rate of 10 percent and interest earned is directly passed on to depositors, the maximum deposit rate will be 9.5 percent-creating a spread of 50 pbs. It is important to note that impact of CRR on banking spread is an increasing function of interest rates, i.e. interest rates and

Figure 5

Admin Expenses to Earning Asset Ratio

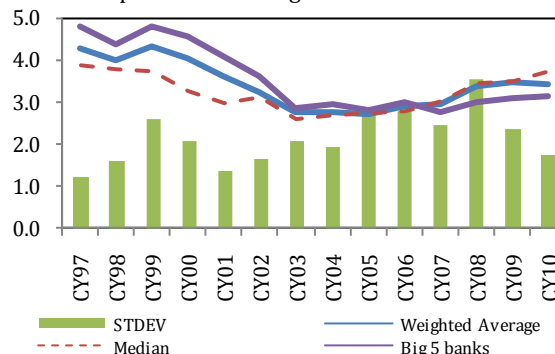
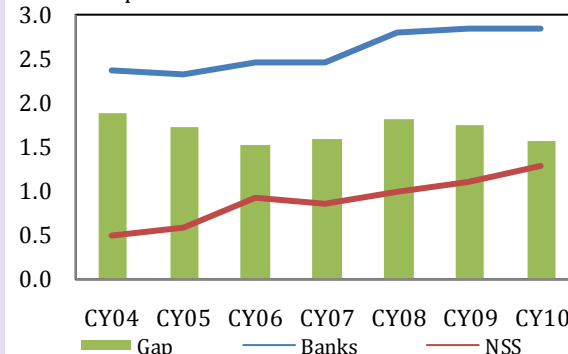


Figure 6

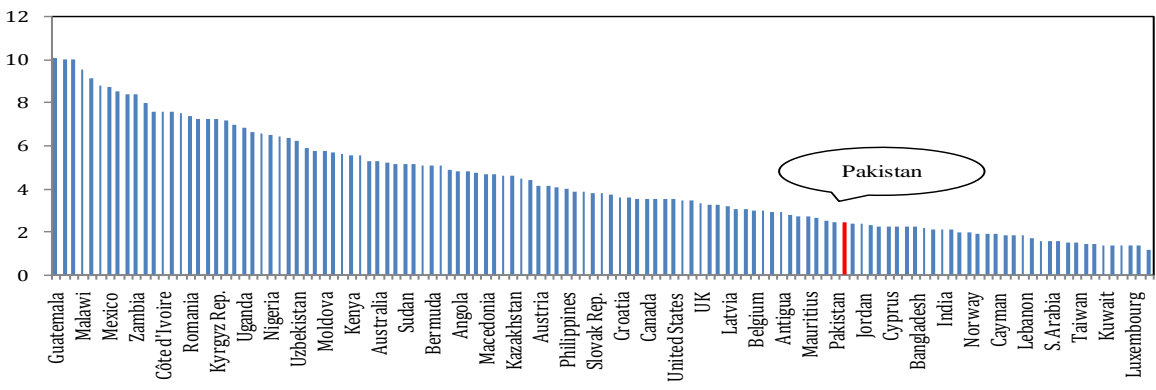
Admin Expenses to Asset Ratio



<sup>10</sup> Source: Thorsten Beck, Asli Demircug-Kunt and Ross Eric Levine (2010) "A New Database on Financial Development and Structure" <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20696167~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>.

**Figure 7**

**Overhead Cost to Asset Ratio**



banking spread moves in same direction.

### 5. Interest rate and Banking Spread

Although a bank has considerable control on its lending and deposits rates, market interest rates used as a benchmark for pricing loans and deposits are taken as given for a single bank. The market rates are primarily determined by a large number of market players (banks and NBFIs) and monetary policy of the central bank. Moreover, it is generally observed that there is no one to one increase or decrease in the lending and deposit rates in response to changes in market interest rates. This is popularly known as an incomplete pass-through of market interest rates to retail rates (lending and deposit) of banks.

Another point to note is the asymmetric natures of movement in retail bank rates in response to change in policy rate. Although degree of asymmetric movement in retail rates depends on interest rate elasticities of loans and deposits, it is widely observed that lending rate adjust more quickly (in terms of time) than the deposit rate in an increasing interest rate scenario, thus pushing up the banking spread.

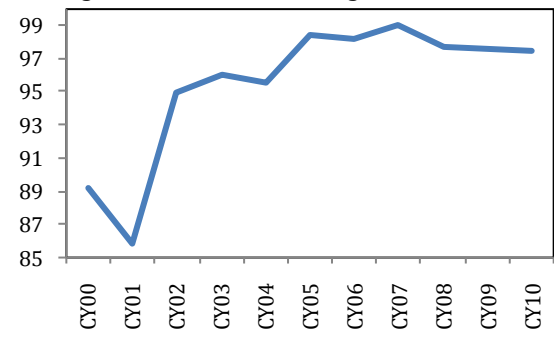
Changes in interest rates along with a positive gap between interest bearing liabilities (deposits & borrowing) and earning assets also impact the banking spread. Figure 8 shows that earning assets of commercial banks are less than their interest bearing liabilities. It implies that in an increasing interest rate scenario, a rise in average interest on earning assets must exceeds the rise in average returns on interest bearing liabilities, even if pass-through of market interest rates to retail rate is 100 percent: ultimately pushing up the banking spread. Opposite will be the case in a decreasing interest rate scenario. The same is also visible form positive association between banking spread and average policy rate (Figure 9).

### 6. Taxation

Both direct and indirect taxes on financial institutions are passed on completely to the customers. Like CRR, taxes on financial transactions also drive a wedge between what

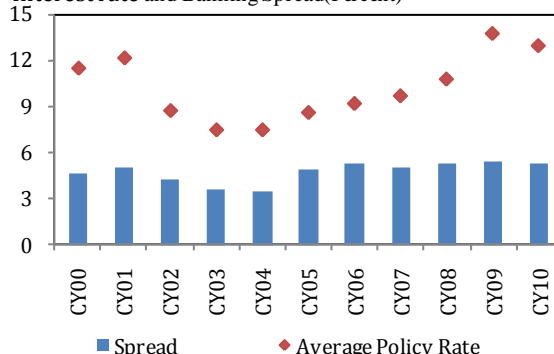
**Figure 8**

**Earning Assets to Interest Bearing Liabilities**



**Figure 9**

**Interest rate and Banking Spread(Percent)**

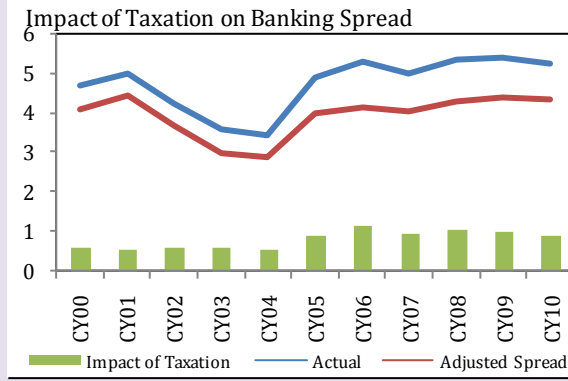




borrowers pay and lenders receive, thus contributing to spread. However, incidence of taxation on customers depends on the elasticity of demand for credit and on the elasticity of supply of deposits. Aggregate data of commercial banks reveals that amount of taxation for CY10 stood at 0.7 percent of average assets and 0.9 percent of average earning assets. Further calculations indicate that banking spread for CY10 will reduce by 90 bps to 4.4 percent if the benefit of taxation (current) is fully passed on the borrowers (Figure 10).

Last but not the least overall economic activities also play an important role in determining banking. Spread. Specifically, strong GDP growth not only affects the supply of loan-able funds (through deposits) for the commercial banks, it also favorably impacts the banking system by strengthening repayment capacity of the borrowers. Negative association between NPLs of the banking system and real GDP growth is well documented in literature and in SBP flagship publications. As mentioned earlier, increase in provisions to provide for non-performing loans exerts upwards pressure on banking spread.

**Figure 10**



Above discussion indicates that banking spreads are the outcome of various factors including structure of banking sector deposits, explicit or implicit taxation, non-performing loans, administrative expenses, macroeconomic environment etc. Therefore, an appropriate interpretation of both the level and trends in banking spreads in Pakistan cannot be made without taking into account these factors.

Advances to Deposit Ratio (ADR), as a measure of liquidity, is generally used to evaluate a bank's ability to repay depositors and other creditors without incurring excessive costs and while continuing to fund growth. While it was a popular regulatory tool in 80s and 90s, ADR started to lose appeal as introduction of modern financial techniques enabled banks to maintain lending growth despite relatively high ADR, at least in financially sophisticated markets. For instance, securitization of loans made it possible for banks to expand their loan books by selling off old loans. However, ADR has gained currency after global financial crises of 2007-08 where some of the countries used it to restrict credit growth. Here we explore how ADR has been used by regulators in some of the selected countries and what have been the trends in Pakistan.

**Using ADR as a regulatory tool:** ADR has been used to achieve variety of objectives. For instance, USA has used it to ensure that banks don't use a particular geographic region to merely collect deposits. On the other hand, Indonesia, China, and Korea have used it to contain growth in lending in the buildup of economic upswings. A few examples follow:

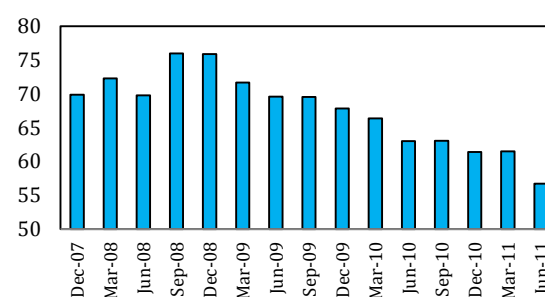
- In USA, state-wise ADR<sup>11</sup> is used to determine whether a bank will be allowed to open or acquire a branch outside of its home state. In particular, section 109 of Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 prohibits a bank from establishing or acquiring a branch or branches outside of its home state primarily for the purpose of deposit production. If a bank's statewide ADR is at least one-half of the published host state ADR, the bank is considered compliant. FDIC publishes the LDR for each state on annual basis. The data for 2010 reveals that state-wise LDR ranged from a low of 57% in Delaware to a high of 166% in North Dakota
- The central bank in Indonesia (Bank Indonesia) has introduced a range for ADR to encourage financial intermediation and to ensure prudent lending practices. According to a new policy announced in September 2010, banks with ADR outside the range of 78-100% will need to maintain additional reserve requirement (RR). Specifically,
  - Banks with ADR below the lower limit of 78% will face an additional 0.1 RR from Rupee deposits.
  - Banks with ADR exceeding upper limit of 100% and with CAR below 14% will face additional 0.2 RR from Rupee deposits, and
  - Banks with ADR exceeding upper limit of 100% but with CAR above 14% will face no additional reserve requirement.

However, critics argue that a similar policy introduced in 2005-2006 was not effective, as banks opted to increase their RR instead of granting more loans because of the unfavorable market conditions prevailing at that time.

**ADR trends in Pakistan:** In Pakistan, ADR has been on a consistent decline since 2008, falling from 76.0 percent in Sep-08 to 56.7 percent by June-11 (*Figure 1*). Typically, the urge to earn profit serves as a natural floor on ADR, forcing banks to lend to private sector instead of placing money in low-

**Figure 1**

Trends in ADR (percent)



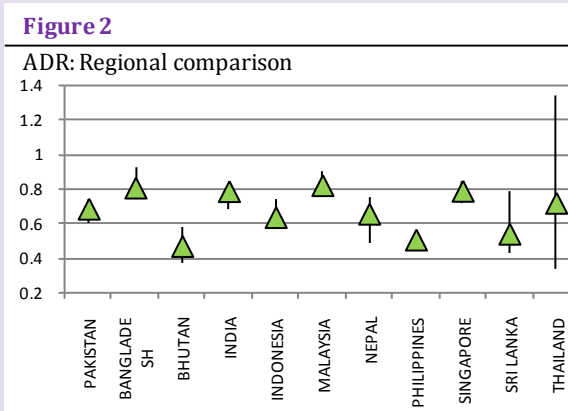
<sup>11</sup> More precisely, both USA and Indonesia have used the term Loan to Deposit Ratio (LDR).

yielding government paper. However, with government's increasing reliance on banks to raise finances with a concomitant rise in risk free rate to as high as 14 percent, the incentive for banks to private sector lending has significantly subdued, particularly in a stressed business environment marred by energy shortages and deteriorating law and order situation.

Local private banks and particularly foreign banks have been keen to switch their asset mix from advances to investments. Foreign banks, with their dwindling role in local market, have mostly resorted to placing funds in government papers,

indicated by their higher Investments-to-Deposits Ratio (50 percent). The distribution of banks on the basis of the ADR suggests that 2 banks have their ADR above 100 percent (these are two specialized banks). However, when viewed against regional trends, the absolute level as well as the range of changes in ADR in Pakistan has been in line with many countries in the region (Figure 2).

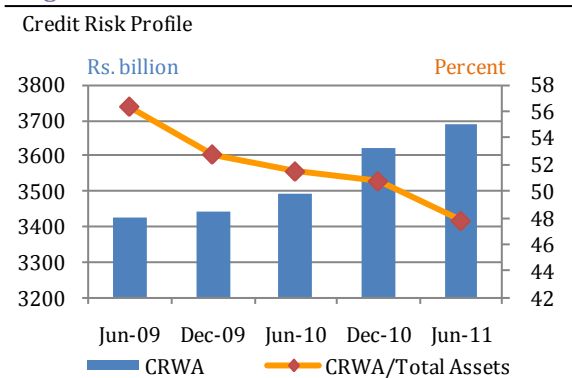
**Experience of ADR as a policy tool in Pakistan:** SBP introduced a cap on ADR in October 2008, restricting it to 70% to limit excessive credit growth. However, it was precisely the time when banks started reducing their exposure to private sector credit amid growing economic challenges both on domestic and international front. Further, government's relentless borrowing from the banking sector further reduced banks appetite for private sector credit. As a result, ADR have continued to drop consistently since Q3-2008, making ADR ceiling irrelevant for practical purposes. If the current trend in declining ADR continues unabated, SBP might have to consider the introduction of a floor on the ratio, encouraging banks to lend to the private sector. Admittedly, it would be a stretched proposition, given the subdued demand for private credit amid severe energy shortages and a challenging business environment.



*Risk profile of the banking system offers a mixed picture. Credit risk remains intractable, despite banks' growing investments in government papers. NPLs continue to build up, with PSCBs and mid-sized LPBs appearing more vulnerable to credit risk. Recent floods followed by torrential rains are also likely to contribute to the existing pile of NPLs. Banks' liquidity profiles have been strengthened by their accumulation of government securities while growing share of long term deposits in the funding mix has kept the funding risk at bay. Market risk remained subdued amid stable exchange rate and interest rate, notwithstanding the flattening of yield curve and lackluster performance of the equity market.*

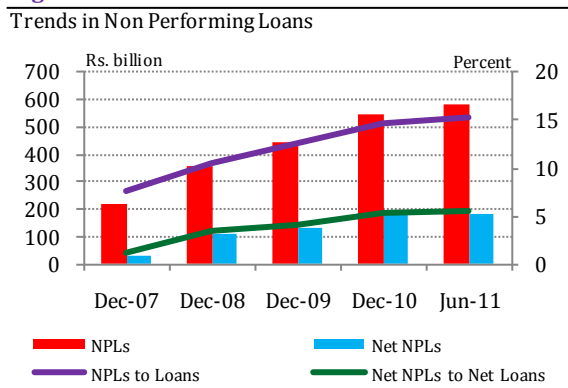
*Credit risk remains a key challenge amid subdued economic activity*

**Figure 2.1**



Credit risk remains a key component in the risk profile of the banking sector, despite banks' recent preference to place bulk of their incremental funds in safer assets. During H1-CY11, the credit risk weighted assets (CRWA) grew by 2 percent (Rs. 65 billion) (Figure 2.1). However, a much robust growth in assets (8 percent) on the back of investments in government papers markedly outpaced the relatively slower growth in CRWA. As a result, ratio of CRWA to total assets further regressed by 295 basis points, dropping to 47.8 percent by the end of June-11. However, falling CRWA to total assets over the last few years is not an indicator of lower credit risk; rather it simply suggests a strong flight to quality amid high NPLs. Banks have tried to manage higher infections by tightening their credit standards, with significantly restricting their lending to riskier sectors (eg: SMEs & Consumer). At the same time, banks have liberally increased their investments in government debt.

**Figure 2.2**



*.....as non-performing loans continue to buildup*

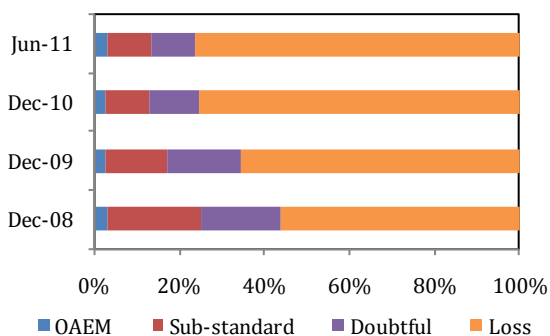
The adverse economic outlook and structural deficiencies in the economy are taking their toll on the debt repayment capacity of the borrowers. The deterioration in economic indicators as measured by a faltering GDP growth rate has led to a surge in NPLs. During H1-CY11, NPLs of the banking sector further inched up from 14.7 to 15.3 percent, adding another Rs. 31.4 billion to infected assets (Figure 2.2). Compared to a rise of Rs. 27.8 billion in NPLs during H1-CY10, the accumulation in NPLs is marginally higher in the half year under review. Still, the fact that NPLs continue to build up underscores the intractable nature of heightened credit risk.

*...with the bulk of NPLs posted in loss category*

During H1-CY11, banks accumulated another Rs. 31.3 billion in the Loss category, compared to Rs. 39.8 billion during the same

**Figure 2.3**

Category-wise Breakup of NPLs



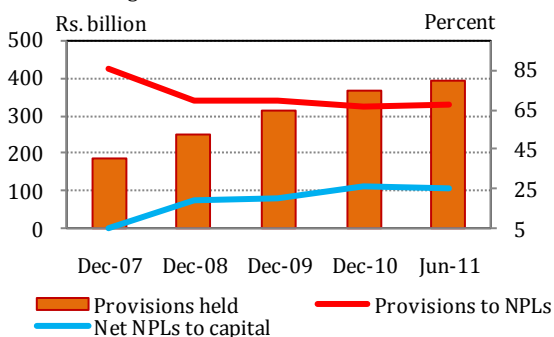
period last year. While this deceleration of NPLs in loss category is encouraging, a turnaround in NPLs growth is still out of sight. During H1-CY11, increase in loss category was the most significant compared to all other categories; in fact, NPLs in Doubtful category dropped by Rs. 7 billion. This is partially because of some delays on the part of few banks in timely recognition of infection in their portfolios, resulting in classification of such assets directly into the Loss category. Given that about 77 percent of the NPLs of the banking sector are still classified in the Loss category, bulk of these infected assets carry slim prospects of recovery<sup>12</sup> (Figure 2.3).

*... yet provisioning keeps credit risk adequately covered*

However, banks' credit portfolio appears to be adequately covered against anticipated losses. During H1-CY11, provisions held by the banking system increased by 7.6 percent (Rs. 28 billion). While this increase partly reflects growing infection that requires higher provisioning, growth in provisions have outpaced the rise in NPLs. Consequently, the NPL coverage ratio (provisions to NPLs) has inched up from 66.7 to 67.9 percent during the first half of 2011 (Figure 2.4). Further, owing to increase in coverage ratio, net NPLs to Loans have marginally improved during the same period. Besides, results of the macro stress tests conducted on banks' credit exposure of June-11 suggest the Pakistan's banking sector remains resilient against major foreseeable shocks.

**Figure 2.4**

Provisions against NPLs



*PSCBs and mid-sized LPBs appear more vulnerable to credit risk*

The increase in NPLs during the half year under review was quite widespread, with most of banks witnessing an upsurge in NPLs and only a handful of banks registering a marginal decline. In particular, the Local Private Banks<sup>13</sup> (LPBs) sustained the most damage, as their NPLs were up by 7.6 percent (Rs. 26 billion) during H1-CY11.

Breakup of NPLs in terms of various banking groups reveals that both Public Sector Commercial Banks (PSCBs) and mid-sized LPBs have significantly higher infection ratios than industry averages. Specifically, infection ratios of 21.5 percent and 25.6 percent of PSCBs & mid-sized LPBs respectively suggest increasing level of vulnerabilities of these banks against credit risk (Table 2.1 & 2.2). Going forward, if the

**Table 2.1: Asset Quality by Bank Category**

(In percent)				
	Infection Ratio	Net Infection Ratio	Provision Coverage	Net NPLs to Capital
<b>Jun-11</b>				
PSCBs	21.5	11.2	53.8	49.0
LPBs	13.2	3.7	74.7	19.5
FBs	9.0	1.1	88.8	2.0
CBs	14.8	5.2	68.5	24.9
SBs	31.1	15.5	59.2	172.9
All banks	15.3	5.5	67.9	26.6

<sup>12</sup> Notwithstanding lower chances of recovery, these assets would not dent banks balance sheet any further, given that banks have made suitable provisions.

<sup>13</sup> Banks ranked 11-20 on the basis of asset size in Table 2.2

**Table 2.2: Asset Quality by Bank Size (percent)**

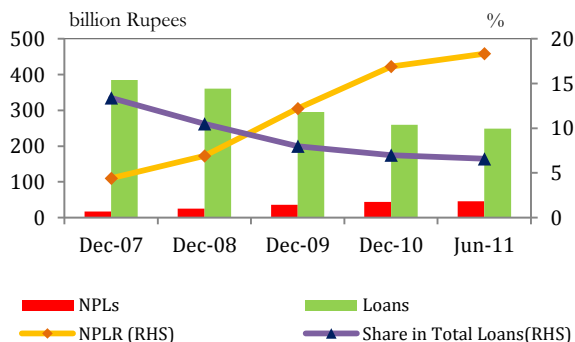
Jun-11	Infection Ratio	Net		Net NPLs to Capital
		Infection Ratio	Provision Coverage	
Top 5 banks	12.9	3.3	77.3	14.2
6-10 banks	11.3	3.0	76.0	17.6
11-20 banks	25.6	14.2	52.0	86.7
21-29 banks	15.9	8.3	52.2	19.1
All banks	15.3	5.5	67.9	26.6

**Table 2.3: Credit and Infection Ratios by Sector (percent)**

	Share	Infection Ratio	
	in Loans	Dec-10	Jun-11
Textile	17.7	24.3	27.4
Individuals	11.3	16.1	17.3
Energy	10.1	3.8	4.6
Agribusiness	6.1	6.6	7.3
Chemical & Pharma	3.8	7.9	9.0
Sugar	3.2	19.4	11.5
Cement	2.2	18.5	23.0
Others	40.6	13.9	14.0
<b>Total</b>	<b>100.0</b>	<b>14.7</b>	<b>15.3</b>

**Figure 2.5**

Trends in Consumer Financing

**Table 2.4: NPLs to Loan Ratio of Consumer Financing percent**

	Share	Dec-10	Jun-11
Consumer	100.0	16.9	18.3
Credit Card	10.1	19.5	21.2
Auto Loans	20.4	10.2	10.1
Durables	0.3	10.8	15.7
Mortgage	24.4	23.7	27.2
Personal Loan	44.9	15.8	16.6

economic performance continues to be lackluster, the infected portfolio of PSCBs is likely to surge further.

The higher infection ratios of mid-sized LPBs are reflective of their limited choice in attracting quality borrowers. Primarily, it is the larger banks that have better outreach and access to low cost deposits, which allows them to attract more creditworthy though low return borrowers. On balance, large banks have demonstrated their resilience to the credit risk, whereas smaller banks have proven to be the most vulnerable group. As of 30-Jun-2011, the infection ratio of 5 biggest banks was 12.9 percent as compared to an infection ratio of 25.6 percent for the banks ranked from 11-20. Similarly, the infected portfolio of the former group was far better provided for resulting in net infection ratio of only 3 percent as of 30-Jun-2011 as compared to 14.2 percent for the latter group (Table 2.2).

#### *Textile sector's growing infection aggravates concentration risk*

With around 18 percent share in banks total loans, textile sector is the leading user of bank credit (Table 2.3). Though banks' significantly large exposure is understandable, given the share of textile sector in GDP and exports<sup>14</sup>, yet concentration of credit to this sector may pose threat of systemic risk and thus calls for a close vigil. Owing to the large exposure, even small deterioration in the asset quality of textile sector can have serious implication for the solvency of some of the banks. This concentration becomes more critical given that textile sector already has a significantly higher infection ratio, which has further deteriorated to 27.4 percent during the half year under review. Energy sector, agribusiness and consumer financing are other sectors that are amongst the largest users of the bank credit and need to be monitored carefully for early warning signs of a major deterioration.

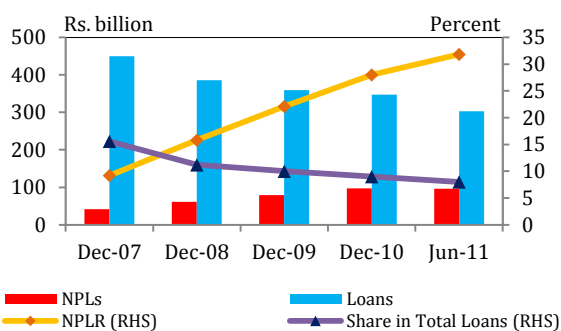
#### *Consumer & SME finance further shrink amid growing NPLs*

During H1-CY11, infection ratio for consumer finance inched up to 18 percent, prompting banks to further cut back their exposure. Consequently, the banks reduced their aggregate consumer financing by another Rs. 11 billion (Figure 2.5). Amongst various segments of consumer financing, the mortgage component that makes up 24.4 percent of the total consumer loans, has witnessed a significant rise in the infection ratio. The NPLs in financing against consumer

<sup>14</sup> The share of textiles in total exports accounted for over 50 percent during FY11.

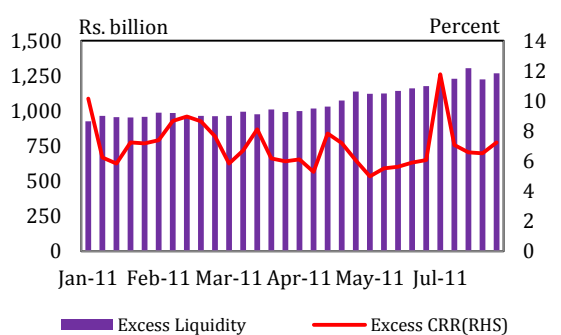
**Figure 2.6**

Trends in SME Financing



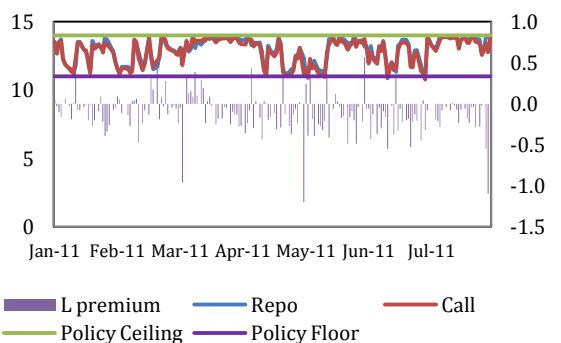
**Figure 2.7**

Surplus Liquidity of Banking Sector



**Figure 2.8**

Trends in O/N rates and Liquidity Premium



durables also increased sharply during H1-CY11; however, with banks' miniscule exposure against this segment, the dent is limited (Table 2.4). Banks' growing reluctance for consumer finance, while understandable amid high infection ratios, is likely to affect the already lower level of access of the households to bank credit. However, unless macroeconomic conditions improve significantly, banks are unlikely to resume interest in this segment soon.

Similar to consumer finance, credit to SMEs is persistently receding as the infection ratio is on the rise. During H1-CY11, the banks cut down credit to SMEs by another Rs. 44 billion (13 percent) (Figure 2.6). The declining availability of credit facilities may further impair the repayment capacity of SMEs. As SMEs employ a large proportion of labor force in developing economies, limiting credit to SMEs may trigger more defaults on consumer financing as well.

#### Recent floods warrant a serious appraisal

Recent floods and heavy rainfall in the provinces of Sindh and Baluchistan have caused massive damages in the affected areas. These damages are likely to cause a sharp upsurge in NPLs in the affected areas. Only in the province of Sindh, the floods are estimated to add Rs. 13 billion to the NPLs. The effects of these damages need to be closely monitored to contain the credit risk in the banking sector<sup>15</sup>.

#### Short-term liquidity

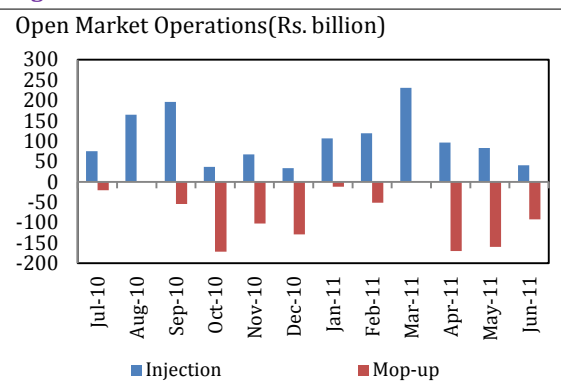
##### Banks remained sufficiently liquid, despite bouts of mild strains

During the half year under review (H1-CY11), the overall liquidity position remained comfortable, with banks maintaining excess liquidity (over and above required Statutory Liquidity Requirement-SLR) of around a trillion rupees (Figure 2.7). Growing share of investments in banks' asset portfolio helped banks maintain an increasing level of excess SLR.

While overall liquidity position was comfortable, there were bouts of liquidity pressure with overnight rates not only higher but also volatile. Volatility in overnight rates remained higher

<sup>15</sup> Box 2.2 at the end of this chapter provides more details.

**Figure 2.9**

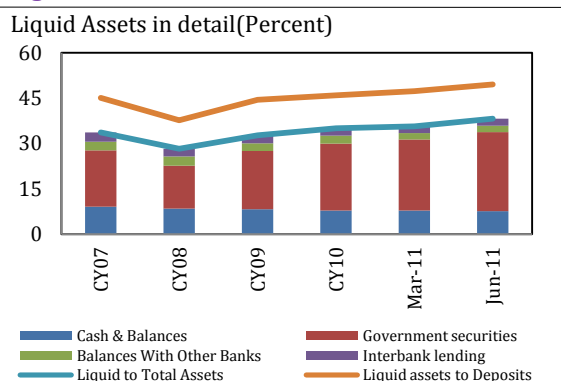


in May CY11, which was also the month when government borrowing from commercial banks<sup>16</sup> touched its peak during the period under analysis (Figure 2.8). Monthly breakup of liquidity position reveals that liquidity stress was observed primarily in the first quarter of CY11. Overnight rates remained higher in March 2011 when they reached 13.5 percent, closer to the upper bound of the range<sup>17</sup>, primarily due to liquidity strains that led SBP to net injection of Rs 230.9 billion. However, liquidity position improved significantly during the second quarter, with SBP resorting to net mop ups (Figure 2.9).

*Investments in government paper further bolster liquidity indicators*

With banks' burgeoning exposure to government debt, share of liquid assets in total assets further increased from 35.0 percent in Dec-10, to 38.2 percent by June-11. Dissecting liquid assets to their components suggests that this rise in liquid assets mainly emanates from the rise in investments in government securities, with only a marginal growth in loans (Figure 2.10). With growing share of investments in banks' asset portfolio, liquid assets to deposits ratio has also exhibited an increasing trend and reached 49.5 percent at June-11, indicating that almost 50 percent of the banks' deposits are covered by their liquid assets.

**Figure 2.10**



Distribution of banks on the basis of the liquid assets to total assets ratio reveals a similar improvement in the overall liquidity position of the banking industry. Specifically, the number of banks below the industry average declined to 13 from 19 in June CY11 relative to the previous year. Further, none of the banks (against 1 in June CY10) had this ratio below 10 percent while 1 bank (against 4 in June CY11) had the ratio ranging between 10 and 20 percent. This suggests that overall the liquidity position has increased across the banking industry.

Trend in advances to deposits ratio (ADR), another indicator of liquidity, also reveals further improvement in liquidity profile of banks during the period under review. From 61.4 percent in Dec-10, ADR has declined to 56.7 percent by June-CY11. An improvement in the ratio was seen across all groups of the banking industry. Both the relatively strong growth in deposits as well as the investments in government paper (with

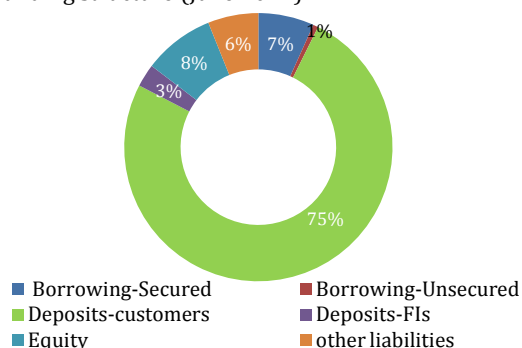
<sup>16</sup> Specifically, government borrowing from commercial banks surged by Rs189 billion in May-11 in addition to Rs 94.4 billion of seasonal credit expansion for commodity operations.

<sup>17</sup> Range for overnight rates is 300 bps which as at March CY11 formed a band between 11-14 percent.



**Figure 2.11**

Funding structure (June 2011)



concomitant slowdown in credit to private sector) has contributed to the declining trend in ADR.

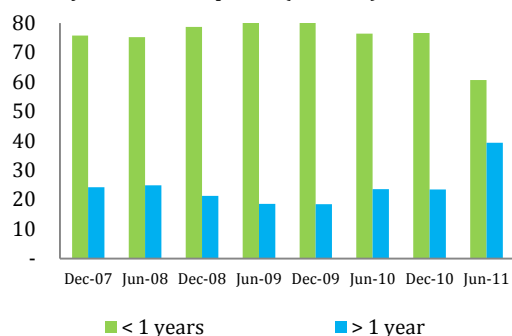
### Funding Liquidity

*Growing share of longer term deposits provides additional cushion against funding risk*

Banks funding structure essentially remained the same over the half year under review, with a heavy reliance on customer deposits that accounted for 75 percent of the banks' total liabilities (Figure 2.11). Dominant role of deposits in the funding structure offers another indication of banks' strong liquidity profile, particularly when compared with banks in some advanced countries that have greater exposure to short-term funding raised from the market<sup>18</sup>.

**Figure 2.12**

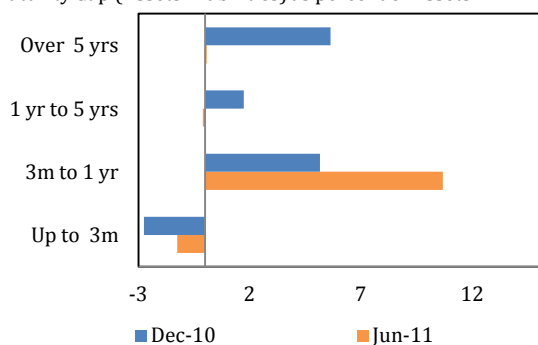
Maturity Profile of Deposits (Percent)



Segregation of deposits by tenor reveals that the share of deposits of one year and above sharply increased to 39.4 percent, from 23.4 percent at the end of CY10 (Figure 2.12). During the same time, the share of deposits of less than one year registered a concomitant drop, from 76 to 60 percent. This gain in share of longer term deposits has been on account of SBP's policy incentive in the form of exemption of time liabilities with tenors of one year and above from statutory reserve requirements. This exception partially explains banks' greater interest in mobilizing longer term deposits since 2009. Additionally, the declining share of less than one year of deposits has been due to SBP's revised instructions to report non-contractual deposits (previously reported in the lowest maturity bucket) on the basis of their expected maturity.

**Figure 2.13**

Maturity Gap (Assets-Liabilities) as percent of Assets



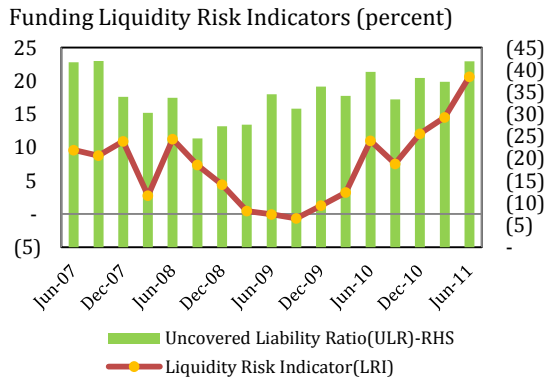
*Increasingly positive maturity gap in the short tenor exposes banks to re-pricing risk*

During H1-CY11, the gap between assets and liabilities maturing up to 3 months has reduced while it has increased to 10.7 percent for 3-months to 1-year time buckets (Figure 2.13). These shifts in short term gaps are partially explained by reporting alignment<sup>19</sup> and partially by increase of investments in MTBs maturing within 3 months to 1 year. While the change in gaps of less than one year is a positive development in terms of short term liquidity risk management, it also reveals an

<sup>18</sup> BIS Working Papers, No 345, "The bank lending channel: Lessons from the crisis" by Leonardo Gambacorta and David Marques-Ibanez, Monetary and Economics Department, May 2011

<sup>19</sup> This gap is mainly attributed to banks' adjustment to place demand deposits (the non-contractual liabilities which have a significant share in total liabilities) from 3-month bucket to longer time bucket based on their expected maturity after issuance of latest instruction in BSD circular letter no. 3 of 2011.

**Figure 2.14**



increasing share of investments in banks’ total assets. This can expose banks to repricing risk in a declining interest rate scenario.

Uncovered Liability Ratio (ULR), which measures liquidity shortage at an institutional level, suggests low liquidity risk for banks and considerable improvement since 2008 on the back of growing investments in liquid assets (Figure 2.14). The methodology to calculate ULR and the intuition behind this measure is given in Box A.

Similarly, Liquidity Risk Indicator (LRI) which measures the short term liquidity gap calculated for 30 day horizon indicates lower funding risk and an improving trend for the banking industry (Figure 2.14). The methodology to compute LRI and the intuition behind this measure is given in Box B. Positive results of ULR and LRI are mainly because these ratios are driven by deposits and investments which are quite stable portion of banks’ balance sheets in Pakistan.

**Box A: Methodology of Uncovered Liability Ratio**

$$ULR = \frac{(LL + TL) - \{(LA - INS) + \lambda * INS\}}{TA - LA}$$

LL=Liquid Liabilities  
 TL= Temporary component of all other liabilities  
 INS=Liquid Investments  
 TA=Total Assets  
 LA=Liquid Assets

In this equation, the liabilities susceptible to redemption are comprised of the sum of Liquid Liabilities and temporary component of all other liabilities. On the other hand, capacity of institution to fulfill these obligations is determined by: i) liquid assets other than Liquid investments (LA - INS), and ii) liquid investments (AFS, Held for trading) multiplied by a discount ( $\lambda$ ). This discount means the value of liquid investments (INS) in terms of liquidity risk is slightly less than its market value ( $\lambda < 1$ ). ULR if positive shows high liquidity risk while negative ULR implies low liquidity risk.

ULR can be interpreted using the following table:

ULR	Reason	Liquidity Risk
Positive	$(LL+TL) > (LA-INS+\lambda*INS)$	High
Zero	$LL+TL = (LA-INS+\lambda*INS)$	Medium
Negative	$LL+TL < (LA-INS+\lambda*INS)$	Low

**Box B: Methodology of Liquidity Risk Indicator**

$$LRI = \frac{\text{Market liquidity adjusted liquid assets} + \text{Net liquidity requirement}}{\text{Total assets} - \text{Market Liquidity Adjusted liquid Assets}}$$

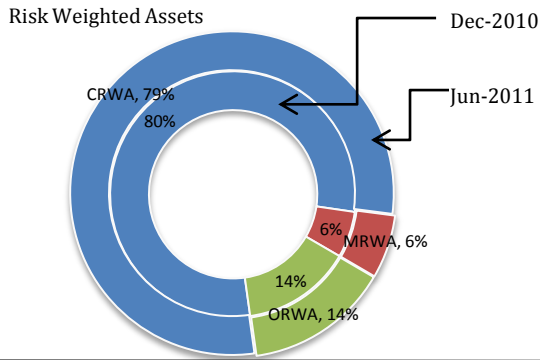
Market liquidity adjusted liquid assets= cash + balance with treasury banks+ balance with other banks+ (investment in govt. securities) (1-discount rate on repo) + (all other securities)\*(1-1.2\*haircut rate)-(total required daily average reserves)

Net Liquidity Requirement= net cash flow of assets, liabilities and off-balance sheet positions in the following 30-calendar days

**Decision Rule:** LRI<0 implies high risk as net liquidity requirement will exceed liquid assets

While LRI>0 implies better liquidity situation with liquid assets higher than required liquidity.

**Figure 2.15**

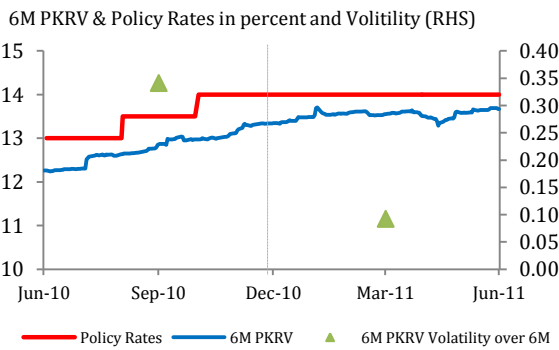


**Market Risk**

*Market risk continues to remain marginal*

Distinct from other risks, market risk is an important risk for banks. Its distinction, particularly from credit risk, often gets blurred as market and credit risks may interact to reinforce each other and result in substantial losses if not managed jointly<sup>20</sup>. Despite its significance, when measured in terms of current practices of calculating risk weighted assets<sup>21</sup>, the contribution of market risk remains trivial in the overall risk profile of the banks (Figure 2.15).

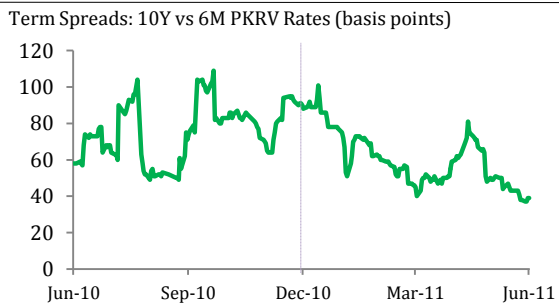
**Figure 2.16**



*Though volatility drops in money market, yield curves flattens*

During the period under review (H1-CY11), the money market remained relatively less volatile compared to previous half year (H2-CY10). SBP continued with its tight monetary policy stance to contain inflationary pressures by keeping the policy rates unchanged at 14 percent throughout this period<sup>22</sup>. Consequently, the 6 month PKRV rates remained less volatile during H1-CY11 relative to H2-CY10 (Figure 2.16).

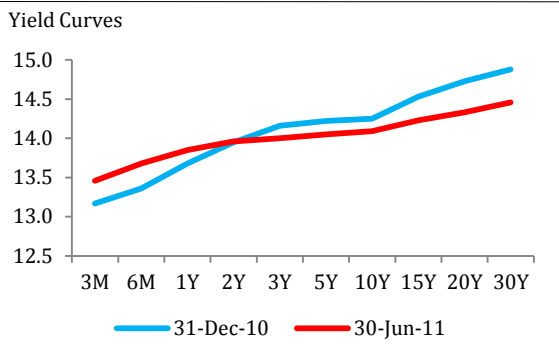
**Figure 2.17**



The term spread between 10 year and 6 month PKRV rates that peaked at 101 basis points in January 2011 followed a general declining trend throughout H1-CY11, reducing to 36 basis points by the end June-11 (Figure 2.17). Consequently, the yield curve flattened during the review period (Figure 2.18). The flattening of yield curve signals short term tightening of liquidity along with low inflation expectation and overall concerns about long term economic outlook, growth and demand for long term funding.

*.....exposing banks to yield risk*

**Figure 2.18**



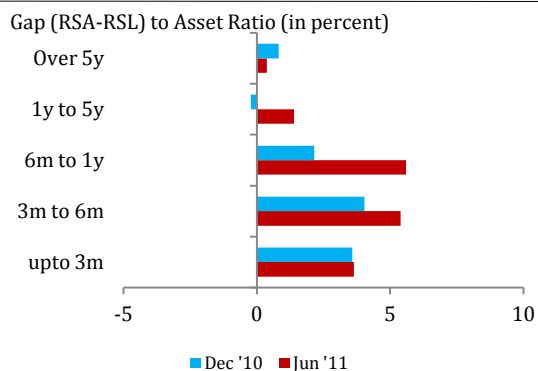
Banks face yield risk because of the differences in interest rates of different maturities. The shape of yield curve can change, leading to erratic changes in interest revenues & expenses. Flattening of yield curve can be particularly worrisome for the banking sector as banks generally borrow short and lend long. During H1-CY11, the gap in RSA and RSL varied substantially across different time buckets, with banks continuing to face yield risk. However, the flattening of yield curve during H1-CY11 has been less detrimental for the banks as the yield curve swiveled around 2 year maturity (Figure 2.18), whereas banks

<sup>20</sup> BCBS(2009), "Findings on the interaction of market and credit risk", BIS WP. 16

<sup>21</sup> Throughout this section, risk weighted assets (RWA) are limited to RWA under Pillar-1 of Basel II capital accord, that is, interest rate risk in banking book is explicitly excluded from the analysis.

<sup>22</sup> During the post-review period, SBP slashed down policy rates by 200 basis points between Jul & Oct-2011.

**Figure 2.19**

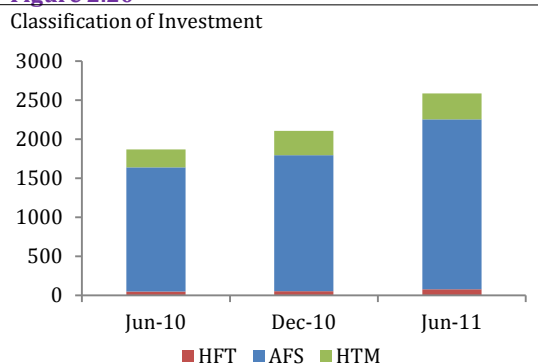


have most of the positive gap in up to 1 year maturity (*Figure 2.19*).

*...though rate sensitive gap remains within acceptable bounds*

Maturity transformation is one of the vital functions of banking sector as during the normal course of their business, banks fund longer tenor loans with liabilities that mature and are re-priced at shorter tenors. Consequently, a certain degree of gap between rate sensitive assets (RSA) and rate sensitive liabilities (RSL) is inevitable. As banks, at aggregate level, have more RSAs than RSLs, ceteris paribus, a decrease in interest rate is likely to adversely affect the bottom line of banking sector<sup>23</sup>. Generally a gap to asset ratio of +/- 10 percent is considered within tolerable range. During the period under review, the banks were able to effectively manage re-pricing risk as gap to asset ratio of the banking sector remained well within the acceptable limits in all time buckets (*Figure 2.19*).

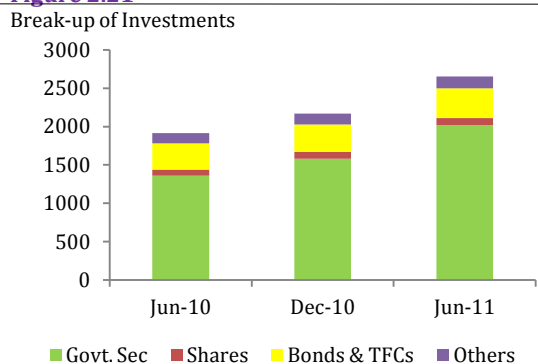
**Figure 2.20**



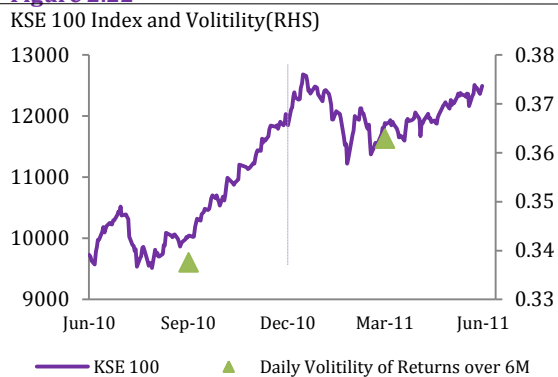
*AFS classification shielded bottom lines from revaluation*

During H1-CY11, banks preserved the classification strategy of their investment portfolio by classifying most of the investments in the Available for Sale (AFS) category, with only small proportions in Held for Trading (HFT) and Held to Maturity (HTM) categories (*Figure 2.20*). As of 30<sup>th</sup> June 2011, only 3 percent of the investment portfolio was classified as HFT whereas 84 percent was held in AFS category. The revaluation gains / losses on AFS category are directly taken to the balance sheet without affecting the income statement. Despite sizable investment in government securities (*Figure 2.21*), stable interest rate environment helped curtail the deficit on revaluation of government securities from Rs. 11.8 billion to Rs. 9.3 billion during the half year under review.

**Figure 2.21**



**Figure 2.22**



*Returns on KSE 100 Index do not compensate for inflation*

The KSE 100 index closed at 12,496 points as of 30-Jun-2011 posting a gain of 5.5 percent during H1-CY11 as compared to a healthy 24 percent return during H2-CY10 (*Figure 2.22*). Though investments in stocks are considered a natural hedge against inflation, KSE 100 index delivered negative inflation adjusted returns during the half year under review. The stock market volatility<sup>24</sup> slightly increased during H1-CY11, reflecting a marginal increase in uncertainty amongst investors; however, there were no exceptionally large swings

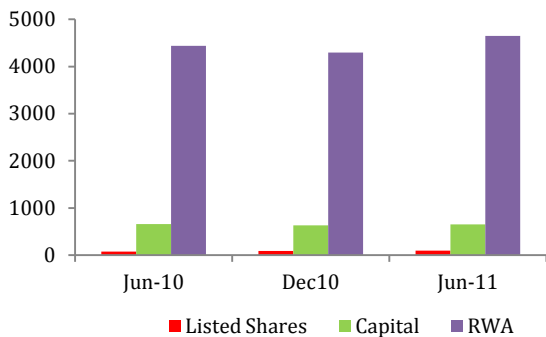
<sup>23</sup> Gap analysis assumes an across the board change in interest rates and ignore market value effects.

<sup>24</sup> Volatility is calculated as daily standard deviation of KSE 100 Index returns over six-month period.

in the index returns during the review period.

**Figure 2.23**

Stock Market Exposure of Banking Sector (Rs. billion)

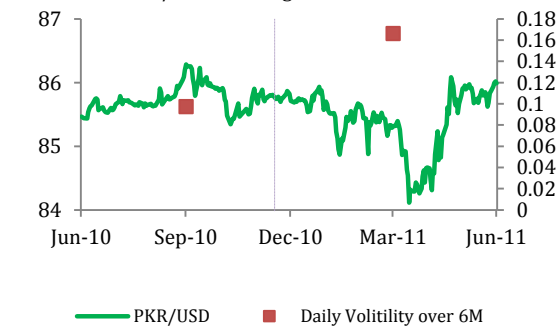


*Modest equity market positions insulate banks from swings in stock prices*

Banks have limited exposure of Rs. 93 billion in the stock market which constitutes a meager 3.5 percent of their total investment portfolio (Figure 2.23). This marginal exposure means that even big swings in the equity prices are not going to affect banks' profitability or solvency. Sensitivity analysis shows that if the prices of all listed shares drop by 50%, the CAR of the banks will decrease by only 69 basis points (see Chapter 3 for details). However, due to relatively poor equity returns, the surplus of banks on account of revaluation of their quoted equity investments decreased to Rs. 3.8 billion as of June-11 as compared to a surplus of Rs. 5.4 billion as of Dec-10.

**Figure 2.24**

Evolution of PKR/USD Exchange Rates

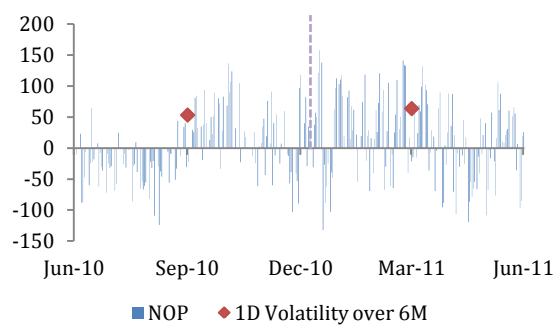


*Healthy home remittances contain depreciation of PKR*

Pakistan received a record USD 5.9 billion in home remittances during the period under review, registering an improvement of 12 percent over the second half of 2010. Despite this positive development, PKR depreciated against USD closing at Rs/\$ 85.99<sup>25</sup> on 30<sup>th</sup> June 2011, thus shedding 0.30 rupee against USD since the beginning of the CY11 and 1.88 rupees since the recent high in April 2011. The exchange rates also remained more volatile during H1-CY11 compared to H2-CY10, reflecting concerns about growing economic challenges (Figure 2.24).

**Figure 2.25**

NOP of All Banks



During the period under review, overall Net Open Position (NOP) of banks remained within the manageable bounds of +/- US\$ 160. The volatility of NOP during the period was slightly more than that during H2-CY10; however, deviations from square position were mostly on the long side (Figure 2.25). Given, the depreciation of PKR against USD and other major currencies, banks on average gained from their long open positions.

<sup>25</sup> Average of bid and offer exchange rates.

## Box 2.1

## Impact of Recent Floods on NPLs

The southern provinces of Pakistan have experienced heavy rainfall and floods during September 2011. The Sindh province is especially badly affected where rain and floods have caused massive disruption for the second year in a row. While final estimates of the scale of damage are not available yet, it is quite evident that floods have wreaked havoc with the infrastructure, property and standing crops, causing a serious blow to the inhabitants and farmers alike. An estimated 5.3 million people have been affected by flooding in Sindh and Baluchistan, nearly 1 million homes are reported to be destroyed, over 4.2 million acres of land has been flooded, almost 1.59 million acres of crops have been destroyed and in worst affected areas about 72 percent of crops have been wiped out<sup>1</sup>. The International Monetary Fund (IMF) has also warned of major economic impact. While information is still incomplete and there can be further weather-induced developments in the coming months, this box examines the potential effects of recent floods on NPLs of the banking sector.

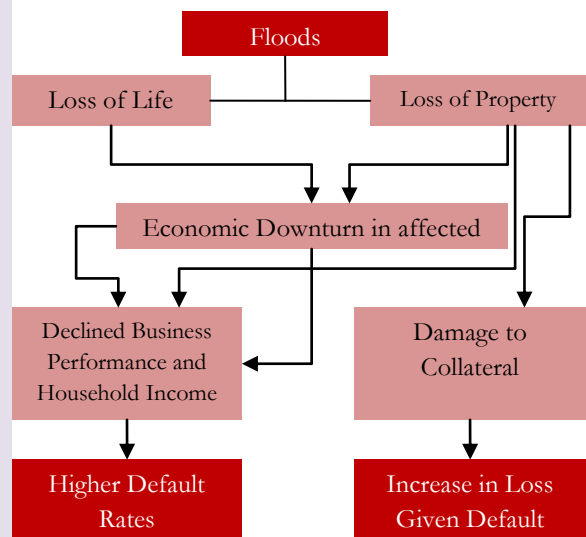
Natural disasters like floods are a negative supply shock as property - including household property, public infrastructure and business assets - is damaged and production is disrupted because of loss of life and property. In the affected areas, spending is also initially delayed but later bounces back when disruptions are decreased and individuals and businesses start to restore or replace damaged assets. Losses of crops, production facilities and disruptions to distribution channels also cause prices to shoot up in the short term. Later, these price effects diminish as transport disruptions are eased and supplies are restored with additional production or import.

Floods and other natural disasters also affect the credit risk of the banks through two channels. First, due to loss of life and property, the economic activities slow down with decline in business performance and household income. This in turn triggers more than normal defaults on loans in affected areas. Second, the collateral that banks have obtained to secure loans also suffers damage, thus losing all or part of the value. Consequently, the net losses that banks suffer in the events of default also surge. **Figure 1** exhibits how floods or other natural disasters affect credit risk.

Since recent floods have mainly affected rural areas, most of the affected loans are for agricultural purposes. The agricultural credit constitutes about 71 percent of loans by volume and 26 percent by amount in the affected areas (**Figure 2**). The existing

**Figure 1**

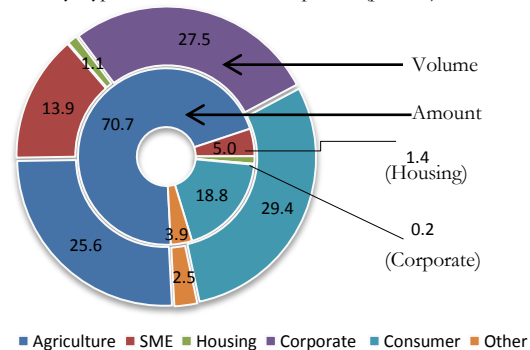
Floods and NPLs



Source: Adapted from The Shizuoka Bank, Ltd., Risk Management Deptt.

**Figure 2**

Loans by Type in Affected Areas- Sep 2011 (percent)

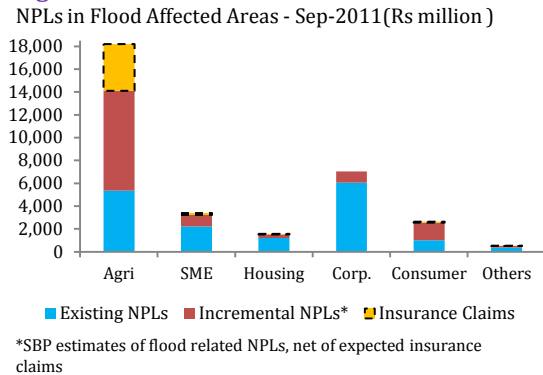


<sup>1</sup> Oxfam and IRIN estimates and UN News Center

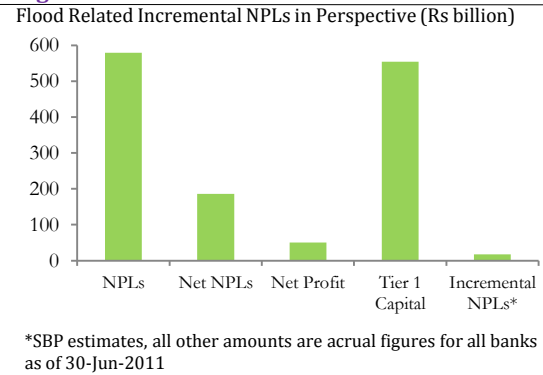
NPLs in the flood affected areas were already high at about Rs 16.1 billion, corresponding to an overall infection ratio of 16 percent while that of agriculture credit was around 20 percent at the end of September 2011. With colossal damage to the crops, property and businesses in the flood affected areas of Sindh, a number of additional borrowers are expected to default on their commitments. Preliminary estimates suggest a potential increase of around Rs. 17 billion in NPLs, thus more than doubling the pre-flood NPLs. With extensive damage to crops, NPLs of the agricultural sector are expected to rise three folds of the pre-floods level, posting an increase about 12.9 billion in new NPLs. While banks are expected to recover around 4.7 billion from insurance companies against damage to collaterals, a major chunk of new NPLs would still damage banks' balance sheets. For agricultural credit, banks are estimated to recover almost half of the additional NPLs through insurance as they expected to rack up about 4.1 billion rupees in insurance proceeds (**Figure 3**).

The projected amount of flood related incremental NPLs is substantial. Only for the province of Sindh it is almost one-third of the net profit generated by the entire banking sector during H1FY11 or about 9 percent of existing net NPLs. However, the strong capital base of the banking sector appears to help withstand the losses inflicted by these additional NPLs (**Figure 4**).

**Figure 3**



**Figure 4**



Liquidity risk was the core of global financial crisis-2007-8 as multiple institutions were unable to secure or rollover short term funding from the market participant, resulting in unprecedented government interventions to bail out the faltering banks. The liquidity risk management regime prevailing at the time failed to account for complete shutdown of secured funding market when market liquidity risk, funding liquidity risk and counterparty risk all became strongly correlated. Since there was no historical data available of such severity to model liquidity risk and thus help its effective management, exiting liquidity risk management practices considerably lagged behind the developments during the global crisis. To fill this gap of suitably measuring and monitoring liquidity risk, Basel committee on banking supervision introduced Basel-III liquidity standard in December 2010. They also came up with two enhanced liquidity ratios: 1) Liquidity Coverage Ratio (LCR) to assess banking sector liquidity requirements over short term (1 month) and; 2) Net Stable Funding Ratio (NSFR) to assess banking sector liquidity requirements over the medium term (upto 1 year). These ratios have been designed to ensure that banks are better prepared to survive under significant liquidity stress scenario lasting one month and one year.

**Liquidity Coverage Ratio (LCR)** is designed to require banks to have sufficient high-quality liquid assets to withstand a stressed 30-day funding scenario specified by supervisors.

$$LCR = \frac{\text{Stock of High Quality Liquid Assets}}{\text{Net cash outflows over 30 days}} \geq 100\%$$

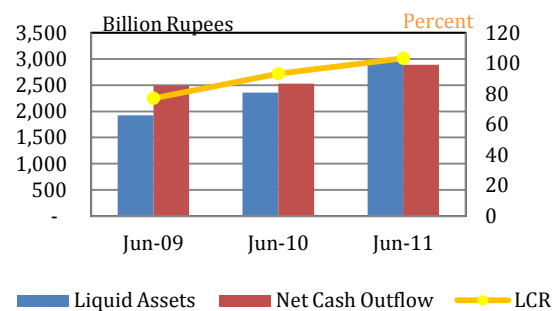
Here the stock of high quality liquid assets includes assets which can be easily and immediately converted into cash with little or no loss of value e.g. cash, central bank reserves, investment in government debt etc. Cash outflows are calculated by applying the draw down rate to outstanding balance of all liabilities and off-balance sheet commitments while cash inflows are estimated by multiplying expected inflow rate to the outstanding amount of contractual receivables. The resulting LCR must be at least 100 percent.

In calculation of LCR for Pakistan’s banking industry, individual items have been set as close as possible with the Basel III requirement. In case of uncertainty about the treatment of some items, a conservative approach to assign liquidity factor has been adopted ( **Table 1**). LCR calculated for Pakistan banking industry turns out 103 percent by June-2011, slightly above the required benchmark (**Figure 1**). While LCR of private banks have been 102 percent, public sector banks with 92 Percent LCR fails to meet the Basel

<b>Table 1: Summary of assumption for Liquidity Coverage Ratio( LCR)</b>	<b>Liquidity factor</b>
<b>High quality liquid assets</b>	
Cash	100%
Balances with treasury banks	100%
Balances with other banks	100%
Call and Repo landings	100%
Investments in Govt. securities such as PIBs, FIBs, T-bills and provincial govt. securities	100%
All other investments such as TFCs, bonds, unlisted shares, private shares, debentures and foreign securities	0%
<b>Cash outflow</b>	
Government Deposits	25%
Wholesale deposits	75%
Retail deposits	15%
Commitment to extend credits	10%
Other contingent payments	5%
Borrowings maturing within 30 days	100%
Subordinated loans maturing within 30 days	
Bills Payable maturing within 30 days	
Liabilities against asset subject to finance lease maturing within 30 days	
Other liabilities maturing within 30 days	
<b>Cash inflow maturing within 30-days</b>	
Investments other than Govt. securities	100%
Advances other than PKR loans	100%
Other assets	100%

Figure 1

Liquidity Coverage Ratio(LCR)





standards. However, in overall terms, Pakistan’s banking industry can comfortably finance the outflows expected over next 30 days under stressed conditions. This high level of liquidity is reflective of characteristic features of banks in Pakistan with large stable deposits on the one hand and increasing level of banks’ investment in high quality liquid assets like government securities.

**Net Stable Funding Ratio:** A long-term ratio that measures how much stable funding a bank has to endure a year-long liquidity crisis. This standard has been designed to ensure that long term liabilities are funded by at least (100 %) stable sources of long term assets and is calculated as:

$$NSFR = \frac{\text{Available amount of stable funding(ASF)}}{\text{Required amount of stable funding(RSF)}} > 100\%$$

Here the available stable funding is defined as “those types and amounts of equity and liability financing expected to be reliable sources of funds over one-year time horizon under conditions of extended stress” while required funding is a function of liquidity characteristics of various types of assets and off-balance sheet exposures held by banks. ASF is calculated by applying a factor to each category of liabilities according to their liquidity while RSF is calculated by applying a liquidity factor to each category of assets. RSF factor indicates how much is expected to be supported by stable funding. On the whole, this ratio should exceed 100 percent. Individual items included in calculation with their respective liquidity factors are given in **Table 2**.

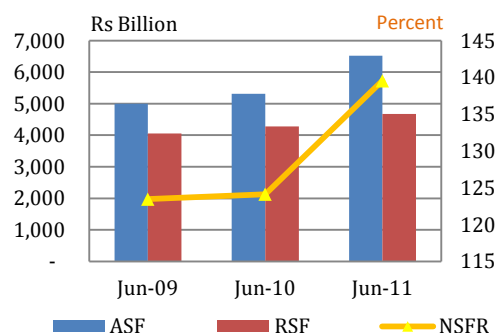
Based on NSFR, banking industry in Pakistan exhibits a strong liquidity position over longer time horizon (**Figure 2**). Since June-10, NFSR has sharply increased on the back of high growth in stable funding sources (23 percent) as compared to growth in required funding (9 percent). Further, the resilience against liquidity risk is quite broad based as only one bank and two DFIs were behind the required NSFR standard as of June-11. A comfortable NSFR of the banking industry is mainly characterized by high volume of deposits constituting more than 70 percent of total liabilities. Further, the deposit base itself predominately (65%) comprises of less volatile current and saving accounts.

**Table 2: Summary of assumption for Net Stable Funding Ratio(NSFR)**

Available Stable Funding(ASF)	Available factor
Tier 1	100%
Tier 2	
Liabilities with maturity over 1 year	
Deposits with maturity up to 1 year	75%
All other liabilities	0%
Required Stable Funding(RSF)	Required factor
Cash	0%
Investments in Govt. securities such as PIBs, FIBs, T-bills and provincial govt. securities	5%
Advance with maturity up to 1 year	50%
All other assets not given above	100%
Off-balance sheet items(Commitments to extend credit)	5%
Other guarantees	50%

**Figure 2**

Net Stable Funding Ratio(NSFR)

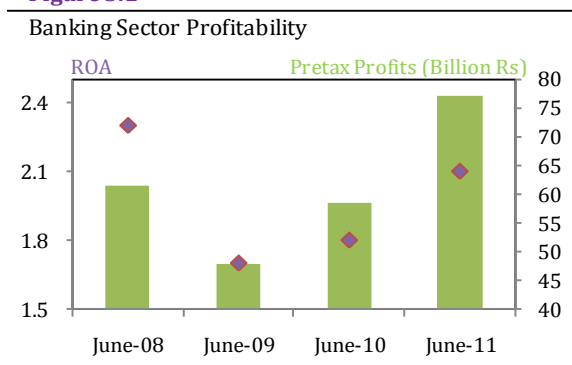


During the half year under review (H1-CY11), pre-tax profits of the banking system soared to 77.3 billion, highest for the Jan-June period in a decade. Robust growth of 31 percent (YoY) in profits came primarily on the back of growing investments in government securities. Of banks total investment income, 81.8 percent came from investments in government papers which on aggregate terms accounted for 29.9 percent of banks' total interest income. Capital adequacy of the banking sector inched up further, thanks to higher profits and rising minimum capital requirement. However, many banks still find the rising MCR a major challenge. Stress tests conducted on June-2011 data reveals that banking sector is resilient to various shocks on credit, market and liquidity risk factors.

### Profitability

#### *Deteriorating fiscal discipline gives a flip to banks' profits*

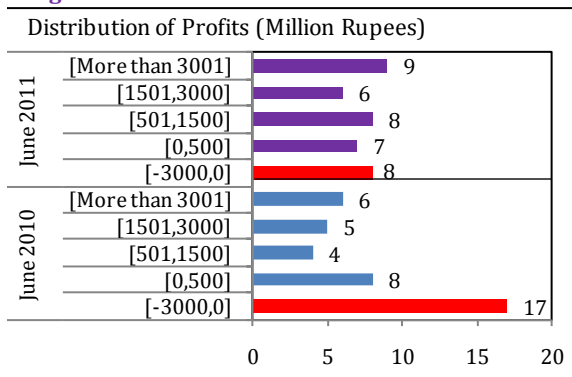
**Figure 3.1**



The prevailing level of high fiscal deficit has turned out to be blessing in disguise for the banking sector. Amid sluggish demand for credit from the private sector and banks' risk-averse behavior, relentless government's borrowings for budgetary support has proffered banks a risk free source of earning healthy returns. Accordingly, banking sector profits (pretax) soared to Rs. 77.3 billion, registering growth of 31 percent YoY in June 2011 (Figure 3.1). This was the highest first-half yearly rise in earnings of the banking sector in a decade. The improvements in bank profitability, in a period of lackluster macroeconomic performance with an attendant rise in the non-performing loans, has also been supported by lower cost of provisions on account of the FSV benefits allowed by the regulator (SBP).

With an improvement in the bottom-line of banks, the conventional measures of earnings (ROA, ROE) have also improved in June 2011. Similarly, the net interest (NIM) margins and profitability (PM) of the banking sector inched up from 2.6 to 2.7 percent and 16.3 to 18.7 percent YoY respectively.

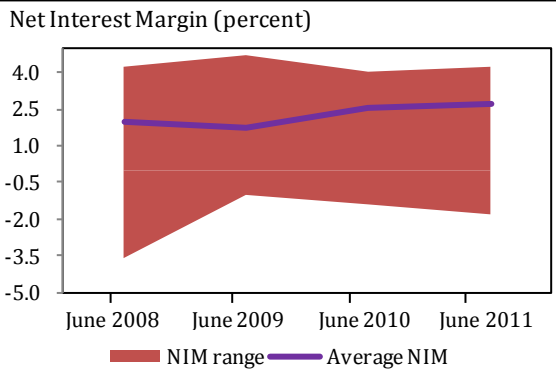
**Figure 3.2**



#### *.....with significant decline in profit concentration*

The lure of higher yields in risk-free government securities has prompted nearly all the banks to expand their investment portfolios with a favorable impact on their earnings. This has reduced the number of banks facing losses to just 8 in June-11, from 17 in June-10 (Figure 3.2). As nine banks have got out of red during H1-CY11, indicators of profit concentration have improved favorably too. The share of top 5 banks in banking profits has dropped from 95 percent in Dec-10 to 78 percent in June-11.

**Figure 3.3**



*.....but the advantage of being big remains strong*

Despite a reduction in profit concentration, the competitive advantage of larger banks has further amplified as its average NIM far exceeded that of the industry. It is primarily because these banks hold 53 percent of industry deposits at below industry interest level. Despite a shortening of NIM range (High-low), 63 percent of the banks (25 in numbers) witnessed the NIM to be lower than the industry average (Figure 3.3)<sup>42</sup>. Similarly, the top 5 banks also outperformed in terms of ROA and ROE (Table 3.1).

However, the Asset Utilization ratio (AU) has remained almost stable at 6.6 percent since last year<sup>43</sup>. AU declined from 7.1 percent in June-09 to 6.6 in percent in June-10 because of rising infection in banks' loan portfolio (Figures 3.4). Bank-wise, it's medium to small sized banks that have witnessed an above average AU of 8.9 percent on account of aggressive utilization of their already narrow deposit base by lending to weaker borrowers at high rates. Similarly, the foreign banks having selected but strong corporate portfolio have also been able to post higher profitability margin along with efficient asset utilization ratio.

In a period of easy earnings for the banking system, the mid-sized banks (top 11 to 20) category did face challenging circumstances on its credit portfolio on account of idiosyncratic shocks. This also led to abnormal provisioning as the infected credit portfolio was directly booked in the loss category.

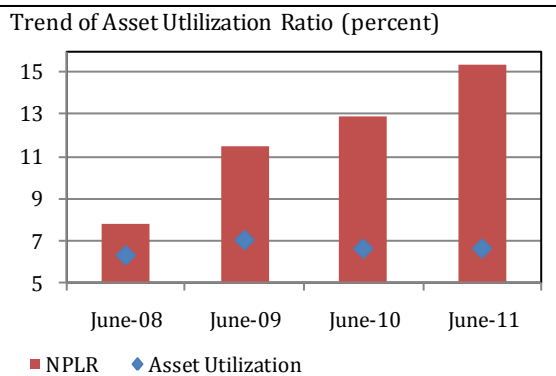
*Investments have turned out to be the primary driver of profitability*

During the half year under review, net interest income (NII) witnessed a growth of 18.4 percent YoY on the back of Rs 131.6 billion of interest income on investments (which was up by 44.5 percent during H1-CY11). On the other hand, non-interest income registered a growth of 10.8 percent during the same period. Accordingly, share of NII in banks earnings inched up to 87.2 percent, while that of the non-interest income

**Table 3.1**  
Concentration of Earnings (percent share)

June-2011	ROA	ROE	AU	PM	NIM
Top 5 banks	3.4	32.2	6.7	29.3	3.3
Top 6 to 10 banks	1.4	24.3	6.6	12.5	2.4
Top 11 to 20 banks	(0.4)	(16.1)	6.5	(6.5)	1.2
Top 21 to 30 banks	2.1	6.7	8.9	11.7	2.7
Public Sector banks	1.8	16.6	6.5	17.5	2.2
Private banks	2.2	23.8	6.6	19.1	2.7
Foreign banks	2.2	14.8	7.1	18.9	2.9
Specialized banks	1.6	37.1	7.7	12.9	3.3
All banks	2.1	21.9	6.6	18.7	2.7

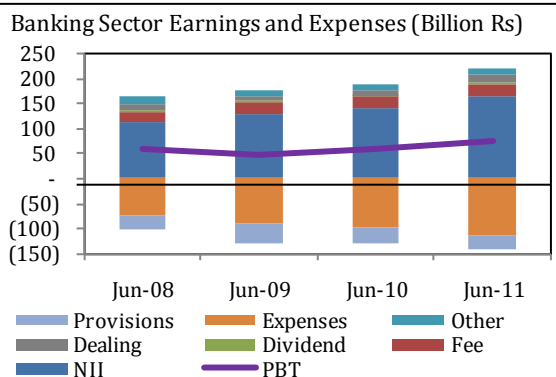
**Figure 3.4**



<sup>42</sup> The Figure 3.3 does not take into account two specialized banks as their NIMs were excessively low in June-11 and were ignored as outlier.

<sup>43</sup> The Asset utilization ratio is the ratio of the sum of markup and non markup income to total assets. Internationally, the average asset utilization ratio lies in the range of 5 to 7 percent. A higher ratio is indicative of higher earnings by optimal utilization of bank assets.

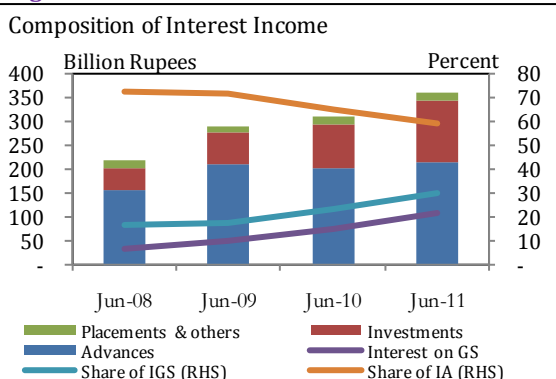
**Figure 3.5**



(including dividend income, fee and commission on bank services and income from dealing in foreign exchange) dropped from 13.3 percent to 12.8 percent in Jun-11 (Figure 3.5).

Unsurprisingly, a hefty proportion (81.8 percent) of interest on investments was driven by return on government securities. Overall, the share of interest earnings on government securities (IGS) in total interest income increased from 23.9 percent to 29.9 percent YoY. The high concentration of interest earnings from government securities can make a serious dent to banks profits in case of a sharp cut in SBP discount rate. This also indicates the presence of debt trap where issuance of government debt is solely for the purpose of repaying interest on earlier debt and not for investing in productive and profitable avenues.

**Figure 3.6**

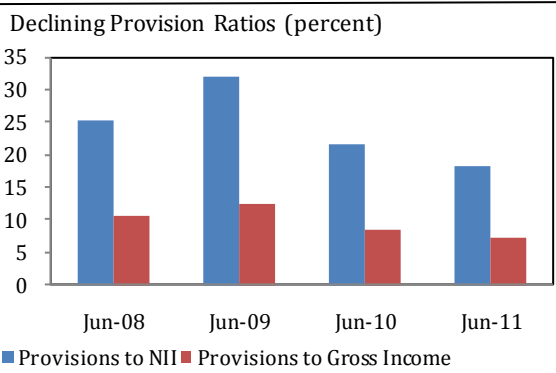


In addition, the composition of interest income also reveal a compromise on the banks very function of financial intermediation as their share of interest income from loans (IA) has been consistently declining, from 72.6 percent in Jun-08 to 59.5 percent in Jun-11 (Figure 3.6). Besides the investments in government securities, a rising NPLR has also contributed significantly towards this decline.

*FSV benefit has kept the banks' expenses in check*

The non-interest expense, though rising, has been kept at bay mostly by the FSV benefit. Consequently, banks have managed to limit their provision expenses despite higher credit risk and a rising NPLR (which reached 15.3 percent by June-11). During CY10, banks availed Rs. 11.9 billion of FSV benefit resulting in the decline of provision to income ratios (Figure 3.7).

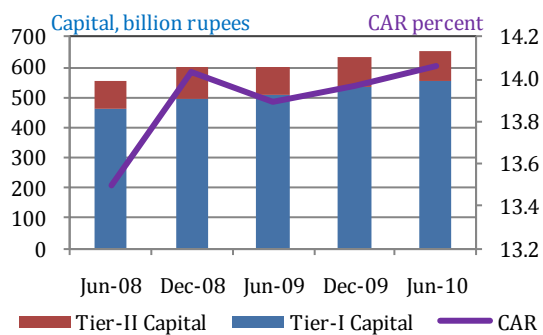
**Figure 3.7**



Similarly, while the administrative expenses have continued to rise on account of increasing operating costs, the operating expense ratio and the cost of funds ratio witnessed a marginal decline as the banks' return on investments enhanced the operating and gross income far more than their expenses in Jun-11 period.

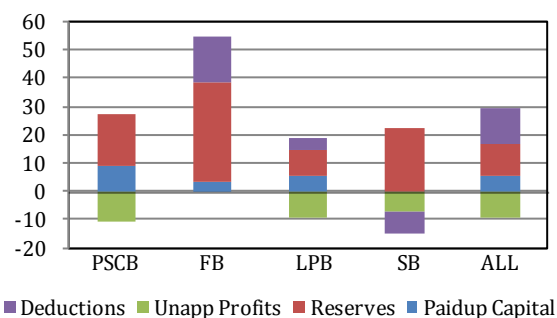
**Figure 3.8**

Solvency Profile of Banks



**Figure 3.9**

Improvements in Tier-1 Capital (percent)



**Table 3.2**

Banks' Category-Wise Solvency Ratios (percent)

	Capital to RWA		Tier 1 to RWA		Capital to Assets	
	Dec-10	Jun-11	Dec-10	Jun-11	Dec-10	Jun-11
Top 5	16.1	16.1	13.4	13.6	10.3	9.5
6 to 10	8.9	12.0	6.7	9.0	5.0	6.8
11 to 20	12.1	11.6	11.2	10.8	8.5	8.4
21 to 29	24.1	30.1	23.8	30.1	13.2	13.0
All 29	16.0	18.2	14.7	17.0	9.7	9.7
FBs	24.6	25.2	24.3	25.0	14.8	15.1
SBs	4.6	8.0	(0.9)	1.9	3.9	1.9
Industry	14.0	14.1	11.8	11.9	9.7	8.5

## Solvency

### Higher profits and rising MCR helps solvency profile

Solvency profile of the banking system further improved during H1-CY11 on the back of SBP's drive for enhanced capitalization as well as growing profitability of the banking sector. Capital adequacy ratio (CAR) of banks was up by 10 bps to reach 14.1 percent by Jun-11 (Figure 3.8).

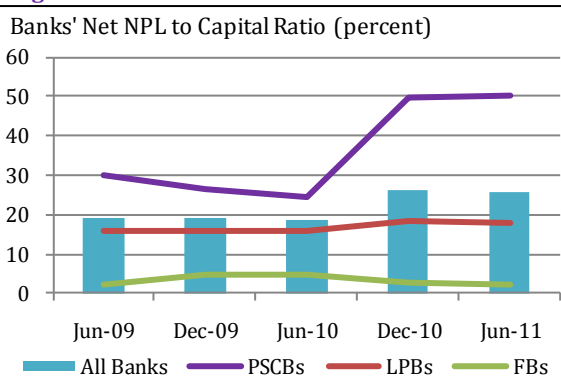
### ..... with Tier-1 providing much needed strength to banks' capital

Much of the improvements took place in Tier-I or the core capital as the banks, benefiting from a period of easy earnings, started to accumulate reserves and enhance their paid-up capital to meet growing MCR (minimum capital requirements). Since the core capital is considered to be the first line of defense against idiosyncratic and systemic shocks, it is desirable to have a substantial portion of capital in Tier-1 category. The imposition of MCR has been instrumental in improving the quality of the capital base of the banking system as the share of Tier-1 capital has kept on rising, from 80.1 percent in Jun-08 to 84.8 percent in Jun-11.

The growth in tier-1 capital by 3.5 percent during the period under review has been supported by 11.1 percent growth in the reserves and 5.5 percent enhancements in the paid-up capital of the banks (Figure 3.9). Segment-wise, the foreign banks (FB) witnessed a 35.4 percent rise in its reserves while the specialized banks (SB) and the public sector banks (PSCB) also witnessed substantial improvements of 22.4 and 18.3 percent respectively. However, due to consistent losses and rising provisions, the SB witnessed depletion in its un-appropriated profits by 7.4 percent in Jun-11. The large private banks (LPB) though most of them being profitable in Jun-11 still posted a 9.5 percent decline in un-appropriated profits on account of abnormal losses reported by the two leading banks.

Category-wise, the most significant improvement was experienced by the smaller banks (21 to 29), as their CAR soared from 24.1 to 30.1 percent on account of new capital injection and a merger activity which also improved its Tier-1 to RWA ratio to 30.1 percent (Table 3.2). The top 6-10 banks also consolidated their capital profile by increasing their reserves and enhancing paid-up capital. However, due to a surge in foreign remittances leading to a 13.7 percent increase

**Figure 3.10**

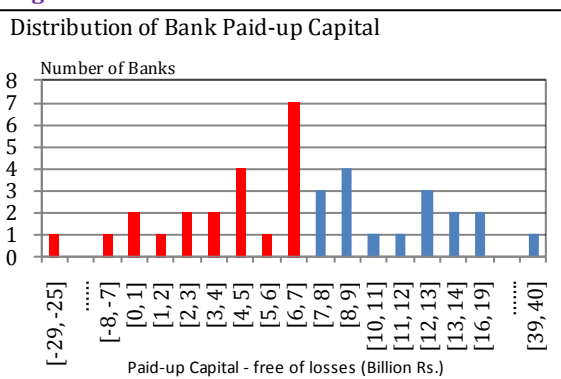


in the asset base marginally depleted the capital to asset ratio by 80 bps. The specialized banks (SBs), though still below regulatory requirements of 10 percent, witnessed a considerable improvement as well. The foreign banks (FBs), with only 3.2 percent share in the industry, continued to maintain the highest CAR across all banks.

*High NPLs a major threat to the capital base of PSCBs*

The worsening of credit infections in the segment of public sector banks highlights the critical role of higher capital requirements. In case of public sector commercial banks (PSCBs), the Net NPLs to Capital ratio (indicating fraction of banks' equity which can be wiped out by loan losses) has substantially increased since Jun-10 period, though it has remained the same during H1-CY11 (Figure 3.10). On the other hand, some of the banking segments, foreign banks in particular, continue to have net NPL to capital ratio below 2 percent.

**Figure 3.11**



*Banks find MCR still a major challenge, despite being comfortable on CAR*

Banks have generally found it difficult to meet the growing MCR despite being profitable and availing the FSV benefit on its infected credit portfolio. The sluggish macroeconomic environment and developments in local and international political scenario has impeded foreign shareholders to further inject equity into the banking system. As of June-2011, 17 banks have been unable to meet MCR of Rs. 7 billion (Figure 3.11). With deadline for higher MCR of Rs. 8 billion just a few months away, this will put further pressure on the banks' compliance to regulatory capital requirement.

**Table 3.3**

Distribution of Banks by CAR (percent)

	Total	less than 10	10 to 15	Over 15
Dec-08	40	9	10	21
Jun-09	40	7	12	21
Dec-09	40	6	15	19
Jun-10	40	6	15	19
Dec-10	38	6	12	20
Jun-11	38	5	12	21

However in terms of capital adequacy requirements of 10 percent, the majority of the banks have the CAR well above the required level (Table 3.3). Five banks with CAR below 10 percent have a marginal market share (4.6 percent) and are also MCR non-compliant. These include three private banks which are in a process of bringing new equity and one public sector and a specialized bank that are under the process of restructuring.

## Resilience and Stress Testing

### *The banking system appears resilient to various shocks*

A strong capital base of the banking system has enabled the banks to withstand various hypothetical and historical credit and market risk shocks. Using the approaches of sensitivity (single factor) and macroeconomic (scenario based) stress testing, the financials of the banking system for Jun-11 have been stress tested and its impact on the capital adequacy of the banking system have been examined.

In case of sensitivity analysis – a single hypothetical shock factor is assumed to impact the profitability and hence the CAR of individual banks. The credit shocks included different hypothetical scenarios covering down-gradation of loan classifications and sector-wise concentration (see *Box C on credit risk shock for details*). In addition, a critical infection ratio, at which the capital base of the bank is assumed to be fully wiped-out due to credit losses, came out to be 41.9 percent as against the present level of actual NPLR of 15.3 percent. None of the banks posted a critical infection ratio of less than 28.5 percent. A high critical ratio is reflective of buffer capital to accommodate for the losses.

The overall banking system appears quite resilient against all credit shocks (*Figure 3.12*). The shock *C1* proved to be more severe as it deteriorated the stressed system-wide CAR to 12.6 percent against the baseline (pre-shock) system-wide CAR of 14.1 percent. Bank-wise, four banks that had baseline CAR of above 10 percent failed to minimum CAR in stressed condition. Similarly, the default of top 3 borrowers – *C3* shock lowered the CAR by 1 percent. In terms of severity, shocks *C8* and *C9* have been least severe as it deteriorated by baseline CAR merely by 7 and 21bps.

In addition to the credit risk, the sensitivity analysis has also been employed to stress tests the banking sector CAR using hypothetical market risk shocks (see *Box D on market risk shock for details*). However, unlike the credit risk shocks, the market risk shocks were not severe enough to worsen system-wide as well as individual bank CAR. For instance, the *ER1* shock deteriorated the baseline CAR by 73 bps to 13.3 percent. Similarly, the equity price shock of 50 percent – shock *EQ2* only managed to lower the baseline CAR by 69 bps to 13.4 percent (*Figure 3.13*).

#### Box C: Credit Shocks

**C1:** 10% of performing loans moving to substandard, 50% of substandard to doubtful and 50% of doubtful to loss.

**C2:** All NPLs under substandard downgrade to doubtful and all doubtful downgrade to loss.

**C3:** Default of top 3 borrowers of the banks, downgraded to substandard category.

**C4:** Increase in provisions against NPLs equivalent to 50% of Net NPLs.

**C5:** Increase in NPLs to Loans Ratio equivalent to the maximum quarterly increase in NPLs to Loans Ratio of the individual banks during the last 5 years.

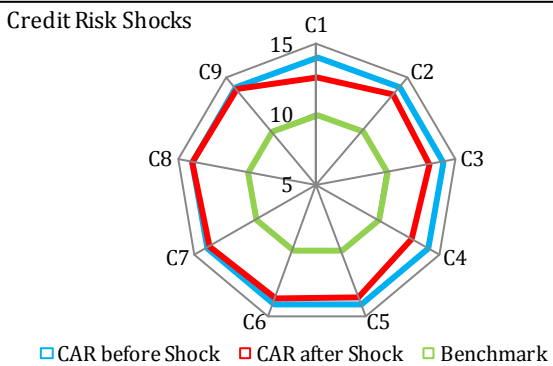
**C6:** Increase in NPLs of all banks by 21% which is equivalent to the maximum quarterly increase in NPLs of the banking system during the last 5 years

**C7:** Increase in NPLs to Loans Ratio of Textile Sector of the banks equivalent to the maximum quarterly increase in these banks during the last 3 years.

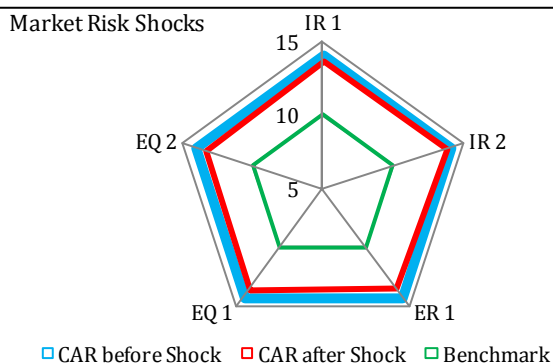
**C8:** Increase in NPL to Loan Ratio of Consumer Sector of the banks equivalent to the maximum quarterly increase in these banks during the last 3 years.

**C9:** Increase in NPL to Loan Ratio of Agriculture & SME Sector of the banks equivalent to the maximum quarterly increase in these banks during the last 3 years.

**Figure 3.12**



**Figure 3.13**



**Box D: Market Risk Shocks**

**IR1:** Parallel upward shift in the yield curve - increase in interest rates by 300 basis points along all the maturities.

**IR2:** Upward shift coupled with steepening of the yield curve by increasing the interest rates along 3m, 6m, 1y, 3y, 5y and 10y maturities equivalent to the maximum quarterly increase experienced during the last 3 years.

**ER1:** Depreciation of Pak Rupee exchange rate by 30%.

**ER2:** Appreciation of Pak Rupee exchange rate by 3.2% equivalent to the quarterly high level of appreciation of rupee against dollar experienced during the last 3 years.

**EQ1:** Fall in general equity prices by 41.4%

**EQ2:** Fall in general equity prices by 50%

In addition to sensitivity based stress testing, another useful mechanism for gauging the resilience of the banking system towards adverse but plausible shocks has been the scenario or the macroeconomic based stress testing. This approach is increasingly used by the supervisory authorities and leading commercial banks worldwide. The scenario based stress testing primarily relies on the inter-relationships between the macroeconomic and bank-specific variables with the NPLR that are stressed to produce reliable forecasts of plausible macroeconomic shocks.

The macroeconomic stress testing of the credit risk has been carried out using the Credit portfolio view (CPV) model. The model assumes a linear relationship between default rates (NPLR) and macroeconomic indicators. The leading macroeconomic indicators included the level of industrial output (LSM), exchange rate (EXR), inflation (CPI) and lending rates (LR). By examining a structural relationship between the NPLR and macroeconomic indicators and using Monte Carlo simulation process, the stressed values of NPLR ratios were achieved. Similarly, the same process is also employed to forecast one-period value of NPLR.

Under the baseline scenario, the CPV model forecasts the NPLR to further deteriorate by 20 bps for 2HCY11 to 15.5 percent (*Table 3.4*). Similarly, there is one percent probability that the NPLR deteriorate in excess of 20.8 percent without applying any shocks. Whereas, in case of applying LR shock, the average NPLR is expected to be 15.8 percent. Interestingly, even at 0.01 percent probability and applying all macroeconomic shocks simultaneously, the NPLR can reach 23.2 percent which is less than the critical infection ratio of 28.5 percent calculated in the sensitivity analysis.

In addition, the derived simulations of stressed NPLR also indicate a major shift from the baseline to adverse movement in macroeconomic aggregates projected for H2-CY11 (*Figure 3.14*).

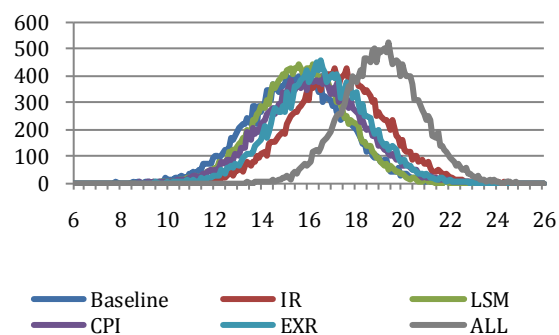
**Table 3.4**

Simulated NPL Ratios Projected for H2-2011

	Baseline	LR	ER	CPI	LSM	All
Avg	15.5	15.8	16.2	16.6	17.3	19.2
75 P	16.9	17.0	17.7	17.9	18.6	20.2
90 P	18.1	18.1	18.9	19.1	19.8	21.2
95 P	18.9	18.8	19.7	19.8	20.6	21.8
99 P	20.3	20.0	21.1	21.1	21.9	22.9
99.5P	20.8	20.4	21.7	21.6	22.4	23.2

**Figure 3.14**

Frequency Distribution of Simulation Results





A wide body of literature suggests that banking and financial crises often lead to protracted economic downturns<sup>44</sup>. One important channel of transmission of banking crisis to the economic activities is bank capital channel<sup>45</sup>. When capital of banks is eroded, they lend less and this accentuates economic slowdown.

The global financial crisis highlighted the significance of banks and adequacy of their capital and liquidity for financial stability, and highlighted deficiencies in financial regulations. In response, BIS issued new guidelines under Basel III proposal to strengthen the capital and liquidity requirements of the banking industry. These guidelines comprise micro and macro prudential reforms to strengthen bank capital and introduce revised regulatory requirements for bank liquidity and leverage.

### Capital Standards:

Basel III capital proposal seeks to improve the quality and level of capital by stressing the role of common equity as the best form of capital to withstand idiosyncratic and systemic shocks. The proposal includes increasing the proportion of common equity in the required capital, requiring contingent capital that can be converted into common equity at the discretion of the financial regulator and introducing capital conversion and countercyclical buffers comprising common equity. The new capital requirements will be gradually phased-in between 2013 and 2019 (Table 1), and include the following:

**Table 1:** Timeline for Implementation of Basel III Accord

	2013	2014	2015	2016	2017	2018	2019
Common Equity Tier1 (CET1)	Gradual implementation 3.5%	Gradual implementation 4.0%	Final implementation 4.5%				
CET1 including CCB and CCCB*				Gradual implementation 5.125%- 5.75%	Gradual implementation 5.75% -7.0%	Gradual implementation 6.375% - 8.25%	Final Implementation 7.0%-9.5%
Tier 1 Capital	Gradual implementation 4.5%	Gradual implementation 5.5%	Final implementation 6.0%				
Capital Conservation Buffer (CCB)				Gradual implementation 0.625%	Gradual implementation 1.25%	Gradual implementation 1.875%	Final Implementation 2.5%
Counter-cyclical Capital Buffer (CCCB)				Gradual implementation 0.625%	Gradual implementation 1.25%	Gradual implementation 1.875%	Final Implementation 2.5%
Total Capital**	Final implementation 8.0%					Final Implementation 8.0% - 8.25%	Final Implementation 8.0% - 9.5%
Phasing in of New Deductions from Capital Base		Gradual implementation 20%	Gradual implementation 40%	Gradual implementation 60%	Gradual implementation 80%	Final implementation 100%	
Leverage Ratio	Observation	Observation	Disclosure	Disclosure	Final Adjustments	Final Implementation	

\*The lower bound represents CET1 requirement including Capital Conservation Buffer (CCB), the upper bound represents CET1 requirement including both CCB and Countercyclical Capital Buffer (CCCB)

\*\* Includes CCB and CCCB, where applicable

Source: Adapted from BIS documents

### 1. Quality and level of capital

Common Equity Tier 1 capital (CET1) comprising common equity will be at least 4.5% of risk weighted assets (RWA), while total Tier 1 capital will be raised to 6% of RWA from the present requirements of 4% of RWA.

<sup>44</sup> Borio (2007); Goodhart (1996); and Minsky (1992), Bernanke and Gertler (1995); Bernanke, Gertler, and Gilchrist (1999); and Kiyotaki and Moore (1997).

<sup>45</sup> Bernanke, Lown, and Friedman (1991); Kashyap and Stein (1995); Peek and Rosengren (1995); and Altunbas, Gambacorta, and Marqués (2007).

## 2. Capital conservation buffer

In normal times, banks will be required to hold high quality capital above the regulatory minimum. To fulfill this requirement, banks will hold a capital conversion buffer comprising common equity of 2.5% of RWA that will supplement the Common Equity Tier 1 capital. The total common equity will thus be at least 7% of RWA. This effectively increases the total regulatory capital requirements to 10.5% from the existing 8%.

During stressed periods, when capital levels falls in the buffer range, a progressive capital distribution constraints will be imposed on a bank until buffer is fully restored. The imposed constraints will not restrict operations of the bank and will be limited to capital distributions.

## 3. "Gone concern" contingent capital

This proposal would require clauses in the capital instruments that would allow the regulator to ask for write-off of such instruments or conversion of such instruments into common equity during stressed periods thereby strengthening the capital base when needed and increasing the contribution of private sector in the bank's capital.

## 4. Countercyclical capital buffer

The countercyclical buffer is meant to be a macro prudential tool to contain the buildup of excessive systemic risk. Based on the credit growth and other relevant indicators, when the financial regulators believe that there are signs of excessive credit growth that may lead to a buildup of unacceptable levels of systemic risk then they, at their discretion, may require additional countercyclical buffer of up to 2.5%. During downturns the buffers would be released to boost the banks' capacity to lend.

## 5. Leverage ratio

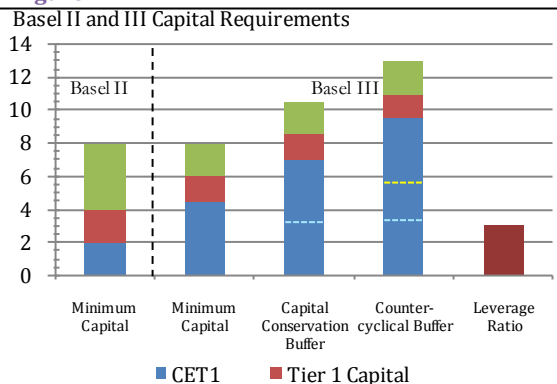
The recent global financial crisis was characterized by excessive leverage in the banking system while the risk based capital was still strong. To avoid this situation, Basel III has proposed a non-risk based leverage ratio of 3% as a supplementary measure to the risk based capital requirements. Under this proposal banks will be required to maintain a Tier 1 leverage ratio calculated as ratio of Tier 1 capital to on- and off-balance sheet exposures.

A comparison of capital requirements under Basel II and III is illustrated in **Figure 1**

## Basel III requirements and Pakistani banks

It must be appreciated that the Basel III framework is meant for the internationally active banks and as such it is not mandated for Pakistani banks. However, due to inherent conservatism and less sophisticated banking system Pakistani banks can adhere to some requirements of Basel III with relative ease while other requirements may not be relevant for Pakistani banks. Most of the banks in Pakistan hold high quality capital. In June 2011, on average, almost 85 percent of the banks' total regulatory capital was in the form of common equity tier 1 capital (CET1<sup>46</sup>) (**Figure 2**). At the end of June 2011, Capital Adequacy Ratio of all banks and DFIs was 14.93 percent on average and other than five non-compliant banks, all other banks comfortably meet the proposed Basel III requirements of CET1/RWA ratio including capital conservation buffer. Selected capital ratios of major groups of banks are depicted in **Figure 2**.

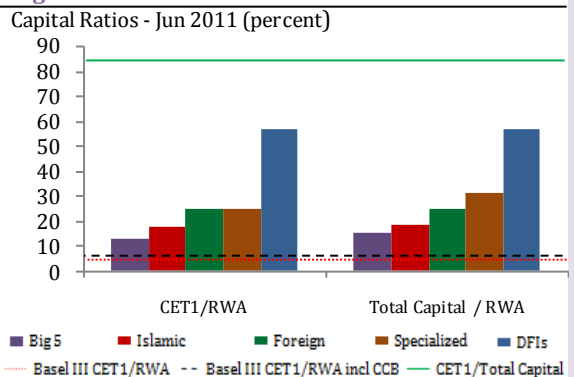
**Figure 1**



Notes:

- (1) Tier 1 Capital Includes CET1, Total Capital includes Tier 1 Capital
- (2) Leverage Ratio is prescribed against total assets and off-balance sheet commitments, whereas all other capital ratios are in relation to Risk Weighted Assets
- (3) Countercyclical Buffer is between 0 and 2.5 percent, the figure shows countercyclical capital buffer at maximum value.

**Figure 2**

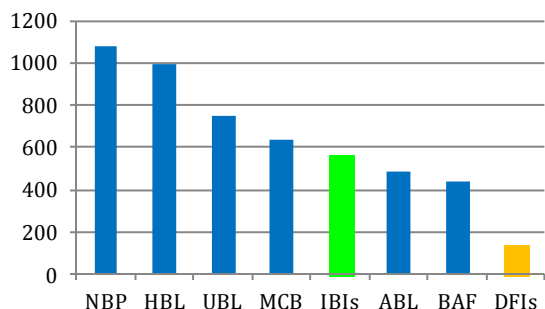


<sup>46</sup> CET1 calculation is approximate without taking into account revaluation reserves and some regulatory adjustments like deferred tax assets and defined contribution plan liabilities.

Islamic banking institutions (IBIs) have registered double digit growth during H1-CY11 with bulk (84%) of incremental assets channeled into government securities. On average, IBIs are more solvent, liquid and profitable than the rest of the banking sector and these indicators improved during the period under review. Reputational and displaced commercial risk, though dormant, can pose significant challenge to the future growth prospects of the industry.

**Figure 4.1**

Total Assets as of 30-Jun-2011 (Rs. billions)

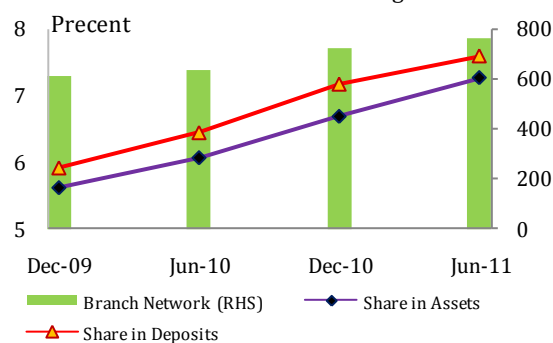


*IBIs continue to maintain double digit growth*

Islamic banking has registered double digit annual growth over the last decade and this trend continued with 17.5 percent growth in total assets during the period under review (H1-CY11). The growth rate in both assets and deposits picked up particularly during Q2-CY11. While part of the strong growth rate in assets can be ascribed to the small base effect, growing share of IBIs in Pakistan’s banking system is indicative of their increasing significance in the overall banking industry. With Rs. 560 billion of assets by June-11, IBIs have 7.3 percent share in total assets of the banking sector, which is more than the total assets of the 5<sup>th</sup> largest bank in Pakistan and over four times of the total assets managed by all DFIs in the country (Figure 4.1 & 4.2).

**Figure 4.2**

Share and Network of Islamic Banking



*...with new funds mostly placed into government securities*

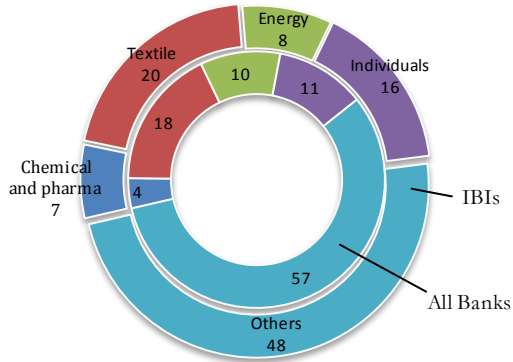
Despite double digit growth in total assets, growth in financing remained subdued with net financing increasing by only 4.6 percent compared to a strong 46.6 percent growth in total investments (net) during H1-CY11 (Table 4.1). The unprecedented growth in investments also caused a significant shift in IBIs’ assets mix from financing to investments; the share of financing portfolio decreased to 33 percent while that of investments increased to 42 percent. Issuance of GoP Ijarah Sukuk of over 182 billion rupees between October 2010 and June 2011 facilitated this shift from financing to high quality sovereign investments enabling IBIs to invest as much as 83.7 percent of their incremental assets in government securities during H1-CY11. In fact, this trend of investments in government papers was quite similar to that of conventional banks in Pakistan (as highlighted in Chapter 1). Going forward, the 200 basis point cut in the policy rates coupled with lack of immediate availability of new sovereign Sukuk might redirect some funds to private sector, though energy crises, poor law and order situation and slack economic performance would continue to hamper any major reallocation of credit to private sector in the short run.

**Table 4.1: Growth of Islamic Banking.**

	billion Rupees				
	Dec-09	Jun-10	Dec-10	Jun-11	All Banks
Total Assets	366.3	411.1	477.0	560.5	7,714.6
Investments (net)	72.2	78.0	157.8	231.3	2,620.2
Financing (net)	153.5	157.5	180.4	188.6	3,383.5
Deposits	282.6	329.8	390.1	452.1	5,964.8
	percent change				
Total Assets	17.0	12.2	16.0	17.5	8.1
Investments (net)	34.9	8.0	102.3	46.6	22.3
Financing (net)	9.4	2.6	14.5	4.6	1.0
Deposits	18.7	16.7	18.3	15.9	9.4

**Figure 4.3**

Concentration of Financing (in percent)

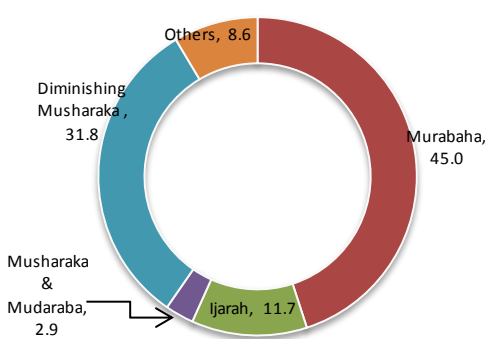


In terms of credit allocation, around half of the total credit extended by IBIs was directed towards four key areas; textile, energy, chemical and individuals (Figure 4.3). Though a relatively high exposure of IBIs in textile sector makes them vulnerable to adverse developments in textile industry, credit concentration of this level is somewhat unavoidable given the share of textile in overall exports and large scale manufacturing sector. While IBIs' credit exposure to various sectors was in line with that of the overall banking industry, their exposure to individuals and chemical and pharmaceutical sector was almost double than the rest of the banking sector. However, the relatively higher exposure to the chemical and pharmaceutical sector does not give rise to concentration risk as it constitutes just 7 percent of the IBIs' financing portfolio.

*Limited size of profit and loss sharing financing portfolio remains a reputational risk*

**Figure 4.4**

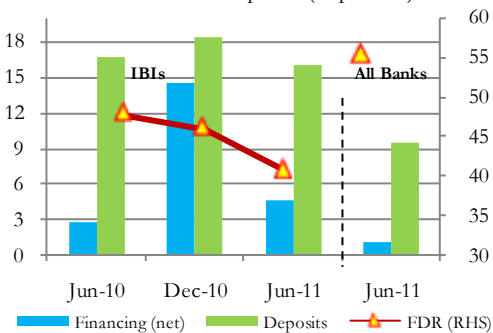
Financing Mix (in percent)



Notwithstanding the importance attached to profit and loss sharing (PLS) modes of financing in Shariah, IBIs continued to rely heavily on mark-up based and mortgage/lease type modes of financing (Figure 4.4). This continued neglect of the distinct Islamic finance modes has attracted considerable criticism both from Shariah community and public as the present approach is diluting the distinction between Islamic and conventional banking. The IBIs' reluctance in making serious efforts to increase the share of P&L financing is however understandable, given the higher risk and moral hazards associated with such financing and lack of formal and informal dispute resolution mechanisms. Therefore, in addition to increasing the IBIs' appetite for P&L financing, supportive legal and regulatory environment will have to be created to address this reputational risk.

**Figure 4.5**

Growth in Advances and Deposits (in percent)



*Falling FDR appears a mixed blessing*

In the wake of deteriorating asset quality and continued government borrowings through Ijarah Sukuk offering attractive returns, IBIs remained shy of lending to the private sector despite sufficient availability of loanable funds. With growing supply of Shariah compliant low-risk sovereign sukuk, IBIs increased their exposure towards investments, thus registering a further drop in their Financing-to-Deposit ratio (FDR) to 40.8 percent, compared to 55.4 percent for the entire banking sector<sup>47</sup> (Figure 4.5). In fact, Government of

<sup>47</sup> For conventional banks, 55.4 percent is Loan-to-Deposit ratio (LDR) which is not exactly same as FDR of Islamic Banks. Still, these numbers provide a rough comparison.

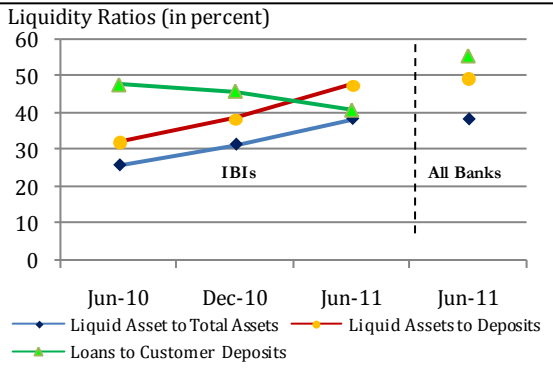
Pakistan issued Ijarah sukuk of Rs. 89 billion during H2-CY10 and of another Rs. 93 billion during H1-CY11, causing investments to rise by 96 percent and 46.6 percent respectively.

While Loan-to-Deposit ratio of conventional banks is also falling since Q4-CY08, IBIs' FDR remain significantly lower than LDR. The plausible reasons are:(a) As IBIs have more restricted access to money market for short-term funding needs, they need to maintain higher liquidity for precautionary purposes, (b) lender of the last resort facility is not available to Islamic banks making them more vulnerable to liquidity risk and consequent increase in their appetite for liquid securities, and (c) their deposits are on 'tap' basis after acquiring customer, while extending credit may require more efforts & time. This issue can be more relevant for newer banks like IBIs.

While the continuously falling FDR might undermine the intermediation function of IBIs, it would ironically have a positive effect on their liquidity, asset quality, and profitability as highlighted in the following paragraphs.

*...as it allows IBIs to comply with rising SLR requirements*

**Figure 4.6**



On the back of growing investments in government securities and cautious financing, liquidity ratios continued to improve during the period under review. Apart from falling FDR, ratios of liquid asset to total assets and to deposits improved as well, moving in line with rest of the banking sector (Figure 4.6). Comfortable liquidity position of the IBIs was evident from the trend of the afore-mentioned liquidity ratios.

Before 2011, IBIs were subject to concessionary Statutory Liquidity Reserve (SLR) requirements because of dearth of SLR eligible securities. The Government of Pakistan issued additional SLR-eligible sukuk of 182 billion rupees during FY11. Considering the comfortable liquidity position of IBIs and availability of sufficient Shariah compatible and SLR eligible avenues to place the required funds, the concession given to IBIs was fully withdrawn during H1-CY11. As IBIs are already placing a sizeable portion of their assets in government securities, this withdrawal of concession will not affect the bottom line of IBIs in the short-run. However, in the longer run, IBIs will have to compete for credit growth with their conventional counterparts on a more level playing ground.

**Table 4.2: Asset Quality**

	in percent			
	IBIs		All Banks	
	Jun-10	Dec-10	Jun-11	Jun-11
NPF to Financing	6.5	7.3	7.5	15.3
Net NPF to Financing	2.8	3.2	3.2	5.5
Provisions to NPFs	58.8	58.6	60.0	67.9
Net NPAs to Total Capital	11.5	13.3	14.3	26.6

	IBs		IBBs	
	Dec-10	Jun-11	Dec-10	Jun-11
	NPF to Financing	9.2	9.6	3.5
Net NPF to Financing	3.8	3.7	1.9	2.2
Provisions to NPFs	60.8	63.4	46.9	46.7
Net NPAs to Total Capital	16.1	16.5	7.1	8.9

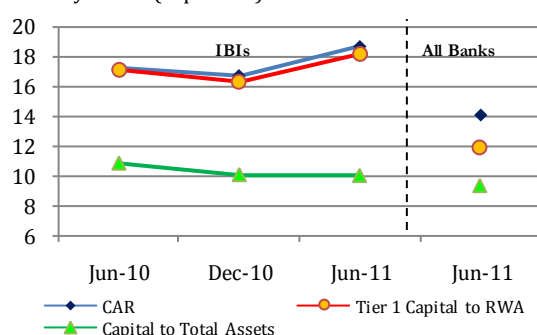
  

	IBs	IBBs
NPFs (billion Rs.)	11.7	11.8

IBs=Islamic Banks, IBBs = Islamic Banking Branches, IBIs = IBs+IBBs

**Figure 4.7**

Solvency Ratios (in percent)



### Loss absorption capacity is adequate, despite marginal deterioration in asset quality

After rising sharply during H2-CY10 with an addition of Rs3.2 billion, the accumulation in Non Performing Financing (NPFs) of IBIs considerably decelerated and grew by only 1.0 billion rupees during H1-CY11. The infection ratios, as a result, deteriorated only marginally during the period under review (Table 4.2).

Asset quality indicators of IBIs remained relatively better than those of conventional banks reflecting their cautious lending behaviour as evident from the growing share of investments in their asset portfolio, and their ability to better manage credit risk as demonstrated by their lower NPLs compared with conventional banks<sup>48</sup>.

Almost 70 percent of the NPFs of IBIs are in the loss category and are therefore adequately provided for. That explains relatively better coverage ratio (provisioning to NPFs) of IBIs compared with the rest of the industry. Despite suffering a significant blow in the last one year due to sharp increase in NPFs during H2-CY10, Net NPAs to Total Capital of IBIs remained at comfortable levels of 14.3 percent as of 30-Jun-2011 (Figure 4.7) reflecting adequate cushion to absorb unprovided-for losses. Moreover, IBIs boasted a healthy 18.7 percent CAR as of 30-Jun-2011 suggesting satisfactory capacity of IBIs to absorb unanticipated losses.

Within Islamic Banks, Islamic Banking Branches (IBBs) have significantly lower stock of NPFs as compared to Islamic Banks (IBs). Though NPFs of branches increased sharply (Rs 0.9 billion) during H1-CY11, it was primarily on account of a single bank. On the other hand, incremental NPFs of IBs increased by only 0.1 billion during the same period, which was significantly lower than a rise of Rs.2.8 billion that took place during H2-CY10.

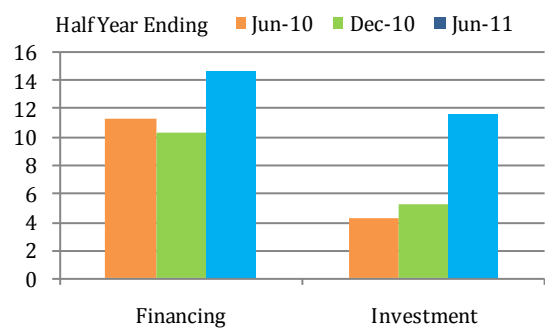
### Profits surge on the back of growing investments in high yield Sukuks

IBIs registered a healthy increase in earning indicators during the H1-CY11 as return earned on financing increased by 3.5 billion rupees or 30 percent over the corresponding period of 2010. Nevertheless, the most significant improvement was witnessed in return earned on investments as the shift in asset mix from low yielding placements in interbank market through commodity murabaha like instruments to higher yielding

<sup>48</sup>IBI's NPFs of 7.5% (compared with 15.3% NPLs of conventional banks) can be partially explained by their penalty structure. In the event of delinquency by the borrower, the penalty charged by IBIs cannot be taken to their income, thereby reducing their incentives to lend to marginal customers and increasing their incentives for better scrutiny of the borrowers.

**Figure 4.8**

Sources of Earnings (Rs Billion)



**Table 4.3: Earnings in percent**

	IBIs			All Banks
	Jun-10	Dec-10	Jun-11	Jun-11
Return on Assets	0.8	0.6	1.6	1.4
Return on Equity	6.9	5.2	16.5	14.4
Operating Expenses to Gross Income	71.8	72.6	62.3	51.0

investments in Ijarah Sukuk started to payoff in the form of better earnings. The return earned on investments during the period under review shot up by 7.4 billion rupees (rise of 175 percent) from the corresponding period of 2010 (Figure 4.8).

The improved earnings on financing and investment portfolios coupled with lower provisions against non-performing assets lead to noteworthy improvements in earning ratios. Earning indicators of IBIs outperformed those of the overall banking sector for the first time, as ROA for the period under review increased from 0.8 percent to 1.6 percent. Similarly, ROE surged to a healthy 16.5 percent from 5.2 percent as of Dec-10 (Table 4.3).

The efficiency of IBIs' use of resources also improved with operating expenses to gross income ratio decreasing to 62.3% during the first half of 2011 as compared to 71.8 percent during the same period of 2010. This improvement was primarily due to increase in return earned on financing and investment rather than reduced operating expenses.

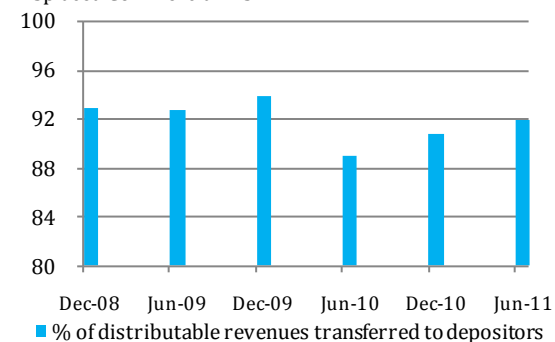
*...but displaced commercial risk remains significant*

In theory, PLS depositors of IBIs are contractually obliged to share in profit and/or losses. This profit and loss sharing provision supplements the capital of IBIs by giving them an additional cushion to absorb losses. The share of IBIs (as *mudarib*) in revenues generated from funds of PLS deposits ranged from 50 percent to 85 percent. However, instead of sharing profits and losses according to the contract, whenever the profits/revenues fall short of the market rates, IBIs make good of the shortfall by foregoing (part of) their own share of profits to match the returns of PLS depositors with the market rates. During the last two years, IBIs have distributed about 90% of the revenues generated from the funds of PLS depositors, and this trend continues despite improved profitability during H1-CY11 (Figure 4.9). IBIs have continued this practice under the (possibly flawed<sup>49</sup>) assumption that doing so would dissuade depositors from withdrawing deposits.

However, by doing so, IBIs shift the risks from the PLS depositors to the shareholders of the bank and also deprive themselves as also the current account holders from the

**Figure 4.9**

Displaced Commercial Risk



<sup>49</sup> Literature suggests that depositors of Islamic Banks are not necessarily in 'search of yield' and their decision to withdraw deposit may be less sensitive to profit rates on deposits. For details please refer to Gerrard, P. and J. B. Cunningham (1997). "Islamic banking: a study in Singapore." International Journal of Bank Marketing, and Khan, A. K. (2010). "God, Government and Outsiders: The Influence of Religious Beliefs on Depositor Behavior in an Emerging Market". Cambridge MA, Harvard.

additional layer of cushion available to absorb losses. Banks in Pakistan are presently not maintaining either Profit Equalization Reserve (PER) or Investment Risk Reserve(IRR)<sup>50</sup> to mitigate displaced commercial risk.

*More transparent disclosures would help reduce judicial risk*

IBIs operate with a relatively higher legal risk as compared to conventional banks. This higher legal risk emanates from possible or presumed Shariah non-permissibility of various Islamic finance contracts. As elsewhere, there have been instances where the defaulting parties have questioned the Shariah permissibility of the contractual obligations they had agreed while obtaining the financing. IBIs can possibly reduce this risk by carefully drafting their financial contracts which not only meet the Shariah requirements but also explicitly state the rights and obligations of the parties to the contract.

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<sup>50</sup> Purpose of both PER and IRR is to smooth returns to the PLS depositors by accumulating these reserves during periods of higher profitability and drawing down from these reserves during periods of lower profitability. PER is created by IBIs out of the income *before* allocating their own share in profits as mudarib's fee. PER thus belongs to both equity holders and PLS depositors. IRR is created by IBIs out of the income *after* allocating their own share in profits as mudarib's fee. Thus these reserves belong solely to the PLS depositors.



## Box 4.1

### Credit Risk in Conventional and Islamic Banking<sup>51</sup>

Islamic banking is one of the fastest growing parts of the financial sector. Islamic banks maintained strong growth in assets in the midst of financial crisis as well, growing at more than double the pace of conventional banks on average during 2007-09 (*IMF* report by Hasan and Dridi (2010)).

Despite the fast growth of Islamic banking and the imperative claims made about the built-in protection against excessive risk-taking by financial institutions, no research so far has investigated the default rate of individual conventional versus Islamic loans<sup>52</sup>. This lack of evidence arises out of steep identification challenges and corresponding data requirements; we aim to fill this gap by a detailed and systematic analysis of the default rates of conventional versus Islamic loans in Pakistan.

We find robust evidence that Islamic loans are less likely to default. This effect is not only statistically significant, but also economically relevant. The hazard rate on Islamic loans is on average less than half the hazard rate on conventional loans.

The elimination of interest in all its forms or *Riba* in Islamic banking, and the resultant structuring of Islamic loans into, among others, deferred-sale and lease-like contracts, may provide only a partial explanation for this robust finding. We cannot exclude the possibility that borrowers may also feel a more acute conflict with their individual religious beliefs or those of their fellow believers when defaulting on an Islamic loan.

#### Data and Identification Strategy

We analyze loan level data obtained from the Consumer Protection Department (CPD) of the State Bank of Pakistan that maintains the domestic credit registry, i.e., the Credit Information Bureau (CIB). The monthly available data covers all business loans outstanding in Pakistan from 2006:4 to 2008:12. Our analysis of individual loan performance commences from the point when a unique credit decision is made. We therefore focus on new loans and loans that are renewed, extended or altered during the sample period. **Table 1** provides the sample details. Within the sample period quite a few borrowers and banks have balance sheets containing both conventional and Islamic loans. **Table 2** indicates the sample composition by borrower and bank type.

We define default to occur if a debt or an installment / interest payment is overdue by 90 days. This definition of default is standard and identical for conventional and Islamic loans. Later on, we confirm the robustness of our findings if we define default to occur if loans payments are overdue for 180 days rather than 90 days.

We use duration model as the main estimation methodology. The hazard function in duration analysis provides a suitable method for summarizing the relationship between the time to default and the likelihood of default. The hazard rate has an intuitive interpretation as per-period probability of loan default provided the loan “survives” up to that period. For robustness, we also employ (dynamic) logit model.

**Table 1: Sample Composition**

Variable	Number of Obs.	Unit
All new loans granted	1,238,574	loan - months
<i>Minus</i> loans to non-corporates <sup>1</sup>	363,221	loan - months
<i>Minus</i> micro, special and non-bank loans	252,047	loan - months
Sample loans observed each month	603,677	loan - months
<i>Conventional</i>	571,478	loan - months
<i>Islamic</i>	32,199	loan - months
Loans	152,730	loans
Borrowers	22,723	borrowers
Banks	40	banks

<sup>1</sup>Loans to financial intermediaries, public sector enterprises, local, provincial or federal governments, and other autonomous bodies

<sup>2</sup>Loans smaller than Rs. 50,000, loans larger than Rs. 419,000,000, and loans granted by financial institutions that are not registered as banks.

**Table 2: Samples for borrowers and banks by loan types**

Loans observed each month	Granted by banks that offer loans that are			Totals
	Only conventional	Conventional and Islamic	Only Islamic	
Obtained by borrowers with loans that are				
Only conventional	172,120	331,675	-	503,795
Conventional and Islamic	37,755	44,946	8,307	91,008
Only Islamic	-	2,028	6,846	8,874
<b>Totals</b>	<b>209,875</b>	<b>378,649</b>	<b>15,153</b>	<b>603,677</b>

<sup>51</sup> This section is gleaned from Baele, Lieven; Farooq, Moazzam; and Ongena, Steven, “Of Religion and Redemption: Evidence from Default on Islamic Loans” (October 1, 2010). CentER Discussion Paper Series No. 2010-136; European Banking Center Discussion Paper No. 2010-32; Center for Economic Policy Research (CEPR) Discussion Paper No. 8504. Available at SSRN: <http://ssrn.com/abstract=1740452>

<sup>52</sup> Scholars are often hesitant to label many of the Islamic financial products as “loans” (Kuran [2004]) or even as “Islamic” We henceforth employ the term “Islamic loan”, for ease of writing.

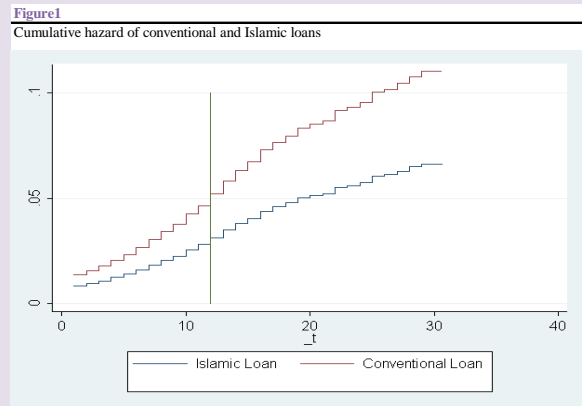
## Empirical Results

The results show that hazard rate is substantially lower for an Islamic than for a conventional loan. This effect is robust to many additional controls, including borrower, bank, and borrower\*bank fixed effects and is economically large. The coefficient in our baseline specification implies that the hazard rate of an Islamic loan is only 2/3<sup>rd</sup> of the hazard rate on a conventional loan. Moreover, Islamic loans granted by Islamic banks have a lower hazard rate. Borrower, loan and/or bank characteristics that differ between conventional and Islamic loans may be responsible for the estimated difference in the hazard rates. Therefore, we also systematically investigate each of these possible sources of variation.

### *Differences between Borrowers that Obtain Conventional and Islamic Loans?*

We control for borrower size, region, and industry, yet these controls may not capture all borrower heterogeneity. We therefore include borrower fixed effects to capture all time-invariant unobservable and observable borrower heterogeneity. The results show that the same borrower is more likely to default on a conventional loan than on an Islamic loan. We more closely assess the economic relevancy of our findings for a one-year (median), collateralized, cash loan that is not for export or agricultural purposes, or granted by a government, specialized, foreign or large bank. **Figure 1** displays the resulting schedule of the cumulative hazard of conventional and Islamic loans. After one, the difference in the cumulative hazard is already more than 2

percent. This first-year cumulative hazard rate on conventional loans equals 5.2 percent, not uncommon for loans in a developing economy, while the first-year cumulative hazard rate for Islamic loans equals 3.1 percent, more equal to the default rates on loans commonly observed in developed economies.



### *Differences in the Loan Contracts?*

Despite the controls for the several loan characteristics, it is still possible that differences in loan contract characteristics between conventional and Islamic loans would explain the difference in hazard rates. We use a set of specifications to address this concern. We start by excluding the non-cash facilities that may differ more between conventional and Islamic loans in other loan characteristics. We re-estimate all duration models and our results are almost unaffected. Our data set does not include loan seniority we therefore include a proxy variable for *Seniority of Charge* that equals one if the loan is the only one outstanding, and equals zero otherwise. The coefficient on this new variable is insignificant, while the coefficient on Islamic Loan is unaffected.

We employ a battery of tests by including a coarse measure of *durability* of financed asset, by adding loan rate (*Interest Rate*) to account for time-varying borrower heterogeneity that is also unobservable to us but that may be observable to the lending bank, by excluding *Musharakah* and *Mudarabah* contracts (both types are more similar to equity financing than to conventional bank credit, and by redefining default to occur only after 180-days instead of 90 days. Our main results remain unaffected for all alternative specifications.

In sum, it does not seem to be the case that only differences in loan contract characteristics between conventional and Islamic loans can explain their difference in hazard rates.

### *Differences in the Banks that Grant the Conventional and Islamic Loans?*

While we do correct for bank type, controlling for (time-invariant) bank fixed effects may be important, as default rates may be due to bank-specific clientele effects, risk-taking incentives, and/or screening and monitoring technology.

We therefore include bank fixed effects in a variety of models estimated on the set of loans that are issued only by banks that offer both conventional and Islamic loans. We find robust evidence that hazard rate on Islamic loans is lower than those on conventional loans for those banks that give both types of loans.

One possible explanation for this lower default could reside in the penalties banks charge in case of default these

penalties flow to the bank in case of non-performance on a conventional loan and to a charity in case of an Islamic loan. In case banks would set penalties optimally they would set the penalties on conventional loans lower than on Islamic loans, especially for borrowers that mix loan types and that are of an intermediate credit quality. Yet, we do not think differential penalties are the explanation here. First, anecdotal evidence suggests that banks may actually set the penalties on conventional and Islamic loans equal to each other. Second, when introducing in a variety of specifications the interactions of the Islamic loan dummy with – as a proxy for borrower quality – the observed loan rate and the rate squared, the estimated coefficients on the interaction terms are statistically insignificant but are actually pointing in an opposite direction (i.e., for intermediate loan rate borrowers the difference in the hazard rate between conventional and Islamic loan is minimal not maximal as we would expect if penalties are set optimally).

#### *Borrower, Bank or Loan Characteristics? Or Religion?*

One possible explanation for these robust findings is that borrowers may choose not to default on Islamic loans because of their individual religious beliefs. As argued before, the motivation to take the Islamic loan may also discourage the borrower from defaulting on it.

To assess this, we add two variables that capture whether borrowers (that have both type of loans) during the sample period switch to Islamic or to conventional borrowing, i.e., whether during the sample period conventional loans were obtained first or later than Islamic loans. Those borrowers that switch to Islamic borrowing may be, given the recency of their decision, even more motivated not to default on their Islamic loans.

For this exercise the start of the sample period presents a severe left-censoring problem, i.e., we cannot observe those loans that are no longer outstanding. Though not statistically different, the estimates suggest that individual motivation may play a role. Those borrowers that only recently turned to Islamic loans are even less likely to default on their Islamic loans than those that switched to conventional loans.

To establish beyond any doubt that religious beliefs matter for loan default one would need an objective measurement of religiosity for each individual borrower. As far as we are aware no existing research has had access to such a measure,<sup>53</sup> and neither do we. We therefore introduce a number of specifications that are a first step in identifying whether religion in this setting matters for loan default.

First, we introduce a variable *Ramadan* that equals one if the month is in the Ramadan period and equals zero otherwise. If either (1) the local network effect of religious activity, and/or (2) the identification of the borrower with Islamic tenets, plays a role in explaining the lower hazard rate on Islamic loans, one would expect this differential between conventional and Islamic loans to widen during the holy Muslim month. The estimated coefficient on the interaction between Islamic loan and Ramadan is indeed negative and sizeable, implying that during Ramadan months default on Islamic loans drops by more than half.

In case the network effect of religious activity plays a role, the location of the borrower/bank may matter. In rural areas (and small towns) there may be more inherent social pressure to repay and more informal help from family and friends in case a borrower faces financial difficulties, and religious affiliation and practice may provide few or no extra network benefits. The distinction between religious and other political parties in small towns may also be less acute than in big cities because rural dwellers may in general be more religious. We, therefore, introduce a dummy variable *Big City* that equals one if borrower is located in a city with more than one million inhabitants and equals zero otherwise. To measure local religious fervency we rely on a variable *Share Religious Political Parties*, which equals the percentage of total votes obtained for National Assembly seats by the coalition of six religious-political parties in the General Elections of 2002 in the district where the borrower is located.<sup>54</sup>

The estimated coefficients suggest that in big cities: (1) the loan hazard rate is on average almost 50 percent higher than in rural areas or smaller cities; (2) Islamic loans are relatively more likely to default than in rural areas and (3) Islamic loans are relatively less likely to default loans if the share of religious parties grows while this is not the case in rural areas.

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<sup>53</sup> Al-Azzam, Hill et al. (2011) find that the repayment delay on 160 *group* loans in Jordan is negatively affected by the percentage of group members who pray five times a day. More broadly Guiso, Sapienza et al. (2011) document that homeowners that find it “*morally wrong* to walk away” are less likely to say that they are willing to default when the value of their home equity falls below a certain threshold even if they can afford to pay the monthly mortgage costs.

<sup>54</sup> We use the poll results from the 2002 General Election because 5 of the 6 religious-political parties boycotted the 2008 edition.

This evidence suggests that difference in loan performance of conventional and Islamic loans, especially among urban dwellers that in general may be less pious, may be explained by the network effect of religious activity.

In robustness we replace the Share of Religious Political Parties with *Religious School Enrollment* we glean from Andrabi, Das et al. (2006). They define this variable as the number of children enrolled in religious schools as a percentage of total school enrollments in each district. Results again suggest that network effects of religion play a role in determining the differential probability of conventional and Islamic loan repayment, though now the effect is more muted in big cities than in rural areas. Possibly the increased possibilities for pupils to commute in big cities may weaken the correspondence between this measure of local religiosity and the differential in hazard rates.

In a recent study, Pepinsky (2010) argues that the demand for Islamic banking products is determined more by a quest by individuals to claim or maintain a Muslim identity, rather than by religiosity itself. The need for identification tends to be stronger for middle-class borrowers, who are more vulnerable to social dislocation problems induced by modernization and globalization, especially when located in a big city. We hypothesize that in particular these middle-class borrowers that look to strengthen their Muslim identity not only demand more Islamic banking products but also have a lower propensity to default on them, especially in big cities.

To test this conjecture, we introduce a variable *Share of Post-Natal Private Care* which equals the percentage of women that used private (and not public) hospitals or clinics for their post-natal care in the district of the borrower captures the local consumption of a luxury good by the middle class. The estimated coefficient on the triple interaction term suggests that in big cities Islamic loans are less likely to default than conventional loans if the share of post-natal private care grows.

In sum, the reported estimated correlations suggest that in addition to borrower, loan and/or bank loan characteristics, also religion may play some role in determining the differential repayment performance of conventional and Islamic loans, through individual piousness, network effects and maybe also group identification.

### **Conclusions**

The hazard rate on Islamic loans is less than half the hazard rate on conventional loans, across many duration models we estimate using a comprehensive monthly dataset from Pakistan that follows more than 150,000 loans over the period 2006:04 to 2008:12. During Ramadan and in big cities where religious parties poll well Islamic loans default less likely, suggesting that religious motivation may partly determine the differential loan default rates.

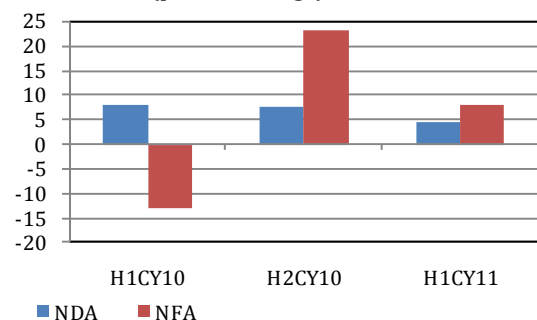
It is important to notice that this study does not aim to address the broader question if conventional or Islamic finance is “better” from either the borrower’s, bank’s or even society’s perspective. Nor does our study imply that similar effects could not be present among adherents to other religions or value systems. But studying the default rates on individual conventional and Islamic loans is a first and necessary step, however, in understanding how the specific arrangements in Islamic finance may, or may not, determine borrower loan repayment. The study, however, suggests that financial inclusion of different faith based groups can be beneficial not only from societal but also from financial stability point of view. Moreover, conventional banks may learn important lessons and adopt some screening and operational technology employed by Islamic banks that may improve screening and monitoring of borrowers. Some of such practices are following. The provision that Islamic banks must give away penalty charged on delinquent loans to charity may force them to exercise more caution when assessing marginal borrowers. Similarly PLS provisions may provide incentives to Islamic banks for better monitoring of their clients and more engagement in the business process of customers may enhance the ability of Islamic banks to better monitor their borrowers.

The domestic financial markets continued to effectively perform its functions during the half year under review. Notwithstanding bouts of mild strain in the market liquidity, stress was largely contained by the favorable developments in the NFA. Healthy inflows on the back of workers' remittances and price-led export earnings kept the value of domestic currency almost stable, in addition to buffeting banks' deposits and liquidity profiles and build up of central bank reserves. In the money market, the yield curve flattened during H1-CY11 as the short-term rates inched up with a subsequent decline in the longer term maturities. The capital market managed to post a marginal growth of 4 percent during the half year under review. However, the trading volumes and activities in the corporate debt market largely remained low. Finally, derivatives market experienced contraction, FX options in particular, as overall number of derivative contracts and outstanding amount dropped by 44 percent and 13.4 percent respectively. Cross currency swaps continued to dominate the derivatives business, followed by foreign currency denominated interest rate swaps.

*Favorable developments in the external sector kept domestic markets generally stable*

**Figure 5.1**

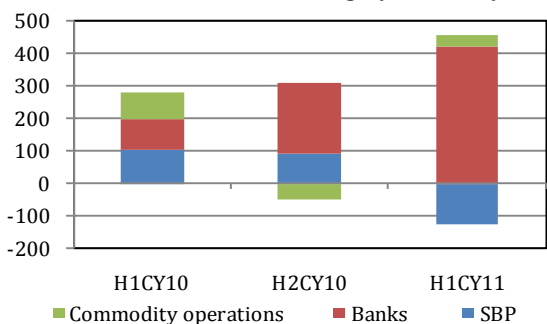
Trends in M2 (percent change)



Stress to the liquidity profile of the financial markets – mainly imposed on account of rising government’s borrowing needs was largely contained by 8 percent improvements in the NFA – Net Foreign Assets and the excess liquidity held by the commercial banks in H1-CY11 (Figure 5.1). Factors such as favorable movements of export prices coupled with robust growth in remittances improved the overall external balance as well as the deposit base of the banking system. Furthermore, the central bank’s purchases of foreign currency from the open market to ensure stability of the exchange rate also injected liquidity in the markets, apart from buildup of reserves.

**Figure 5.2**

Pattern of Government Borrowings (Rs. billions)



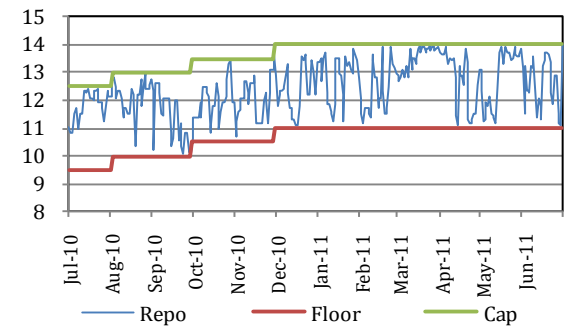
On the other hand, NDA – Net Domestic Assets also witnessed a growth of 4.5 percent on account of government borrowings. With the initiation of phased retirement of central bank debt in H1-CY11, the government has been increasingly relying on the banking sector to finance its budgetary deficit (Figure 5.2).

*Short-term market rates remained somewhat volatile as banks become highly collateralized.*

The money market in H1-CY11 witnessed a rather volatile liquidity condition mainly due to a surge in the short-term funding needs of the government and the subsequent constant rollover requirements. With a rise of 16.3 percent in first half of CY11 in the deposits, banks found prevailing money market scenario attractive enough to earn easy money by investing in

**Figure 5.3**

Trend of overnight Repo Rates (percent)

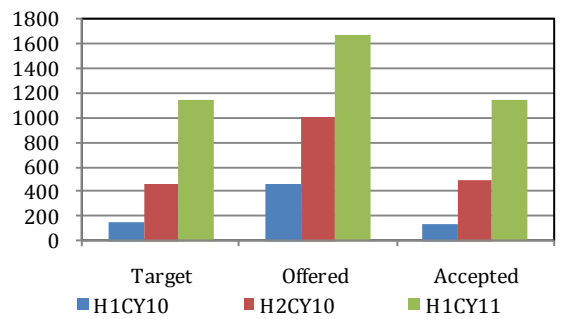


short-term government papers and thus creating pressure on short-term supply of funds.

In addition, the improvements in the inflation outlook that provided a strong rationale to keep the monetary policy stance unchanged throughout H1-CY11 period and the prevailing interest rate corridor, the overnight repo rates – a measure of short-term market liquidity reflected a higher volatility in H1-CY11. The average repo rates remained 12.84 percent in the period under consideration – higher than the 11.94 percent in H2-CY10, while the average spread between repo rate and the cap (discount rate) reduced from 131bps to 115 bps in H1-CY11 (*Figure 5.3*).

**Figure 5.4**

Profile of T-bill Auctions (Rs. billion)

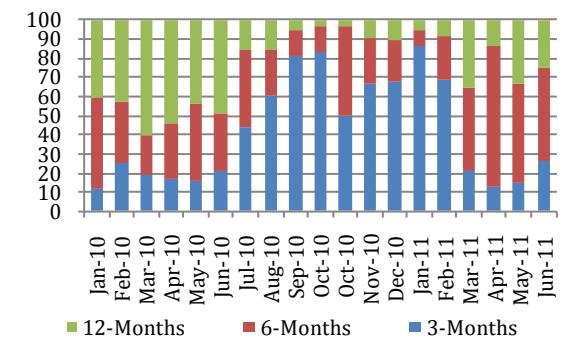


*T-bills continue to cater to the growing government borrowings*

The increased reliance on the banking channel to fund short-term government needs gathered considerable momentum in H1-CY11. The short-term debt instrument, the T-bill has been used by the government in a planned manner. The amount targeted in T-bills auctions has witnessed a considerable growth over the period as the government deficit widened and the lags in revenue generation tends to broaden as reflected by a surge in the target amounts (*Figure 5.4*). Similarly, the offered amount reflecting the banks and other market players' interest in investing this risk free and profitable source that also improves the maturity profile of its assets has also improved considerably in H1-CY11.

**Figure 5.5**

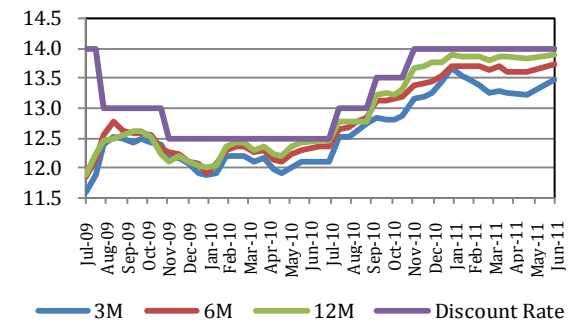
T-Bill Tenure offered (percent share)



The holding of monetary policy stance in H1-CY11 and stable outlook for inflation has altogether changed the tenure distribution of the T-bills offered (*Figure 5.5*). The reversal in the distribution with 6M and 12M T-bills representing almost 42 and 20 percent of offerings in H1-CY11 as against 25 and 9 percent respectively in H2-CY10 signifies the stance of the banks' positions as the market perceived further monetary easing.

**Figure 5.6**

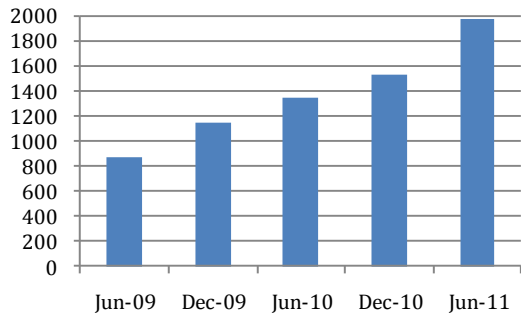
T-Bill Cut-off rates (percent)



In line with the stable discount rate that prevailed throughout H1-CY11, the T-bill cut off rates also maintained the same trend throughout the period. Since the cut-off rates cannot go beyond the discount rate as it leads to arbitrage opportunities, the spreads between cut-off rates and the discount rate highlights the banks' preferences of investing in different tenures. For instance, the 3M rates that have showed a marginal decline in May-11 as banks preferred to invest in

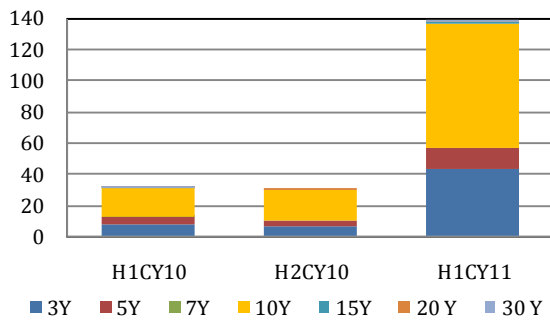
**Figure 5.7**

Stock of T-bills outstanding (Rs. billion)



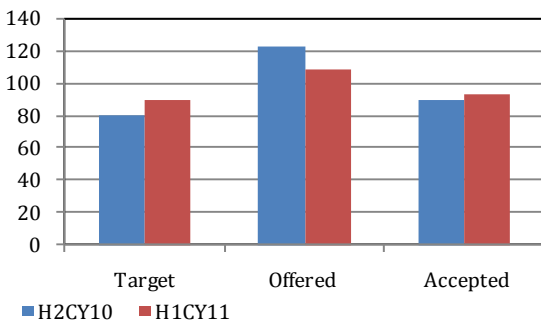
**Figure 5.8**

Accepted PIB Auction Profile (Rs. billion)



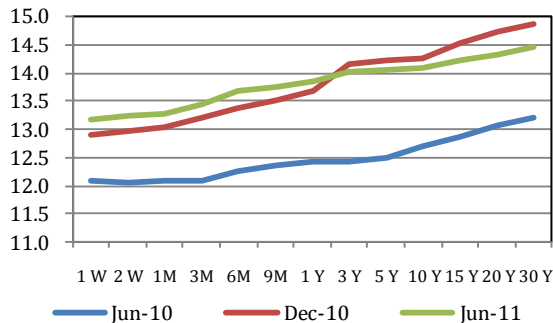
**Figure 5.9**

Auction Profile of Ijara Sukuk (Rs. billion )



**Figure 5.10**

Yield Curve (percent)



longer term that resulted in the 6M and 12M rates to inch up closer to the discount rate (Figure 5.6).

While the government solely relied on money market instruments to fund its finances in H1-CY11, the consistent strain on government expenditures on account of governance issues coupled with huge cost of natural calamities and circular debt has amplified the stock of government debt and similarly the outstanding stocks of T-bills (Figure 5.7). During H1-CY11 alone, the stock grew by 28.1 percent as against 14.1 percent in H2-CY10. The rising stock, while generating income for the banks, also exposes them to a sharp cut in discount rate in future. From the macroeconomic perspectives, it limits the availability of funds to the private sector.

*Activity in PIB market revived on attraction of higher returns*

In addition to the T-bills, the government also borrowed heavily from the auction of long-term money market instruments, PIBs – Pakistan Investment Bonds (Figure 5.8). Investing in long term maturing assets has considerably improved in H1-CY11 by an overwhelming 345 percent in H1-CY11 as high returns are offered by the government. The YTM (Yield to maturity) also improved by 141bps YoY to 14.1 percent in Jun-11 and as the market expects further monetary easing during H2-CY11, the PIBs are expected to book capital gains for the investors. Tenure wise, the subscription pattern for 3 year (3Y) and 10 year (10Y) bonds dominated with the share of 31 and 58 percent respectively following the historical pattern. Whereas, the longer term maturities, 20Y and 30Y only attracted 1.6 percent share each. It is expected that with further monetary easing and some revival of the economy, the higher term maturing assets will attract considerable demand.

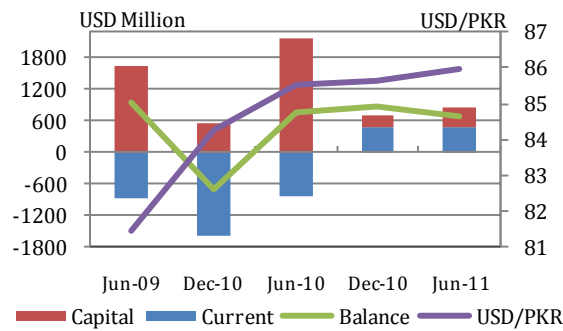
In addition to the PIBs in the primary market, the government also raised funds from Ijara sukuk. In H1-CY11, two sukuk auctions raised 93.3 billion rupees – a marginal growth of 4.8 percent on half yearly basis (Figure 5.9). The issuance of sukuk not only provided government an avenue of generating funds but also contributed towards supplying a shariah based investment instruments for the Islamic banks.

*Higher government borrowings flattens the yield curve*

The frequent episodes of monetary tightening throughout H2-CY10 led to an upward movement in the yield curve. However, with the stable monetary stance prevailing since Dec-10 coupled with an increase in demand for short-term debt

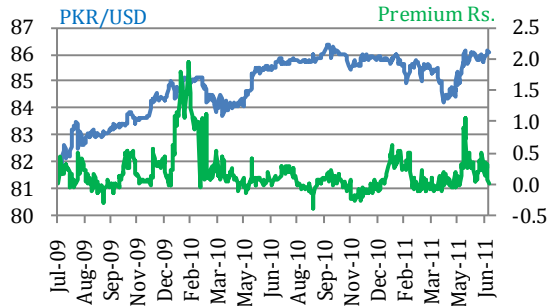
**Figure 5.11**

Developments in External Account



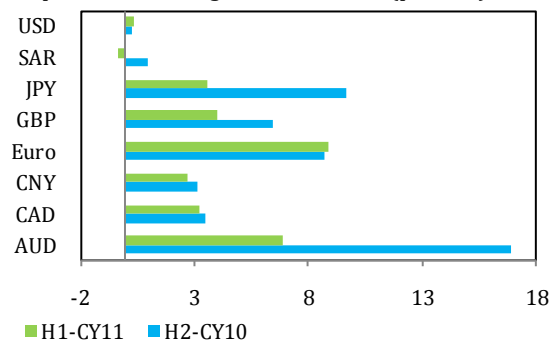
**Figure 5.12**

KERB Market Premium



**Figure 5.13**

Rupee Movement against Currencies (percent)



instruments has flattened the yield curve (Figure 5.10). Further, the interest rates on longer term securities have dropped in anticipation of further monetary easing in H2-CY11.

### Foreign Exchange Market

*Strong external inflows kept value of local currency largely stable*

The improvements in the external account, mostly influenced by rising export prices and stellar inflows of workers' remittances through the banking channel eased some pressure on the value of domestic currency, which was experiencing increased stress and volatility in H1-CY11 on account of sluggish macroeconomic performance. The value of the domestic currency against the dollar depreciated by a marginal 0.35 percent or 23 paise in the period under consideration as against 0.29 percent or 25 paise in the H2-CY10 (Figure 5.11).

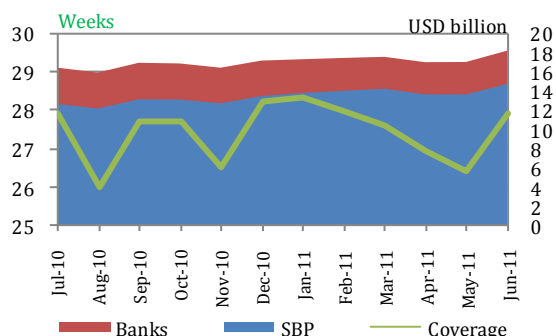
Along with the exchange rate (PKR/USD) depreciation in the period under consideration, there has also been greater volatility compared to H2-CY10. Episodes of unexpected KERB (open) market movements in both directions were witnessed. An appreciation of exchange rate by 100 paisas in the first half of April-2011 as the central bank allowed export refinance in other leading currencies. Similarly, a steep depreciation that prevailed through most of May-2011 that depleted the value of domestic currency by 240 paisas on account of panic in the market had an effect on the KERB market premium (difference between interbank and KERB markets). The premium increased to an average of 0.18 paisas in H1-CY11 as against a meager 0.02 paisas in H2-CY10 (Figure 5.12).

While comparing the domestic rupee with a set of leading international currencies, the rupee generally witnessed a relatively lower depreciation in H1-CY11 as compared to H2-CY10 (Figure 5.13). However, in case of Euro, rupee fell by 8.9 percent as against 8.7 percent during H1-CY11. On the other hand, PKR did appreciate against Saudi Riyal (SAR) by 0.9 percent in H1-CY11. Perhaps, it has been the US Dollar (USD) against whom the rupee witnessed the least depreciation as USD was itself depreciating against other currencies in the same period.



**Figure 5.14**

**Foreign Exchange Reserves and Import Coverage**

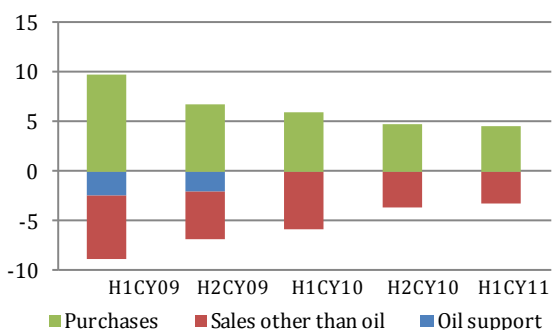


*Foreign exchange reserves reached at the highest level .....*

Favorable developments in the external account in H1-CY11 also lent a boost to the foreign exchange reserves of the country by US 1 billion in H1-CY11 to a reserve of US 18.2 billion. The reserves held by the central bank (SBP) grew by 9.2 percent as against 6.4 percent during H1-CY11. However, the foreign exchange (FE) deposits held by the commercial banks accounting for almost 20 percent in total reserves faced a decline on account of large withdrawals in Jan-11 and Mar-11 period. In particular, FE deposits declined by 6.1 percent in H1-CY11 as against a decline of 2.2 percent in H2-CY10.

**Figure 5.15**

**SBP FX Market Interventions (USD billion)**



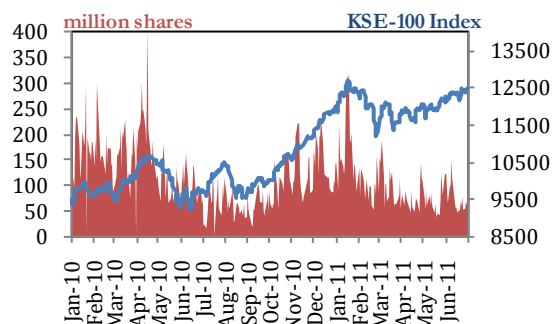
*..... putting import coverage ratio at comfortable levels*

With the buildup of reserves, the import coverage ratio also maintained comfortable levels of 27.6 week of imports throughout H1-CY11 (Figure 5.14). A higher import coverage ratio is desirable as it eases foreign exchange markets pressures and thus limits volatility of the currency.

In addition to the workers' remittances and export earnings, the foreign exchange reserves were also supported central bank's large purchases from the market (Figure 5.15). The purchases were also aimed to keep the open market rate at desirable levels.

**Figure 5.16**

**KSE-100 Index and Trading Volumes**



**Capital Market<sup>55</sup>**

*Equity market managed to retain its upward momentum amid high volatility*

Stress in the domestic capital markets tend to ease marginally despite the continuous deterioration in the macroeconomic outlook and rising geo-political turmoil both internal and external. In the equity markets, the benchmark KSE-100 index gained by 4 percent or 473 points in the first half of CY11 mainly due to improvements in the market liquidity as the much anticipated margin trading facility was launched in March 2011

<sup>55</sup> Pakistan has three stock exchanges. However, the Karachi Stock Exchange (KSE) remains the largest accounting for almost 70 percent of trading volumes, listings and market capitalization. It is therefore the analysis pertains to the developments in the KSE.

(Figure 5.16). However, the possible down-grading of the country's ratings on account of rising fiscal deficit and issues in the imposition of capital value tax (CVT) on the stock market transactions kept the index volatile more profoundly in Jan-March period.

Similarly, the trading volumes sharply reduced over period, in particular during the second quarter of CY11 on account of outstanding economic problems like persistently high inflation and decline in industrial productivity with consequent drop in corporate earnings and payouts. This further exacerbated the volatility in the index and led to a reduction in the flow of net foreign investment from USD 249 millions in H1-CY10 to merely USD 45 millions in H1-CY11 in the equity market.

#### *KSE performed in line with that of emerging markets*

The domestic equity market index (KSE-100) exhibited a trend similar to other emerging markets as measured by MSCI (Table 5.1)<sup>56</sup>. During CY2010, KSE witnessed a robust growth of 20.89 percent, significantly better than China, though it fell short of growth registered by emerging markets' average. However, H1-CY11 proved a slack period for the emerging markets on account of rising inflation expectations and tight monetary stance from their respective central banks in the emerging economies. However, the markets in advanced economies showed a moderate growth despite rising unsustainable debt levels and growing sovereign and contagion risks.

#### *SCRA flows remained low and volatile<sup>57</sup>*

With the growing risk of another financial turmoil in advanced economies and the sluggish recovery in post-flood scenario that aggravated domestic macroeconomic conditions, and a difficult political environment restricted the foreign interest and the KSE only managed to attract a net of USD 45 millions in H1-CY11 (Figure 5.17). It was in sharp contrast with H1-CY10 that saw a net SCRA investment of USD 249 millions.

Over the years, the KSE has been successful in attracting foreign portfolio investment as it has been offering a higher forward earning yield in comparison to regional markets<sup>58</sup>. The KSE

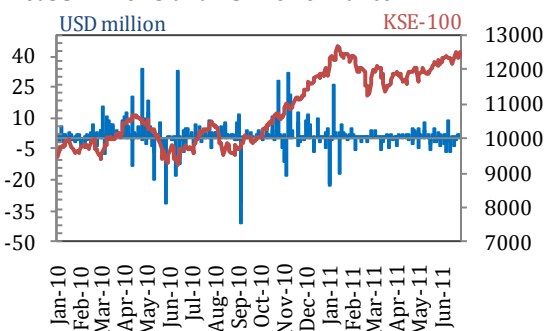
**Table 5.1**

MSCI Index (Growth Rates)			
	CY 2010	FY 2011	H1-2011
Pakistan	20.89	20.53	-0.21
Indonesia	28.59	28.72	11.47
Thailand	59.27	38.84	0.29
India	26.11	6.60	-9.14
China	11.99	9.94	-0.80
Malaysia	33.76	30.83	6.55
Brazil	16.58	19.96	-3.43
EM-Asia	24.09	23.07	0.38
EM-BRIC	15.96	16.46	-1.90
Emerging	23.33	24.86	-0.45
U.K	10.55	29.72	3.54
U.S	17.41	28.91	5.17
Euro	0.89	33.78	9.97
World	14.34	27.84	3.99

Source: Bloomberg

**Figure 5.17**

Net SCRA Flows and KSE Performance



<sup>56</sup> The MSCI (Morgan Stanley Capital International) index calculates the market indices for leading equity markets of developed and developing countries. It is considered as a standard benchmark for comparing the performance of stock markets over a period of time.

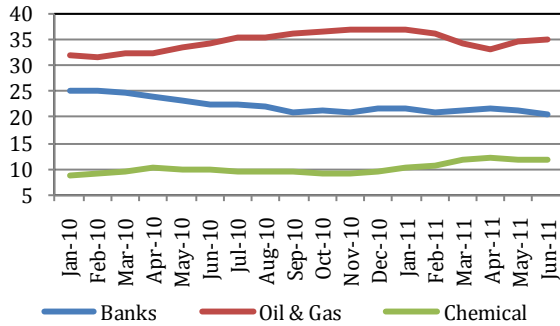
<sup>57</sup> SCRA (Special Convertible Rupee Account)

witnessed a net flow of USD 435 million in CY10 which provided impetus to the KSE specifically in the second half of CY10 coupled with the favorable developments in corporate profitability and expectations of a leveraged product to be implemented in the market.

*Growth in KSE is highly concentrated in a few sectors*

**Figure 5.18**

Sector-Wise Performance of KSE (percent)



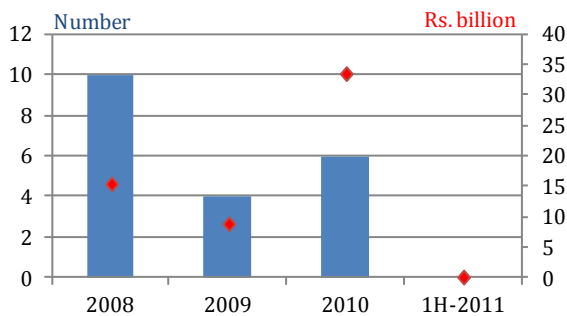
The growth in the KSE-100 index has been highly concentrated in a few leading sectors like Banks, Chemicals, and Oil & Gas. The banking sector capitalization has declined during FY 11 (Figure 5.18) as performance of most of the listed banks was severely affected by higher provisioning. Further, the inability to meet capital requirements by a number of banks and the expectations of higher losses in future also depressed the banking sector capitalization. The banks also found it hard to generate additional equity from the market as they had to issue shares largely at a discount. This led to underperformance of stocks of even otherwise profitable banks.

On the other hand, market capitalization in the oil & gas sector has surged largely on the back of movements in international oil prices. While higher oil prices aggravate the economic activity, it helps share prices of oil exploration and marketing companies. Investors perceive rising oil prices as greater profitability for oil exploration and marketing companies which in turn lead to higher payouts.

*New equity listings came to a halt...*

**Figure 5.19**

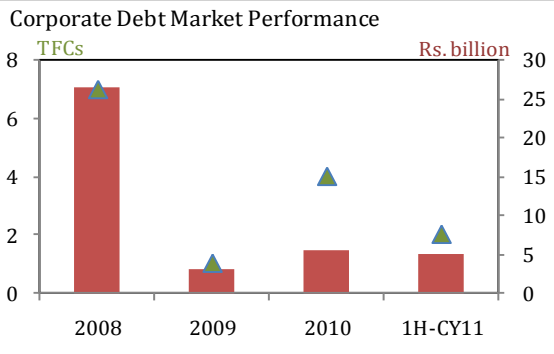
Equity Listings in KSE



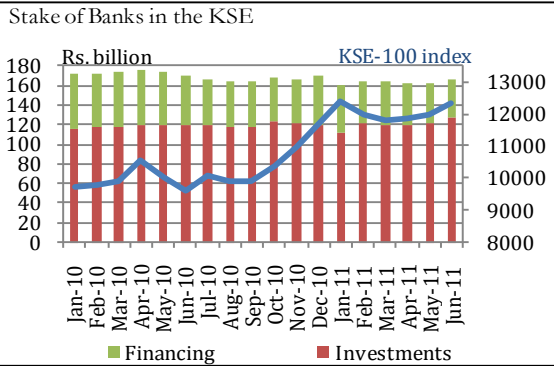
In addition to low turnover and concentration in a few leading scrips, the KSE did not witness any new listing in H1-CY11 (Figure 5.19). With both the private sector credit and LSM index registering a contraction of 0.8 and 0.1 percent respectively in H1-CY11 the prevailing fragile macroeconomic stance and frequent social disorder led the investors to shun away from new listings. Similarly, the underperformance of equity market in which the shares are being traded at discount is largely responsible for depressed listings. It is because the firms are not able to generate enough equity, thus reducing offer prices. From the investors' perspective, a limited market participation and preference to invest in gold and NSS has also dampened demand for stocks and aggravated the illiquidity in the equity market.

<sup>58</sup> The KSE traded at a forward (FY12) Price-equity ratio of 7x (multiples). Whereas, the regional markets traded at 12x which enables the KSE to trade at a discount of 42 percent. A higher discount indicates that shares are undervalued and there is a tendency of stock prices to increase leading to capital gain.

**Figure 5.20**



**Figure 5.21**



*...and corporate debt listings remained depressed*

During the period under review, the corporate debt market witnessed a consistently declining trend in both the listings and in the amount of listed capital. With only two listings in H1-CY11, the debt market apparently lost its attraction despite offering rather stable returns and was perceived to be less risky than the equity market in 2002-08 period.

Similar to the stock exchanges, the corporate debt market has also been severely affected by the conventional saving behavior of the households and businesses that mainly rely on risk free avenues. Moreover, limited financial literacy of the prospective investors and a strong bank dependency by the corporates has also impeded the growth of the debt market. Similarly, the recent deterioration in the macroeconomic indicators has also left its mark on the sluggish performance of the corporate debt listings. Following the pattern of last two years, H1-CY11 has also witnessed only two listing that enhanced the listed capital of the debt market by Rupees 5 billion (*Figure 5.20*)<sup>59</sup>.

*Banks' exposure in capital market remained subdued*

In a period of government's heavy reliance on borrowings from commercial banks amid dwindling external funding and dismal revenue generation, banks investment in government paper has grown considerably with a consequent fall in their stock market exposure<sup>60</sup>. The banks' exposures in the KSE in terms of financing have witnessed a declining trend since CY10 and it further lowered by 1.8 percent to Rupees 167 billion during H1-CY11 (*Figure 5.21*). However, the investments registered a larger decline by 6.8 percent in the same period

Besides the fact that banks have found a rather risk free and high yielding avenue of financing budget deficit, the rising volatility in KSE and proportional less payouts than government investments is also much to blame for not being able to attract institutional investors. Similarly, the regulatory structure of the banks also restricts their investments in the equity market<sup>61</sup>.

<sup>59</sup> Out of the two listings, one is the commercial paper issuance amounting Rupees 1,000 millions for tenure of six months.

<sup>60</sup> Banks' capital market exposures are the sum of banks' investments and the financing against shares that are held as collateral with the bank.

<sup>61</sup> The Prudential Regulation 6 requires the banks not to exceed equity investments by more than 20 percent of its equity.

## Derivative Markets

### Derivative market continues to contract

During the first half of 2011, the overall number of derivative contracts<sup>62</sup> and outstanding amount dropped by 44 percent and 13.4 percent respectively. This decrease was particularly strong in FX option related contracts though both Interest Rate

Swaps (IRS) and Cross Currency swaps (CCS) were also down as compared to Dec-10 (*Table 5.2*). Anemic growth in credit to private sector and stable interest rate regime<sup>63</sup> somewhat dampened the demand for derivative products. The drop in derivative activity was also on account of a sizeable number of contracts maturing during the H1-CY11. Noticeably, Forward Rate Agreements (FRAs) have seen no activity since FY08 (*Figure 5.22*).

### Cross currency swaps still dominate the derivative business ...

The Stock of CCS - the most popular derivative product in domestic market dropped by 9 percent to Rs. 141 billion in June-2011 due to maturity of some contracts from telecom sector. Drop in loans from international financing agencies for capital expenditures, a key contributor in the growth of CCS, partially explains the fall in CCS during H1-CY11. However, due to a more pronounced decrease in FX options, share of CCS in total derivatives portfolio of banks further increased to 70.6 percent in June-11, from 65 percent in June-10.

Currency-wise break of CCS reveals that US Dollar and Japanese Yen were the main currencies for domestic derivative transactions, in line with key trading partners of Pakistan. On the other hand, sector-wise usage highlights that CCS have been primarily used by telecom and power sectors (*Figure 5.23*). Exposure of the telecom sector can be traced back to the period of 2003-08 when telecom companies' acquired FCY denominated loans for capital expenditure<sup>64</sup>. Most of such lending arrangements required these entities to hedge their foreign currency exposures, creating a market for CCS. However, as these contracts continued to mature, share of telecom in CCS reduced from 62% in June-09 to 57% by June-11.

### .....followed by foreign currency denominated interest rate swaps

Table 5.2

Number of Derivatives Contract					Growth
	Jun-10	Sep-10	Dec-10	Jun-11	YoY
IRS	50	43	40	37	-26.0%
FX	298	26	192	69	-76.8%
CCS	256	256	238	233	-9.0%
Total	604	325	470	339	-43.9%

Figure 5.22

Size of Derivatives Market (Rs. billion)

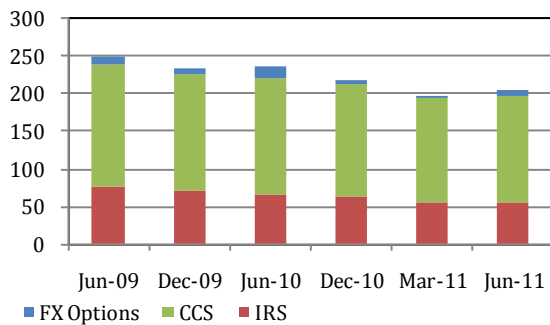
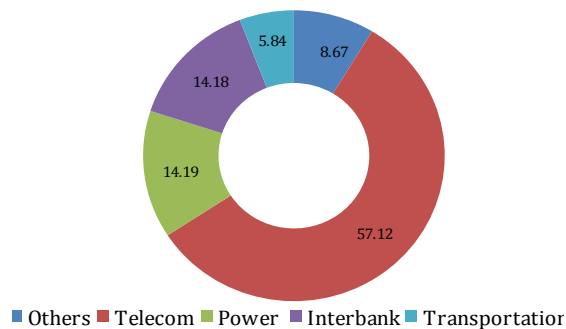


Figure 5.23

Sectorwise CCS in Jun-11 (percent)



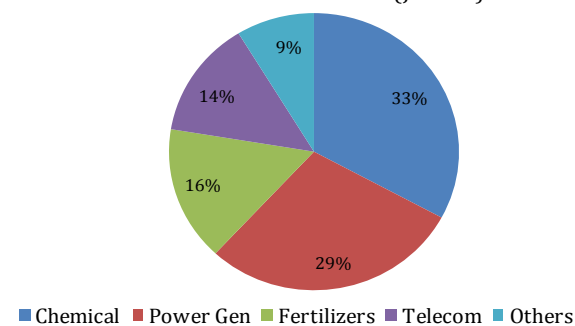
<sup>62</sup> Due to risk-sensitivity of these products, only FX options, Interest Rate Swaps and Forward Rates Agreements are allowed by SBP vide BSD Circular No 17 of 2004. On the other hand, Cross Currency Swaps (CCS) transactions are approved by SBP on case to case basis.

<sup>63</sup> SBP policy rate remained unchanged in H1-CY11 at 14 percent.

<sup>64</sup> It was a time when investment in telecom sector peaked to US\$ 4 billion.

**Figure 5.24**

Sectorwise Distribution of IRS -FCY (Jun-11)



Currency-wise breakup of IRS, the second largest component with 29% share of overall derivatives portfolio, indicates historically higher share (74.6 percent) of foreign currency denominated IRS. Majority of these contracts were executed when some of the corporate entities acquired FCY loans for fixed investment. As stipulated in their lending arrangements, most of these loans were then ought to be hedged in order to cover interest rate risk. Sector-wise distribution of FCY denominated IRS was found to be concentrated in chemical and power generation sectors (*Figure 5.24*). Whereas, for Pak rupee denominated IRS, banking and transport sector had relatively higher share.

While most of IRS deals were obligatory upon different entities, market expectations and SBP's decision to keep discount rates unchanged in H1-CY11 also led to decrease in IRS's contracts and notional principal in overall derivative portfolio.

#### *Demand from auto sector led FX options to bounce back*

FX options posted a strong growth in H1-CY11 to reach at Rs 7.5 billion after plummeting to Rs 1.3 billion in Mar-11. Decline in Mar-11 quarter was associated with maturity of contracts between a local private bank and an auto firm. By June-11, the share of automobile sector accounted for 88 percent of total FX options, denominated in Japanese Yen (*Table 5.3*).

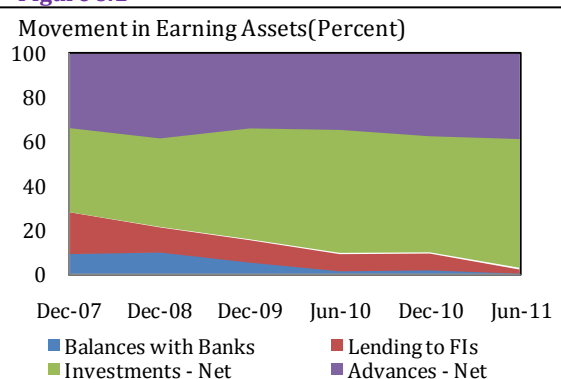
**Table 5.3**

Currency-wise Outstanding Derivatives (Rs. Billion)

	FX	IRS	CCS	Total
PKR		14.4	102.2	116.6
Euro	0.9			0.9
USD		42.3	38.4	80.7
CHF	0.0			0.0
JPY	6.6			6.6
Total	7.5	56.7	140.6	204.8

During the period under review, the asset base of the Development Finance Institutions (DFIs) managed to grow marginally. Share of advances in total assets remained intact (around 35 percent), though at significantly lower level than what DFIs' nature of business would warrant. DFIs' strong solvency ratios suggest ineffective utilization of their capital base. The leasing sector has kept on shrinking amid strong competition from the banking sector. In contrast, the mutual funds industry witnessed its revival as the money market investments improved the net assets of the industry by 24 percent in H1-CY11. Finally, the insurance industry witnessed a growth of 16.6 percent in its asset base with the life business experienced a much strong growth<sup>65</sup> (24 percent). On the contrary, the nonlife insurance has been affected by a significant drop in the consumer finance activities and a higher claims ratio, though it has managed to post reasonable profits from rising investment income.

Figure 6.1



### Development Finance Institutions (DFIs)

*Growing investment portfolio takes up lending to FIs.....*

Similar to banks, DFI's investments over the last few years have also been on a continuously rising trend and now constitute around 59 percent of their assets. Contrary to common perception, surge in investments has not crowded out the private sector credit. Rather, it is the lending to financial institutions (FIs) that has practically disappeared in the process (Figure 6.1). With ample opportunities to invest in government papers offering attractive returns, DFIs find little incentive for lending to other financial institutions.

Figure 6.2

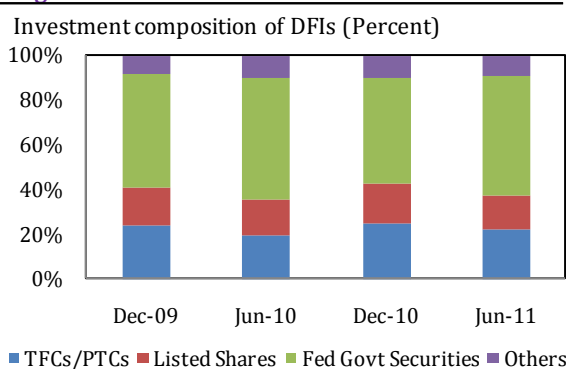


Table 6.1

### Investment by type (Share in percent)

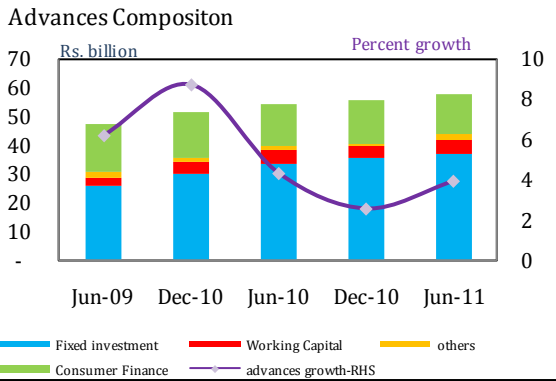
	Jun-10	Dec-10	Jun-11
HFT	5.6	1.6	4.0
AFS	82.3	85.7	75.7
HTM	5.1	5.0	13.5
S&A	7.0	7.6	6.8

During the period under review (H1-CY11), investments grew by 11.9 percent on the back of 26 percent growth in government securities, particularly the short term MTBs. Within investments, Federal Government securities constitute 54 percent of total investments, followed by 22 percent in TFCs/PTCs (Term Finance Certificates/Participating Term Finance Certificates) (Figure 6.2). With rising exposure to government papers over the period, DFIs have reduced their exposure to risky investments like listed shares, mutual funds and commercial papers, etc. While this trend of increasing investments in safe and liquid government papers augurs well for both liquidity and profitability of the DFIs in the short run, it is likely to reduce the risk management capabilities of DFIs going forward.

In terms of maturity profile, while Available-for-Sale (AFS) securities still accounts for bulk of DFIs investment portfolio, its share has declined from 85.7 percent to 75.5 percent during H1-CY11 (Table 6.1). High share of AFS securities is in line with industry's strategy of keeping the investment

<sup>65</sup> This analysis is based on published annual audited accounts of 24 private non life insurance having 88 percent share in total assets for year 2009, 6 life insurance and a reinsurance company that were available with the SBP.

**Figure 6.3**

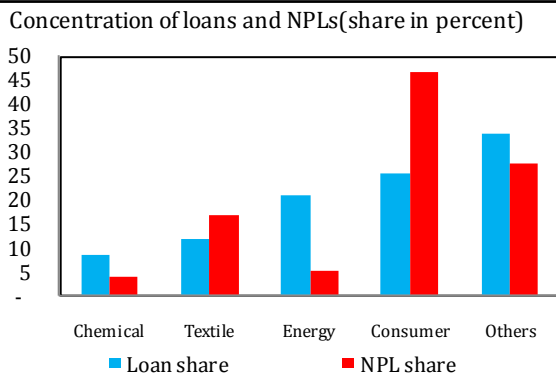


management flexible which also improves their liquidity position. On the contrary, there has been increasing trend in DFIs' Held-to-Maturity (HTMs) and Held-for-Trading (HFT) portfolio. Specifically, share of HTMs has more than doubled during the same period, suggesting DFIs' lower expectations of liquidity stress in near future.

*....but share of advances uphold, though at traditionally lower level*

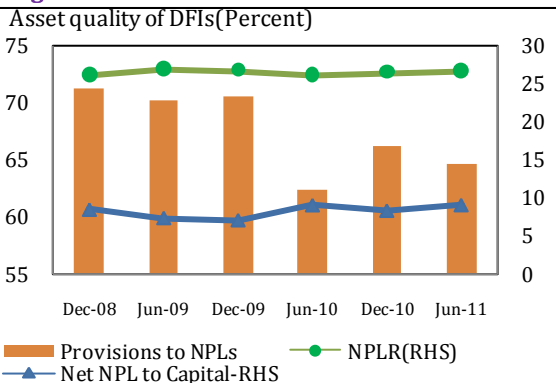
With around 35 percent share in total assets, advances have been traditionally at lower level than the nature of DFIs' business would warrant. However, rising investments in recent years have not led to a further drop in advances (Figure 6.3). During H1-CY11, advances posted a growth of 4 percent, marginally increasing the share of advances from 37.8 to 38.4 percent. However, relatively small share of advances in DFIs portfolio mix, particularly when even banks have advances around 44 percent of their assets, exhibits the reluctance of DFIs in extending private sector credit and playing an active role in project finance. Breakup of advances reveals that loans to corporate sector, which constitutes around three quarters of DFIs advances, exhibited a growth of 6.7 percent. Within corporate sector loans, around 88 percent were extended for fixed investment purpose.

**Figure 6.4**



In terms of sector wise advances, energy, textile and chemical sector accounted for around 40 percent of DFIs total advances (Figure 6.4). During H1-CY11, advances to chemical sector grew by 15 percent, followed by 11 percent growth in credit to energy sector. The consumer finance, which is the second largest segment in DFIs advances portfolio and mainly finances housing mortgage further declined from 26 percent to 24 percent during H1-CY11.

**Figure 6.5**



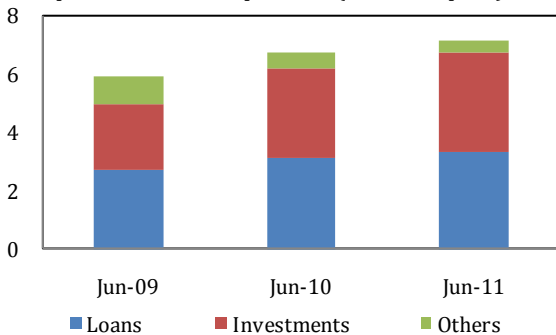
*NPLs continue to rise, though concentrated in few DFIs*

During the period under review, Non-Performing Loan Ratio (NPLR) of DFIs (excluding HBFC) increased from 18 to 19 percent, as 12 percent growth in NPLs outpaced the 7.7 percent growth in advances. Inclusion of HBFC in our analysis pushes up the NPLR of DFIs to a staggering 26.7 percent, much higher than banking industry average of 15.3 percent (Figure 6.5). Segment wise analysis of the NPLs shows that major chunk is in consumer finance category (47 percent), largely contributed by a single mortgage financing institution. Further, the coverage ratio (provisions to NPLs) has deteriorated during the period under review, from 66.2 percent to 64.7 percent as 4.4 percent growth



**Figure 6.6**

Composition of mark-up income(Billion Rupees)



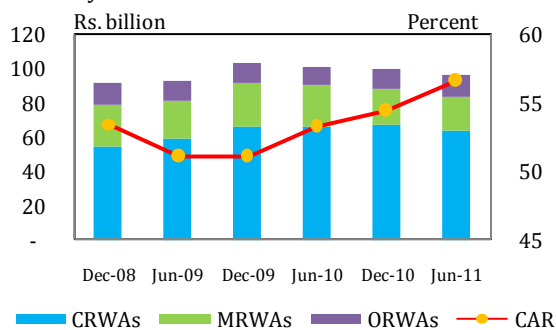
in NPLs outpaced 2 percent growth in provisions. This also led to a rise in capital impairment ratio (Net NPLs to capital) from 8.3 percent to 9.1 percent.

*Operating performance marginally weakens during H1-CY11*

During the first half of 2011, DFIs witnessed weak operating performance on YoY basis. The profit before tax of the DFIs dropped to Rs. 2 billion from 3.1 billion during the corresponding period last year, largely because of increase in loan loss provisioning. Share of interest income from advances has remained unchanged at around 46 percent in last three years while share of income from investments has grown substantially from 37.8 to 47.9 on the back of changing portfolio mix, as discussed above (Figure 6.6).

**Figure 6.7**

Solvency Profile of DFIs



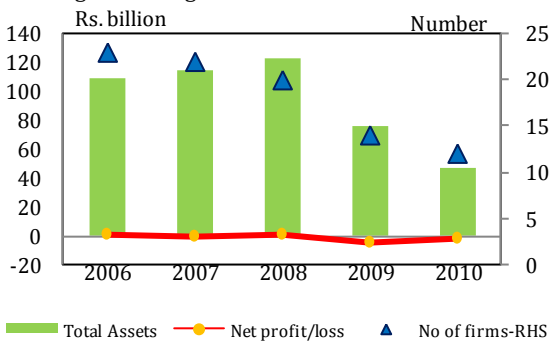
*Strong solvency indicators suggest ineffective utilization of capital*

An already strong solvency position of DFIs witnessed further improvement during H1-CY11. While the capital base marginally reduced, retained earnings alongside share of risk free assets enhanced the Capital Adequacy Ratio (CAR) of DFIs to an impressive 56.7 percent, compared with 14.1 percent for banks (Figure 6.7). The improvement was widespread as six out of eight DFIs registered a rise in their respective CARs.

Low share of credit risk weighted assets<sup>66</sup> on the back of relatively small loan book contributes towards this significantly high CAR of DFIs compared to banks. It also indicates the selective business activities of DFIs with fairly limited risk taking, suggesting a grossly sub-optimal utilization of their strong capital base.

**Figure 6.8**

Leasing sector at glance



**Leasing<sup>67</sup>**

*Presence of leasing sector is fleeting amid competitive pressures*

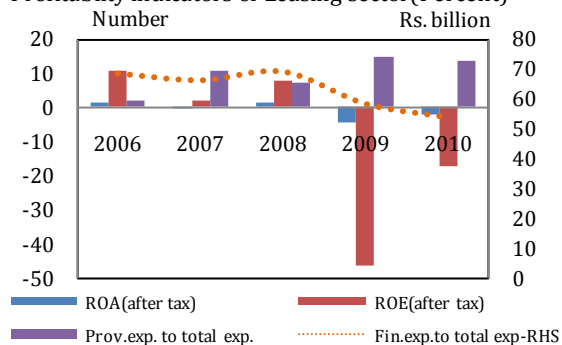
In recent years, leasing sector has undergone structural changes, with number of leasing firms significantly dropping on account of their mergers with investment and commercial banks. Competitive pressures from the banks, offering similar products at attractive rates amid their lower costs of raising deposits, have posed a challenge of survival to many leasing firms. Unsurprisingly, the number of leasing firms has reduced

<sup>66</sup> Share of credit risk weighted assets of DFIs is 66 percent, compared to 79 percent for banks, as on June 30, 2011.

<sup>67</sup> Leasing sector review is based on data provided by NBFIs and Modaraba Association of Pakistan year book 2010 and Pakistan Leasing Year Book 2008.

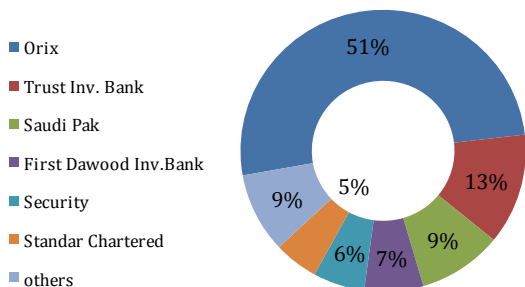
**Figure 6.9**

Profitability indicators of Leasing sector(Percent)



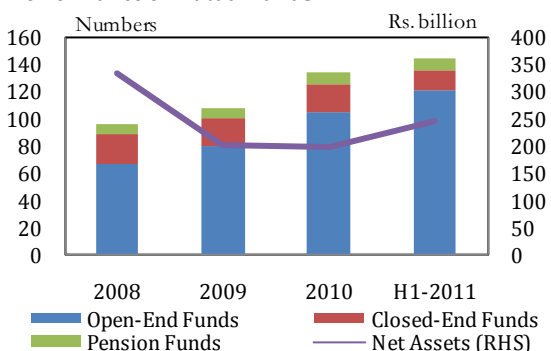
**Figure 6.10**

Concentration of Assets in Leasing Sector(FY-10)



**Figure 6.11**

Performance of Mutual Funds



from 20 in FY08 to 12 in FY10, with their total assets plummeting from Rs 110 billion to Rs.47 billion during the same period (Figure 6.8). The focus of firms has been on lease finance which forms 68 percent of their total assets at end FY-10. Category wise asset break up shows that 45 percent of leasing business is concentrated in plant and machinery and 49 percent in private and commercial vehicles.

....with seven of the twelve firms in red

Profitability of the leasing sector is continuously on declining trend since FY08. Impact of weak performance of the industry is evident from the profitability indicators, as both ROA and ROE turned negative in FY10 (Figure 6.9). Out of twelve firms, seven are incurring losses. High financial expenses on the back of heavy reliance on bank borrowing and provisioning costs are the key reasons behind poor performance of the leasing sector. Specifically, provisioning expense now stands at around Rs.1 billion much higher than in FY06 figure of Rs.0.1 billion<sup>68</sup>. High provisioning cost calls for enhanced risk management and improved credit standards on part of leasing industry.

Equity position has also deteriorated over the period on account of contraction in industry as well as lower capital maintained by leasing firms. In FY10, 3 out of 12 companies are non-compliant with the minimum equity requirement for the leasing companies set forth by SECP<sup>69</sup>.

....further increasing the industry concentration

Leasing sector is highly concentrated, with four companies holding 81 percent share of total assets (68 percent in FY08)<sup>70</sup> (Figure 6.10). Out of these four firms, Orix alone holds 57 percent of industry assets.

Despite shrinking role of leasing industry in overall financial sector, its implications for overall financial stability was extremely limited as leasing industry is a miniscule 0.5 percent of overall financial sector.

### Mutual Funds

Mutual Funds' net assets exhibit strong recovery

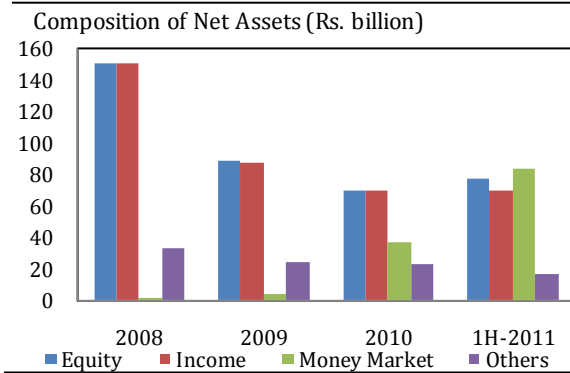
Since CY08, the mutual funds industry witnessed a significant

<sup>68</sup> To make objective comparison of provision expense to total expense ratio, data have been used for twelve firms that survived in FY10.

<sup>69</sup> Non-Banking Finance Companies and Notified Entities Regulations, 2008 require fresh licensed leasing companies to hold Rs. 700 million capital while existing companies to maintain Rs. 350 million by June 30,2011, Rs. 500 million by June 30,2012 and Rs. 700 million by June 30,2013.

<sup>70</sup> For Investment banks involved in leasing business, only lease finance is considered as assets for calculation of concentration.

**Figure 6.12**



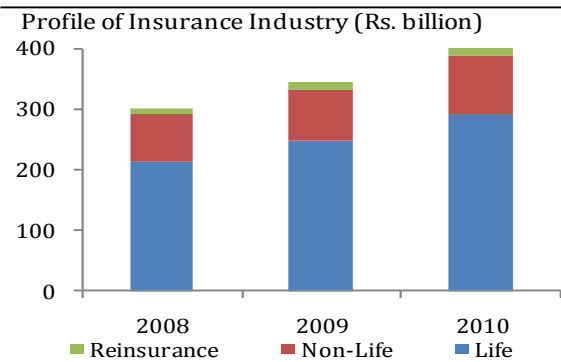
decline in its net assets as the investors' interest was shaken by the freezing of the KSE in Sep-08. In last two years, the losses incurred discouraged the prospective investors to venture in the mutual funds. However, in H1-CY11, the mutual funds industry witnessed a recovery of 24 percent in its net assets mainly on the back of investment activities in the money market instruments and partially from the equity market.

Besides the revival in the net assets, the number of mutual funds has also increased to 145 in the same period with a majority (122) concentrated in open-ended mutual funds (Figure 6.11). However, it is the money market funds and investments in treasury bills that have improved the outlook of the mutual funds industry (Figure 6.12).

### Insurance Sector<sup>71</sup>

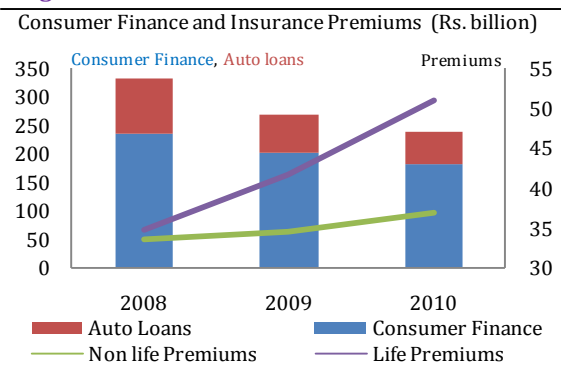
*Overall insurance sector registers strong growth*

**Figure 6.13**



On the back of sound growth in the life insurance business which accounts for 74.8 percent of total insurance assets, the insurance industry witnessed a strong growth of 16.6 percent in CY10 as against 14.5 percent in CY09. On the other hand, the reinsurance sector (that only constitutes one nonlife reinsurance company) showed an insignificant improvement of 0.1 percent in its asset base (Figure 6.13).

**Figure 6.14**



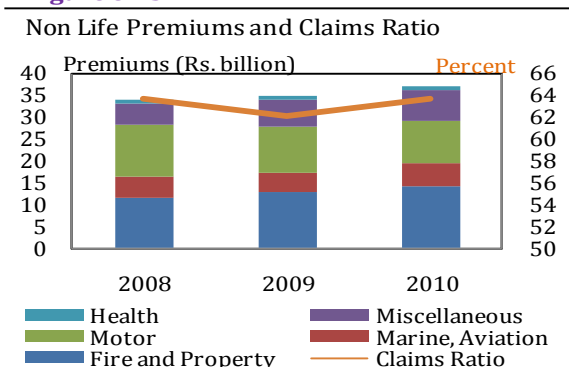
Despite a steep decline in the consumer finance business and an overall sluggish business environment prevailing in the country, the gross premiums witnessed an improvement of 15.2 percent in CY10 against 11.4 percent in CY09 (Figure 6.14). In case of life premiums that are largely dependent on individual's net disposable income, a sharp increase since CY08 has been observed as new companies entered in the market offering innovative and somewhat cheaper products that have enticed medium to higher income group. Further, the prevailing law and order and social conditions have also necessitated the need for insurance coverage.

*...though premium accumulation is compromised by rising claims ratio*

The nonlife gross premiums witnessed a steady increase of 7.1 percent in CY10 as against 2.6 percent in CY09 (Figure 6.15).

<sup>71</sup> The analysis is based on published annual audited accounts of 24 private non life insurance having 88 percent share in total assets for year 2009, 6 life insurance and a reinsurance company that were available with the SBP.

**Figure 6.15**

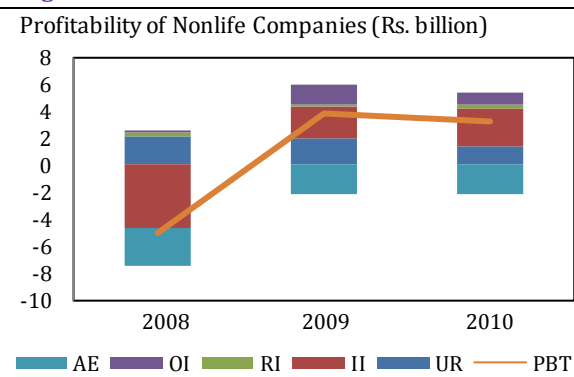


Category-wise, the concentration of fire and property premiums further improved in period under consideration as its share in total premiums increased to 38 percent while the motor insurance witnessed a decline in its share – largely on account of diminishing auto financing by banks- from 30.8 to 26.6 percent in CY10.

However, deteriorating law and order situation and difficult socio-economic conditions led to a marginal rise in the claims ratio (net claims to net premiums) from 62.1 percent to 63.6 percent YoY. Claims ratio witnessed a much stronger rise in the categories of fire and property insurance while claims ratio associated with motor insurance fell from 66.4 to 63.3 percent.

*Profitability rests on investment income as it compensates the declining underwriting revenues*

**Figure 6.16**



With rising claims and related administrative expenses (AE), the underwriting revenues (UR) of the nonlife companies declined sharply in CY10. However, as in case of other financial institutions (banks & DFIs), investment income (II) supported the bottom-line. Furthermore, the rental income (RI) and other income components (OI) improved the pretax profits (PBT) of the companies which although remained lower than CY09 (Figure 6.16).

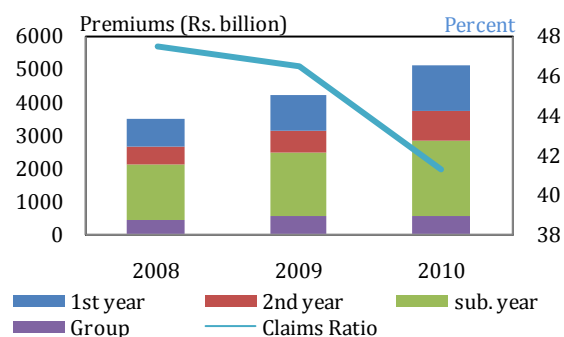
In terms of financial soundness, the performance of the nonlife insurance companies has been compromised by a rise in claims ratio and management expense ratio (MER). Accordingly, the combined ratio (CR) - sum of claims ratio and MER- has deteriorated from 75.3 to 77.5 percent YoY (Table 6.2). Similarly the underwriting expenses to gross premium ratio (UEGR) that signifies the cost of acquiring business has also deteriorated. Solvency-wise, the equity to total assets ratio (ETR) has also declined on account of un-proportionate increase in the asset base. However, improvements in the investment income has bolstered the investment income to net premiums (IIN) and investment income to assets (IIA) ratios in CY10.

*Life insurance premiums boosts while claims ratio falls*

In contrast to nonlife business that witnessed a moderate growth, the life insurance gross premiums grew robustly by 21.9 percent in CY10 compared to 19.8 percent in CY10. During the same time, the claims ratio fell drastically from 46.4 percent to 41.2 percent. In terms of gross premiums, the share of first year premiums rose from 25.2 to 26.9 percent indicating favorable outlook for new life business (Figure

**Table 6.2**

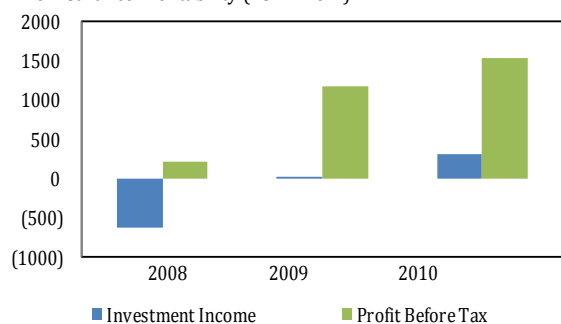
Nonlife Financial Soundness Indicators (percent)			
	2008	2009	2010
ETR	52.57	55.79	49.53
UEGR	12.67	13.18	14.08
Claims Ratio	63.72	62.12	63.42
MER	12.82	10.47	10.34
IIN	-21.43	11.02	13.42
IIA	-12.49	5.19	5.97
CR	76.38	75.30	77.50

**Figure 6.17****Life Premiums and Claims Ratio**

6.17). However the share of subsequent premiums (3<sup>rd</sup> year and beyond) fell marginally from 46.4 to 45.1 percent.

*Underwriting surplus helps improve life insurance profitability*

The robust growth in gross premiums coupled with the declining claims ratio have boosted the underwriting or core surplus for the life insurance companies resulting in higher profits for CY10. For the life insurers, profits before tax surged by 30.2 percent (figure 6.18). This is in stark contrast to the nonlife business where investment returns played a significant role in their profitability.

**Figure 6.18****Life Insurance Profitability (Rs. million )**

Despite rising profitability and lower claims ratio, the solvency profile of life insurance presents a weak picture. The equity to assets ratio (ETR) has reduced to 1.86 percent in CY10 (Table 6.3). Although minimum capital requirements are imposed on the insurance companies, the solvency ratio requirement does not exist, prompting companies to take higher liabilities and build-up their balance sheets on a rather low capital base. Other financial soundness indicators such as claims ratio, management expense ratio (MER), combined ratio (CR) however witnessed improvements in CY10. Further, as the stock of investments has climbed up to Rs. 226 billion, the net investment income to investment ratio (IIA) depicts very low return (0.13 percent).

**Table 6.3****Life Financial Soundness Indicators (percent)**

	2008	2009	2010
ETR	1.71	1.94	1.86
UEGR	35.63	40.02	38.88
Claims Ratio	47.47	46.44	41.27
MER	36.76	41.18	38.71
IIN	-1.92	0.02	0.59
IIA	-0.39	0	0.13
CR	84.23	87.62	79.98

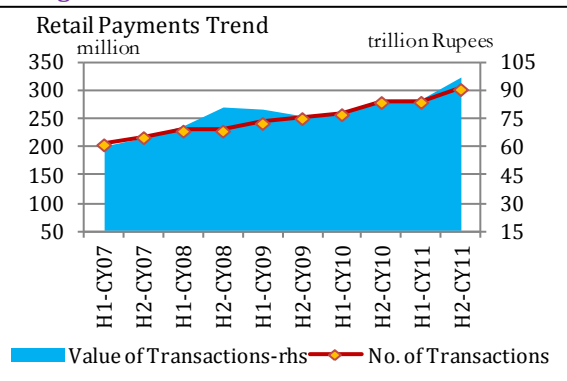
The analysis of reinsurance sector reveals some recovery in the performance of sole reinsurer, Pakistan Reinsurance Company Ltd. in CY10. Though the claims ratio further worsened to 57.4 percent in CY10, the profits (after tax) soared to Rs. 526 million on account of lower mark to market revaluation of its assets compared to CY09 (Table 6.4).

**Table 6.4****Profile of Reinsurance Sector (Rs. millions)**

	2008	2009	2010
Equity	7,265	6,786	6,412
Investments	5,459	5,482	4,674
Gr. Premiums	4,555	5,839	6,552
Net. Premiums	1,896	2,170	2,940
Net Claims	962	904	1,688
Expenses	250	231	301
Assets	12,528	12,372	12,534

During the period under review (Jan-June 2011), the amount transacted through retail payment system grew by 14 percent (YoY) against 11.6 percent in the corresponding period last year. Number of retail transactions (paper based and electronic) also witnessed a YoY increase of 8.2 percent. In terms of volume, share of e-banking transactions has gained momentum, reaching 42 percent by June-11. However, in terms of value, retail payments are still dominated by paper based transactions (particularly through cheques), with 86 percent share in all transactions settled. Large value payment system in Pakistan has become efficient and more reliable with the launch of Pakistan Real time Interbank Settlement System (PRISM). During H1-CY11, PRISM handled 175.4 thousand transactions worth Rs. 44.8 trillion, which are 15 percent higher in volume and 16 percent higher in value when compared with the corresponding period last year.

Figure 7.1.

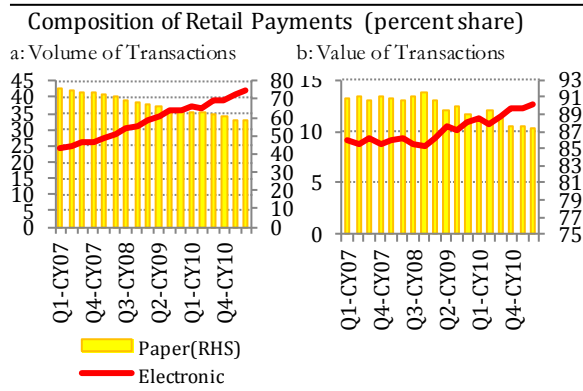


### Retail Payments

#### Retail payment transactions maintained double digit growth

Retail payment systems are used for low-value transactions to support the exchange of goods and services in an economy. In Pakistan, the retail payment landscape is dominated by cash transactions, followed by paper based<sup>72</sup> and e-banking modes of payment. During the period under review (H1-CY11), the amount transacted through retail payment system grew by 14 percent (YoY) against 11.6 percent in the corresponding period last year. The number of retail transactions (paper based and electronic) increased to 303.2 million, witnessing a YoY increase of 8.2 percent (Figure 7.1).

Figure 7.2



#### ...with electronic modes gaining share in volume

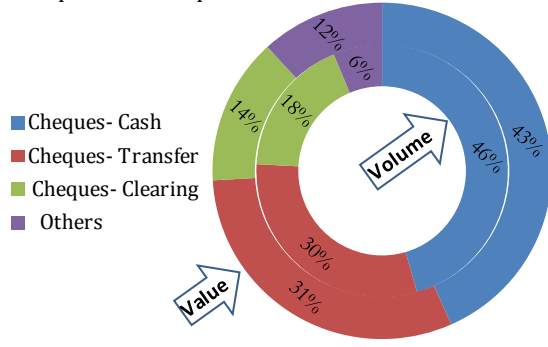
Rapid improvements and growing application of telecommunication, information technology and security systems have revamped the retail payment services, making e-banking a more efficient and reliable mode of payment. In Pakistan, the last decade has seen the emergence and acceleration in use of e-banking as an alternative to the traditional paper based instruments. Consequently, in the total volume of retail payments, the share of e-banking has reached 42 percent in June-11, from 25 percent in early 2007 (Figure 7.2).

However, in terms of value of transactions, retail payments are still dominated by paper based modes, which contributed 87.6

<sup>72</sup> Cheques, pay orders, demand drafts, telegraphic transfers, etc.

**Figure 7.3**

Composition of Paper Based Transactions



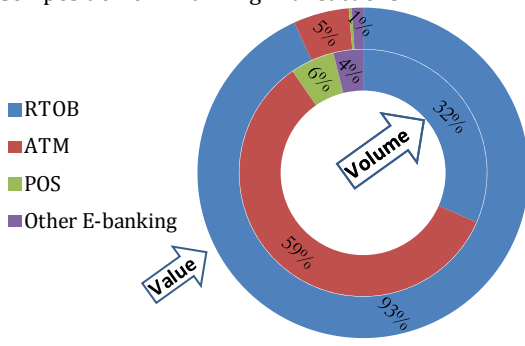
percent of the amount settled during H1-CY11. The lower value per transaction through e-banking is primarily on account of transaction limits applicable on these modes to ensure their safety and security.

*Use of cheques dominates paper based transactions*

Within paper based instruments, transactions through cheques dominate the volume as well as the amount of transactions, and are being used for cash withdrawals, fund transfer between accounts as well as between banks (through clearing). During H1-CY11, cheques' share in total number of paper based transactions was around 88.1 percent, with 93.7 percent share in terms of amount transacted. Other paper based instruments like pay orders, demand drafts and telegraphic transfers, despite their minimal share, have been an essential component of payment system catering to special needs of the customers (Figure 7.3).

**Figure 7.4**

Composition of E-Banking Transactions

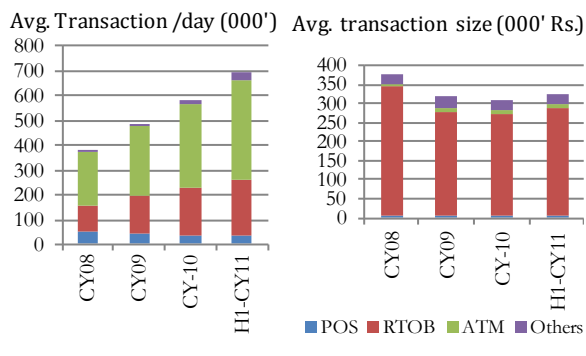


*...while RTOB accounts for bulk of the e-banking transactions*

The breakup of electronic based transactions reveals that Real Time Online Banking (RTOB) accounts for 93 percent of the value of all transaction in contrast to its significantly lower share (32 percent) in number of transaction (Figure 7.4). In terms of volume (number of transactions), ATMs with 59 percent share have been the most popular mode, though their share in value of transactions remain marginal.

**Figure 7.5**

Trends in E-banking Transactions.



Data on average size of transactions offers another look at the role of RTOB and ATMs in facilitating various retail and business transactions. During H1-CY11, average size of transactions through RTOB amounted to Rs. 282 thousands, in comparison to average transaction size of Rs. 8.8 thousands through ATMs and Rs. 4.7 thousand through POS (Figure 7.5). The significant size of RTOB transaction points to the fact that this component of electronic banking is mainly being used by the corporate sector.

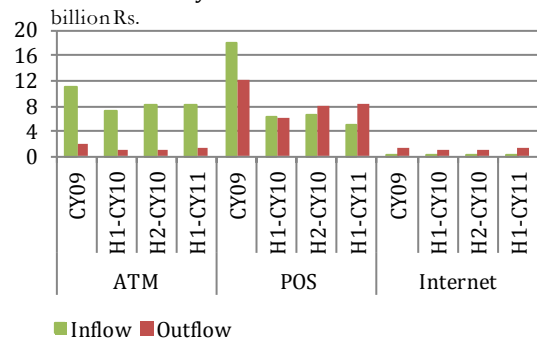
However, benefits of e-banking are not confined to the corporate sector as growing presence of ATMs have facilitated its widespread use by the general public (Table 7.1). Use of ATM has been on a rising trend, thanks to the increase in types of financial services being offered through ATMs like fund transfers, cash deposits and utility bills payments. Cognizant of growing role of ATMs in electronic modes, SBP has aimed to ensure efficient functioning of ATM network in Pakistan by

**Table 7.1:****E-Banking Infrastructure**

	CY09	H1- CY10	H2- CY10	H1- CY11
Point of Sale (POS)	50920	52049	44383	37232
No. of On line Braches	6587	6667	7036	7416
No. of ATMs	4217	4465	4734	5200

issuing guidelines from time to time to streamline the functioning of the networks. Specifically, guidelines about the ATM operations were amended with a view to segregate the responsibilities of various stake holders towards automatic credit to customers' accounts.<sup>73</sup>

Other modes of e-payment<sup>74</sup> are also gaining currency in the public, though their role and contribution remains limited so far. In particular, mobile and internet banking is witnessing a rapid acceptance due to the convenience in their use and increasing variety of services being offered through these modes. Mobile banking, apart from being important for its convenience value, can also prove instrumental in helping offer the banking services to an otherwise largely under-served market in rural areas. During H1-CY11, transactions through mobile banking witnessed a threefold increase (YoY) with amount of payments increasing twofold. Likewise, the volume and value of internet banking registered a growth of 51 percent and 66 percent respectively since June-10.

**Figure 7.6****Cross Border E-Payments***Use and presence of POS terminals on a declining trend*

Slowdown in economic activity over the last few years is reflected in declining trend in Point of Sale (POS) terminals as well as payment activity through this mode (*Table 7.1*). This is also in line with declining credit card activity for past few years. Notably, amount of credit cards has gone down from 1.6 million in Dec-09 to 1.38 million by Mar-11.

Recent trends in cross border e-payments also exhibit a transformation in terms of inflow of funds as the share of POS transactions have come down from 61 percent in CY09 to 37.6 percent in June-11 (*Figure 7.6*). This decline is attributable to both declining number of POS terminals as well as the growing acceptability of international credit cards on local ATM networks that has prompted the shift from POS towards ATM transactions.

**Large Value Payments***RTGS has transformed the large value payment system*

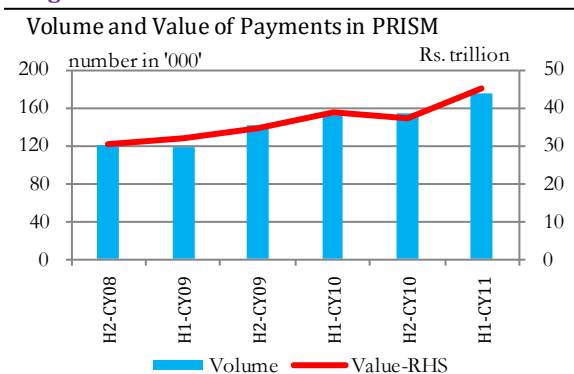
Because of their systemic importance, large value payments systems have been a key concern of the central banks over the

<sup>73</sup> PSD Circular Letter No. 2 /2010 dated July 8, 2010.

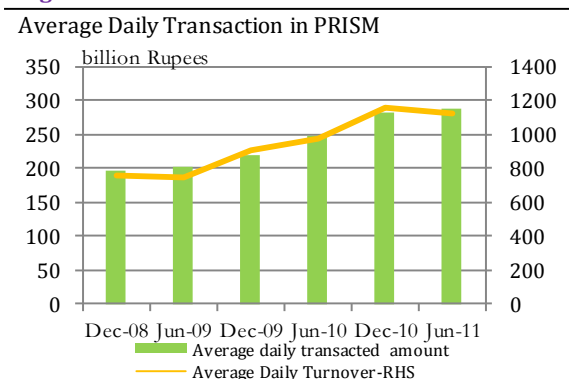
<sup>74</sup> Call centers, mobile and internet banking.



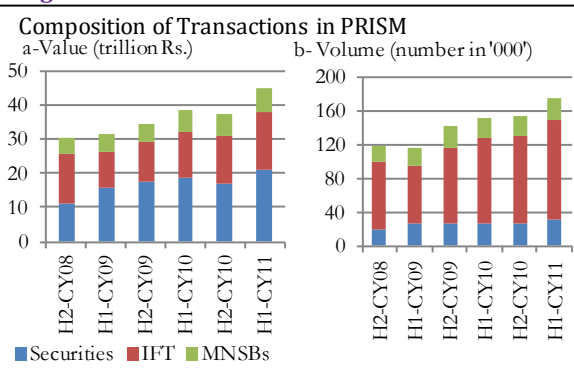
**Figure 7.7**



**Figure 7.8**



**Figure 7.9**



world. In Pakistan, keeping in view the global trends in payment system development and the growing payments market in the country, SBP took the decision to implement the Real Time Gross Settlement System (RTGS), resulting the launch of Pakistan Realtime Interbank Settlement System (PRISM) in Jul-2008. Since then, it has been performing smoothly as the system has been able to handle large volume of transactions through queue management, gridlock resolution mechanism and Intra-day Liquidity Facility (ILF)<sup>75</sup>. While historical data of system availability is not available, statistics since mid-May 2011 reveal that system availability on average remained around 96.55 percent and the major reason for reported downtime had to do with the securities settlement interface of PRISM, namely DEPOX.

*...with both value and volume of payments recording double digit growth*

During H1-CY11, PRISM handled 175.4 thousand transactions worth Rs. 44.8 trillion, which are 15 percent higher in volume and 16 percent higher in value when compared with the corresponding period last year (Figure 7.7). The system settled an average of 1,125 transactions of Rs. 287 billion on daily basis (Figure 7.8). These daily averages are a reflection of the significance of PRISM as a large value payment system.

Not only are the turnover and value of transactions significantly higher in PRISM, the transactions being settled are of critical nature too. Generally, the transactions in PRISM can be categorized into (i) Interbank Fund Transfer (IFT), (ii) Settlement of clearing balances between banks in form of Multilateral Net Settlement Batches (MNSBs) received from NIFT, and (iii) Securities Settlement. Recently, SBP has also allowed settlement of third party fund transfers<sup>76</sup> on behalf of banks' customers, with a view to increase the coverage of PRISM as a funds settlement facility. Initially the upper limit for third party transfers was set at Rs. 10 million, which was later revised to Rs. 1 million with a view to introduce the use of electronic payments to corporate entities<sup>77</sup>.

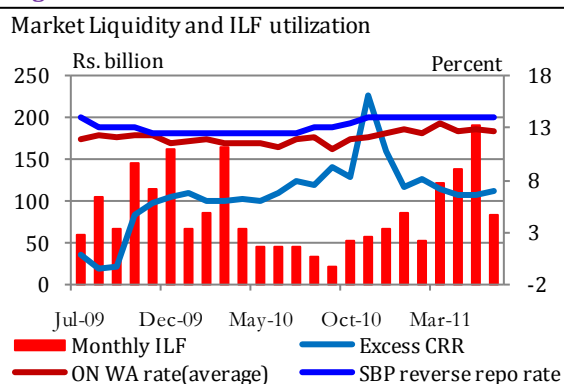
The trends in components of PRISM settlements suggest that securities settlement is the largest component in terms of value. On the other hand, in terms of volume, the number of transactions settled on account of IFT constitutes the major

<sup>75</sup> For details on operational and liquidity issues in PRISM (including ILF), see Chapter 8 FSR 2009-10.

<sup>76</sup> PSD Circular No 2 dated 11th February, 2011.

<sup>77</sup> So far, this is a negligible component of settlements in the system.

**Figure 7.10**



component (Figure 7.9). It is partly because no limit has been set for the transfer of funds between members for the purpose of afore-mentioned three categories. Therefore, IFT is being used for all the payments in interbank market. Recently, SBP has however introduced transaction charges of Rs. 200 per transaction with a view to offset the maintenance and system up-gradation costs.<sup>78</sup>

*Liquidity strains in market were reflected in usage of intraday liquidity facility*

Real time settlement in PRISM can entail significant liquidity risks for the individual banks and can give rise to gridlocks in the system<sup>79</sup>. To counter these issues, SBP has been providing unlimited, fully collateralized intraday credit with a same day repo agreement to PRISM participants in need of liquidity. This intraday liquidity facility (ILF) was introduced in Jan-09 and has been used extensively by banks since then. During H1-CY11, banks availed Rs. 671 billion against this facility. Increased use of ILF is not only an indication of higher payment activity in PRISM, but also a reflection of short-term liquidity stress faced by banks during the period.

During the first half of 2011, bank liquidity remained stressed due to high intra quarter requirements of government borrowing<sup>80</sup> (despite improved foreign inflows and strong growth in deposits). Specifically, the visible strains in liquidity during May-2011<sup>81</sup> are also reflected in surge in ILF usage, amounting to Rs. 191.4 billion, the highest in a month since the initiation of the facility (Figure 7.10).

<sup>78</sup> PSD Circular No 01/2011 dated February 04, 2011.

<sup>79</sup> For detailed assessment of liquidity management in PRISM, see Chapter 8, FSR 2009-10.

<sup>80</sup> During H1-CY11, government borrowed Rs. 191.1 billion over and above the target of Rs. 2130 billion for T-bill auctions.

<sup>81</sup> Government borrowing from commercial banks witnessed a rise of Rs189 billion during May 2011, in addition to seasonal expansion of credit for commodity operations to the amount of Rs94.4 billion.

Branchless Banking (BB) as the name suggests, is a mode of banking which does not rely on traditional bricks and mortar branch approach for provision of financial services. The hallmark of BB is the use of technology and the existing infrastructure to reach beyond the physical premises of the banking network. Hence, it can provide a cost effective and innovative banking avenue to the unreached population in remote areas, thereby helping significantly reduce financial exclusion. Experiences<sup>82</sup> from the pioneer countries suggest that costs from BB are on average 19 percent lower than the traditional banking modes. Also 37 percent of active users of BB in eight pioneer cases were previously unbanked which points to the role it can play to effectively tackle the issue of financial exclusion.

Still BB is an evolving concept being carried out using two basic models namely (i) bank led, and (ii) non-bank led/Telco led. Bank led model is essentially where a bank and a service provider enter into agreement to become interoperable towards providing a defined range of financial services. BB in non-bank led model is owned and operated by a non-bank agent independently and is generally carried out by Telcos.

In Pakistan, the extent of financial exclusion is quite significant whereby 56% of the adult population do not use either formal or informal financial products<sup>83,84</sup>, and hence the potential of BB is undeniably very high in the country, estimated at 20 percent by 2020<sup>85</sup>. In practice, BB took its roots in Pakistan in April 2008, when SBP issued 'Branchless Banking Regulations' which prescribe several BB activities including opening and maintaining BB accounts, account-to-account and person to person fund transfer, cash deposit and withdrawal, bills payment, merchant payments, loan disbursement/ repayment and remittances. SBP has permitted the practice only through bank-led model where only authorized financial institutions can provide these services, with three permissible modes: one to one (one bank providing service through one agent), one to many (one bank and more than one agents entering into an agreement) and many to many (a joint agreement between more than one banks and agents). These regulations were revised in June 2011 focusing increased role of agents, convenience to customers and reduction in operating cost.

Existing BB network in Pakistan consists of services by four banks following different operational setups from mobile banking to services through banking kiosks (**Table 1**). So far, two of the services namely UBL Omni and Tameer Easy Paisa are fully operational large scale projects, while other two are small scale services catering to certain segments of the population. BB network is steadily expanding in Pakistan with a number of projects in pipeline including some big players like MCB, Bank Alfalah and Mobilink planning to enter the BB market in near future.

**Table 1: Existing BB network in Pakistan**

	Name of provider/Product	Inception Date	Operational Details
1	First Microfinance Bank (FMB).	(March 2008)	BB Services housed at Pak Post offices.
2	Tameer Microfinance Bank/Easypaisa.	(October 2009)	Agent based and Mobile banking
3	UBL/UBL Omni.	(April 2010)	Retail agents/ Omni Dukaans. Banking kiosks at educational institutions.
4	Dubai Islamic Bank Ltd.	(April 2010)	

<sup>82</sup> Claudia McKay and Mark Pickens (2010), "Branchless Banking 2010: Who's Served? At What Price? What's Next?" CGAP No. 66, September 2010.

<sup>83</sup> Finscope survey results at <http://www.finscope.co.za>

<sup>84</sup> Only 11 percent are formally banked according to the same source.

<sup>85</sup> Telenor Group and Boston Consulting Group (BCG) study on the "Socio-economic impact of mobile financial services".

Rapid expansion in BB business in Pakistan is also revealed by available statistics (**Table 2**), where all indicators of BB activity exhibiting steep upward trend over past few months. Going forward, the numbers are projected to further climb steeply with new entrants and innovative products reaching the market. However, the extent to which these numbers exhibit actual rise in financial inclusion needs to be assessed carefully, given that some of users could be from the already financially served section of the population.

**Table 2: Branchless Banking(BB) Trends**

	Dec-CY10	Mar-CY11	Jun-CY11
Number of BB Accounts(000s)	274.7	387.0	600.0
Volume of BB transactions (million #)	14.9	23.9	36.8
Value of BB transactions (million Rs.)	57160.7	84992.7	136658.0
Total number of BB Agents	13,866	15,688	18,000
Number of cities covered (approx.)	500.0	600.0	650.0

## Box 7.2

## Concentration Risk in PRISM

Concentration risk in a specific payment system can arise through two channels, namely (i) the liquidity concentration channel and (ii) the payment concentration channel. Concentration through both channels makes payment system vulnerable to payment gridlocks and, in extreme cases, disruption in activity. First, if a certain bank controls significant portion of system liquidity, its failure may indirectly disrupt the payment system activity by straining the liquidity required by otherwise healthy banks. Second, if a bank is involved in significant payment activity, its failure may directly impact the payment system by curtailing other banks' payments which depend on their inflows.

Herfindahl index(HI) is a useful tool in ascertaining the above mentioned vulnerability of banking system and can be calculated as :

$$HI(\text{Liquidity/Payment}) = \sum_i (\text{Share of bank } i \text{ in liquidity/payment})^2$$

By definition, HI ranges between 0 and 10,000 with higher values of index pointing to high concentration in the system, and an index of 10,000 accruing to a monopolistic market/ one market player controlling 100 percent of market share. If the market is question is equally divided into N participants, the index equals  $1/N$ .

We use the data from Pakistan Real-time Interbank Settlement Mechanism (PRISM) since January 2011, on both payments and liquidity of 36 participating banks in the system. HI of payment concentration has averaged at 700, while liquidity concentration index has been hovering around 750 (**Figure 1**). These results suggest that, while both liquidity and payments activity are not being equally shared by all the participants, these are not excessively concentrated either. On average, concentration in liquidity has been relatively higher than in the payments activity.

**Figure 1**

**Herfindahl Indices for PRISM**

