

Profit Performance of Indian Commercial Banks in the Post-Reform Period: Has it Improved

Santosh Kumar Mahapatra

Abstract

Banking institutions have always played a significant role in the economic development of nations. The case of India is not an exception to this. In fact, the banking sector in India has been in the lime light since 1991 because of its reform measures. A number of measures have been taken since then and the question comes to mind whether India has gained from these measures. The present paper is an attempt in this respect and examines the performance of Indian banks in the post-reform period in terms of profit performance. The study finds that profit performance of Indian banks have improved significantly in the post-reform period and thus the reform measures are justified and should continue in the future

Keywords: Banking, profitability, performance of banks

JEL Classification: G 210, G 380

Introduction

Finance is the lifeblood of economic development. It helps in capital formation and capital accumulation, which are essential for the growth of an economy. For ensuring capital formation, the financial resources of a country need to be mobilized in such a way that they are put in productive channels (Vaish, 1978). This function of mobilizing funds to the productive channels is successfully performed by the Commercial Banks. In the process of mobilizing deposits and advancing those in the form of loans to the productive channels, they create more addition to the money. This characteristic distinguishes Commercial Banks from other financial institutions. Commercial banks play an important role in the economic development of a country. The history of the economic growth of different countries of the world shows that banking institutions have played a significant role in the economic development of nations. In a developing country like India too, banking sector have been assigned an important role to achieve certain socio-economic objectives.

Performance evaluation is an important prerequisite for the development of any institution. Commercial banks, being no exception, need evaluation periodically. Again, a detail performance evaluation of the banking sector is desired in the context of the reforms that have started since 1991. The gradual rationalization of interest rate structure, introduction of new money market instruments, reduction of Statutory Liquidity Ratio and Cash Reserve Ratio, diversification of banking business into new activities and adherence to the prudential norms on capital adequacy and asset quality have enhanced the responsibility of the Indian banks. It, is therefore, desired to examine the performance

of Indian banks to observe the distinct characteristics and assess their efficiency in the post-reform scenario. This will enable the policy makers and banks to manage the future development more efficiently.

Objective of the Study

The main objective of the present study is to examine whether there has been improvement in the profit performance of the Indian Commercial Banks in the post-reform period as a result of the reform measures.

Hypotheses

On the basis of the objective and scope of the study, an attempt has been made to observe the positive (or negative) impact of the reform measures in terms of changes in the performance of the Indian banks in the post-reform phase. The following null (μ_0) and alternative (μ_1) hypotheses have been framed:

μ_0 = There is no significant difference in the profit performance of Commercial Banks in the pre-reform and post-reform period; and

μ_1 = There is significant difference in the profit performance of Commercial Banks in the pre-reform and post-reform period.

These are tested in this present study to arrive at a conclusion.

Review of Literature

The profit is an important indicator of performance which indicates the economic or commercial viability of banks. In the words of Bhatia (1982), "profits perform many useful functions in a system. They allocate capital, compensate investors for the risk assumed, reward operating efficiency resulting from price-output decisions and provide for future expansion. Since these functions are the essential elements of economic performance, profits and profitability ratios may be employed as indices of a banking system's economic performance". Nayan (1985), Garg (1989), Raut and Das (1996), Rammooorthy (1997), Bhatia and Verma (1999), Subbiah (2001), Satyamurthy (2001), Sood (2001), Kaveri (2001), Shirai (2002), Raypati (2002), Chipalkatti and Rishi (2003), Trehan and Soni (2003), Sabnani (2004), Sathhye (2005), Maji and Dey (2006), and Ramsastri and Samuel (2006) have measured the performance of Indian banks by assessing

the financial performance. Financial performance has been measured in terms of returns on assets, spread to working funds, establishment expenses to total expenses, loan-out ratio (loans/deposits) and non-performing assets to net advances. Efficiency of the bank was measured using accounting ratios such as deposits per employee (loans/staff) and net profit (net profit/ staff). In measuring the performance, output in relation to input has been used by many. The factors that determine profitability, how they behave, how they are related to each other, and how valid inter-bank and inter-temporal comparisons can be made are some methodological questions, which are addressed by Varde and Singh (1983).

Methodology

The present study is based on financial data available from the sources of Reserve Bank of India, Indian Banks Association and Government of India publications. The study includes all scheduled Commercial Banks in public sector, private sector and foreign sector functioning in India. The sample of the study includes data of these banks for 28 years that is from 1980 to 2007-08. The period covered in this study i.e., from 1980 to 2007-08 has been divided into pre-reform and post-reform period. Pre-reform period covers the period of 1980 to 1990-91 and post-reform period covers the period from 1991-92 to 2007-08. The post-reform period has been further divided into first phase and second phase covering the period from 1991-92 to 1997-98 and from 1998-99 to 2007-08 respectively for a better and meaningful deduction. The study is based on comparative analysis of profit performance of Commercial Banks in pre- and post-reform period. Profit performance is analyzed on the basis of various profitability ratios. Profitability refers to profit expressed in terms of assets or volume of business or working fund. In the present study, we have used assets as input to measure the profitability and related ratios. These indicators are: net profitability ratio or return on assets, interest income ratio, non-interest income ratio, interest cost ratio, manpower cost ratio and facility cost ratio. These ratios are used for a comparative study over the pre- and post-reform period. As the study is made on the ratios of input and output, changes in number of banks will have no impact on our study results. The central focus of the present work is to assess whether there has been improvement in the profit performance of banking sector as a whole or not due to the reform measures. Statistical techniques such as Analysis of Variance (ANOVA) and t-test are used to test the significance of differences.

Empirical Findings

Profitability and profitability-related ratios of All Scheduled Commercial Banks for the period from 1980 to 2007-08 are shown in Table-I. The ratios have been computed for three phases: (1) Pre-reform Period (1980 to 1990-91); (2) Post-Reform Period—First Phase (1991-92 to 1997-98); and (3) Post-Reform Period—Second Phase (1998-99 to 2007-08). The post-reform period as a whole that is from 1991-92 to 2007-08 is also grouped as a period for our analysis purpose. The summary of the results of the study has been shown in Table-II.

Return on Assets: The summary results as reported in Table-II depicts that return on assets has improved in the

post-reform period from 0.15 to 0.51. The said ratio in the first phase of post-reform period is found at 0.06 while in the second phase it went up to 0.82. This clearly indicates the benefits of reform in banking sector have been noticed in the second phase of the reform. These findings can also be also observed from our graphical analysis as presented in Figure I where we have shown the movement of net profit ratios and fitted a trend line based on four years moving average. To test whether there is a significant difference between the return on asset ratios of pre- and post-reform period we have used the analysis of variance. The results of analysis of variance has been presented in Table III, from which it is clear that the difference between these two periods with regard to the profit performance is significant at 5 per cent level of significance.

Table I Profitability Ratios of All Scheduled Commercial Banks

Years	(in per cent)							
	Profitability (p)	Spread (s)	Burden (b)	Interest Income (r)	Interest Cost (k)	Man-power (m)	Facility Cost (f)	Non-interest Income (c)
1980	0.11	1.71	1.60	6.30	4.59	1.69	0.71	0.79
1981	0.11	1.71	1.60	6.56	4.85	1.63	0.72	0.75
1982	0.11	1.70	1.59	6.60	4.90	1.57	0.72	0.70
1983	0.11	1.78	1.67	6.62	4.84	1.60	0.73	0.66
1984	0.09	1.92	1.83	6.95	5.03	1.75	0.73	0.65
1985	0.11	1.95	1.84	6.99	5.04	1.76	0.73	0.65
1986	0.15	1.86	1.71	6.95	5.09	1.68	0.75	0.72
1987	0.20	1.91	1.72	7.36	5.44	1.66	0.83	0.77
1988-89	0.22	2.19	1.97	8.68	6.50	1.95	0.94	0.92
1989-90	0.19	1.85	1.66	7.51	5.66	1.60	0.83	0.78
1990-91	0.22	1.83	1.61	7.73	5.91	1.59	0.87	0.85
1991-92	0.37	3.15	2.78	9.78	6.63	1.66	0.80	1.31
1992-93	-1.03	2.39	3.42	9.27	6.88	1.68	0.84	1.12
1993-94	-0.81	2.41	3.22	8.27	5.86	1.63	0.88	1.29
1994-95	0.39	2.88	2.49	8.30	5.42	1.80	0.85	1.34
1995-96	0.14	2.97	2.85	8.88	5.91	1.94	0.84	1.42
1996-97	0.62	2.99	2.40	9.20	6.20	1.79	0.86	1.35
1997-98	0.77	2.79	2.07	8.76	5.98	1.68	0.81	1.44
1998-99	0.47	2.64	2.19	8.72	6.08	1.67	0.85	1.28
1999-2K	0.65	2.69	2.07	8.85	6.16	1.65	0.86	1.41
2000-01	0.49	2.85	2.36	8.88	5.88	1.79	0.85	1.31
2001-02	0.75	2.57	1.87	8.26	5.69	1.42	0.77	1.57
2002-03	1.00	2.77	1.97	8.28	5.51	1.39	0.85	1.86
2003-04	1.13	2.88	1.86	7.31	4.44	1.34	0.88	2.00
2004-05	0.91	2.93	2.10	6.73	3.81	1.29	0.90	1.49
2005-06	0.89	2.89	2.05	6.67	3.79	1.23	0.93	1.26
2006-07	0.91	2.76	1.89	6.87	4.12	1.07	0.88	1.13
2007-08	1.00	2.41	1.51	7.19	4.78	0.94	0.88	1.37

Source: Computed and Compiled from various issues of Report on Trends and Progress of Banking in India (RBI), Data Base on Indian Banking 1987-98 (IBA) and various issues of Statistical Tables Relating to Banks in India (RBI)

Table II Summary of Results on Profitability Ratios

Indicators	Profit-ability (p)	Spread (s)	Burden (b)	Interest Income (r)	Interest Cost (k)	Man-pow-er Cost (m)	Facility Cost (f)	Non-interest Income (c)
A1	0.15	1.86	1.71	7.11	5.26	1.68	0.78	0.75
A2	0.06	2.80	2.75	8.92	6.12	1.74	0.84	1.32
A3	0.82	2.74	1.99	7.78	5.03	1.38	0.86	1.47
A4	0.51	2.76	2.30	8.25	5.48	1.53	0.86	1.41
STD1	0.05	0.14	0.12	0.68	0.57	0.11	0.08	0.09
STD2	0.70	0.29	0.47	0.55	0.50	0.11	0.03	0.11
STD3	0.22	0.16	0.23	0.91	0.95	0.27	0.04	0.28
STD4	0.60	0.22	0.51	0.96	0.95	0.28	0.04	0.23
V1	0.00	0.02	0.02	0.46	0.32	0.01	0.01	0.01
V2	0.50	0.09	0.22	0.30	0.25	0.01	0.00	0.01
V3	0.05	0.03	0.05	0.83	0.90	0.07	0.00	0.08
V4	0.36	0.05	0.26	0.91	0.91	0.08	0.00	0.05

A:Average ; STD: Standard Deviation; V: Variance; 1,2,3 and 4 denote Pre-reform Period (1980 to 1990-91), First Phase of Post-reform Period (1991-92 to 1997-98), Second Phase of Post-reform Period (1998-99 to 2007-08) and Post-reform Period as a whole (1991-92 to 2007-08) respectively.

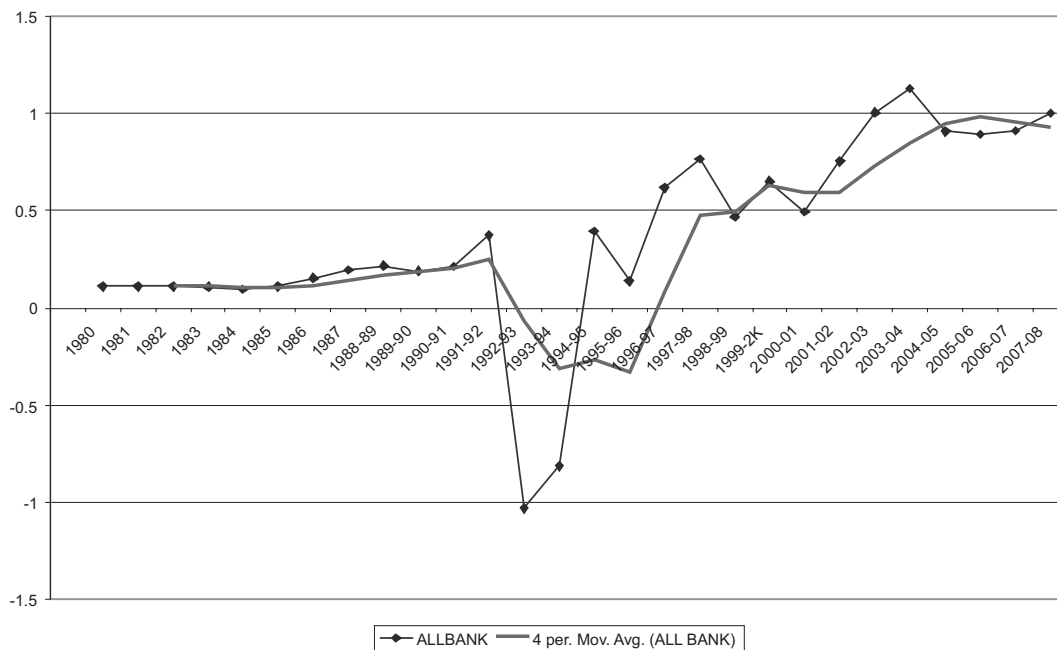
Figure I**Net Profit Ratios of All Scheduled Commercial Banks**

Table III ANOVA: Return on Assets of All Scheduled Commercial Banks

<i>SUMMARY</i>						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Pre-reform	11	1.622732	0.147521	0.002360		
Post-reform	17	8.66265	0.509568	0.360912		
<i>ANOVA</i>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.875412	1	0.875412	3.925478	0.058228*	4.225201
Within Groups	5.798202	26	0.223008			
Total	6.673614	27				

* As P-value > 0.05, the difference can not be said insignificant.

Spread: Spread refers to the difference between interest revenue and interest expenses. The spread ratio has been derived on dividing spread by total assets. It signifies the income from pure banking operation of a bank i.e., borrowing and lending. In managing profitability, spread is considered as an important factor. Increase in the spread ratio shows improvement of bank performance. The spread ratios of All Scheduled Commercial Banks as shown in Table I indicates that the spread ratio of all

banks has increased from 1.86 in the pre-reform period to 2.76 in the post-reform period. The Analysis of Variance (as shown in Table IV) also supports that the difference is significant at 5 per cent level of significance. The graphical presentations of spread during this period have been made in Figure II from which one can infer that the spread performance of all scheduled Commercial Banks in India has improved remarkably during the post-reform period.

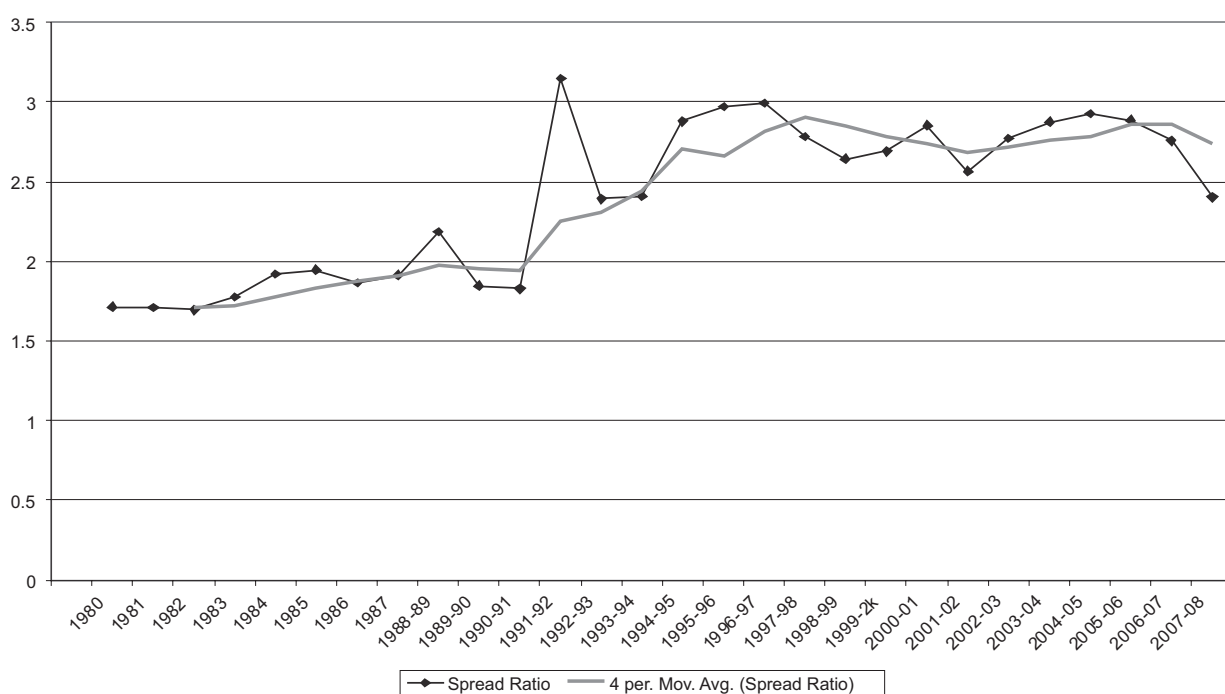
Figure II**Spread Ratios of All Scheduled Commercial Banks**

Table IV ANOVA: Spread Ratios of All Scheduled Commercial Banks

SUMMARY						
Groups	Count	Sum	Average	Variance		
Pre-reform	11	20.41753	1.856139	0.020088		
Post-reform	17	46.96094	2.762408	0.048194		
ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	5.48527	1	5.48527	146.7269	3.4E-12	4.225201
Within Groups	0.97199	26	0.037384			
Total	6.45726	27				

Burden: Burden refers to the total of manpower and other operational cost reduced by non-interest income. The burden ratio is a relative expression of burden to assets. A reduction in burden ratio over a period of time is a good indicator of financial improvement, as it contributes to the increase of profitability. The change in burden ratio can be explained by analyzing other related ratios like manpower cost ratio. Facility cost ratio and non-interest income ratio. Burden ratios of All Scheduled Commercial Banks in India as presented in Table I show that the burden ratio of all banks has increased in the post-reform period to 2.30 from 1.71 in the pre-reform period. Again, it is also found

that the said ratio was 2.75 in the first phase of reform while it improved and came down to 1.99 in the second phase of post-reform period. The reason of increase in burden may be an increase in manpower cost or facility cost or reduction in non-interest income that has been examined in our study at a later stage. The movements of burden and burden ratio have been presented in graphical form in Figure III, which shows the increase of burden during the first phase of post-reform period. This observation has been strengthened by our findings of statistical test as reported in the Table V.

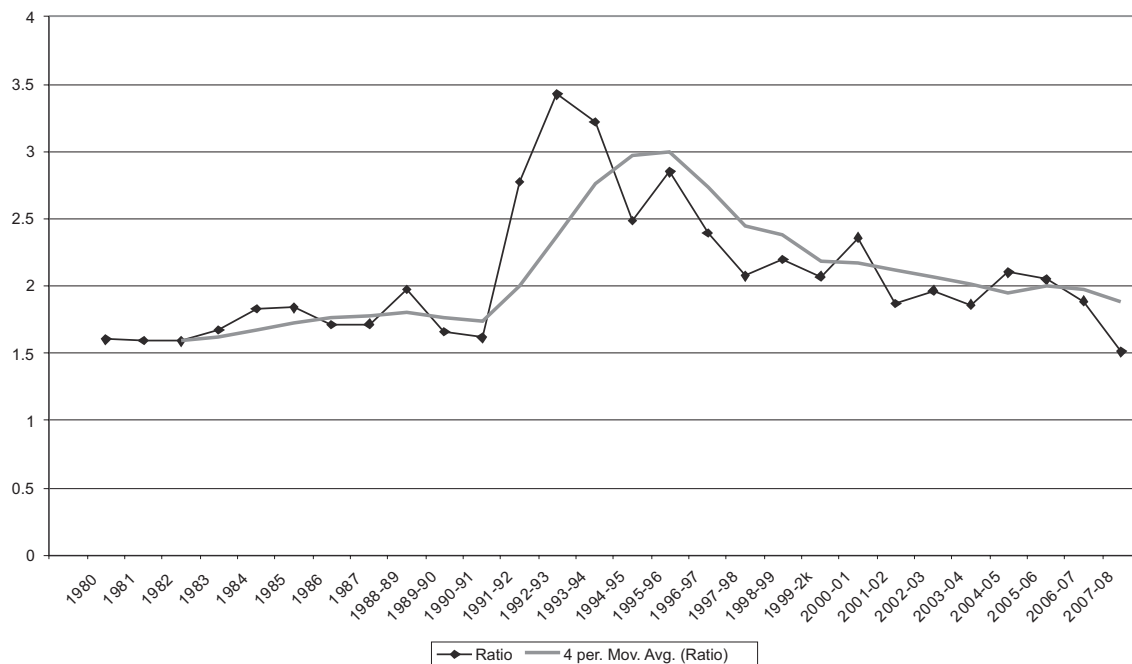
Figure III**Burden Ratios of All Scheduled Commercial Banks**

Table V ANOVA: Burden Ratios of All Scheduled Commercial Banks

SUMMARY						
Groups	Count	Sum	Average	Variance		
Pre-reform	11	18.79411	1.708556	0.015112		
Post-reform	17	39.07875	2.29875	0.261957		
ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	2.326345	1	2.326345	13.92883	0.000936	4.225201
Within Groups	4.342431	26	0.167017			
Total	6.668776	27				

Interest Income: Interest income ratio denotes the interest revenue earned as a percentage to total assets. Increase in the ratio may indicate changes in interest rate as a policy measure or result of market forces. Interest income ratios as found in the Table II indicate that there has been improvement of the ratio in the post-reform period over pre-reform period. The ratio in the post-reform period has been arrived at 8.25 as against 7.11 in the pre-reform period. The first phase of reform period has

recorded a higher ratio (8.98) as compared to the second phase (7.78). This is due to the impact of higher interest rate as prevailed in the market during that period. The analysis of variance as shown in the Table VI also affirms that the difference between the ratios of pre-reform and post-reform period is statistically significant at 5 per cent level of significance. The trend of growth of interest income and interest income ratios can be observed from the Figure IV.

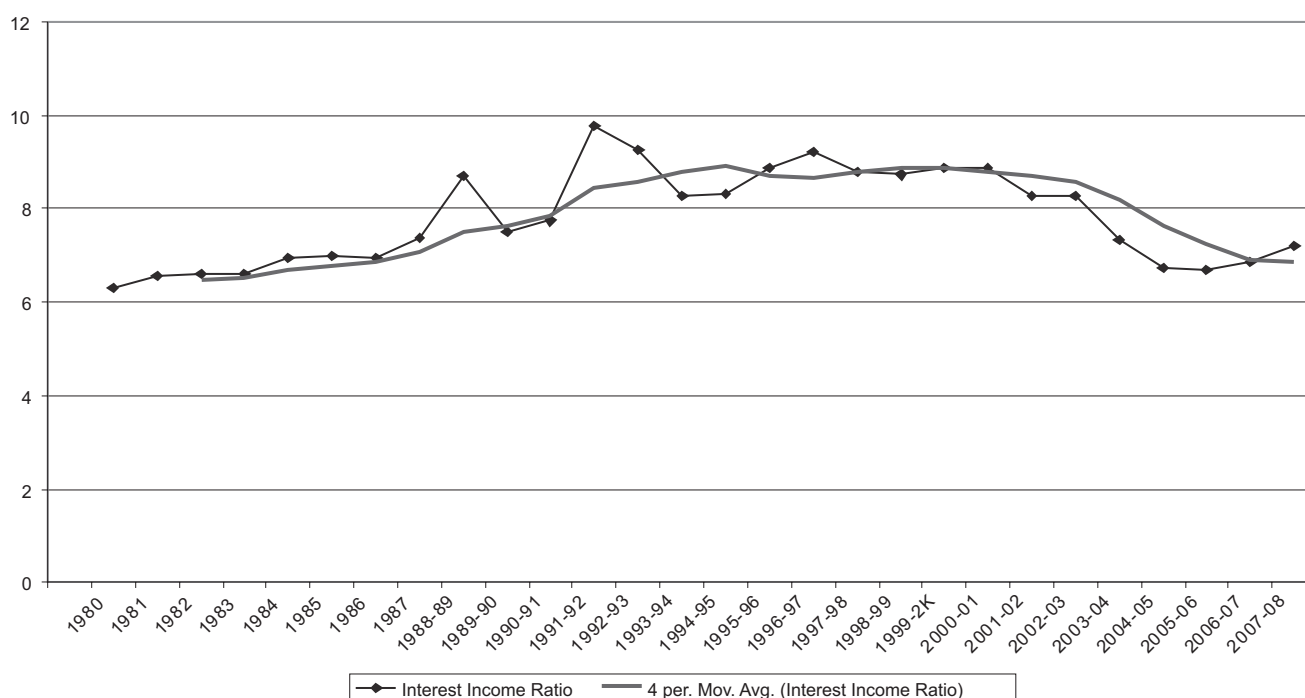
Figure IV**Interest Income Ratios of All Scheduled Commercial Banks**

Table VI ANOVA: Interest Income Ratios of All Scheduled Commercial Banks

SUMMARY						
Groups	Count	Sum	Average	Variance		
Pre-reform	11	78.25932	7.114483	0.462177		
Post Reform	17	140.2383	8.249309	0.914236		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8.600861	1	8.600861	11.61703	0.002139	4.225201
Within Groups	19.24954	26	0.740367			
Total	27.8504	27				

Interest Cost: Interest Cost is the total of interest incurred in getting funds from deposits and borrowings made by the bank. Total interest cost divided by total asset is known as interest cost ratio. An increase in this ratio may result in reduction of spread and profitability while a decrease may result in improvement in spread and profitability. The interest cost ratios of all scheduled Commercial Banks are given in the Table I while the summary is presented in Table II. From these tables it is evident that the interest cost ratio in the post-reform period has increased marginally as compared to the pre-reform period. However, if we look at the average interest cost ratio in the first and second phase of reform, it can be seen that the ratio was 6.12 in the first phase while

the same came down to 5.03 in the second phase of post-reform period. This clearly depicts the improvement in efficiency of Indian banks during the post-reform period. This can also be seen in the graphical presentation made in Figure V. Again, as reported in Table VII, we have found a significant difference between the pre-reform and post-reform period with regard to interest cost ratios; and thus it can be inferred that there is significant improvement in management of interest cost through cost reduction. In the reform process many steps have been taken to reduce the interest. Interest rate deregulation and better recovery management are important among them. It is evident from the observations made that the banks have got the benefits of these reform measures.

Figure V

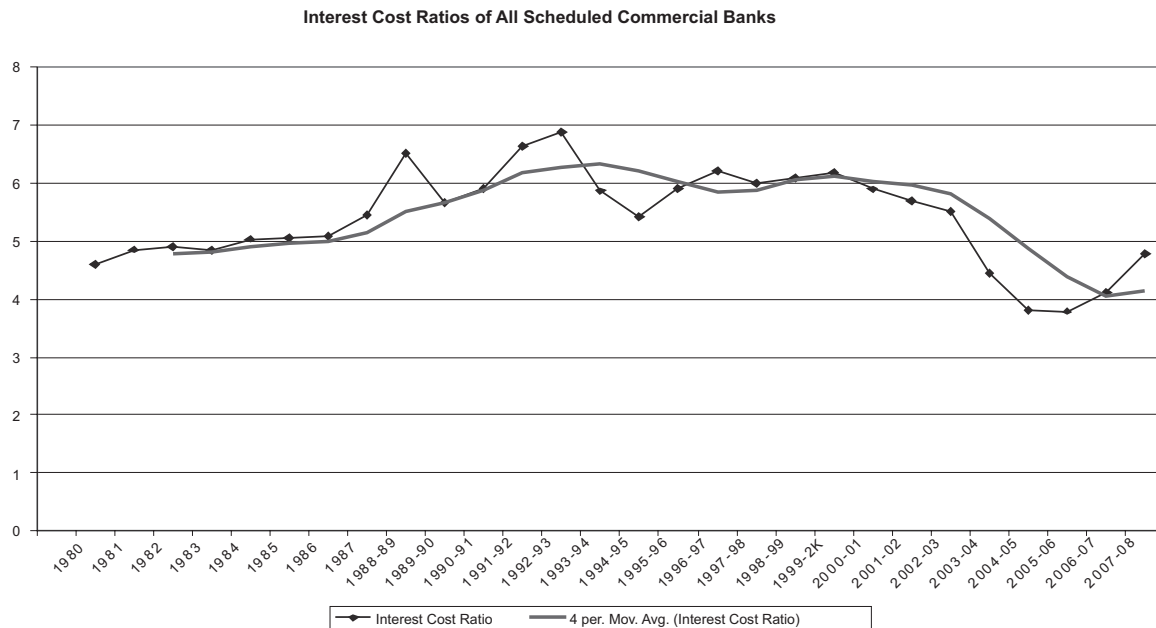


Table VII ANOVA: Interest Cost Ratios of All Scheduled Commercial Banks

SUMMARY						
Groups	Count	Sum	Average	Variance		
Pre-reform	11	57.84344	5.258494	0.319964		
Post-reform	17	93.1292	5.478188	0.906915		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.322344	1	0.322344	0.473225	0.497599*	4.225201
Within Groups	17.71028	26	0.681165			
Total	18.03263	27				

* As P-value > 0.05, the difference cannot be said insignificant.

Manpower Cost Ratio: Manpower Cost includes the entire establishment expenses incurred on employees in terms of salary, fees and other benefits. Indian banking industry had witnessed many reforms in the form of voluntary retirement scheme, restructuring of human resource and enhancement of skill through training. It is to be seen whether the banks reap the benefits of these changes or not. One can observe the manpower cost ratios

as presented in Table I and find that there has been a gradual decline in the manpower cost ratios. This can also be seen from the graphical presentation made in Figure VI. From Table II we can see that manpower cost ratio has come down from 1.68 in pre-reform period to 1.53 in the post-reform period. These findings are also supported by our analysis of variance as shown in Table VIII, which supports the view that the difference in manpower cost in pre- and post-reform period cannot be said insignificant.

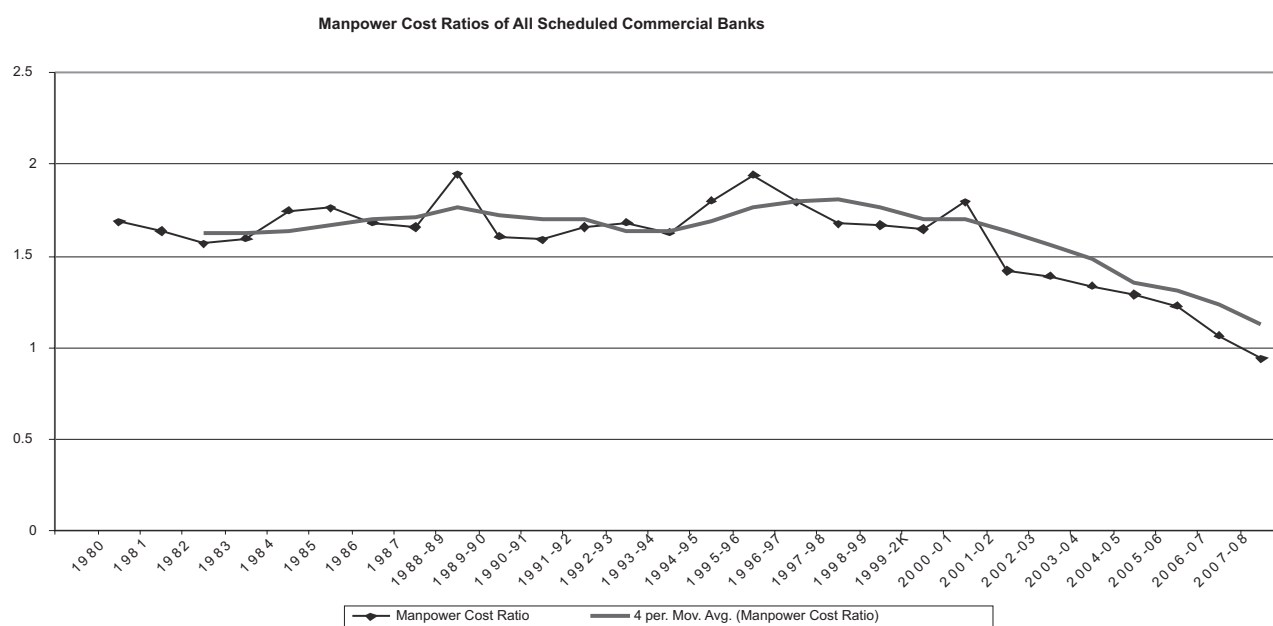
Figure VI

Table VIII ANOVA: Manpower Cost Ratios of All Scheduled Commercial Banks

SUMMARY						
Groups	Count	Sum	Average	Variance		
Pre-reform	11	18.46796	1.678906	0.011923		
Post-reform	17	25.95494	1.526761	0.079075		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.154596	1	0.154596	2.903364	0.10032*	4.225201
Within Groups	1.384424	26	0.053247			
Total	1.539019	27				

* As P-value > 0.05, the difference cannot be said insignificant.

Facility Cost: Facility cost refers to all operating costs other than manpower cost. These costs facilitate the business and hence termed as facility cost. The facility cost ratios (f) as shown in Table I show that facility cost as a percentage to total assets has increased over the period of study. From Table II it can be noticed that the facility cost ratio in the post-reform period has increased to 0.86 from 0.78 in the pre-reform period. The increase in this ratio may be attributed to upgradation of technology adopted

in the cost. The graph as presented in Figure VII shows that the movement of the ratio remains within a particular band. However, the statistical test conducted by us (Table IX) reveals that the difference of facility cost ratios between pre- and post-reform period is significant. This lead to conclude that though the facility cost is maintained within a limit, it has increased in the post-reform period the reason of which may be technological upgradation and the cost associated with it.

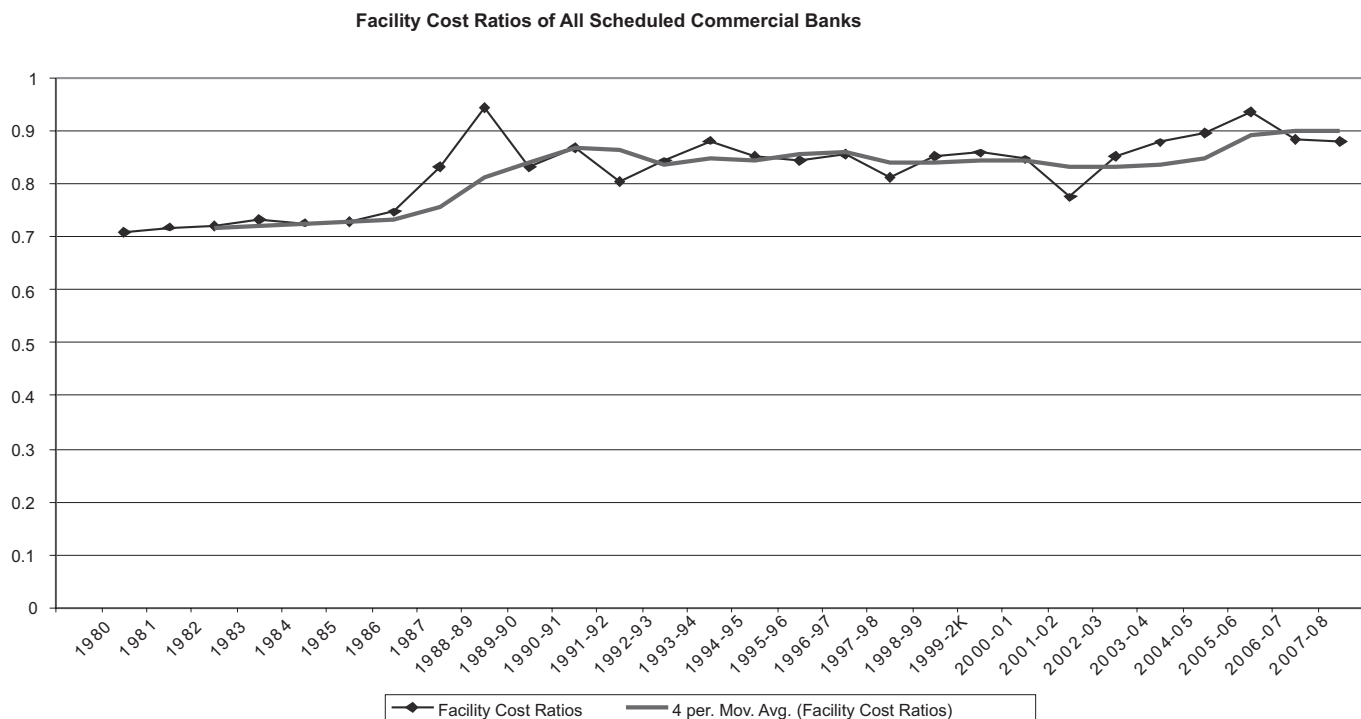
Figure VII

Table IX ANOVA: Facility Cost Ratios of All Scheduled Commercial Banks

<i>SUMMARY</i>						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
	11	8.550741	0.77734	0.0062		
	17	14.53762	0.855154	0.001369		
<i>ANOVA</i>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.040439	1	0.040439	12.53011	0.001533	4.225201
Within Groups	0.083911	26	0.003227			
Total	0.124350	27				

Non-interest Income: Non-interest Income refers to the income earned by bank other than interest. This includes commission and service charges received from customers on account of the services provided to them. This income is earned from the ancillary services provided by a bank and reduces the burden. Non-interest income as a percentage of assets is referred as non-interest income ratio. An increase in the ratio shall lead to a reduction in burden and increase

in profitability. Ratios and descriptive statistics as shown in Table I and Table II respectively indicate a gradual and impressive increase of the ratio barring last few years of our study. The average ratio in pre-reform period was 0.75 while the same rose up to 1.41 in the post-reform period. The graphical presentation made in Figure 8 depicts this scenario. Our ANOVA test (Table X) also confirms that the pre-reform period non-interest income is significantly different from that of post-reform period.

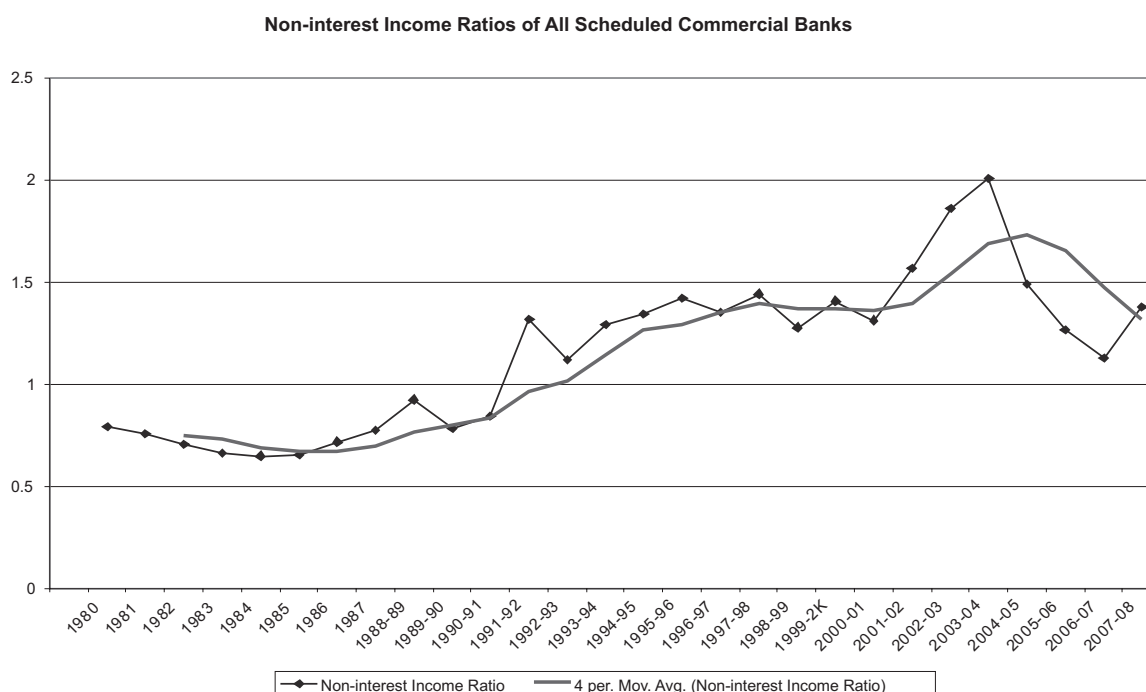
Figure VIII

Table X ANOVA: Non-interest Income Ratios of All Scheduled Commercial Banks

<i>SUMMARY</i>						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Pre-reform	11	8.238419	0.748947	0.007472		
Post-reform	17	23.94381	1.408459	0.052214		
<i>ANOVA</i>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2.904888	1	2.904888	82.98315	1.42E-09	4.225201
Within Groups	0.91015	26	0.035006			
Total	3.815037	27				

It is observed that there has been a significant difference with regard to profitability of Commercial Banks in the pre-reform and post-reform period in case of All Scheduled Commercial Banks. Our Analysis of Variance has strengthened this observation, which is statistically significant at 5 percent level of significance. Thus, our null hypothesis is rejected and the alternate hypothesis is accepted. Therefore, we conclude that there is difference in the performance of Commercial Banks in the pre-reform and post-reform period. As observed in our analysis, there has been an increase in profit performance of the Indian banks during the post-reform period.

Conclusion

Commercial banks play an important role in the economic development of a country. In a developing country like India, banking sector has been assigned an important role to achieve certain socio-economic objectives. The performance of a sector or industry or firm needs to be evaluated to know about its success or failure and design its future course of action accordingly to get desired results. Thus, performance evaluation of the Indian commercial banks is of great importance not only to bankers, but also to policy makers, academicians and researchers particularly in the context of post-reform achievements that have taken place since 1991. The present study is an honest attempt to examine the profit performance of the Indian Commercial Banks.

The study has observed that profitability of all scheduled Commercial Banks in India have improved significantly in the post-reform period. This has happened due to an overall improvement of Indian banks in managing income and cost. The performance of Indian banks have improved

in the post-reform period remarkably in terms of increase in interest and non interest income and reduction in interest cost as well as manpower cost. The increase in facility cost is due to upgradation of technology and justified in terms of reduction in manpower cost and improvement in overall profitability. Thus, we can conclude that the banking sector reform measures have delivered to a satisfactory level and in the right direction so far. The reform process should continue in the same direction in future to strengthen the banking system in India. Banking system, being a vital organ of the financial and economic system, needs appropriate policy and implementation in a continuous way. Hence, new research on micro aspects of the profitability, impact of reform on profitability and productivity should continue to give more insights into the topic and give a right direction to the policy changes and reform measures in the days to come.

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