

*Full Length Research Paper*

# Performance evaluation of pre- and post-nationalization of the banking sector in Pakistan: An application of CAMEL model

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This research study is based on the nationalization and de-nationalization of the banking industry in Pakistan. An effort has been made to analyze and evaluate the performance and efficiency of the banking sector using CAMEL parameters. It covers the period of pre- and post-nationalization of the state owned and commercial owned banks of Pakistan. Through the utilization of this model, it has been explored that the position of banks under study are sound and satisfactory with regards to capital adequacy, assets quality, management capabilities, earnings and liquidity.

**Key words:** Performance and efficiency of banking, soundness of banks, CAMEL.

## INTRODUCTION

The first program of nationalization that was taken into functioning in Pakistan in 1974 was suspended in 1980 due to change of government in the country. The banking industry was treated as an employment exchange rather than a financial institution. More people were employed on political basis and more numbers of branches were opened around the country, which resulted in a loss of devotion in trained personnel and shift of loyalties to the private sector banks and establishment of their own business out of the country. This behavior led to institutional fall down at unaffordable and unavoidable cost, thereby leading to budget deficit, foreign debt burden, extended pressures, increased trade deficit, disequilibrium in balance of payment and alarming current account position. As such, the banking industry was affected by over employment, over branching and non-performing loans (NPLs). These were the main reasons of denationalization of the banking industry and it was the only way to save the financial sector and develop the finance institution (DFIs) of Pakistan. Many branches

making loss were closed, leading to a system of financial apprehensions and healthy competition between private financial institutions and state owned banking sectors with modified culture and behavior.

The main objective of this study is to watch performance and efficiency of the banking industry at the period of pre and post nationalization of state owned enterprises and private commercial banks of Pakistan. Reform and corrective measures were undertaken by the governments to improve the performance and soundness of banks operating in Pakistan. The study would concentrate on evaluating the soundness of banking institutions, particularly Muslim Commercial Bank (MCB) and HBL during the decades of the reform process. The study also assesses the implications of reforms and measures undertaken to streamline the entire banking sector. It covers the period of twelve years from 1990 to 2002 and analyzes the performance and efficiency of Pakistani banking sector during the reform and post-reform period.

This study tests the solvency of banks which are operating in Pakistan and applies a new procedure of CAMEL for high lighting super sound banks during the period of the study. By applying the parameters of CAMEL frame work, capital adequacy, asset quality and

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management soundness, sensitivity to market risk, liquidity and earning are examined in detail. To study the impact of the financial sector reforms on the soundness of banks operating in Pakistan, CAMELS framework will be applied on all banks data for the following periods:

1. 1982 to 1987 (Pre- reform period)
2. 1988 to 1990 (Beginning of the reform- period)
3. 1991 to 1996 (During the reform period)
4. 1997- to 2002 (Post- reform period)

Taking into account the impact of financial sector reforms on the soundness of banks, we intend to analyze the soundness of banks' operation in Pakistan under CAMEL framework. Our methodology is unique in a way that it applies a well known method (CAMEL) after confirming:

1. Capital adequacy,
2. Asset quality,
3. Management soundness,
4. Earnings, and
5. Liquidity position of the banking sector in Pakistan.

This study will assist in future planning, decision making and help in effectively controlling the system in the banking industries even in 'private' or 'public' sector banks of Pakistan.

## LITERATURE REVIEW

Different countries have different objectives in their attempt to privatize state owned enterprises. The objectives of privatization of each country have to be clearly defined so that the success or failure of privatization is properly measured. In certain instances, privatization is necessitated to increase competition in the country; while in other countries, the objective could be pure denationalization. Most free market economies attempt to create efficiency in the market by allowing more competition. The case of 'New Zealand' clearly fits this objective. Other objectives of privatization could be revenue generation for the government. Some heavily indebted countries, with unsustainable balance of payment problems, engaged in privatization exercise to generate revenues with which they could reduce their budget deficits (Berg, 1993). A case in point is Mexican privatization exercise and to certain extent the case of Zambia. Their primary objective was to raise revenue and to ease some of the fiscal problems of government. Other objectives, such as the enhancement of efficiency, liberalization and deregulation were also considered, but they were secondary in nature (NBP Economic Bulletin, 2001). Another privatization objective is the economic empowerment for the majority of the population. In addition to issues of efficiency enhancement deregulation and competitions, some governments are faced with the

issue of huge income disparities that need to be addressed. Privatization may bring successful or unsuccessful results. Dasgupta (2000, 2001) explains that due to the problem of nonperforming assets in post liberalized era, stakeholders and researchers have started taking interest in evaluating, measuring and managing the financial performance of Indian banks.

From the continued effects of nationalization, domestic banks faced difficult situations to maintain their share in their deposits and advances. The share of state owned banks further declined due to competitive growing trends of the private sector. State owned banks were under pressure of political leadership and interventions resulting to overstaffing and over branching, which were the main causes of failure of the state owned banks (FSA-2002). However, Salehi et al. (2009) conclude that after interference of the Iranian government in the banking sector, growing concern becomes more sustainable, while it raises higher level of inflation in the economy. As such, domestic Pakistani banks were faced with large amount of nonperforming loans and high administrative expenses, huge losses and eroded capital base of state owned banks (Ayub, 1996). In this situation of high administration expenses and non performing loans, Bharathi (2010) concludes that intellectual capital performance of the board of directors and the overall firm seems to be a more valuable tool in analyzing the performance of banks. She concludes that management of human resources play a very important role towards the overall intellectual capital and profitability performance of banks in Pakistan.

CAMEL model has been used successfully by many researchers to evaluate the financial performance of banks in one of the latest studies done by Sangmi and Nazir (2010). They have used the CAMEL parameters to highlight the position of banks in Northern India after evaluating their capital adequacy, asset quality, management capability and liquidity. A recent study by Shar et al. (2010a) applies bankometer to analyze the capital inadequacy and solvency of banks before and after nationalization. The study confirms that majority of the big banks could not pass the solvency measure after nationalization using bankometer tool.

A study on foreign and local private banks was conducted by Taseer et al. (2000), with the primary objective of providing a reference to the day indicators of performance, growth and size of the financial position of banks' operation in Pakistan. For comparison purposes, they segregated banks in three categories via: foreign banks operating in Pakistan, local private banks and nationalized commercial banks. They gave good industry review and analyzed banks on financial ratios. They ranked foreign banks and local banks on assets basis and on profit before tax basis. Though Smith (1998) has also explained the meanings of financial parameters used in the analysis of banking performance, a latest study done by Shar et al. (2010) concluded that CLSA-stress

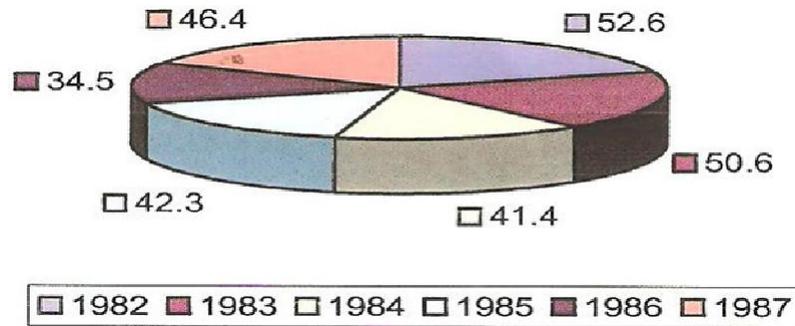


Figure 1. Capital to equity of all banks.

Table 1. Asset quality of all banks.

Asset quality	1982	1983	1984	1985	1986	1986
Earning assets to total assets (%)	76.3	77.3	73.8	74.8	75.9	73.7
Advances top total assets (%)	59.3	57	59.3	58.4	58.7	51.4
Investments to Total A (%)	25.4	28.1	22.3	23.1	23.9	29.4

test is a very useful tool to gauge the capital strength, assets quality, efficiency and liquidity of banks before and after nationalization. They further concluded that majority of the government owned banks show weaker performance than the private sector banks.

#### MATERIALS AND METHODS

To conduct this study, secondary data have been derived from the statistics Department of the State Bank of Pakistan and from 'balance sheet' and 'profit and loss account analysis' reports published by the State Bank of Pakistan. Further, the audited annual reports of all banks operating in Pakistan were published. To supplement the analysis, however, certain data from FSA-2002 and the Banking Supervision Department of the State Bank of Pakistan were also taken.

#### ANALYSES, RESULTS AND DISCUSSION

For the purpose of CAMELS analysis, the overall banking data have been segregated into four periods:

- Pre-reform (1982 to 1987)
- Beginning of the reform period (1988 to 1990)
- During the reform period (1991 to 1996)
- Post-reform period (1997 to 2002)

##### Pre-reform period

The pre-reform period (from 1982 to 1987), which was the period of evolutions had invited a reform program which took place in the beginning of the 1990s. The pre-reform period was measured through the modern financial indicators and determinants which were recognized

by the State Bank of Pakistan, high government borrowing, bank by bank credit ceilings, interest rate controls and directed and subsidized credit in the mid 1980s.

##### Capital adequacy

This determines, in other works, the liabilities (CL) ratio, capital to equity (CE) ratio and capital to assets (CA) ratio. During the pre-reform period, this ratio was not good enough and showed the weak position of banking industry, as evident in this period (except 1986). Capital to equity has also declined from 52.6% in 1982 to 34.5% in 1986, while this ratio showed 35% increase in 1987 over 1986. The CLA was between 2.1 and 3.1% and later went up to 29%, which was low as compared to 4% benchmark for the CA ratio and indicators that measured the vulnerability of the banking sector (Figure 1).

##### Assets quality

A large earning higher profitability, expenditure to total asset and earning, declined form 76.4% in 1982 to 74.9 in 1987. Asset quality of all banks, excessive utilization of assets and credit to asset (CAR) declared fifty plus (50%) or above, thereby leading the investment, whereas total asset ratio was less than 30% (Table 1 and Figure 2).

##### Management soundness

On the basis of monetary indicators, it is difficult for banks to draw deposits; despite that, operating expenses to total expenses, total expenses to total income and

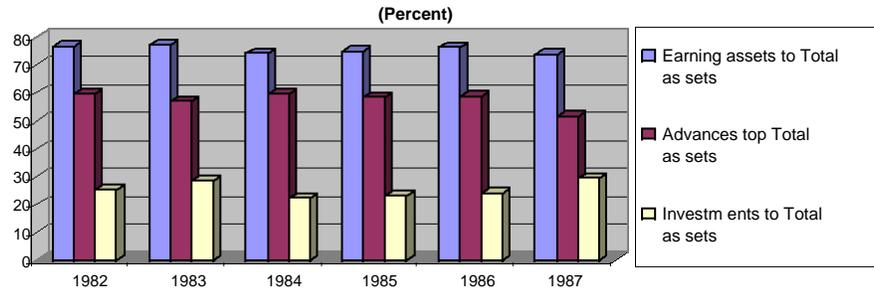


Figure 2. Asset quality of all banks.

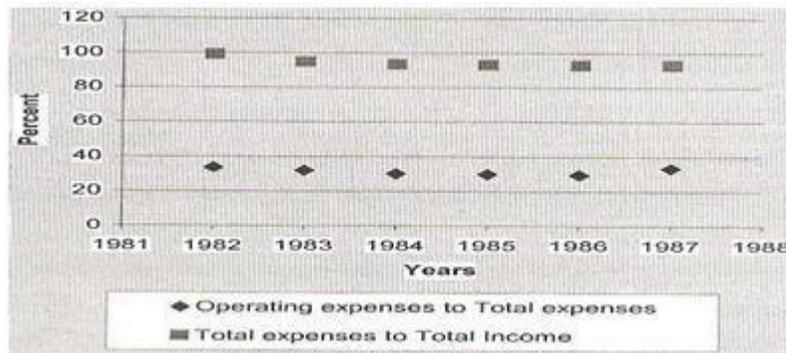


Figure 3. Earning and profitability of all banks.

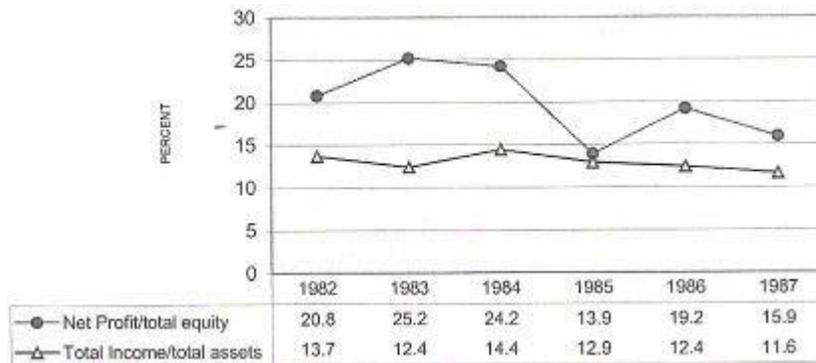


Figure 4. Earning and profitability of all banks.

operating expenses were controlled. Expenditure and income ratio (EIR) indicates the flaws of operating efficiency in management ratio. It was very high in 1982 at 99.1 to 93.0%. Operating expenses per employee remained almost constant throughout the period (Figure 3).

### Earnings and profitability

Ability to support the present and future operations of a bank depends on the quality of its earnings and profitability profile, in absorbing losses through strengthening of capital base and adequate payments of dividends to its shareholders. As such, the best measuring procedure

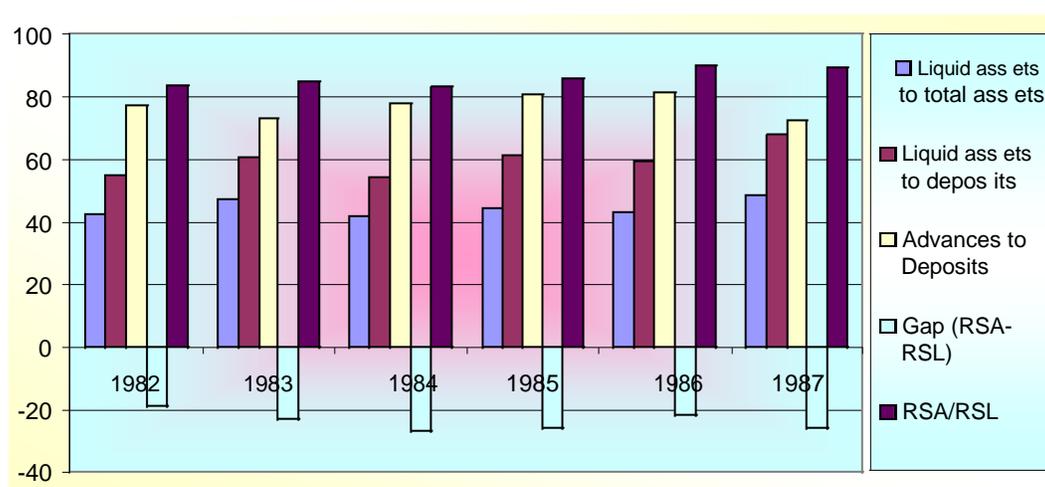
was applied, that is, ROA (return on asset) and ROE (return on earning total assets) (Figure 4). ROA remains 0.01%, which shows inefficient management of the banking and financial institutions, while ROE was below 26% because of the mounting burden on non-performing loans during the study period.

### Liquidity and sensitivity to market risk

A fall in liquid assets and a rise in loans created lot of problems for the banking industry of Pakistan and was seen as an unsafe posture. The banking sector increased investment in risky assets (that is, yellow cab scheme) for

**Table 2.** Liquid and sensitivity of market risk of all banks.

Percent	1982	1983	1984	1985	1986	1987
Liquid assets to total assets	42.1	47.2	41.6	44.3	42.9	48
Liquid assets to deposits	54.7	60.4	54.4	60.9	59.3	67.7
Advances to deposits	77.2	73	77.6	80.3	81.2	72.6
Gap (RSA-RSL)	-19	-23	-27	-26	-22	-26
RSA/RSL	83.3	84.5	82.7	86	89.8	89.4



enhancement in the returns, which increases liquid assets from 43.2% in 1982 to 49.3% in 1987 to 1988. The liquid assets to deposit ratio was increased from 55.5% in FY (1982 to 1983) to 70.1% in FY (1987 to 1988) which was the major sign of the depressed situation in the period of nationalization (Table 2 and Figure 5).

In addition to the liquidity problem during 1982 to 1987, banks faced difficulties due to high investment in long term securities with the expectation of a far higher return. The differences were available in the shape of gap and risk between rate of sensitivity assets (RSA) and rate of sensitivity to liabilities (RSL). For example, large investment was made in volatile assets by banking and development finance institutions. However, consequences of higher RSL than RSA on the growing gap remained -19% in 1982 to -26% in 1987 and their rising ratios were 83.3% in 1982 to 89.4% in 1987. This trend indicates risk in the banking sector due to higher rate of interest. Overall, the banking sector remained in turmoil during the pre-reform period and required measures to eradicate the afore-discussed vulnerabilities and shortcomings. It could only have been possible by creating good governance with sound management strengthening, in that the competition was the main objective of starting the reform period in the areas of state owned enterprises (SOEs).

### Beginning of the reform period

As discussed previously, the late 1980s witnessed a surge in the economy. In the early 1990s, we had seen the implementation of measures to assess their usefulness in terms of developing the banking sector. As such, the following analysis will give a clear picture of the implementation of these measures.

### Capital adequacy

Comparison of capital adequacy with the pre-reform period illustrates a slight improvement in all these ratios. Performance shows a slow decline in capital to liability ratio (CLR) from 4.6% in 1989 to 4.00% in 1990 by maintaining capital reserve via the banking industry of Pakistan. A high CLR hums a strong position of banks as it is evident in the comparison of pre-reform CLR with the same ratio of the beginning of the reform period, which shows a slight improvement. Capital to equity ratio decreased from 45.5% in 1988 to 42.9% in 1990 and CA which was 3.1 to 4.3% remained below the stipulated ratio as compared to the generally accepted benchmark of 4.0%, and thus, shows improvement during the reform period than the pre-reform period (Figure 6).

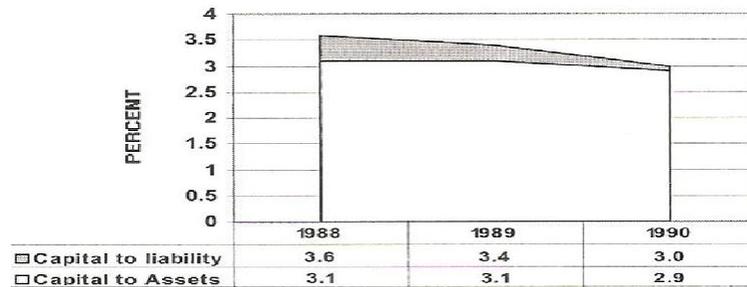


Figure 6. Capital adequacy of all banks.

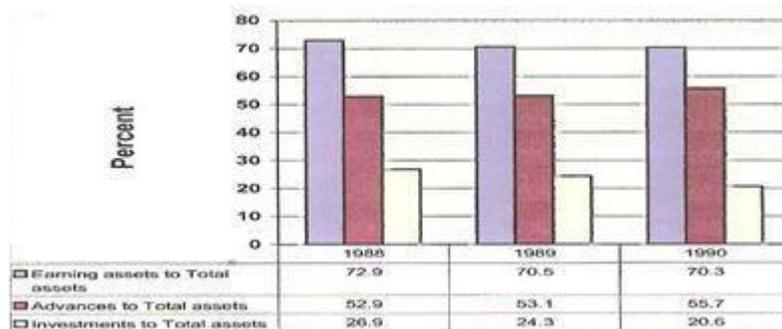


Figure 7. Asset quality of all banks.

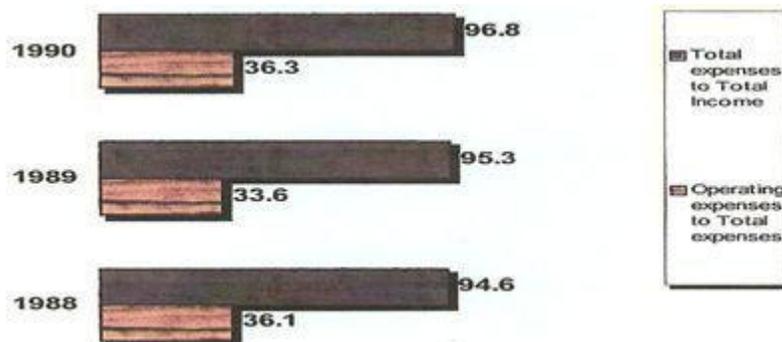


Figure 8. Management soundness of all banks.

### Asset quality

Figure 7 shows a deteriorating position of all assets of the banking industry before privatization. Earning asset to total asset from 73.8 to 71.6% in 1990 affected the profitability of the banking industries. Credit to total asset was 53.8%; however, total assets remained below 28% at the beginning of the reforms. These indicators reflect the banking industry's investment in less profitable sectors.

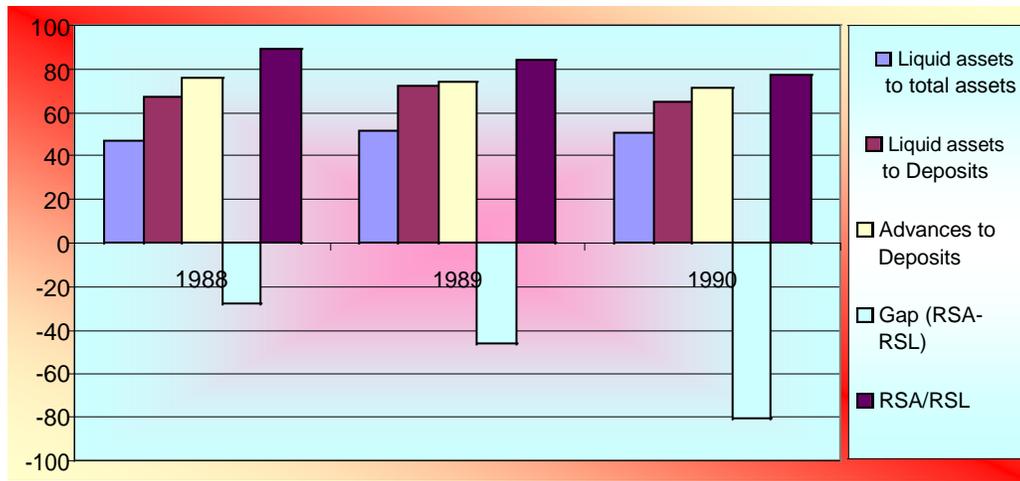
### Management soundness

High and even gradually increasing expenditure to income

ratio points out the unsoundness of bank management during the last 'quarter' in 1980s. The reforms began in this quarter and management failed in improving staff-efficiency or could not control the rise in expenditure. Consequently, the operating expense to employee ratio has been further deteriorated. Expenditure increased from 95.7% in 1988 to 96.9% in 1990. The operating expenses to total expenditure remained almost the same (36%) in both 1988 and 1990, except in 1989, when it went down to 33.6%. Thus, operating expenses re-employment went up through the period and the percentages of these indicators portrayed managerial unsoundness of the banking industry in this particular period (Figure 8).

**Table 3.** Banks' liquidity and sensitivity to market risk.

Percent	1988	1989	1990
Liquid assets to total assets	47.1	51.6	50.2
Liquid assets to deposits	67.3	72.3	64.6
Advances to deposits	75.5	74.3	71.5
Gap (RSA-RSL)	-28	-46	-81
RSA/RSL	89.2	84.4	77.4



**Figure 9.** Banks' liquidity and sensitivity to market risk.

### **Earnings and profitability**

The ratio analysis indicates a sign of improvement in earning and profitability in the early reform period of 1988 to 1990. At the beginning of the reforms, banks concentrated more on reducing the burden of NPLs coupled with a reduction of provisions. During the fourth quarter of the 1980s, return on assets remained just about 1.1%, while it increased from 16.8% in 1988 to 17.8% in 1990. Consequences of the measures taken at the beginning of the said reforms can be seen by taking into account, the increase of return on equity ratio contrary to its deteriorating trend in the pre-reform period. However, earning to asset ratio showed increase of all trends from 12.8% in 1988 to 15.9% in 1990.

### **Liquidity and sensitivity to market risk**

Deposit, along with liquidity, increased in 1988 and 1990. The declining ratio of RSA to RSL during the highlighted period affected them positively that the banking industry was sensitive to change in interest rate. Deposit plummeted from 68.4 to 63.6% in 1990, thereby decreasing the loan to deposit from 76.6% in 1988 to 72.4% in 1990. As a result, a trend of the gap was shown between RSA

and RSL from 29% in 1988 to 82.3% 1990. The ratio of RSA to RSL gradually increased from 77.4% in 1988 to 89.2% in 1990, showing an increase in liabilities over assets. Nonetheless, credit to deposits ratio also declined consequently (Table 3 and Figure 9).

### **During the reform period**

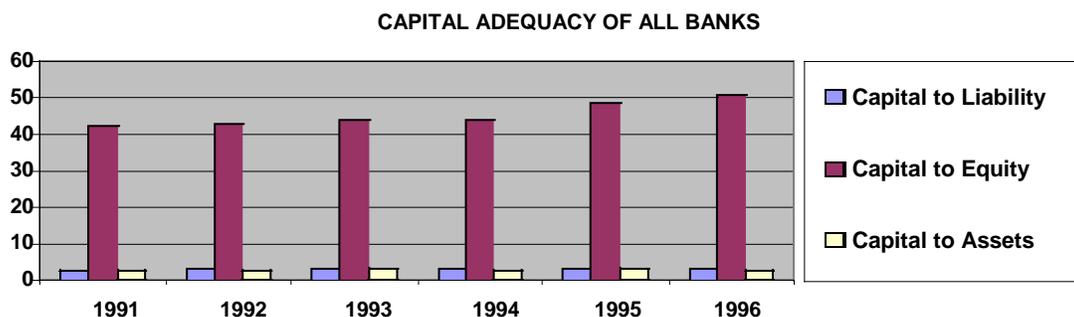
The banking industry was under continuous pressure of higher borrowing in the pre-reform period and during the reform period, and transformation of equity ownership has a great deal with the economy for the banking sector and the development of the finance institution. From 1991 to 1996, total assets of the banking sector increased at a compound rate of 16.4% to Rs 512 billion in 1991 to Rs 1380 billion at the end of 1996.

### **Capital adequacy**

Table 4 and Figure 10 show the position of capital adequacy during the reform period. It demonstrates an unimproved level of capital adequacy, though the capital ratios remained below 4% of the bench mark. Moreover, Capital to Liability Ratio (CLR) and capital to equity ratio

**Table 4.** Capital adequacy of all banks.

Percent	1991	1992	1993	1994	1995	1996
Capital to liability	2.8	3.0	3.3	3.2	3.3	3.2
Capital to equity	42.3	42.5	43.6	43.5	48.2	50.3
Capital to assets	2.7	2.7	2.9	2.7	2.9	2.8



**Figure 10.** Capital adequacy of all banks.

**Table 5.** Asset quality of all banks.

Percent	1991	1992	1993	1994	1995	1996
Earning assets to total assets	69.5	72.1	71.7	69.9	69.8	70.1
Advances to total assets	50.2	47	47.7	44.3	47.3	46.5
NPLs to gross advances	19.9	18.6	22.1	25.6	23.3	23.5
Investments to total assets	24	28.7	27.2	28.8	25.7	27.4

Source: FSA 1999 to 2002, State Bank of Pakistan.

(CER) showed a little increase during the mid-nineties. During the reform period, CLR increased from 2.8 to 3.2%, whereas capital to equity ratio increased from 43.3% in 1991 to 50.4% in 1996. The capital to asset ratio fell to 3.7%, showing improvement in the overall capital adequacy during the reform period.

### **Asset quality**

Earning assets to total assets as well as investment are decreased during the reform period. This gave enough proof of effective implementation of reforms towards the soundness of the banking industry (Table 5 and Figures 11 and 12). Advances to total asset was lower than 51%, in that it invested 25% during the reform period, while earning assets to total assets (EA) remains at 69.5% in 1991 and 70.1% in 1996, except that it declines to 69.8% in 1995. Credit to total assets ratio also increased from 24% in 1991 to 27.4% in 1996 having a mixed trend from 1992 to 1995. NPLs to gross advances are at the highest level from 20.9 to 24.5% in 1996. Still, it remained at the highest with 25.6% in 1994.

### **Management soundness**

Expenditure to income ratio declined, while operating expenditure per employee increased during the period of reforms. The expenditure to income ratio remained above 93%, depicting the inefficient control of banks over expenses during reforms. Expenditure to income ratio (EIR) decreased from 97.3% in 1991 to 96.7% in 1996, while with respect to 1994, it decreased to 96.6%. Operating expenses to expenditure ratio decreased from 38.4% in 1991 to 32.4% in 1996 per employee operating expenses which increased from 0.3 to 0.5 million (Table 6 and Figure 13).

### **Earning and profitability**

Earning and profitability ratios remained unchanged from 1990 to 1996. However, equity and asset ratio showed fluctuated positions that either improved sometimes or deteriorated sometimes as mentioned in 1990 to 1996. The table showing return on asset decreased from 1.2 to -0.7%. Return on equity also decreased from 19.1% in

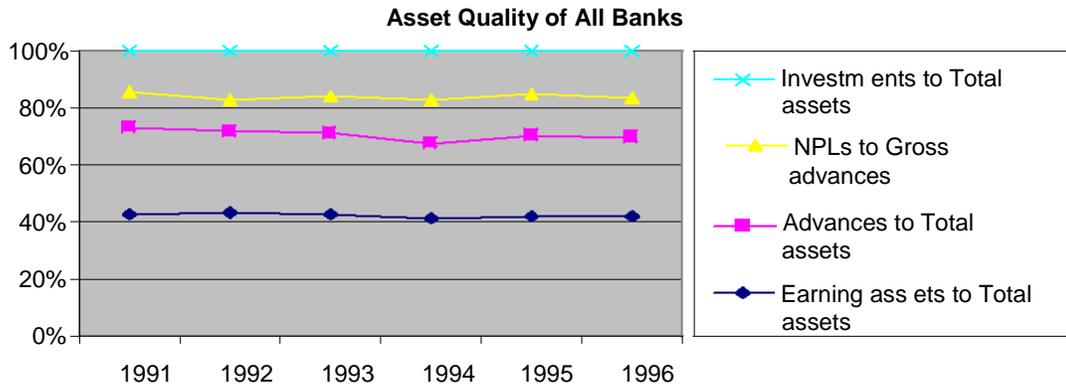


Figure 11. Asset quality of all banks. FSA (1999 to 2002), State Bank of Pakistan.

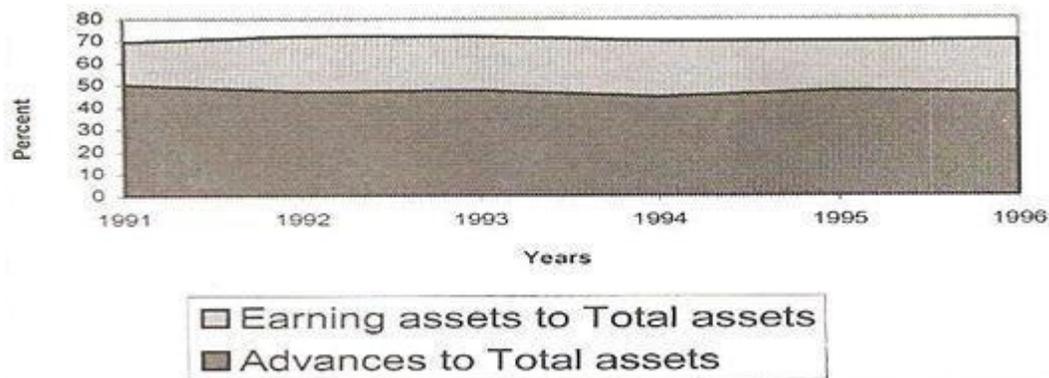


Figure 12. Asset quality of all banks.

Table 6. Management soundness of all banks.

Percent	1991	1992	1993	1994	1995	1996
Operating expenses to total expenses	38.4	38.2	35.7	34.2	35.2	32.4
Total expenses to total income	97.3	95.3	93.9	96.6	96.4	96.7
Operating expenses per employee (Min.Rs)	0.2	0.2	0.3	0.3	0.4	0.4

1991 to 11.7% in 1996. The stagnant position of the assets has been shown in the table from 13.1 to 13.4% in this period (Table 7 and Figure 14).

### Liquidity and sensitivity to market risk

Figure 15 and Table 8 show increased percentage of liquid assets from 51.6 to 60.5% in the period of 1991 to 1996. Deposits climbed from 66.8 to 79.5% in the period of 1991 to 1996, while there was a decline in loans to deposits ratio from 64.9 to 61.1% in 1991 to 1996. RSL and RSA showed a gap of -99 to -166% in 1991 to 1996 during the period of reforms of the banking industries of Pakistan (Table 8 and Figure 15).

### Post-reform period

In the post reforms era, capital to liability ratio (CL) was applied from 1998 to 2001 in analyzing features with 4% bench mark. It shows improved position in CL ratio from the bottom level of 3.15. Deficit of four nationalized commercial banks in 1997 was responsible for the sharp decline. Capital was injected in the distressed nationalized commercial banks through revaluation of fixed asset for subsequent recovery in 1998.

### Capital adequacy

Capital to risk weighted assets (CRWA) is an indicator of capital adequacy. Assets are calculated on the basis of

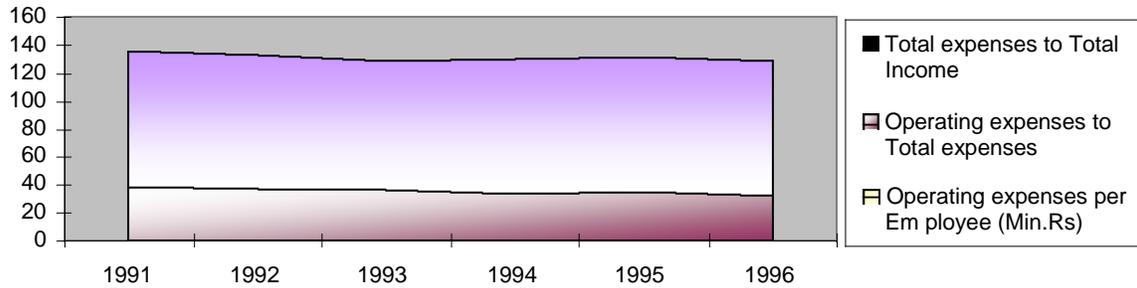


Figure 13. Management soundness of all banks.

Table 7. Earnings and profitability of all banks.

Percent	1991	1992	1993	1994	1995	1996
Net profit to total assets	1.2	1.5	1.7	1.4	1.1	-0.7
Net profit to total equity	19	24.1	25.9	22.3	18.7	-12
Total income to total assets	13.1	11.5	13.1	12.7	12.6	-13

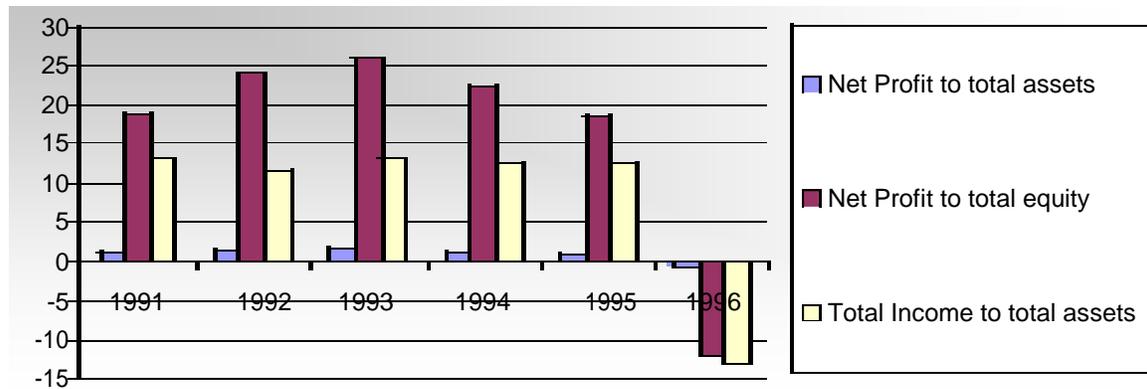


Figure 14. Earnings and profitability of all banks.

risk weights and are determined through 'Basel Accord' for each balance items (Figure 16). Viewing CAMEL ratios, one can easily see the implication of reforms in the post-reform period through CRWA. This ratio has been available for 1997 only, when the State Bank of Pakistan introduced this measure because of the increase in losses of the banks during 1998. CRWA ratio was accordingly raised from 6.0% in 1997 to 12.5% in 2002.

CL ratio was increased from 5.5% in 1997 to 7.2% in 2001, except a slight decrease of 4.2% in 2002. This ratio declined mainly due to 14.3% fall in banks capital during the post-reform period. The same trend was seen in CE-ratio and CA-ratio. CE increased from 67.5% in 1997 to 68.8% in 2001 and 2002. However, the increase in CRWA ratio in 1997 (6%) was doubled in 2002 (12.6%). Capital to assets ratio although remained between 2.8 and 12.6% in 1997 and 2002, the falling of CA-ratio in 2001 as compared to the ratio in 2002 was mainly due to 23.9% increase in assets in that year (Figure 17).

### Asset quality

Earning asset to total asset ratio decreased in the beginning of the reform and during the reform period and there was improvement in the investments. Requirement of the advance tax payments in commercial banking reforms was a major factor in enhancing non-earning assets; however, they decreased in 2001 and again reversed up to 123.9% in 2002. The increase in total asset was recorded up to 96.7% in 2002 (Figure 18).

### Management soundness

It is important to note that the ratio of expenses to income, during 1997 and 1999, was the highest and thus indicated the operating inefficiency of the banking sector. Consequences of this inefficiency on the operating expenses per employee and on total expenses of banks could

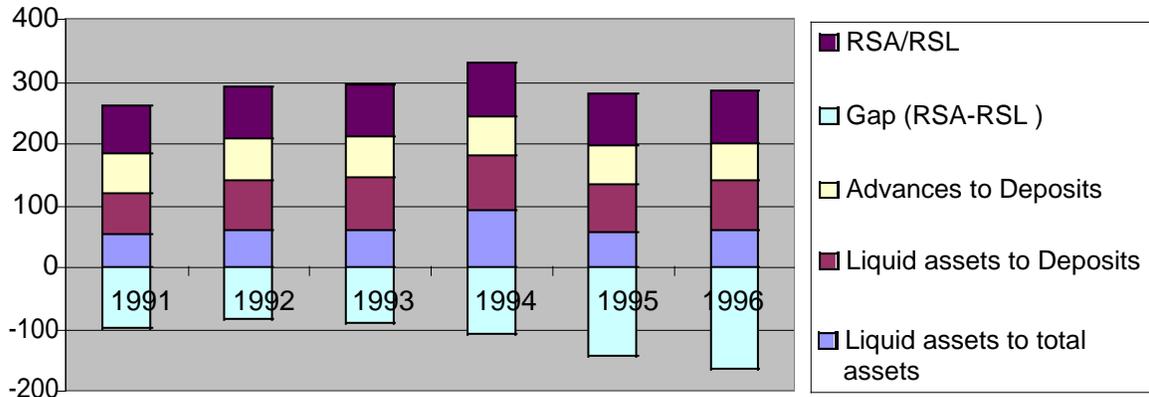


Figure 15. Liquidity and sensitivity to market risk.

Table 8. Liquidity and sensitivity to market risk.

Percent	1991	1992	1993	1994	1995	1996
Liquid assets to total assets	51.6	58.6	59.6	92.3	56.4	60.5
Liquid assets to deposits	66.8	82.3	82.9	88.1	76.7	79.5
Advances to deposits	64.9	66.1	66.4	62.6	64.3	61.1
Gap (RSA-RSL )	-99	-84	-92	-108	-144	-166
RSA/RSL	77.8	85.2	85.7	85.7	83.6	83.3

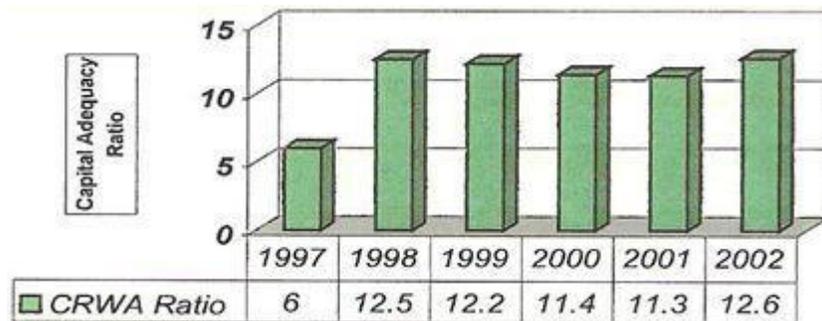


Figure 16. Capital adequacy of all banks.

could be traced by plotting their gradual rising trend during the period. The entrance of new private sector banks and DFIs had increased competition with rising interest rates (Figure 19). Overall, there is an increase from 33.3% in 1997 to 36.7% in 2002 in management soundness (Figures 20 and 21 and Table 9).

### Earnings and profitability

Remittances showed notable growth in the total assets of the banking industry in the last year. This growth has been unprecedented for several years in the past. The local private banks (LPBs) were the real beneficiaries that increased earnings of the banking sector in Pakistan

(Table 10 and Figure 22). Local private banking industry showed inverse effect of rising assets on total income and net profit that could be traced by analyzing their percentages during the post-reform period. Except for a decline in 1997 and 2001, return on assets increased from 0.3% in 1998 to 0.5% in 2000. Its decline to 0.1 in 2002 shows the inefficiency of banks in the post-reform period, whereas return on equity increased from -25.0% in 1997 to 20.3% in 2002. However, earning to assets reduced from 13.1% in 1997 to 8.9% in 2002.

### Liquidity and sensitivity to market risk

Liquid asset to total asset ratio shows increasing trend

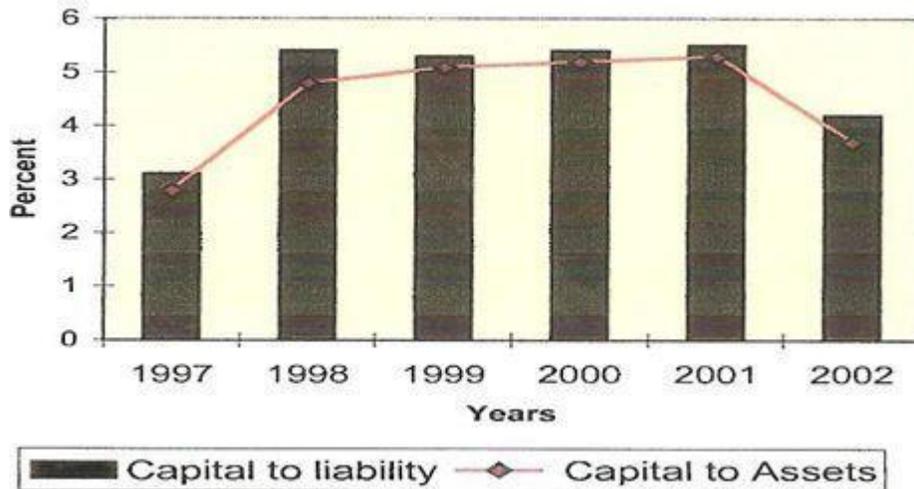


Figure 17. Capital adequacy of all banks.

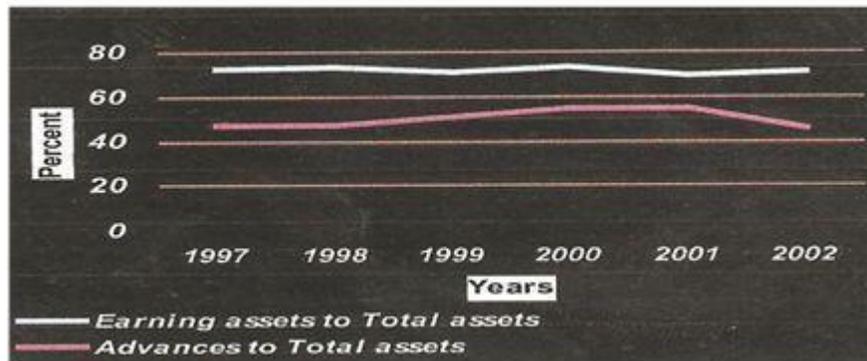


Figure 18. Asset quality of all banks.

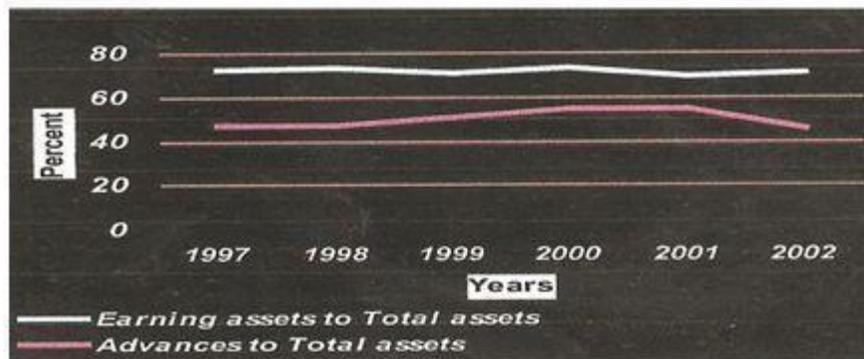


Figure 19. Management soundness of all banks.

during the post reform period and after privatization. Cash Reserve Requirement (CRR) and Statutory Liquidity Requirement (SLR) were reduced due to freezing of foreign currency accounts and deposits' withdrawals, which show a negative gap between RSL and RSA, indicating

risk sensitivity towards liability. The increase in loans to deposits ratio reflects that banks' control over liquidity is quandary during the post-reform period (Figure 23). Table 11 and Figure 24 indicate that liquid assets show an inclined trend in 2002. While deposit rate to total asset

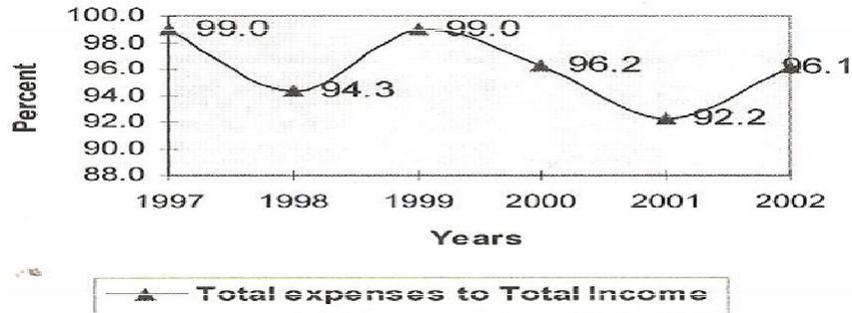


Figure 20. Management soundness of all banks.

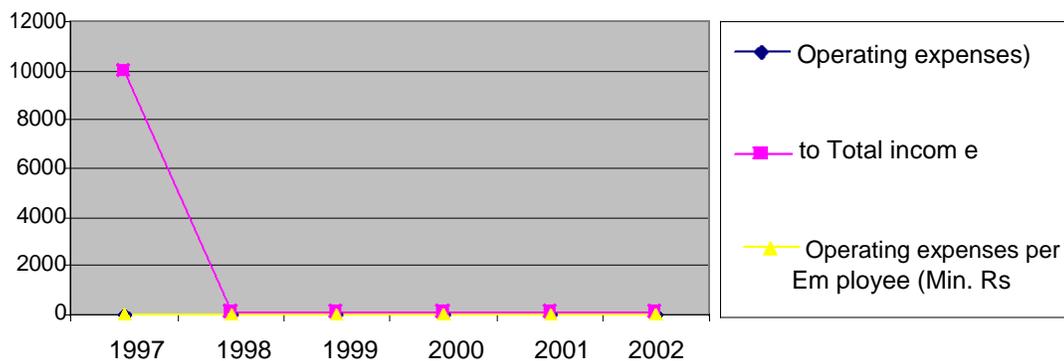


Figure 21. Management soundness of all banks (1997 to 2002).

Table 9. Management soundness of all banks (1997 to 2002).

Percent	1997	1998	1999	2000	2001	2002
Operating expenses	33.3	24.3	31.4	33.7	36.6	36.7
Total income	9930	99	99	96.2	92.2	96.1
Operating expenses per employee (Min. Rs)	0.5	0.4	0.6	0.6	0.8	0.8

Table 10. Earnings and profitability of all banks.

Percent	1997	1998	1999	2000	2001	2002
Net profit to total assets	-0.8	0.3	0.5	0.5	-0.1	0.1
Net profit to total equity	-25	8.4	-5.9	-5.9	-0.8	20.3
Total income to total assets	13.1	12.7	12.7	11.3	11.9	8.9

ratio increased from 74.9% in 1997 to 81.5% in 2002, credit to deposit ratio showed a mix trend from 61.9% in 1997 to 63.1% in 2002. Thus, RSL was higher than RSA and it affected the growing gap from -149 to -228% in 2002.

## FINDINGS AND USEFULNESS OF THE STUDY

After analyzing all segregated periods through CAMEL

parameters, it is obvious that improvement is mainly because of the reduced number of fortified assets and increased capital base of the banking industry. The banking sector remained in turmoil during the pre-reform period and required measures to eradicate the vulnerabilities and shortcomings. It was only possible by creating efficient and sound management capital adequacy and earning assets, which must be based on modern techniques in measuring performances and efficiencies of the banking sector. However, the last part of the 1980s

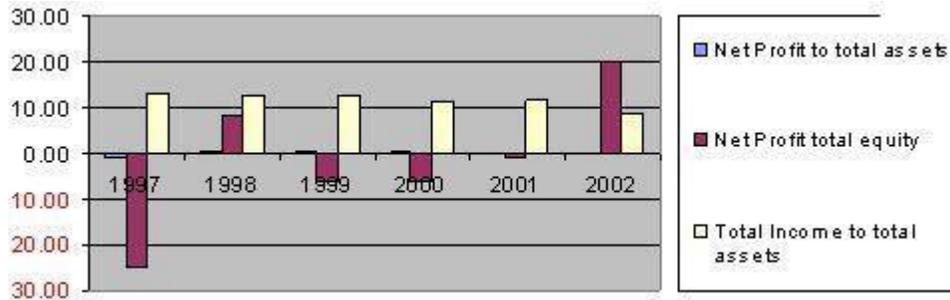


Figure 22. Earnings and profitability of all banks.

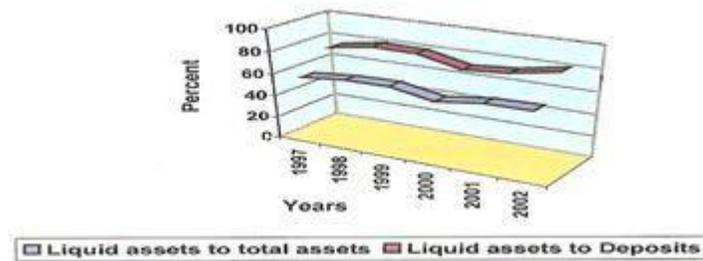


Figure 23. Liquidity and sensitivity to market risk.

Table 11. Liquidity and sensitivity to market risk of all banks.

Percent	1997	1998	1999	2000	2001	2002
Liquid assets to total assets	-57.3	60.5	61.1	54.3	59.3	59.7
Liquid assets to deposits	-74.9	80.7	71.5	71.5	74.6	81.5
Advances to deposits	61.9	62.9	71.9	71.9	69.1	62.4
Gap (RSA-RSL)	-149.3	-134.1	-257.8	-257.8	-338.4	-228.3
RSA/RSL	86.5	81.2	81.7	81.7	77.3	86.5



Figure 24. Banks' liquidity and sensitivity to market risk.

witnessed a surge in the economy. In the early 1990s, we had seen the implementation of these models with a desire to assess their usefulness in terms of developing the banking sector. The reform process actually started during 1988 to 1990.

From 1991 to 1996, liquid assets to deposit ratios showed an improved trend of about 81.5% in 2002, while the banking industry achieved capital to assets ratio up to its benchmark of 4.0% for nationalized commercial banks. Fixed asset revaluation capital injection aided

subsequent recovery in 1998. Exchange rate policy was exercised through the Foreign Exchange Regulation Act of 1947 in the pre- and post- reform periods subsequently (FSA, 1990 to 2000). Overall, analyses of soundness of the banking sector particularly show a positive impact of reforms and revealed an overall improvement in that sector. The study is a pioneer in its nature and will be useful in future planning and decision making, and would also be of help in effectively controlling the entire system of the Pakistani banking industry.

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