## 3.1 Risk Analysis of the Banking Sector

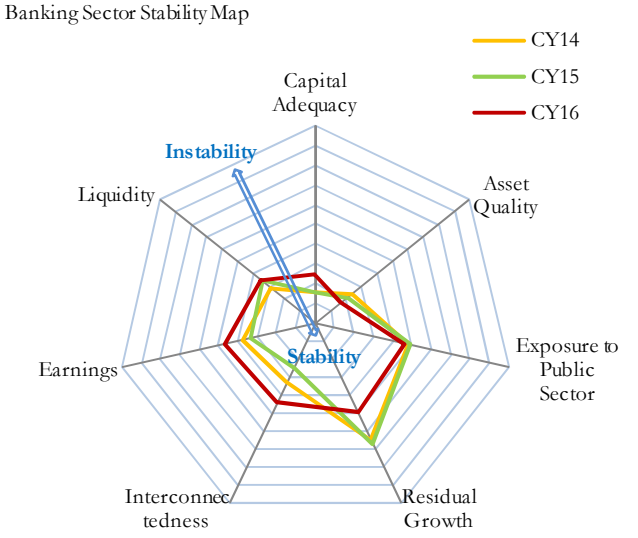
*The overall risks to the banking sector have remained contained. Credit risk has been under check as Non-Performing Loans Ratio (NPLR) has declined with the growth in advances. NPLs of majority of the sectors and segments have also dropped, though SME segment and textile sector continue to have the highest NPLRs. Ample stock of highly liquid risk free sovereign securities has ensured sufficient fund based liquidity for the banks. Market risk remains low, though in case of an adverse movement in interest rates, banks may face some re-pricing and revaluation risks. After increasing for almost a decade, the profitability has come under some pressure in the wake of low interest rate environment, while capital adequacy has remained well above the required regulatory benchmark.*

Enabling economic environment including low interest rates, subdued inflation, stable external sector, political stability and improvement in law and order, has resulted in better performance of the banking sector in CY16, particularly the growth in private sector credit. The stability, thus achieved, is obvious from the "Banking Stability Map"[81] which depicts low risk levels in various dimensions of soundness in CY16 (**Figure 3.1).** The banking sector is characterized by robust CAR, continued improvement in asset quality, slight decline in profitability due to lower interest rates and somewhat increase in interbank activity. The CAR remains well above local and international regulatory standards, though with some downward adjustment due to much needed high growth in private sector advances. The high capital ratios have been facilitated by capital accumulation due to reasonable level of profit, though there has been slight dip in profitability over the last year. Assets quality continues gradual improvement with NPLR drifting down and a lower provisioning charge for NPLs compared to last year.

In case of interconnectedness, banks' dealings among themselves (e.g. call lending and borrowings) have risen proportionately to the growth in assets. However, in the presence of sufficient liquid assets, this is not a significant issue.

**Figure 3.1**

**Despite growth, banking sector has remained stable over the last two years**




Source: FSD, SBP

In the short term, the profitability of the banking sector may come under pressure. Low interest rates, receding investments in government securities and maturity of high yielding PIBs have lowered interest income of the banks and could, potentially, keep

[81] The Banking Stability Map represents a comprehensive picture of stability in seven different dimensions. Risks in each dimension are measured by a weighted combination of key indicators. The percentile rank of each indicator gives the degree of stability relative to its level in the past (since 1996). For details please see Technical Appendix in FSR 2015. For methodology please see Dattels, P., McCaughrin, R., Miyajima, K., & Puig, J. (2010). "Can you map global financial stability?" *IMF Working Papers*, 1-42.

their earnings in check. Income from growth in advances may, however, partially offset the decline in income from investments in the medium term.

Further, fund based liquidity is expected to remain comfortable; while market liquidity (as measured by interconnectedness) and exposure to public sector will be largely driven by government's institutional choice for borrowing (SBP vs. commercial banks).

While banking sector has sufficient capital buffers due to high CAR, banks need to take into consideration a host of anticipated operational and regulatory factors for developing their future capital plans. These include expected uptick in advances that can lead to higher risk weighted assets (RWA); narrowing interest margins that may constrain the accumulation and plough back of retained earnings and a gradual increase in CAR from present level of 10.65 percent to 12.5 percent by 2019 as part of Basel-III implementation plan.

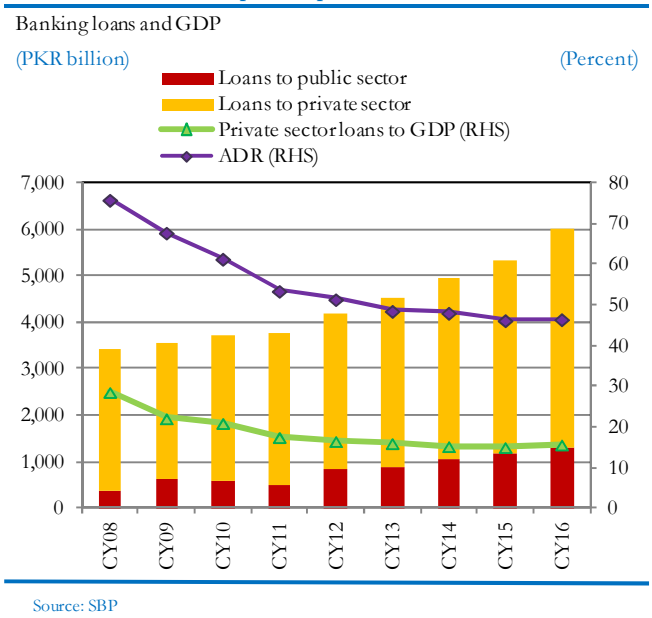
### 3.1.1 Credit Risk

*Private sector loans have picked up…*

Gross loans of the banking sector have grown by 12.81 percent during CY16 compared to 8.12 percent last year. Encouragingly, private sector loans have increased by 12.61 percent which is the highest growth since CY08. The uptick in advances has been broad-based, with intake by almost all the segments and sectors of economy, including textile, sugar, energy, cement etc. The thrust came as the households and firms capitalized on decades' low interest rates, better energy availability, government's focus on infrastructure development and the projects under CPEC gaining steam. Consequently, private sector loans to GDP ratio has increased for the first time in the last eight years. Advances to deposits ratio (ADR) which have been on downhill for almost a decade has marginally improved to 46.61 percent (**Figure 3.1.1**).

**Figure 3.1.1**

**Private sector loans have picked up**




Source: SBP

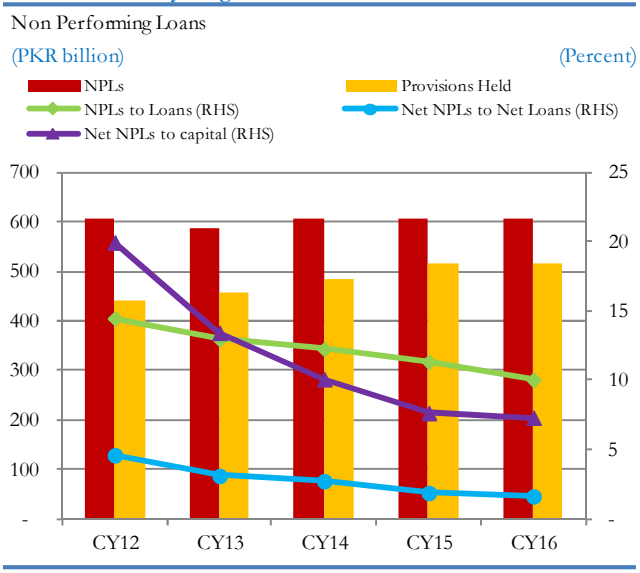
*…while asset quality continues to improve*

The stock of NPLs effectively remains unchanged at PKR 604.7 billion as of end CY16 (PKR 605.4 billion as of end CY15) (**Figure 3.1.2**). While rise in loans has led to decline in NPLR by 1.30 pps to 10.06 percent, as discussed in previous FSR, banks continue to hold higher provisions against NPLs. Hence, provision coverage ratio (provisions to NPLs) has marginally improved to 85.05 percent, which declined Net NPLR and capital at risk (Net NPLs to Capital) to 1.64 percent and 7.32 percent respectively as of end CY16 compared to 1.89 percent and 7.56 percent as of end CY15.

The high level of provisions indicates that banks have already accounted for these bad loans in terms of profitability and solvency. Despite this, the stock of NPLs continues to remain high indicating that banks have not been able to recover or write off these bad loans. A multitude of reasons can be cited, though the most important ones are the impediments in the legal framework and slow resolution of legal cases.

**Figure 3.1.2**

**Stock of NPLs stays stagnant**




Source: SBP

Over the last year or so, a set of laws and legal amendments have been enacted that are expected to facilitate cleaning of bad loans from books of the banks and enhancement of private credit. These include enactment of Corporate Restructuring Companies Act 2016, Financial Institutions (Secured Transactions) Act 2015, Credit Bureaus Act 2015, and amendments to Financial Institutions (Recovery of Finances) Ordinance 2001 (FIRO)

### *Asset quality indicators are at comparable levels with other regional countries*

With continuous improvement, asset quality of banks in Pakistan is now almost comparable with the peer countries. With highest provision coverage, net NPLs to loans ratio for Pakistan is on the lower side though it has the highest NPLR (**Table 3.1.1**). Nevertheless, recent legal and regulatory reforms are expected to further improve the asset quality of the banks in Pakistan in the future.

**Table 3.1.1**

Asset Quality - Cross Country Comparison

| Country | CY14 | CY15 | CY16* | CY14 | CY15 | CY16* | CY14 | CY15 | CY16* |
|---|---|---|---|---|---|---|---|---|---|
| | Infection Ratio | | | Net Infection Ratio | | | Provision Coverage Ratio | | |
| | Percent | | | | | | | | |
| Pakistan | 12.27 | 12.47 | 10.06 | 2.74 | 1.89 | 1.64 | 80.00 | 82.00 | 85.05 |
| India | 4.35 | 5.88 | 8.80 | 2.28 | 3.28 | 5.40 | 48.72 | 45.71 | 40.88 |
| Indonesia | 2.07 | 2.43 | 3.03 | 1.03 | 1.19 | 1.39 | 50.83 | 51.49 | 54.92 |
| Malaysia | 1.65 | 1.60 | 1.65 | 1.18 | 1.16 | 1.23 | 28.36 | 27.67 | 25.98 |
| Sri Lanka | 4.23 | 3.24 | 2.89 | 2.13 | 1.25 | 1.05 | 50.68 | 62.33 | 64.53 |

*September 2016 except Pakistan

Source: FSIs (http://data.imf.org)

**Table 3.1.2**

Asset Quality by Bank Size

| Bank Category* | CY14 | | CY15 | | CY16 | |
|---|---|---|---|---|---|---|
| | Infection Ratio | Provision Coverage Ratio | Infection Ratio | Provision Coverage Ratio | Infection Ratio | Provision Coverage Ratio |
| | Percent | | | | | |
| Large | 11.76 | 80.41 | 9.75 | 91.99 | 8.16 | 92.66 |
| Medium | 13.88 | 78.03 | 16.45 | 74.92 | 13.81 | 79.19 |
| Small | 9.87 | 73.54 | 9.46 | 72.23 | 11.53 | 67.06 |
| Very Small | 19.62 | 92.44 | 21.17 | 92.49 | 18.68 | 92.05 |
| **All banks** | **12.27** | **79.82** | **11.36** | **84.95** | **10.06** | **85.05** |

** Banks have been sorted by asset size and divided in to four quartiles (large, medium, small, very small)*

Source: SBP

### *Asset quality of large banks has improved while that of Specialized Banks (SBs) banks has deteriorated*

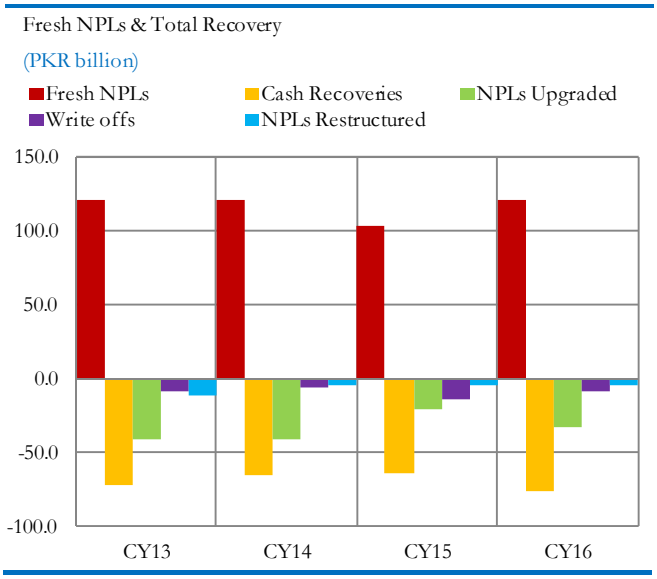
Comparing different categories of banks based on their total assets suggests that asset quality of large banks is improving over the last three years and is now well below the industry average (**Table 3.1.2**). It implies that this quartile (large) of banks might have relatively better credit lending and monitoring practices and systems, besides having presence throughout the country.

**Table 3.1.3**
Asset Quality by Bank Category

| Bank Category | CY14 | | CY15 | | CY16 | |
|---|---|---|---|---|---|---|
| | Infection Ratio | Provision Coverage Ratio | Infection Ratio | Provision Coverage Ratio | Infection Ratio | Provision Coverage Ratio |
| | Percent | | | | | |
| PSCBs | 17.82 | 71.20 | 18.28 | 79.05 | 15.90 | 81.43 |
| LPBs | 10.40 | 85.20 | 9.34 | 89.78 | 8.14 | 90.11 |
| FBs | 7.61 | 102.00 | 7.78 | 100.35 | 8.33 | 100.25 |
| **CBs** | **11.94** | **80.90** | **11.13** | **86.29** | **9.72** | **87.28** |
| SBs | 23.27 | 61.10 | 18.92 | 59.27 | 21.82 | 50.09 |
| **All banks** | **12.27** | **79.80** | **11.36** | **84.95** | **10.06** | **85.05** |

Source: SBP

**Figure 3.1.3**
**Both fresh NPLs and recoveries increase**



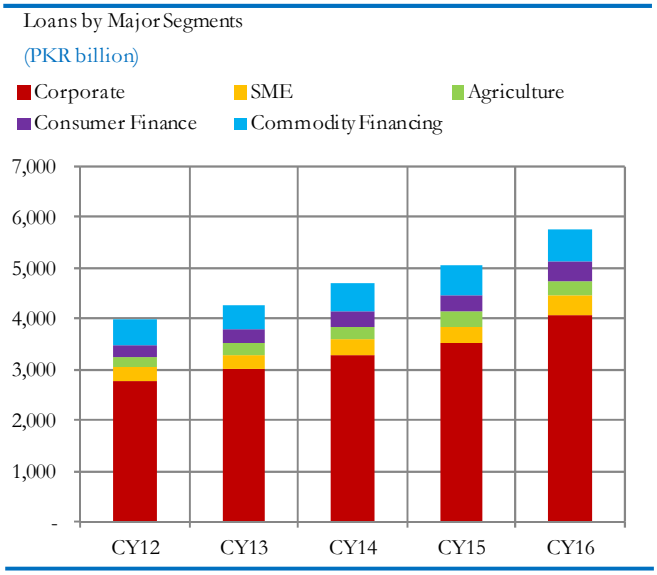

Source: SBP

Categorizing banks based on their ownership structure and type of business reveals that SBs that are publically owned, have the highest NPLR and lowest provision coverage (**Table 3.1.3**). However, most of the increase in NPLs is due to seasonal nature of agriculture finance, which normally gets recovered in subsequent quarters.[82] NPLs of all other categories have declined except where increase in NPLR is a result of decline in loans portfolio during CY16.

*Improved cash recoveries and NPLs management have offset the impact of flow of fresh NPLs*

Banks have made highest cash recoveries in CY16 as compared to the last five years. This coupled with upgrade of NPLs and some restructuring/ rescheduling activity has led to marginal decline in stock of NPLs (**Figure 3.1.3**).

**Figure 3.1.4**
**Loans continue to remain concentrated in corporate segment**




Source: SBP

*Corporate segment[83] remains the largest borrower of funds from the banks*

More than 70 percent of the outstanding loans have been provided to private sector corporates (**Figure 3.1.4**). Though flow of loans to corporate and

[82] As per Prudential Regulations, categories of NPLs for Agriculture financing are different from other types of financing: OAEM (90 days overdue), Substandard (One year overdue), Doubtful (One and a half year overdue), Loss (Over two years overdue). This is due the fact that agriculture loans are characterized by longer recovery periods based on the harvesting cycle of different Rabi & Kharif crops. Therefore, due to cropping cycle, every year in June and December quarters, a certain amount of agriculture loans fall into OAEM category, which are subsequently recovered in the following September and March quarters, respectively.

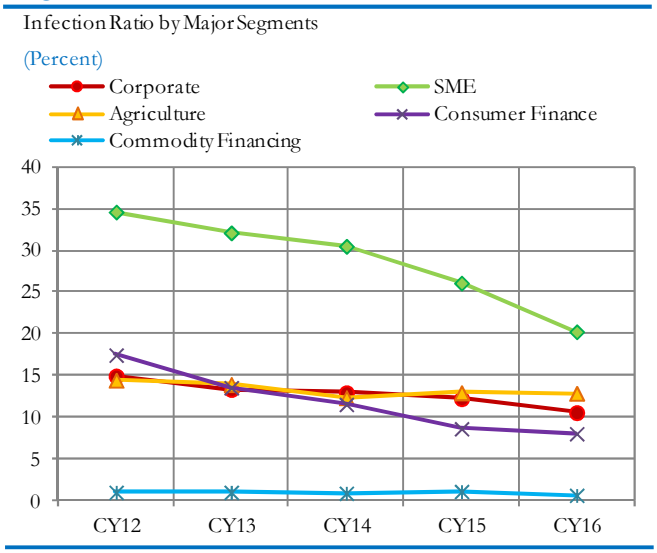
[83] In terms of '*segments*', corporate segment is the key user of bank loans followed by commodity finance, SME, agriculture and consumer. On the other hand, '*sector-wise*' analysis reveals that major borrowers belong to the energy, textile, sugar, and agribusiness sectors.

agriculture sector seems to be growing steadily, trend of flows to other segments has remained somewhat irregular. While lending to private sector corporates does exhibit prudence in banks' lending practices, banks also need to improve focus for catering to the untapped segments of the economy particularly SMEs and consumer finance.

With over 10 percent share, seasonal commodity financing remains the second biggest user of banks' loans. The segment has negligible infected portfolio as its NPLR is below 1 percent as of end CY16.

**Figure 3.1.5**

**Despite significant decline, SME sector continues to have the highest infection ratio**




Source: SBP

*Despite substantial reduction, NPLR of SME segment remains highest among all segments*

Over the years, SME finance has attracted limited attention of banks; however, the segment has registered highest growth (27.12 percent) during CY16. This is partly attributed to the prevailing low interest rates that have made bank loans accessible to SMEs and partly to the regulatory incentives.[84]

With virtually the same stock of NPLs, NPLR has taken a nosedive during CY16 falling to 20.29 percent from 26.10 percent as of end CY15 due to rise in SME advances. However, the segment still has the highest ratio among all the segments.

*Consumer finance segment continues to grow gradually amidst declining credit risk…*

In line with trend seen in the previous few years, consumer finance has observed double digit growth of 10.79 percent. With improved credit standards and cautious approach towards selection of borrowers, the NPLR of consumers has dropped to 8.11 percent. Within consumer finance, auto loans remain the mainstay with a share of 34.73 percent, which have been rising for last few years. The auto sector outlook is promising as some foreign investment is expected which may provide further boost to auto financing.[85]

*…and mortgage finance starts breathing again*

The mortgage finance has registered a significant rise (13.24 percent) during CY16 (4.02 percent in CY15). However, share of the sub-segment remains 1.02 percent in the overall loans of the banks and 16.57 percent in consumer financing. Presently, the 'search for yield" motive of Islamic banks and preference for shariah compliant mortgage products by customers have resulted in Islamic banks achieving the highest share in this segment. The sub-segment, nevertheless, provides immense opportunities to banks and it is imperative that they take measures for enhancing the share of mortgage

[84] With a view to broaden the coverage of SMEs, the relevant PRs were revised to enhance the parameters for identification of SMEs: http://www.sbp.org.pk/smefd/circulars/2016/C2.htm. Moreover, SBP has set SME financing targets for banks related to size, branch network, existing SME portfolio etc. http://sbpweb/sme/pdf/Q-Review/2016/QSMEF-June-2016.pdf

[85] A French automaker, Renault SA, German carmaker, Audi, and Korean automakers Hyndai and KIA are in talks to invest in the auto sector in the country. http://boi.gov.pk/ViewNews.aspx?NID=%201466. Meanwhile, Toyota Boshoku Corporation (TBC) also plans to enhance its investment in Pakistan for manufacturing of interior components. http://boi.gov.pk/ViewNews.aspx?NID=%201469

finance in the overall loan portfolio. Further, the legal reforms, mentioned earlier, should serve as another motivational factor for banks to channel their funds to the sub-segment.

NPLs of mortgage finance have considerably declined during CY16 resulting in a dip of 7.07 pps in the NPLR. However, the ratio at 17.70 percent still remains highest in the consumer segment.

*After a decline last year, NPLs of personal loans have risen again*

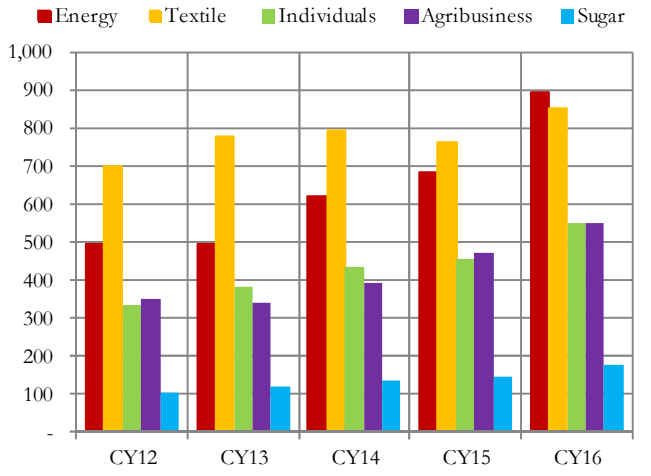
A small sample of banks has been engaged in providing personal loans over the last few years. Not surprisingly, the same sample has been feeling the brunt of rising NPLs in the sub-segment during CY16. With a decline of 3.37 percent in loans and 2.68 pps rise in NPLR to 9.16 percent, the personal loans sub-segment could become a potential source of credit risk for the banks.

**Figure 3.1.6**

**Energy sector has become the biggest user of banks' loans**

Loans by Major Sectors

(PKR billion)




Source: SBP

*Energy sector has become the biggest user of banks' loans*

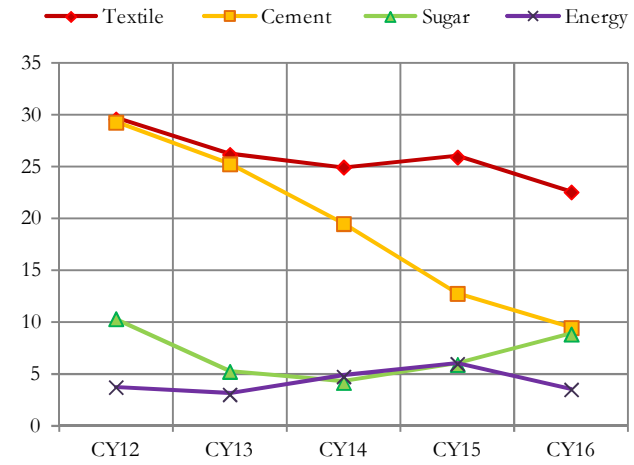
Among the corporates, energy sector loans have been progressively growing over the last three years due to focus of government on tackling the energy shortages. With a growth of 30.90 percent during CY16, loans to energy sector stand at PKR 892.1 billion (PKR 681.5 billion as of end CY15), having a share of 14.81 percent in overall loans of the banking sector (**Figure 3.1.6**). However, the credit risk remains relatively low as only 60.24 percent of these loans have been extended to the private sector and the NPLR is 3.5 percent.

**Figure 3.1.7**

**Textile sector still has the highest infection ratio**

Sector-wise Infection Ratios

(Percent)




Source: SBP

*Textile sector has the highest share in private sector loans and its NPLR has declined*

The lending to textile sector, which remained subdued during CY15, has witnessed a recovery in CY16 with loans growing at 11.88 percent. The sector also continues to hold highest share in the private sector loans (18.18 percent). However, its infection rate has also remained high for quite some time now. Nonetheless, increasing disbursements in other sectors of the economy and a decline in NPLs have somewhat lessened both concentration and credit risk posed by the textile sector (**Figure 3.1.7**). In addition to the improvements in security situation, energy supply, pick up in raw material

prices, considerable reduction in the sales tax as per Federal Budget 2016/17[86] and macroeconomic conditions are some of the reasons behind this revival.

*Sugar sector has registered significant growth while its NPLR has worsened…*

Sugar sector that has seen over 20 percent increase in financing over the year has also observed some deterioration in its loan portfolio. NPLs have actually doubled to reach PKR 15.6 billion. This is due to the liquidity crisis faced by the sugar sector in early CY16 owing to dispute over cane support price and delay in sugarcane crushing season.[87] Nevertheless, NPLR at 8.83 percent still remains lower than the industry average.

*… while asset quality of the cement sector has improved*

Despite small share in overall loans, cement sector has had second highest NPLR during the last five years. However, this trend seems to be changing as the sector's NPLs have declined by 7.77 percent. This decline, coupled with 24.47 percent growth in loans has decreased the NPLR of the sector by 3.31 pps to 9.47 percent. This is a significant development since cement sector is one of those sectors which are pivotal to the infrastructure development and economic growth of the country.

*Expected economic growth may induce higher lending but poses challenges for credit risk management of the banks…*

In the near future, projects like CPEC present immense opportunities for the banks to expand their credit base. At the same time, these will test the banks' lending practices, which have been underutilized for quite some time now. On the positive side, reforms like establishment of private credit bureaus[88] will help in improving banks' credit quality. Moreover, creation of corporate restructuring companies along with other reforms in the legal framework will certainly make a difference towards reducing the outstanding stock of NPLs.

### 3.1.2 Liquidity Risk

The banking system has remained sufficiently liquid during CY16, maintaining liquidity in excess of the regulatory requirements (**Figure 3.1.9**). However, risks pertaining to financial markets and funding availability are the main liquidity issues facing the banks.

*Reduced volatility in financial markets lowers the liquidity risk*

The introduction of SBP's target rate[89] back in May 2015 has continued to yield positive results during CY16. Volatility in the money market has remained much lower in CY16 than CY15. To achieve the stated objective of target rate, SBP had to increase both the volume and frequency of OMOs. (For details see **Chapter 2**).

Nevertheless, there seems to be little impact on liquidity management of the banks as they have been able to maintain sufficient reserves during CY16, as indicated by average Statutory Liquidity Requirement (SLR) ratio of 45.46 percent against the required regulatory level of 24 percent (**Figure 3.1.8**).

[86] Five export-oriented sectors are subject to reduced rates i.e. 3 percent and 5 percent under SRO 1125(I)/2011, dated 31.12.2011. In order to facilitate the exporters and provide for a No-Tax, No-Refund Regime, the items as specified in the said SRO and the purchase of energy i.e. electricity, gas, furnace oil and coal by the five export-oriented, are to be subjected to zero rate of sales tax. The retail sales of locally manufactured finished goods of these sectors are to be subjected to sales tax @ 5 percent: http://www.fbr.gov.pk/budget2016-17/default.html

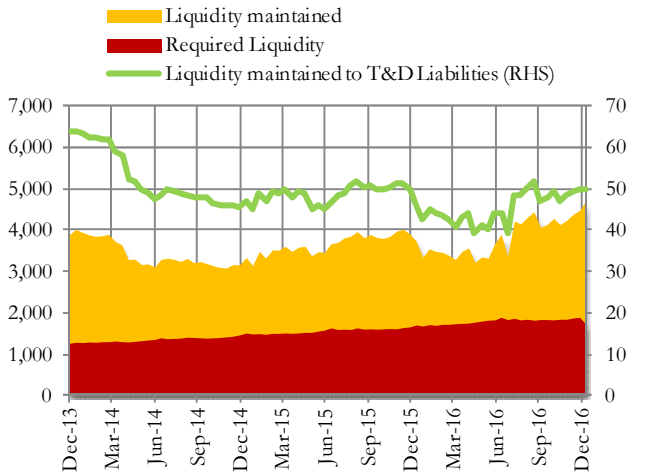
[87] http://www.pakissan.com/english/issues/dispute.over.cane.support.price.shtml

[88] http://www.sbp.org.pk/about/act/CreditBureauAct-2015.pdf

[89] It is to be noted that this target rate is for money market ONR where SBP manages liquidity (primarily through OMOs) in the market to ensure that ONR remains close to the target rate. http://www.sbp.org.pk/dmmd/2015/C9.htm)

**Figure 3.1.8**

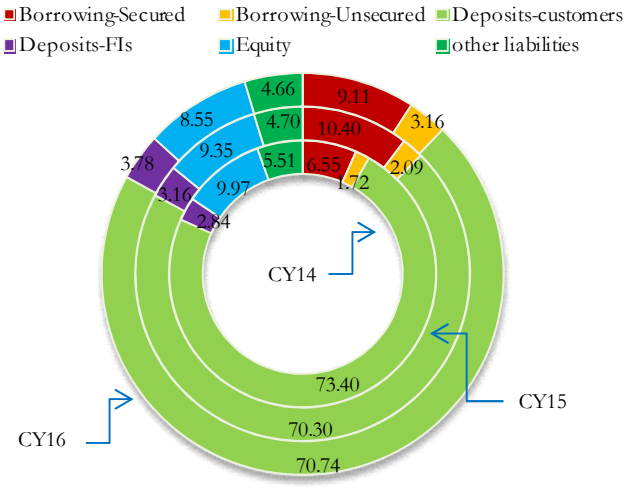
**Banks maintained surplus liquidity**




Source: SBP

**Figure 3.1.9**

**Deposits continued to be the main funding source**




Source: SBP

*Funding risk remains diluted due to minimal change in funding profile…*

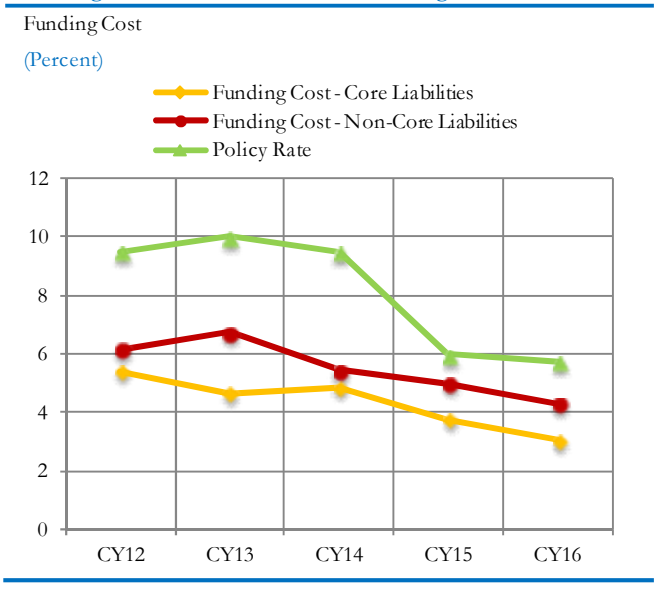
Core liabilities[90] have continued to provide resources needed for managing funding requirement of the banks during CY16 (**Figure 3.1.9**). Deposits have registered a healthy YoY growth of 13.56 percent during the year compared to 12.56 percent growth in CY15. However, the share of non-core liabilities remains significant during CY16 with 10 percent growth in borrowings.

Analyzing weekly borrowing levels of the banks throughout the year suggests that both secured and unsecured borrowings have increased. Banks seems to have utilized these non-core liabilities to meet the rising credit requirements of the private sector particularly in the last quarter of the year.

Last year, funding cost of non-core liabilities did not decline as much when compared to the significant dip in policy rate due to the volume effect.

**Figure 3.1.10**

**Funding cost of non-core liabilties remains higher**




Source: SBP

However, during CY16 the decline in funding costs of non-core liabilities (67 bps) is more than decline in policy rate (25 bps). Comparatively lower rise in volume of borrowings during CY16 is the reason behind this phenomenon. Despite decline, funding cost of non-core liabilities has stayed higher than

[90] Customer deposits are core liabilities while all other liabilities are referred to as non-core liabilities.

that of the core liabilities (**Figure 3.1.10**). Moreover, if the growth momentum of advances continues and outpaces the increase of core funding sources, reliance on non-core funding may enhance, making liquidity management challenging.

*Longer behavioral maturities of deposits are supporting funding needs*

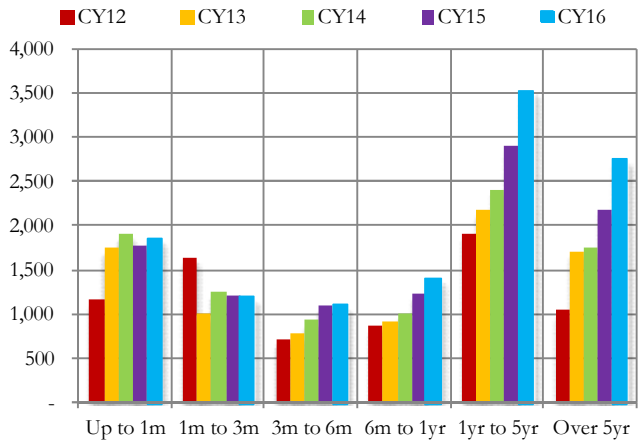
Current and saving deposits (CASA) comprise 71.51 percent of the total deposits as of end CY16.

**Figure 3.1.11**

**Longer behavioral maturities of deposits have shielded banks against potential liquidity risks**

Maturity Profile of Deposits

(PKR billion)




Source: SBP

In terms of behavioral maturities, more than 53 percent of the deposits fall in more than 1 yr maturity bucket (**Figure 3.1.11**).[91] Given the fact that fixed deposits have only 22.63 percent share in total deposits, CASA have practically longer expected maturities. This bodes well for the overall liquidity profile of the banks, as they can effectively utilize these funds for comparatively longer term loans. Nevertheless, banks need to attract longer term fixed deposits to fund the long-term investment opportunities presented by expected economic developments (CPEC etc.) in the near future.

*High quality liquid assets have kept fund based liquidity at comfortable levels*

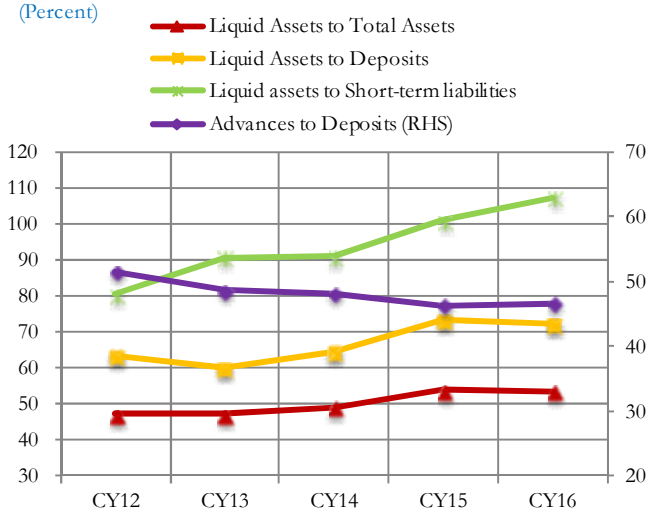
In line with trend seen over the last few years, fund based liquidity of the banking system has improved further with growing stock of risk free sovereign securities. However, with partial shift of government borrowing to SBP, banks' investment in government securities has decelerated. Accordingly, various liquidity indicators like liquid assets to total assets and liquid asset to deposits have seen a first yearly decline in the last four years. However, the ratios still remain quite high and do not pose any risk to the liquidity of the system. Further, liquid assets to short-term liabilities[92] ratio has increased by 6.28 pps to 107.12 percent as of end CY16. This further confirms the stable funding liquidity position of the banks (**Figure 3.1.12**).

**Figure 3.1.12**

**Liquidity Indicators stayed healthy**

Liquidity Indicators

(Percent)




Source: SBP

[91] In terms of BSD Circular Letter No. 03/2011, banks are required to report non-contractual assets and liabilities as per their "expected maturities" that should be calculated based on objective and systematic behavioral studies.

[92] Liabilities maturing within one year

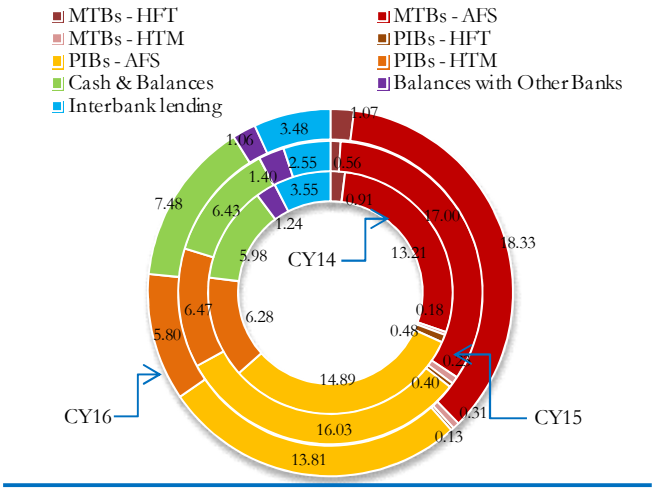
The composition of MTBs and PIBs has somewhat changed during CY16 as the share of the former has increased (3.29 pps) while that of the later has declined (6.45 pps). As discussed earlier, interbank call money lending has also risen during CY16 thus increasing its share by 1.80 pps in overall liquid assets (**Figure 3.1.13**).

**Figure 3.1.13**

**High quality liquid assets ensure efficient liquidity management**

Liquid Assets as a percentage of Total Assets

(Percent)




Source: SBP

*…while banks continue to place majority of liquid assets in "Available for Sale (AFS)" category*

In order to efficiently manage their liquidity, banks have preferred to keep most of the sovereign securities in the AFS category (81.47 percent). Such categorization allows banks to utilize these liquid assets for funding appropriately when required. Hence, banks continue to remain adequately hedged against any liquidity pressures.

*Small banks have relatively lower liquid assets to total assets ratio*

As highlighted in last FSR, small banks have comparatively lower level of liquid assets. The pattern has continued as their liquid assets to total assets ratio has further declined by 3.04 pps to 42.70 percent as of end CY16 (**Table 3.1.4**). The 'small' banks category corresponds to the third quartile of the banks which mainly consists of some Islamic banks, public sector banks, and a couple of growing banks carrying baggage of previous mergers/ acquisitions. Therefore, for conventional banks, reduction in exposure to treasury securities while for Islamic banks, a higher financing growth and relatively lower availability of high quality Shariah compliant securities, are the reasons behind lower liquid assets. (**See Chapter 3.2 for details**).

**Table 3.1.4**

Liquidity by Bank Size (percent)

| Bank Category* | CY12 | CY13 | CY14 | CY15 | CY16 |
|---|---|---|---|---|---|
| | Liquid Assets to Total Assets | | | | |
| | Percent | | | | |
| Large | 47.20 | 48.44 | 51.47 | 55.38 | 54.22 |
| Medium | 45.81 | 41.88 | 42.55 | 51.82 | 55.87 |
| Small | 50.60 | 45.81 | 45.86 | 45.74 | 42.70 |
| Very Small | 57.04 | 58.32 | 48.55 | 54.10 | 63.90 |
| **All banks** | **47.38** | **47.34** | **49.15** | **53.81** | **53.73** |

** Banks have been sorted by asset size and divided in to four quartiles (large, medium, small, very small)*

Source: SBP

*Maturity mismatch exists in over 30-day horizon bucket but is within acceptable limits…*

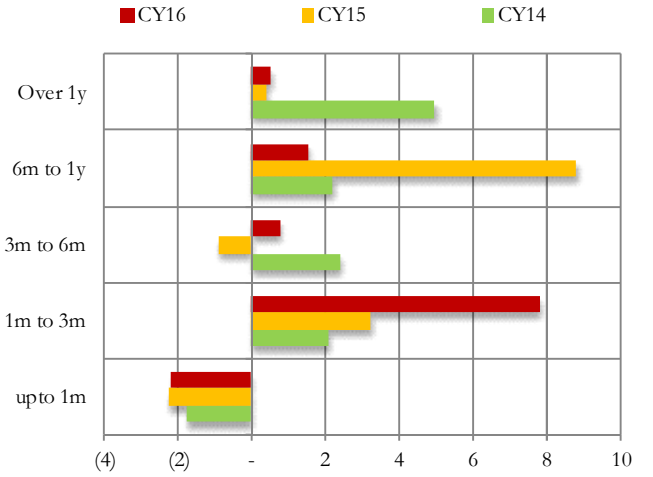
Maturity gap analysis of assets and liabilities of the banks reveals that the liabilities maturing within 30 days will exceed the assets, creating a negative gap (**Figure 3.1.14**). However, the gap is quite small and within acceptable limits. Further, banks have a huge stock of readily tradable liquid securities at their disposal, which also limits possibility of liquidity risk. All remaining maturity buckets reflect positive gaps further reducing such risk.

**Figure 3.1.14**

**Banks are exposed to maturity mismatch risk over 30-day horizon**

Maturity GAP (Assets-Liabilities) as percent of Assets

(percent)




Source: SBP

## 3.1.3 Market Risk

Market risk refers to the possibility of losses in the on and off-balance sheet positions arising from adverse movements in market prices (interest rates, exchange rates, etc.).[93] The sector has negative re-pricing risk at short end, while positive gaps exist beyond 3m horizon. In terms of equity exposure, the stock market investments have increased while foreign currency denominated assets and liabilities have decreased.

*With interest rate at historically low levels, any increase may expose banks to repricing risk…*

Interest rate risk is influenced by the presence of major re-pricing GAPs, exposing the banks to re-pricing and yield curve risk due to excessive movements in interest rates. The gap between rate sensitive assets (RSA) and rate sensitive liabilities (RSL) has remained within comfortable ranges.[94]

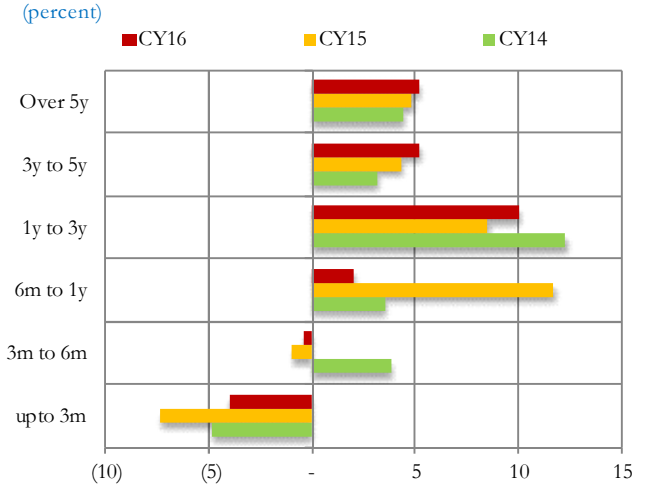
Though negative gap exists for "up to 3m" and "3m to 6m" maturity buckets, gaps are quite small and due to shorter duration of the tenor, these GAPs are likely to have only a limited impact on market value of the assets in case of adverse movements in interest rates (**Figure 3.1.15**).

**Figure 3.1.15**

**Banks may face repricing and revaluation risks in case of increase in interest rates**

GAP (RSA-RSL) as percentage of Assets

(percent)




Source: SBP

*…and revaluation risk due to long-term positive gaps*

The gap for "1y to 3y" maturity bucket that almost touches 10 percent of the assets seems to be on the higher side. As discussed in **Chapter 2**, the gap between long and short term risk free rates has widened since June 2016, where short-term rates seem more stable. As such due to shorter tenor and relatively stable short term interest rates, there will be minimal impact on revaluation of assets on the system due to adverse rate movements. Nevertheless, inflation having increased, interest rates may rise and banks may find themselves exposed to revaluation risk in longer maturity buckets.

*While foreign currency exposures have declined, banks' investment in equities has increased*

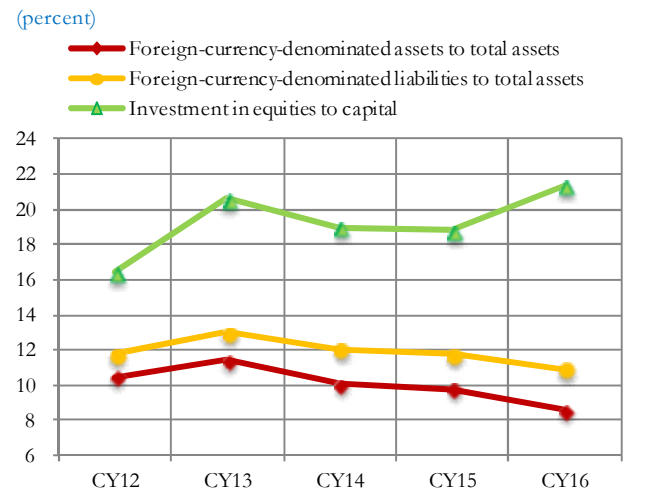
[93] For details see European Banking Authority https://www.eba.europa.eu/regulation-and-policy/market-risk

[94] The gap between RSA and RLA of about + 10 percent of total assets is considered an acceptable limit.

During the year under review, shares of both foreign currency assets and liabilities in total assets of the banking sector have declined thereby minimizing the exposure of the banks to foreign currency **(Figure 3.1.16)**. On the other hand, there has been significant rise in banks' investment in equity market. Although, both foreign currency and equity exposures are well within the limits prescribed by SBP[95], the portfolios remain vulnerable to market risks.

**Figure 3.1.16**

**While foreign currency exposures have declined, banks' investment in equities have increased**




Source: SBP

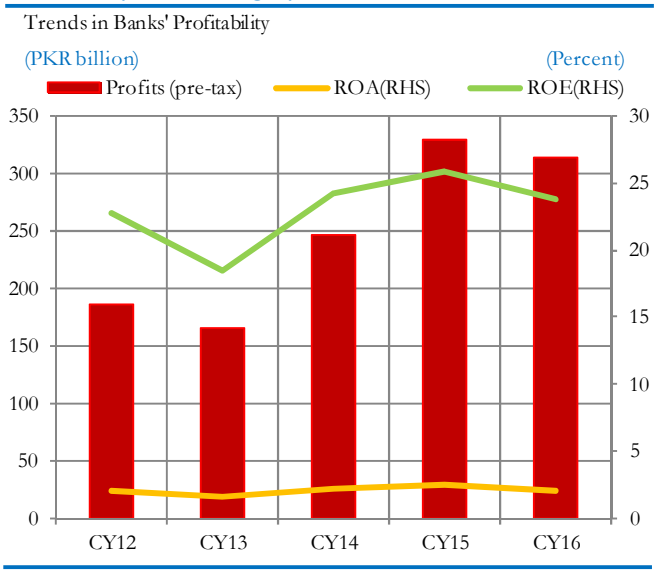
## 3.1.4 Profitability

Profits are, generally, the main driver for building regulatory capital which improves shock absorption capacity of the banks and gives comfort to the regulator as more resilient banks mean less stability concerns.

Banks' profitability that has been increasing for last few years has slightly shrunk in CY16 due to prevailing low interest rate environment. As a result, earnings (before tax) have narrowed by 4.5 percent in CY16 against 33 percent growth in the previous year. This coupled with growth in asset and equity has reduced the ROA to 2.1 percent from 2.5 percent in CY15 and ROE to 23.8 percent down from 25.8 percent (**Figure 3.1.17**).

**Figure 3.1.17**

**Profitability indicators slightly moved downward**




Source: SBP

*Declining spread has surfaced as a risk to banks' profitability*

Interest rate movement has impacted retail rates, such as Weighted Average Lending Rate (WALR) on fresh loans and Weighted Average Deposit Rate (WADR) on fresh deposits. Both these retail rates are, to a large extent, synchronized with the SBP policy rate (**Figure 3.1.18**).

Against the policy rate decline of further 25 pps , WALR, on average, has declined by 136bps and WADR by 76bps to stand at 7.25 percent and 3.54 percent, respectively, in CY16. More than proportionate decrease in retails rates may imply the lagged impact of monetary policy transmission. Consequently, the average spread charged by banks has declined by 60 bps.

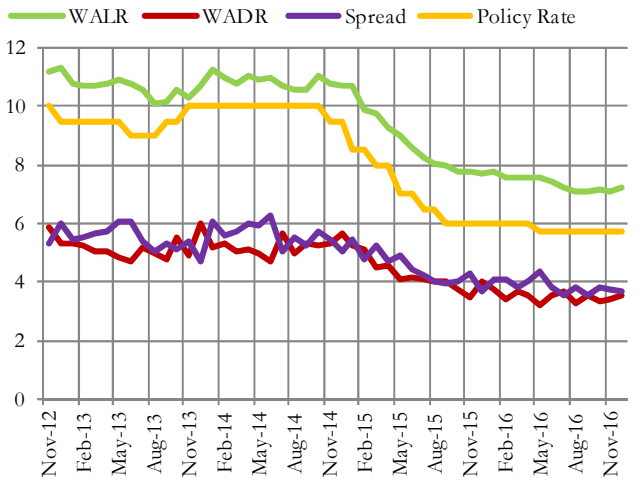
[95] Prudential Regulations R-6 and O-5 for Corporate/Commercial banking http://www.sbp.org.pk/publications/prudential/index.htm

**Figure 3.1.18**

**Spread in tandem with policy rate**

Movement of Deposit, Lending and Policy rates

(Percent)



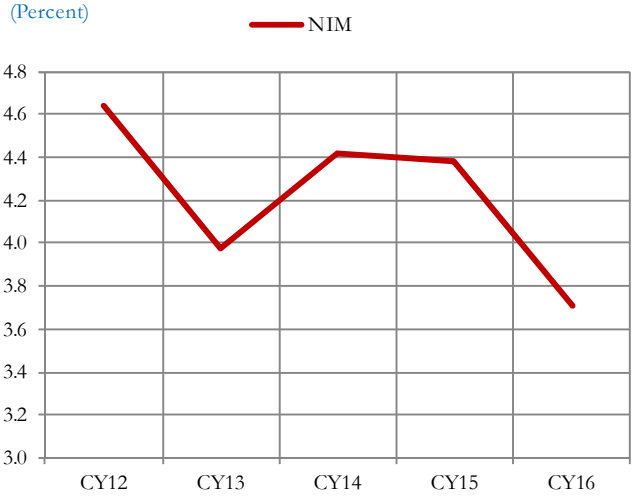

Source: SBP

**Figure 3.1.19**

**NIM observed marked decline**

Net Interest Margin

(Percent)




Source: SBP

## *Net Interest Margin (NIM[96]) observed decline…*

Low interest rates have affected bank's profitability through direct impact on income from earning assets and indirectly through revaluation gains on investment portfolio. NIM has registered a decline of 66 bps in CY16 after staying flat for last two years **(Figure 3.1.19)**. Despite decent growth in average earning assets (15 percent), largely comprising of investments (9 percent growth) and advances (13 percent growth), NIM has declined due to pronounced impact of falling rates which translated into decline in Net Interest Income (NII).

## *Declining markup on investments and advances has reduced Net Interest Income (NII)…*

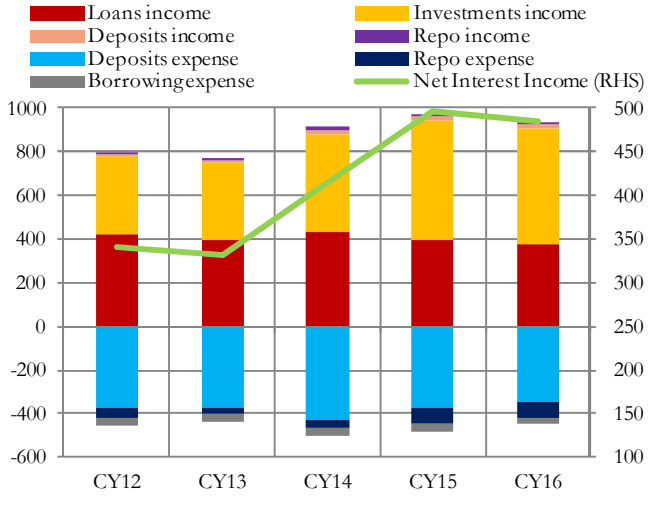
NII of the banking sector has declined by 2.3 percent (YoY) in CY16, due to the fall in revenue leg of the banks by 4.5 percent. Despite 12.8 percent growth in advances portfolio, the interest earned on loans has reduced by 5 percent while markup income on investments, which has been the main revenue component of banks over the last couple of years, has contracted by 3.2 percent after expanding over last decade (**Figure 3.1.20**).

**Figure 3.1.20**

**Net interest income declined**

Net Interest Income

(PKR billion)




Source: SBP

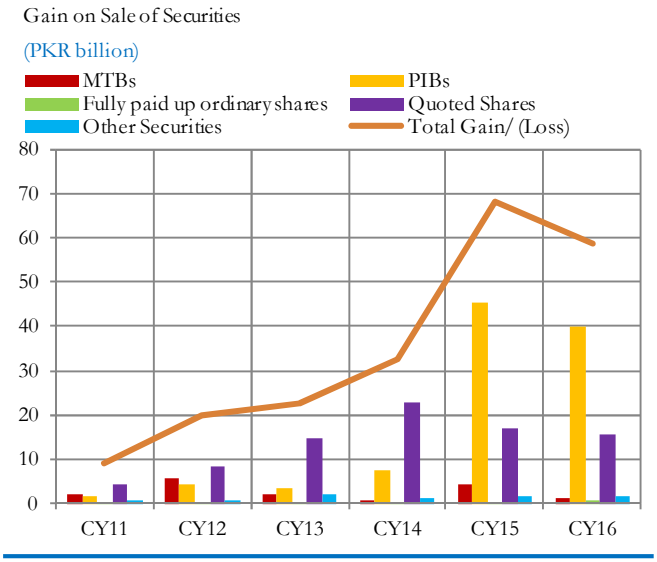
On the cost front, banks seem to have passed on the impact of low interest rates to their depositors and creditors. As a result, markup expense has

[96]NIM equals Net Interest Income (NII) over average earning assets. NII equals Interest revenue from advances, investments and others less interest expense on deposits, borrowings and others.

reduced by 6.7 percent in CY16. As a whole, the markup cost on deposits has decreased by 8.5 percent in CY16 despite 13.6 percent growth in stock of deposits. As for the borrowings, the cost on secured borrowings surged by 5 percent while on unsecured borrowing it reduced by 12 percent.

**Figure 3.1.21**

**Revaluation gains observed steep decline**




Source: SBP

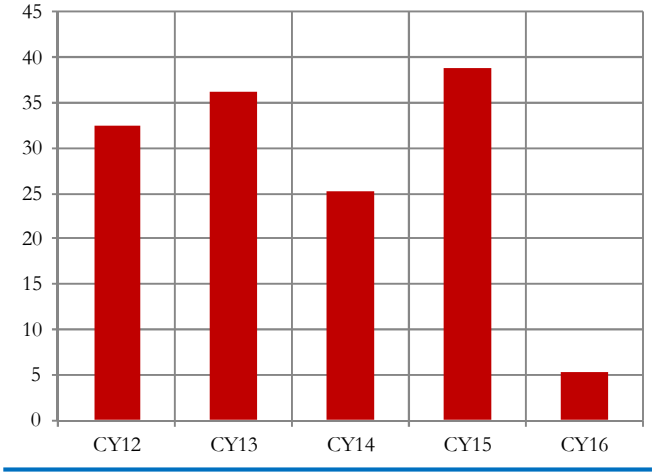
The second channel through which interest rates have affected banks profitability is in terms of lost revaluation gains. Banks in the past have benefitted from gains on sale of their higher interest bearing securities portfolio. Banks earning from gain on sale of securities in CY16 has been 14 percent less than last year, resulting in a decline in overall profitability (**Fig 3.1.21).**

*Lower provisions charge considerabely offset decline in profitability…*

Low interest rates generally result in less probability of defaults—barring instances of untamed disbursement of loans in pursuit of "search-for-yield"—as they reduce the cost for the borrowers thereby improving their capacity to repay. Lower defaults then lead to lower provisioning. During CY16, provision charge for NPLs decreased by 86 percent to PKR 5 billion, which has supported the overall profitability of the banking system (**Figure 3.1.22).**

**Figure 3.1.22**

**Momentous saving on provision expense**




Source: SBP

*Non-mark up income moves in tandem with declining mark up income*

The non-mark up income has also followed the trend of markup income and declined in CY16. Banks reliance for non-markup income is largely on fee, commission and brokerage which are strongly correlated with overall economic activity and in turn with markup income. While Fee and Dividend income inched up, contraction in FX income due to stable exchange rate and as discussed above, lower gain on sale of securities decreased the non-mark-up income by 6.2 percent (**Figure 3.1.22 and 3.1.23**).

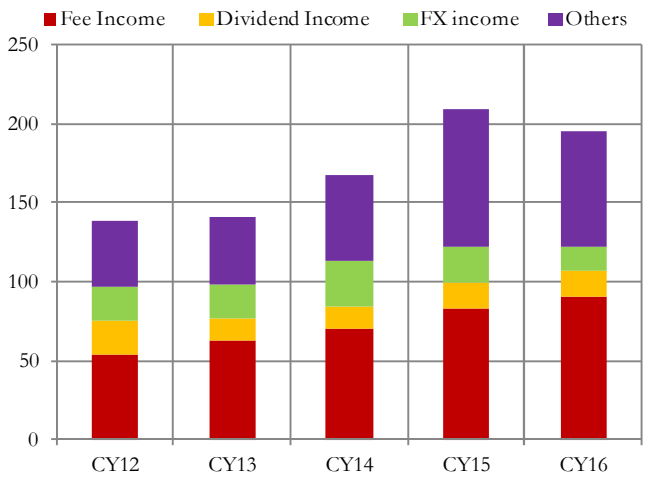
With rising CPEC related economic activity and in line with growth in fixed capital formation, it is expected that banks income from fee, commission and brokerage will rise, being strongly correlated with overall economic activity.

**Figure 3.1.23**

**Non mark-up income also declined**

Composition of Non Markup Income

(PKR billion)



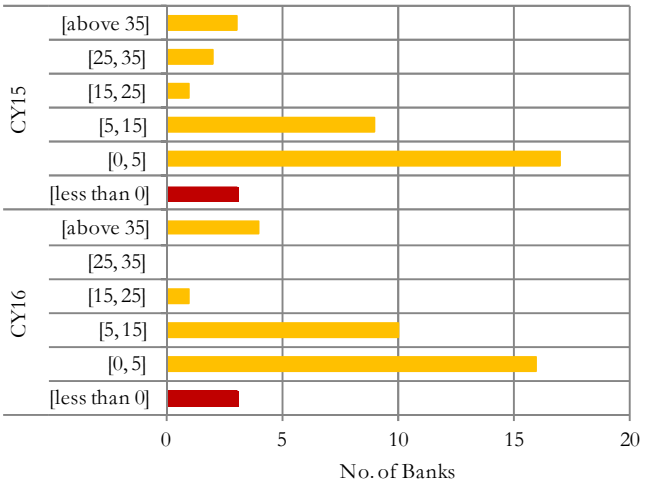

Source: SBP

**Figure 3.1.24**

**Number of loss making banks remained the same**

Pre-tax profitability of banking sector

(PKR billion)




Source: SBP

*Concentration in earnings somewhat increased …*

Size is a major determinant of growth in banking sector which is depicted in profitability distribution of banks as well. Bank-wise statistics reveal a diverse contribution in banking profits as 31 banks posted profits, while the count of loss making banks has remained 3 (**Figure 3.1.24**).

Concentration of earnings has increased as the share of large banks in total profits has increased to 77 percent in CY16 from 72 percent in CY15[97], while share of medium banks sized banks has reduced to 16 percent. The share of small banks in profitability has reduced to 5 percent in CY16 from 8 percent in CY15. Very small banks have also been successful in increasing their share to 2 percent in earnings in CY16 from a meager 1 percent share in CY15 **(Table 3.1.5)**.

**Table 3.1.5**

Concentration of Earnings by Bank Size

| Bank Category* | CY16 | CY15 | Change |
|---|---|---|---|
| | Share in earnings(before tax) | | |
| | Percent | | Percentage Points |
| Large | 77 | 72 | 5 |
| Medium | 16 | 19 | -3 |
| Small | 5 | 8 | -4 |
| Very Small | 2 | 1 | 1 |

** Banks have been sorted by asset size and divided in to four quartiles (large, medium, small, very small)*

Source:SBP

With any possible movement in interest rates in future, concentration pattern of earnings with some minor adjustments will remain intact. Large banks will keep on compounding on their larger branch network which provides them with added advantage of cheap deposits and better investment avenues. Apart from outreach advantage, large banks will keep on enjoying higher earnings because of their potential to expand their balance sheet for which they have cushion available in terms of their strong solvency and liquidity positions **(Table 3.1.6)**.

[97] With merger of one Islamic bank with another bank, the number of banks has reduced to 34 in CY16 form 35 in CY15.

**Table 3.1.6**

Category wise Capital and Liquidity Cushion CY16

| Bank Category* | RWAs Cushion | LA/TA |
|---|---|---|
| | PKR billion | Percent |
| Large | 5,272 | 54.2 |
| Medium | 1,341 | 55.9 |
| Small | 857 | 42.7 |
| Very Small | 163 | 63.9 |

** Banks have been sorted by asset size and divided in to four quartiles (large, medium, small, very small)*

Source: SBP

Low interest rates, receding investments in government securities and maturity of high yielding PIBs could potentially keep earnings of the banking system in check in short term. However, banks are expected to gain form rise in advances as evident from current momentum of fixed investment loans which will translate into high working capital requirement in the future as well. These prospective developments will ultimately give the desired push to banks' profitability.

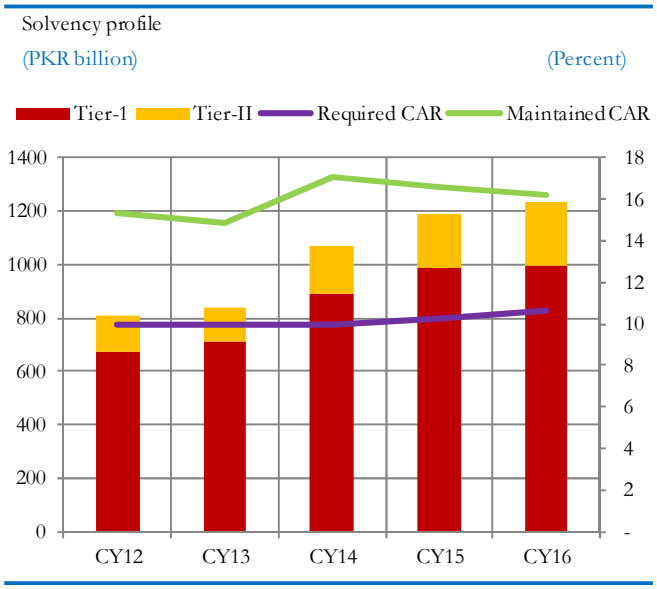
### 3.1.5 Solvency[98]

*Both risk based and non-risk based indicators of solvency remained in comfortable zone…*

The CAR of the banking system is robust despite implementation of a comparatively strict Basel III Capital Accord. Capital Adequacy Ratio (CAR) with a nominal decline of 45 bps[99] has reached 16.2 percent which is well above the local benchmark of 10.65 percent. The leverage ratio (LR)[100] after a slight decline stood at a comfortable level of 5.1 percent in CY16–well above the Basel-III standard requirement of 3 percent. Lastly, majority of the banks are compliant with the prescribed Minimum Capital Requirement (MCR) of SBP.

**Figure 3.1.25**

**CAR of he banks remained above the benchmark**




Source: SBP

*Credit Risk Weighted Assets(CRWAs) share increased slightly…*

In CY16, total eligible capital has grown at a rate of 3.7 percent; largely contributed by Tier II instruments; while RWAs has observed 11.2 percent growth (**Figure 3.1.25)**. In line with private sector's credit uptake, CRWAs witnessed a growth of 11.4 percent and increased its share in RWAs to 74.8 percent (**Figure 3.1.26)**. Within CRWAs, exposures to unrated borrowers[101] (15.85 percent) and retail (5.54 percent) have contributed to this rise.

[98] Solvency is largely measured by Capital Adequacy Ratio(CAR) in banks

[99] Adjusted CAR after structural adjustment (one-off accounting adjustment by a public sector bank) has remained at 16.6 percent in CY15 against 17.3 percent before adjustment.

[100] Leverage ratio is defined as Tier-I capital as proportion of total assets (adjusted both sides for intangible assets). The inverse of leverage ratio is called leverage multiples.

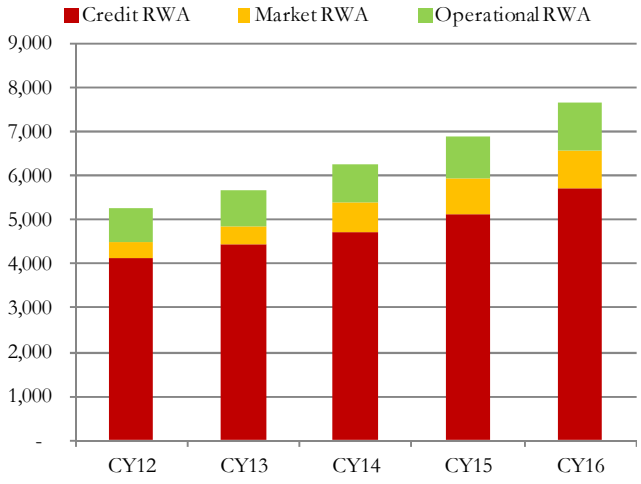
[101] Effective from December 31, 2015, all unrated private sector corporate entities with aggregate outstanding exposure from financial institutions (both fund-based and non-fund based) of Rs. 3.0 billion or above, net of liquid assets, will attract risk weight of 125 percent. Retail exposure and residential mortgage with risk weights of 75 and 35 percent respectively.

**Figure 3.1.26**

**Credit risk remains dominant**

Riskiness of the banking sector

(PKR billion)



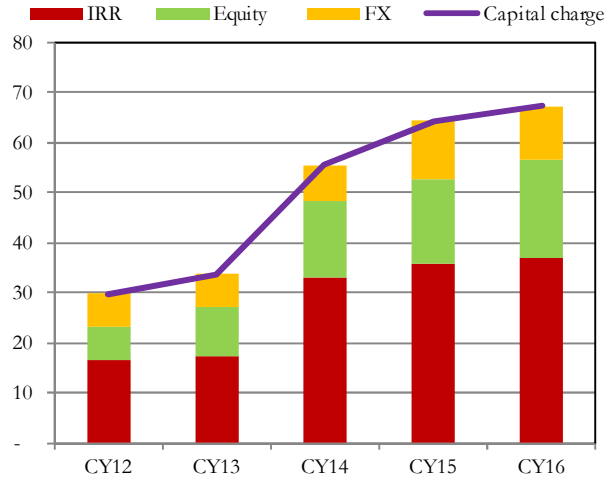

Source: SBP

**Figure 3.1.27**

**Interest Rate Risk (IRR) remained major component of market risk**

Market Risk Components

(PKR billion)




Source: BPRD, SBP

### *…while growth in Market Risk Weighted Assets (MRWAs) slowed down*

MRWAs, after observing sizeable growth in last couple of years, have observed a deceleration in CY16 due to maturity of longer term debt instruments, primarily, on account of maturing PIBs with no proportional roll-over. Among the MRWAs, Interest rate risk (IRR) has remained the driver of increase in capital charge due to significant holding of investment portfolio by banks. However, with significant growth of 26 percent in equity investments, the associated capital charge has surged by 17 percent (**Figure 3.1.27**). On the other hand, the share of Operational Risk Weighted Assets (ORWAs) continued to increase in CY16.[102] Though gross income has declined in CY16, the share of ORWAs in total RWAs has increased to 14.2 percent due to averaging out effect.

**Table 3.1.7**

Distribution of Banks by CAR

| | CY12 | CY13 | CY14 | CY15 | CY16 |
|---|---|---|---|---|---|
| CAR<Required | 5 | 5 | 3 | 3 | 4 |
| Required<CAR<15percent | 9 | 12 | 12 | 13 | 13 |
| > 15 percent | 24 | 21 | 22 | 19 | 17 |
| Total | 38 | 38 | 37 | 35 | 34 |

Source: SBP

### *Minimum Capital Requirement (MCR) policy guiding CAR…*

A higher capital base above the regulatory requirements provides banks with sufficient cushion against unexpected idiosyncratic shocks and severe macroeconomic conditions. As part of its policy to strengthen common equity base of banks, the SBP over the period has enhanced the MCR in gradual manner[103]. The outcome of this approach is obvious in comfortable CAR of almost all banks (**Table 3.1.7**). Few banks falling short of MCR represent

[102] Most of the banks in Pakistan use Basic Indicator Approach (BIA) to measure operational risk charge. Under the BIA, operational risk charge is 15 percent of the average of last three years' positive annual gross income. As the methodology of calculating ORWAs is dependent on gross income of the banks, so ORWAs naturally increases with increase in gross income.

[103] As per BSD Circular No. 07 of 2009, banks are required to raise their paid up capital (free of losses) from PKR 6 billion in 2009 to PKR 10 billion by 2013.

only a nominal share of industry assets and are either under restructuring or undergoing privatization.

*Improvement in CAR is seen across all the categories of banks*

In terms of size, CAR has improved among all categories of banks except very small banks (**Table 3.1.8**). Large banks, which are holding 69 percent of the industry's risky assets, have maintained their CAR well above the local benchmark. On the other hand, CAR of medium sized and small banks has improved over the years due to capital build up in these banks which has started paying off in expanding their balances sheets. As a consequence, CAR of small banks has grown by 300 bps in CY16.

**Table 3.1.8**

Capital Adequacy Ratio (CAR) by Bank Size

| Bank Category* | CY13 | CY14 | CY15 | CY16 |
|---|---|---|---|---|
| | percent | | | |
| Large | 15.2 | 15.8 | 15.9 | 15.9 |
| Medium | 12.1 | 13.8 | 14.8 | 15.1 |
| Small | 13.6 | 15.2 | 16.3 | 19.3 |
| Very Small | 17.5 | 15.0 | 18.2 | 17.2 |
| Overall | 14.9 | 17.1 | 17.3 | 16.2 |

** Banks have been sorted by asset size and divided in to four quartiles (large, medium, small, very small)*

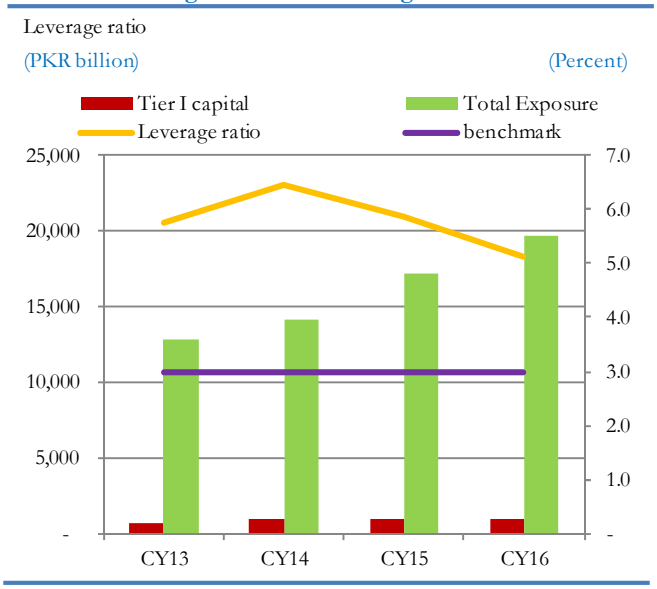
Source:SBP

*Banking system's leverage remains well within the prescribed limit…*

The leverage ratio, a non risk based indicator of solvency with a slight decline remained at a comfortable level; thanks to growing Tier-I capital which kept on supporting the increasing asset base. During CY16, the leverage ratio stood at 5.1 percent which is higher than the minimum 3 percent set by the Basel Committee on Banking Supervision[104] (**Figure 3.1.28**). However, industry still has the gap of 214 bps between actual leverage and benchmark leverage which can be exploited to increase its asset base with existing level of equity.

**Figure 3.1.28**

**Banks have margin to increase leverage**




Source: SBP

The risk based measure of CAR, at its present level is reinforcing the room available for further risk taking in banks' balance sheets; banks will remain within prescribed limit even if they expand their risk weighted assets by another 52 percent (**Table 3.1.9**).

**Table 3.1.9**

Capital Cushion CY16

| | Existing | Simulated | Cushion |
|---|---|---|---|
| | PKR billion | | |
| Capital | 1,234.4 | 1,234.4 | - |
| RWAs | 7,633.2 | 11,590.5 | 3,957.3 |
| CAR | 16.2% | 10.7% | |

Source: SBP

With a comfortable level of both CAR and Leverage indicators and potential of growth in the economy in the backdrop of CPEC related projects, banking

[104] The parallel run period of leverage ratio in Pakistan is from December 31, 2013 to December 31, 2017.

industry enjoys enough buffer to further increase its exposure to the private sector in the future.

The capital adequacy of the banking sector, though still comfortable, could face few challenges due to host of factors; uptick in advances will lead to higher RWAs; pressure on profitability may constrain the plough back of retained earnings to capital base; and, as part of Basel-III implementation schedule, the regulatory CAR requirements are set to gradually increase in the future (11.275 percent in 2017, 11.90 percent in CY18 and 12.5 percent in CY19. For a discussion of Resilience under stress scenario, please see Chapter 4.

## Box 3.1: Impact of Leverage Ratio (LR) requirement on bank risk-taking

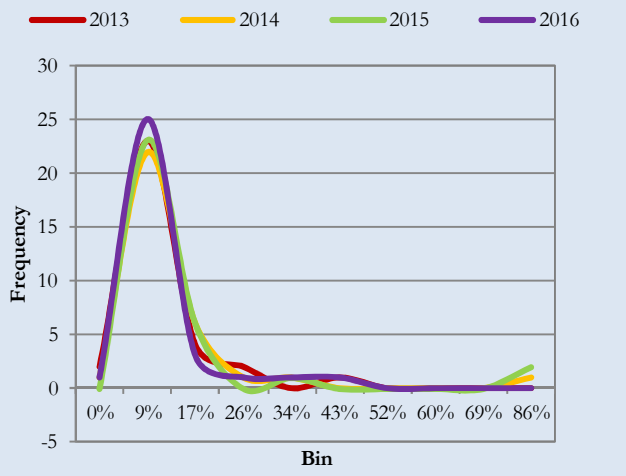
The leverage ratio is a macro prudential measure which is aimed at constraining the excessive leverage buildup in the system and enhancing the banking system's stability. Highly leveraged banks have lower loss-absorbing capacity and are arguably less resilient to shocks. However, non-risk-based nature of the leverage ratio could incentivize banks to increase their risk-taking. Assets with the same nominal value but having different riskiness are treated equally and face the same capital requirement under the non-risk-based LR.

The empirical analysis of domestic banking industry shows that leverage ratio of industry has come down by 60 bps since its introduction in 2013. The frequency distribution of banks' leverage ratio over the years shows that banks have sufficient room to play around by remaining within the regulatory leverage. (**Figure B3.1.1**)

**Figure B3.1.1**

Banks' leverage has increased over the years

Leverage ratio




Source: SBP

The evidence of increased leverage on banks' risk taking behavior is mixed. The segregated analysis of banks shows following observations:

1. Banks with highest decline in leverage ratio utilized it to increase their RWAs to total exposure.
2. Other banks have utilized their leverage to increase less risky assets i.e. risk free governments securities.
3. Both categories of banks have maintained their CAR during this time.
4. The main driving factor behind different behavior of banks to utilize leverage is to improve their return on equity. Banks with low ROE relative to their peers mainly expanded their balance sheets in risky spheres.