Financial Performance of Public Sector Banks in India : A Post Reform Analysis

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Abstract

Bank nationalization was an important landmark in the history of banking in India. In order to serve the development needs of the country, nearly 20 commercial banks were nationalized between 1969 and 1980. This brought nearly 80% of the banking industry under the government control. For two decades, public sector banks dominated the banking space and exhibited enhanced performance. However, in the late 1980s, the performance and growth of public sector banks started waning, confronted by problems of low productivity and high costs. This called for an urgent need for reforms in the banking industry. After the introduction of financial sector reforms in 1993, the public sector banks could not sustain competition from new-generation tech-savvy private banks. Despite attempts of the government to revive the banking industry, public sector banks continued to show poor performance and accumulating NPAs. After the global financial crisis in 2007, India witnessed economic slowdown and subsequent recession. During this phase, private banks started eclipsing the banking scenario, surpassing the performance of public sector banks. With major share of public sector banks in the country's banking business, it becomes imperative to examine the financial performance of the public sector banks in India. Time series data were engaged for the study. Financial performance of the public sector bank group was examined and evaluated on the basis of selected financial parameters. The entire time period of the study from 1995-96 to 2016-17 was fragmented into two phases, Phase I being the period immediately following reforms and before the financial crisis set in (1995 - 96 to 2006 - 07), and Phase II coinciding with the post global financial crisis period (2007 - 08 to 2016 - 17). The study concluded that all indicators of financial performance of the public sector bank group showed positive trends during the first phase ; whereas, they exhibited falling trends over the second phase of the analysis period.

Keywords: financial performance, public sector banks, post reform period, post global financial crisis period, profitability, productivity, efficiency, credit quality, India

JEL Classification: G21, M2, E0

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The history of banking in India dates back to the 18th century. The origin of modern commercial banking in India was associated with the East India Company. Three presidency banks were established by the company, which acted as bankers to the government. Their main objective was to finance trade and industry. In 1921, all the three presidency banks were merged to form the Imperial Bank of India. Under the RBI Act 1934, Reserve Bank of India was set up as the Central bank of the country. With its very inception, the Reserve Bank of India took over the reins of development of the financial sphere of the economy, with special focus on agriculture. They pioneered the concept of using finance to catalyze development.

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Many small private banks started their operations in the country, which mainly catered to the needs of large and well established industrial houses. As a result, the agriculture sector and small scale industries remained neglected. In 1955, the Imperial Bank of India was nationalized and was renamed as State Bank of India. Further, the State Bank of India took over seven princely state banks as its associate banks in 1959, constituting the State Bank of India and its associates. They were entrusted to serve the developmental needs of the economy. Another major progress was the initiative of nationalization of 14 major commercial banks in 1969 and then another six banks in the year 1980. This brought nearly 80% of the banking industry under the government control. For the next two decades, public sector banks ruled the banking space with growing performance.

In the late 1980s, the banking industry was confronted with problems of low productivity and high operating costs. The performance and growth of public sector banks started waning. This was because of excessive government control, improper risk management systems, unmanaged branch network, underutilized manpower, and lack of strong prudential norms. The state of the banking industry in general and the government banks in specific necessitated an urgent need for corrective measures and reforms. This event called into question the previous banking policies in India and triggered the era of economic reforms and liberalization in India in 1991.

In 1991, the Narasimham Committee was established to remodel the country's financial system. The purpose of the Committee was to recommend improvements in the efficiency and productivity of the financial sector and suggest remedial actions for the same. The Committee led the wave of financial sector reforms in India in 1993. A number of private and foreign banks entered the banking industry after 1993. This infused competition into the industry. Public sector banks could not sustain competition from the new generation tech-savvy banks and exhibited falling profitability performance and growth. Bureaucratic controls of the government, stringent rules and regulations, and excessive pressure towards priority sector lending gave rise to non-performing assets for the public sector banks. In order to revive the ailing banking industry and failing public sector banks, the government took some important initiatives in the form of restructuring, deregulation, consolidation, and recapitalization. The impact of reforms was visible only by the turn of the century. The banking industry stabilized, and bank performance began progressing. However, the banking industry still continued to face some challenging issues with changing and fluctuating financial performance within bank groups. After the global financial crisis in 2007, India witnessed economic slowdown and subsequent recession. This was a phase dominated by post crisis pains, reforms fatigue, lack of banking penetration, absence of internal reforms, and ineffective banking management systems. During this phase, the private banks started eclipsing the banking scenario, surpassing the public sector banks.

As the banking sector occupies a pivotal position in the financial system, the global economic slowdown and ensuing recession did have its share of adverse impact on the banking sector in India. With a majority share of public sector banks in the country's banking business, it becomes imperative to examine the financial performance of public sector banks in India in the period succeeding reforms as well as the post-global financial crisis period.

Objectives of the Study

The prime objective of the study is to evaluate the trend in financial performance of the public sector bank group in India over the post reform period. The study endeavours to undertake a segregated analysis of the entire post reform time period to study the bank group's performance. For this purpose, the time period has been divided into two phases – one, post-reform period (1995 - 96 to 2006 - 07) and second, post-global financial crisis period (2007- 08 to 2016 - 17). An attempt is made to measure, analyze, and compare the performance of public sector banks (bank group) in India over these two phases.

Review of Literature

Agarwal (1993) investigated the determinants of profit and profitability of public sector banks in India for the period from 1970 to 1987. The study examined the State Bank of India group and the nationalized bank group. Ordinary least square method was used to estimate the profit equation. Empirical results indicated that profitability of public sector banks was adversely affected by increasing statutory liquidity ratios, bank branch expansion in rural areas, lending to priority sector at low interest rates, rising wages of employees, and declining labor productivity. Only time deposits were found to be encouraging profitability.

Bhatia and Verma (1998) attempted to determine the factors affecting profitability of public sector banks in India. Multiple regression analysis was used to identify the factors influencing profitability for the period 1971 to 1995. The results revealed that priority sector advances, fixed to current deposit ratio, and establishment expenses negatively influenced profitability. On the other hand, interest spread ratio and credit-deposit ratio had a positive impact on profitability.

Prashanta (2000) examined the performance of public sector banks with special reference to State Bank of Hyderabad. The period under study was 1980 to 1993. Ratio analysis was used to analyze and compare the performance of State Bank of Hyderabad with other public sector banks in India. The results showed that average growth in deposits and profits of State Bank of Hyderabad was better than other public sector banks.

Ganesan (2001) identified the determinants of profitability of public sector banks in India for the period from 1998 and 1999. The study used financial ratios and found that interest income, other income, interest cost, credit to total asset, deposits per branch, and proportion of priority sector advances were the significant determinants of profits and profitability of public sector banks.

Das (2002) tried to examine the interrelationship between capital, non-performing loans, and productivity. Regression analysis was used to analyze Indian public sector banks for the period from 1995 - 96 to 2000 - 01. The study revealed that capital, risk, and productivity were interlinked with each other. The study further added that banks which were inadequately capitalized tended to have lower productivity.

Badola and Verma (2006) identified the important determinants of profitability of Indian public sector banks. The time period for the study was from 1991-92 to 2003-04. Multivariate regression model was used to identify the factors influencing profitability. The study concluded that non-interest income, operating expenses, provisions and contingencies, and spread had significant effects on net profit of public sector banks.

Kumar (2008) endeavored to analyze the relationship between technical efficiency and profitability for 27 Indian public sector banks. Data envelopment analysis was used to analyze the technical efficiency score for each bank for the year 2005. It was found that the State Bank of India group outperformed the nationalized bank group in terms of operating efficiency. Andhra Bank and Corporation Bank appeared as an ideal for the other slow progressing public sector banks on efficiency and profitability indicators.

Kumar and Gulati (2009) assessed performance, efficiency, and effectiveness of public sector banks operating in India. Cross-sectional data was used for the year 2006-07. Efficiency and effectiveness were evaluated using data envelopment analysis for 27 public sector banks. The results revealed positive and strong correlation between effectiveness and performance. It was noted that high efficiency did not stand for high effectiveness for Indian public sector banks.

Srinivas (2010) studied the financial performance of banks in India for the period before and after mergers. The study suggested that banks have largely concentrated on their top-line and bottom-line to improve their profits and reduce their operation costs. A large number of banks were found to have enhanced their financial performance through mergers and acquisitions.

Naidu (2012) attempted to scrutinize the financial performance of Andhra Bank, a public sector bank in India. For the purpose of analysis, different ratios were computed and analyzed using their compound annual growth rate and coefficient of variation. It was found that Andhra Bank had tried to maintain its profitability position during the period from 2006 to 2010, which was also the phase of global financial crisis and economic slowdown in the banking sector.

Sharma and Kumar (2013) assessed the impact of reforms in the banking sector on the performance of public, private, and foreign bank groups in India. The analysis was carried out for pre and post reform periods. In the study, performance of banks was measured by a number of indicators, among which profitability was the most important one. The study stated that viability of banks depended mainly on the adequacy of profits and profitability. The results revealed a significant impact on total income of bank groups in the post reform period.

Nagaraju (2014) examined the performance of 34 public and private sector banks in India. The study was carried out using data envelopment analysis for the period from 2006 to 2010. The study found that although both public and private banks did not show great performance on parameters as marketability and profitability efficiencies, they did perform relatively better in terms of profitability efficiency than marketability efficiency.

Karri, Meghani, and Mishra (2015) investigated the financial position and performance of two Indian public sector banks namely – Bank of Baroda and Punjab National Bank. The performance of the banks was measured using CAMEL model and *t* - test statistics for the period from 2010 to 2014. It was concluded that Bank of Baroda showed better performance as compared to Punjab National Bank.

Parveen and Sameera (2016) studied three selected public sector banks in India namely - Punjab National Bank, Bank of Baroda, and State Bank of India. Fundamental analysis was used to analyze the financial performance of banks for the period from 2010 - 11 to 2014 - 15. Different ratios were calculated to understand the strength and weakness of banks under consideration. It was concluded that State Bank of India and Punjab National Bank were good for investment, but investment in Bank of Baroda was not viable.

Shukla (2016) analyzed the performance of 46 scheduled commercial banks in India on the basis of selected financial parameters. Purposive sampling technique was used to include public and private sector banks in the sample for analysis. These banks were examined on the basis of four parameters – size, growth, profitability, and soundness. The study found that public and private sector banks were not very different in terms of size and growth parameters. In case of profitability and soundness of business, private sector banks were significantly better off than their counterparts.

Annapurna and Manchala (2017) evaluated the performance of top three public sector banks in India – State Bank of India, Bank of Baroda, and Punjab National Bank. The study used the balanced scorecard concept for empirical analysis of these banks for the period from 2006 to 2015. It also examined the profitability of public sector banks on the basis of return on assets and return on equity. Correlation and multiple regressions were employed to examine the relationship between profitability variables and variables for the balanced scorecard framework. The results suggested variance in the performance of the banks and significant relationship between the variables was studied.

Mustafa and Taqi (2017) evaluated the financial performance of Punjab National bank in India using ratio analysis and regression analysis. The time period of the study covered 5 years from 2011-12 to 2015-16. It was found that Punjab National Bank had performed well on the ground of growth rate and financial efficiency, but lagged behind in terms of its profitability position.

Rao and Ibrahim (2017) compared the financial performance of IDBI Bank with that of industry average. For industry average, two large public sector banks were considered as the proxy namely - State Bank of India and Bank of Baroda. Financial ratios were used to evaluate the performance of IDBI Bank for the period from 2011-12 to 2015-16. It was found that solvency position of IDBI Bank was competitive with the industry average. Even asset utilization of IDBI Bank was better than industry average. However, net profit margin and return on assets of IDBI Bank was pretty low as compared to the industry average.

Research Methodology

The present study seeks to examine the financial performance of the public sector bank group in India over the post reform period. There are at present 27 public sector banks, including the SBI and its associates, with nearly 1,35,000 bank offices operating in India.

The recommendations of the Narasimham Committee on financial sector reforms were introduced in the year 1993. The impact of reforms was felt by the banking sector in a gradual and phased manner. Hence, the analysis period of the study begins from 1995-96 covering over two decades to the very recent 2016-17. After the adoption of recommendations of Narasimham Committee to restructure and revive the financial landscape of the country, the public sector banks were confronted by challenges as well as opportunities. They faced rising competition from technology driven private and foreign banks in the 1990s. Over time, public sector banks slowly managed to sustain competition and moved towards adoption of newer modern methods of banking.

In 2007, the global financial crisis hit the globe. India demonstrated unmatched flexibility and resilience, yet the economy witnessed recession in the years to follow. The financial sector being an integral part of the economic system, it becomes crucial to see if the financial crisis and the succeeding recession did pilot indirect effects on the growth and financial performance of banking firms; in particular, the public sector banks that occupied bulk of the banking market share.

(1) Time Period Classification : The study carries out a segregated analysis of the post reform time period under consideration, beginning from 1995 - 96 to 2016 - 17. In order to review the financial performance of the public sector bank group, the period of study has been split into two different phases of time – Phase I : 1995-96 to 2006-07 (post-reform period), and Phase II: 2007- 08 to 2016-17 (post-global financial crisis period). The study analyzes the financial performance of the public sector bank group over the two distinct phases of time so as to determine whether there is any difference in the financial performance of public sector banks between the two time periods or phases.

(2) Statistical Method Used : Time series data was engaged for studying the financial performance of public sector banks (bank group). Selected financial variables were identified for analyzing the performance of public sector banks. The financial ratio analysis has been employed to examine the behavior of the selected financial parameters of public sector banks over time. In order to understand the strengths and weaknesses of the banks, the financial ratios were derived by expressing items of balance sheet as ratio of items of profit and loss account. The study measures and analyzes the financial ratios for the public sector bank group in terms of its : (a) absolute values, (b) difference in the values of variables, and (c) percentage growth. Linear trends in the financial variables have been reported in the form of graphs to examine and compare the performance of the public sector bank group over the analysis period and between the two phases.

(3) Variable Specifications and Definitions : A number of financial variables were selected for analyzing the performance of public sector banks. The performance was examined on the basis of five parameters of performance such as bank profitability, bank productivity, bank efficiency, bank health, and bank credit quality. The variables identified for each parameter of bank performance for the public sector bank group are :

(i) Bank Profitability : For assessing the bank profitability of the public sector bank group, the variable selected is return on assets (ROA). It has been defined as net profit/loss as a ratio of total assets.

(ii) Bank Productivity : Bank productivity is measured by the credit - deposit ratio (C-D) of the public sector bank group. It has been computed as ratio of total credit to total deposits.

(iii) Bank Efficiency : Here, bank efficiency is examined by net interest margin of bank group. It has been defined as net interest (interest earned - interest paid) as a ratio of total assets.

(iv) Bank Health: Bank health is an important indicator of bank performance ; it is measured as profit/loss of the public sector bank group.

(v) Bank Credit Quality : Bank credit quality is reflected by the status of non-performing assets (NPAs) of the bank group. For this, the non-performing assets have been defined as the net non-performing assets expressed as a ratio of total assets.

(4) Sources of Data : Secondary time series data were collected for the study from various issues of Reserve Bank of India publications such as *Statistical Tables Relating to Banks in India*, *Report on Trend and Progress of Banking in India*, and *Handbook of Statistics on Indian Economy*.

Financial Performance of Public Sector Banks : Empirical Results and Analysis

The results estimated for financial ratio analysis and the figures showing linear trend line for the selected financial variables have been presented in this section. This is followed by a discussion on the results obtained.

(1) Bank Profitability : Bank profitability for the public sector bank group has been measured using return on assets (ROA). The entire analysis period has been divided into two distinct phases – Phase I : post- reform period

Table 1. Bank Profitability of the Public Sector Bank Group : Return on Assets

Phase I: Post-Reform Period				Phase II: Post-Global Financial Crisis Period			
Years	**ROA**	**Δ ROA**	**% Δ ROA**	**Years**	**ROA**	**Δ ROA**	**% Δ ROA**
1995-96	-0.07	-	-	2007-08	2.09	-	-
1996-97	0.57	0.64	914.28	2008-09	1.99	-0.10	-4.78
1997-98	0.77	0.20	35.09	2009-10	1.26	-0.73	-36.68
1998-99	0.42	-0.35	-45.45	2010-11	1.75	0.49	38.89
1999-00	0.57	0.15	35.71	2011-12	1.76	0.01	0.57
2000-01	0.42	-0.15	-26.32	2012-13	1.92	0.16	9.09
2001-02	0.72	0.30	71.43	2013-14	1.54	-0.38	-19.79
2002-03	0.96	0.24	33.33	2014-15	1.84	0.30	19.48
2003-04	1.12	0.16	16.67	2015-16	-0.07	-1.91	-103.80
2004-05	1.61	0.49	43.75	2016-17	-0.10	-0.03	-42.86
2005-06	2.08	0.47	29.19				
2006-07	2.28	0.20	9.62				
Minimum	**-0.07**	**-0.35**	**-45.45**	**Minimum**	**-0.10**	**-1.91**	**-103.80**
Maximum	**2.28**	**0.64**	**914.29**	**Maximum**	**2.09**	**0.49**	**38.89**
Mean	**0.95**	**0.21**	**101.57**	**Mean**	**1.40**	**-0.24**	**-14.70**

Figure 1 (a).
Phase I : Post-Reform Period

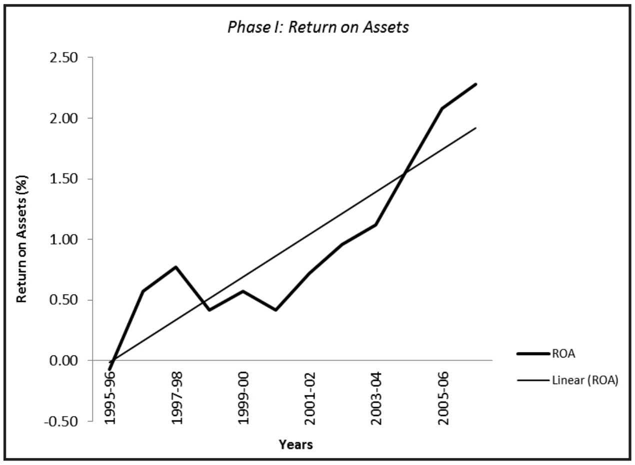
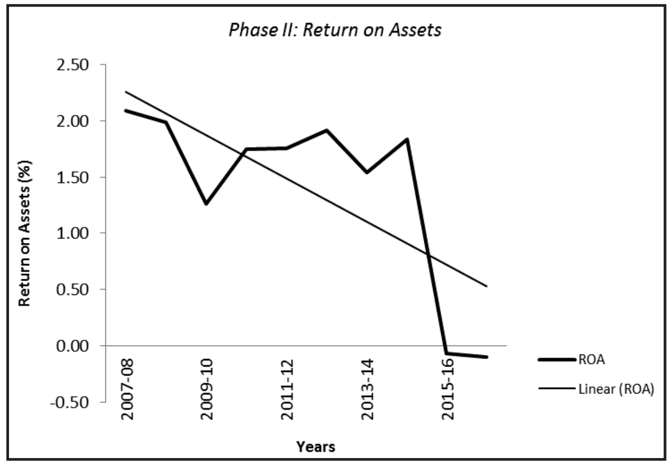


Figure 1 (b).
Phase II : Post-Global Financial Crisis Period



(1995-96 to 2006-07) and Phase II: post global financial crisis period (2007- 08 to 2016 -17). Return on assets has been measured in terms of absolute value (ROA), difference in ROA (Δ ROA), and percentage growth in (% Δ ROA). Mean values and trend line have been estimated for ROA. The results are presented in tabular and graphical forms.

Bank profitability trends for the public sector bank group have been presented in the Table 1. The linear behavior of ROA has been depicted for the two phases in Figures 1(a) and 1(b), respectively. In the post-reform phase, the ROA for the public sector bank group increased from -0.07% to as high as 2.28%, with an average of almost 1%. The average percentage growth in ROA was more than 100%. Figure 1(a) exhibits an overall rising trend in ROA over the post-reform period. The post-global financial crisis phase witnessed a falling trend in ROA from 2.09% to -0.10%. The mean of ROA stands at 1.4%. The percentage growth in ROA over this period was largely negative. The Figure 1(b) shows linear trend line of ROA during this phase and also exhibits a continuously declining pattern in ROA of public sector banks with major fluctuations. The fall is sharp and pronounced after 2014-15.

(2) Bank Productivity : The credit - deposit ratio has been used to compute bank productivity for the two distinct phases of post-reform and post-global financial crisis. The results of bank productivity are presented in the Table 2 and trend lines are depicted in the Figures 2(a) and 2(b).

The credit - deposit ratio for the public sector bank group shows a falling trend for some years post the financial reforms, but then it started increasing, averaging at almost 59%. The average growth rate was only 2.5%. In the second phase coinciding with the post-global financial crisis period, the growth in the credit-deposit ratio fluctuated, with an overall downward trend showing an average growth rate of -0.8%. The average credit-deposit ratio of the public sector bank group is nearly 75%.

The Figures 2(a) and 2(b) show fluctuating movement in the credit-deposit ratio for the public sector bank group during both the phases. The Figure for Phase I reveals an increasing trend line, while that for Phase II shows a declining trend in the credit-deposit ratio with lot of fluctuations. In the post crisis phase, the credit-deposit ratio improved for some years, but after 2013-14, it dropped quickly in the succeeding years.

(3) Bank Efficiency : Bank efficiency of public sector banks is measured in terms of net interest margin (NIM).

Table 2. Bank Productivity of the Public Sector Bank Group : Credit-Deposit Ratio

Phase I : Post-Reform Period				Phase II: Post-Global Financial Crisis Period			
Years	C/D	Δ C/D	% Δ C/D	Years	C/D	Δ C/D	% Δ C/D
1995-96	58.31	-	-	2007-08	74.37	-	-
1996-97	55.33	-2.98	-5.12	2008-09	72.60	-1.77	-2.38
1997-98	54.00	-1.33	-2.40	2009-10	74.21	1.61	2.22
1998-99	53.40	-0.59	-1.10	2010-11	75.94	1.73	2.33
1999-00	54.43	1.03	1.93	2011-12	78.66	2.72	3.58
2000-01	54.46	0.03	0.06	2012-13	78.09	-0.57	-0.72
2001-02	56.21	1.74	3.20	2013-14	78.20	0.10	0.13
2002-03	56.30	0.09	0.16	2014-15	75.79	-2.40	-3.08
2003-04	55.38	-0.91	-1.62	2015-16	72.77	-3.02	-3.98
2004-05	63.07	7.68	13.87	2016-17	68.78	-3.99	-5.48
2005-06	71.52	8.45	13.40				
2006-07	74.95	3.42	4.79				
Minimum	**53.40**	**-2.98**	**-5.12**	**Minimum**	**68.78**	**-3.99**	**-5.48**
Maximum	**74.95**	**8.45**	**13.87**	**Maximum**	**78.66**	**2.72**	**3.58**
Mean	**58.95**	**1.51**	**2.47**	**Mean**	**74.94**	**-0.62**	**-0.82**

Figure 2 (a).
Phase I: Post-Reform Period

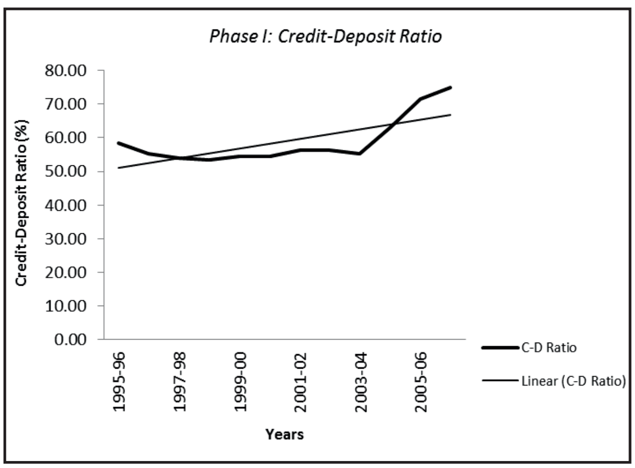
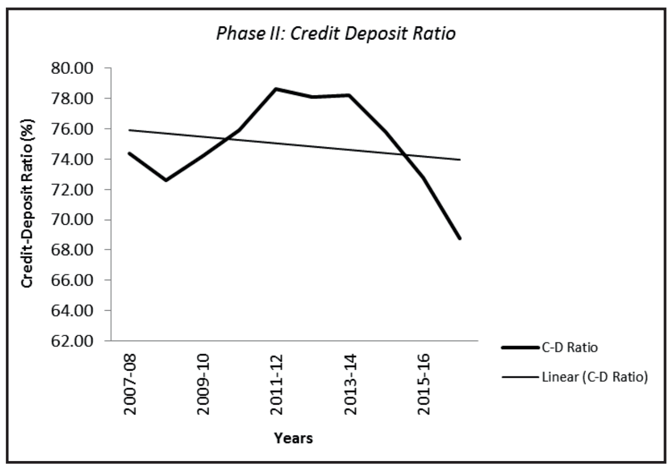


Figure 2 (b).
Phase II: Post-Global Financial Crisis Period



The data for NIM has been compared between the two phases, post-reform phase and post-global financial crisis phase. The outcomes are presented in the Table 3 and Figures 3(a) and 3(b) for the two phases, respectively.

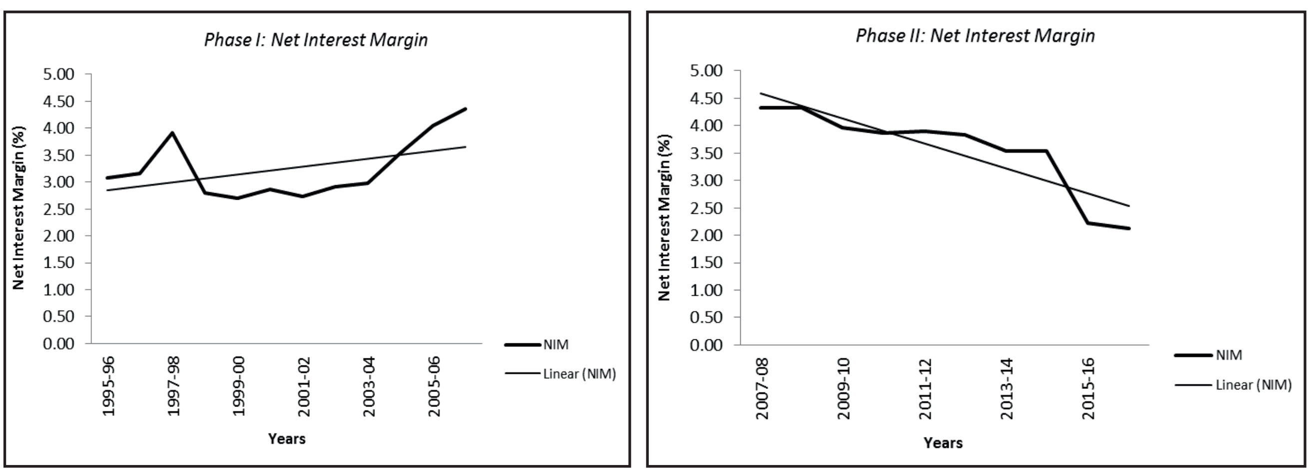
In the post-reform phase, the net interest margin for public sector banks increased from 3.08% in 1995-96 to 4.36% in 2006-07, which is the highest NIM in the entire analysis period. The mean growth rate of NIM was around 4%. The post-global financial crisis period showed a continuous falling trend, with an average growth rate of -6.82%. During this phase, NIM dropped from 4.33% in 2007-08 to a shocking 2.12% in 2016-17, which was the lowest in two decades.

The Figure 3(a) exhibits a steady increasing trend in NIM during Phase I, that is, before the onset of the global

Table 3. Bank Efficiency of the Public Sector Bank Group : Net Interest Margin

Phase I: Post-Reform Period				Phase II: Post-Global Financial Crisis Period			
Years	NIM	Δ NIM	% Δ NIM	Years	NIM	Δ NIM	% Δ NIM
1995-96	3.08	-	-	2007-08	4.33	-	-
1996-97	3.16	0.08	2.60	2008-09	4.33	0.00	0.00
1997-98	3.91	0.75	23.73	2009-10	3.96	-0.37	-8.55
1998-99	2.80	-1.11	-28.39	2010-11	3.86	-0.10	-2.53
1999-00	2.70	-0.10	-3.57	2011-12	3.89	0.03	0.78
2000-01	2.86	0.16	5.93	2012-13	3.83	-0.06	-1.54
2001-02	2.73	-0.13	-4.55	2013-14	3.54	-0.29	-7.57
2002-03	2.91	0.18	6.59	2014-15	3.54	0.00	0.00
2003-04	2.98	0.07	2.41	2015-16	2.23	-1.31	-37.01
2004-05	3.54	0.56	18.79	2016-17	2.12	-0.11	-4.93
2005-06	4.05	0.51	14.41				
2006-07	4.36	0.31	7.65				
Minimum	**2.70**	**-1.11**	**-28.39**	**Minimum**	**2.12**	**-1.31**	**-37.01**
Maximum	**4.36**	**0.75**	**23.73**	**Maximum**	**4.33**	**0.03**	**0.78**
Mean	**3.26**	**0.12**	**4.15**	**Mean**	**3.56**	**-0.25**	**-6.82**

Figure 3 (a). Phase I: Post-Reform Period **Figure 3 (b). Phase II: Post-Global Financial Crisis Period**



financial crisis. The Figure 3(b) shows a sharply downward trending NIM, implying an adverse effect of the global financial crisis on the efficiency performance of the public sector bank group.

(4) Bank Health : Bank health is an important parameter as it analyzes the financial health of banks by examining their profit/loss situation. Profit/loss of the public sector bank group is examined over the post-reform phase and the post-global financial crisis phase. The same has been presented in the Table 4 and Figures 4(a) and 4(b).

The Table 4 reveals the profit/loss (P/L) position of the public sector bank group. Profit/loss of the bank group

Table 4. Bank Health of the Public Sector Bank Group : Profit/Loss

Phase I: Post-Reform Period				Phase II: Post-Global Financial Crisis Period			
Years	P/L (in Mn)	Δ P/L (in Mn)	% Δ P/L	Years	P/L (in Mn)	Δ P/L (in Mn)	% Δ P/L
1995-96	-3348.60	-	-	2007-08	265917	-	-
1996-97	31150.80	34499.4	1030.26	2008-09	343726	77809	29.26
1997-98	49787.60	18636.80	59.83	2009-10	392569	48843	14.21
1998-99	32580.90	-17206.70	-34.56	2010-11	449007	56438	14.38
1999-00	51138.60	18557.70	56.96	2011-12	495138	46131	10.27
2000-01	43170.00	-7968.60	-15.58	2012-13	505827	10689	2.16
2001-02	83040.00	39870.00	92.36	2013-14	370189	-135638	-26.82
2002-03	122960.00	39920.00	48.07	2014-15	375400	5211	1.41
2003-04	165470.00	42510.00	34.57	2015-16	-179930	-555330	-147.93
2004-05	154316.00	-11154.00	-6.74	2016-17	-113887	66043	36.70
2005-06	165387.00	11071.00	7.17				
2006-07	201521.00	36134.00	21.85				
Minimum	**-3348.60**	**-17206.70**	**-34.56**	**Minimum**	**-179930**	**-555330**	**-147.93**
Maximum	**201521.00**	**42510.00**	**1030.26**	**Maximum**	**505827**	**77809**	**36.70**
Mean	**91431.11**	**18624.51**	**117.65**	**Mean**	**290395.60**	**-42200.40**	**-7.37**

Figure 4 (a).
Phase I: Post-Reform Period

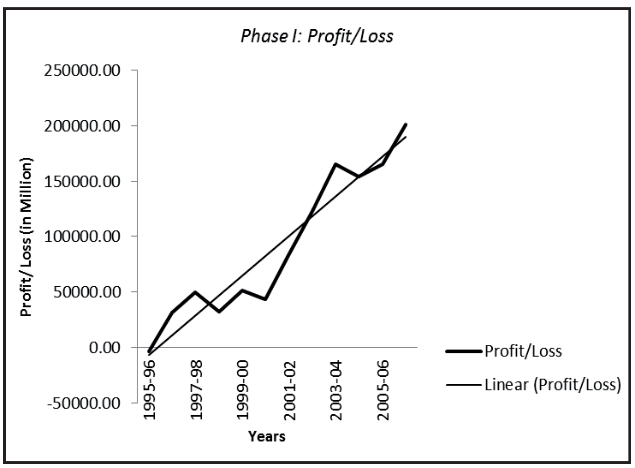
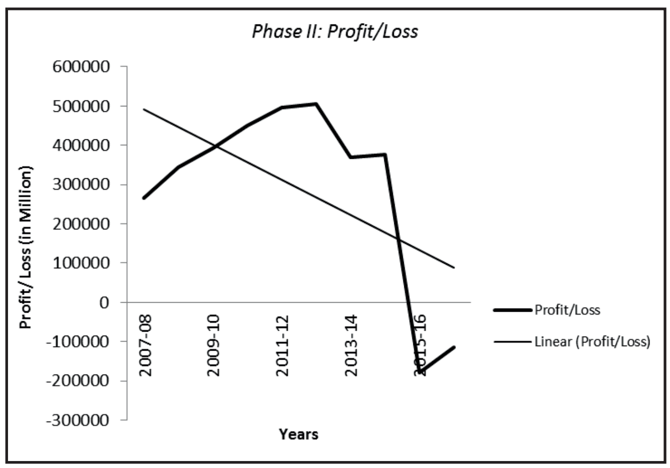


Figure 4 (b).
Phase II: Post-Global Financial Crisis Period



over the post reform phase was trending upwards. The public sector bank group accumulated average profits to the tune of 91431 mn. Immediately after the reforms, the public sector bank group witnessed the maximum jump in profits by an astounding 1000% from 1995-96 to 1996-97. The steep rise in profit/loss of public sector banks over the post-reform period is visible in the linear trend line in Figure 4(a).

During the post global financial crisis phase, for some years, the public sector bank group witnessed an increase in profits except after 2013-14. The average profits accrued to the sector were 290395 mn, which showed a decreasing rate of change by 7%. The Figure 4(b) shows major variations in the profit/loss data with extreme highs and lows. On the whole, the behavior of profit/loss reveals a downward falling trend line over this period.

Table 5. Bank Credit Quality of Public Sector Bank Group : Non-Performing Assets

Phase I: Post-Reform Period				Phase II: Post-Global Financial Crisis Period			
Years	NPA	Δ NPA	% Δ NPA	Years	NPA	Δ NPA	% Δ NPA
1995-96	3.63	-	-	2007-08	0.60	-	-
1996-97	3.65	0.02	0.55	2008-09	0.60	0.00	0.00
1997-98	3.27	-0.38	-10.41	2009-10	0.70	0.10	16.67
1998-99	3.14	-0.13	-3.98	2010-11	0.70	0.00	0.00
1999-00	2.94	-0.20	-6.37	2011-12	1.00	0.30	42.86
2000-01	2.72	-0.22	-7.48	2012-13	1.30	0.30	30.00
2001-02	2.42	-0.30	-11.03	2013-14	1.60	0.30	23.08
2002-03	1.94	-0.48	-19.83	2014-15	1.80	0.20	12.50
2003-04	1.28	-0.66	-34.02	2015-16	3.50	1.70	94.44
2004-05	0.99	-0.29	-22.66	2016-17	3.90	0.40	11.43
2005-06	0.70	-0.29	-29.29				
2006-07	0.60	-0.10	-14.29				
Minimum	**0.60**	**-0.66**	**-34.02**	**Minimum**	**0.60**	**0.00**	**0.00**
Maximum	**3.65**	**0.02**	**0.55**	**Maximum**	**3.90**	**1.70**	**94.44**
Mean	**2.27**	**-0.28**	**-14.44**	**Mean**	**1.57**	**0.37**	**25.66**

Figure 5 (a).
Phase I: Post-Reform Period

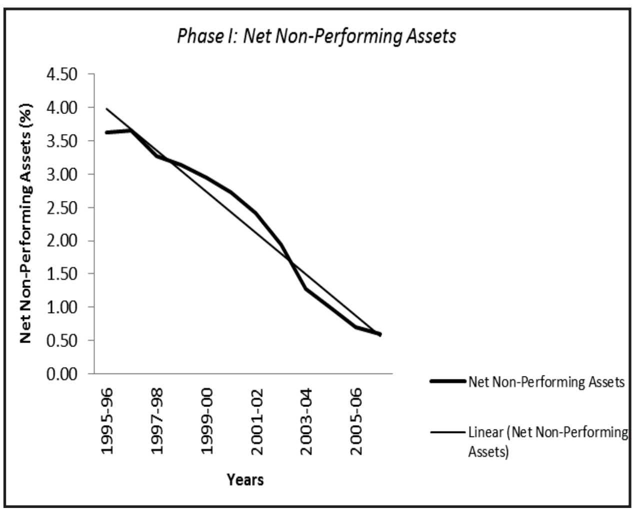
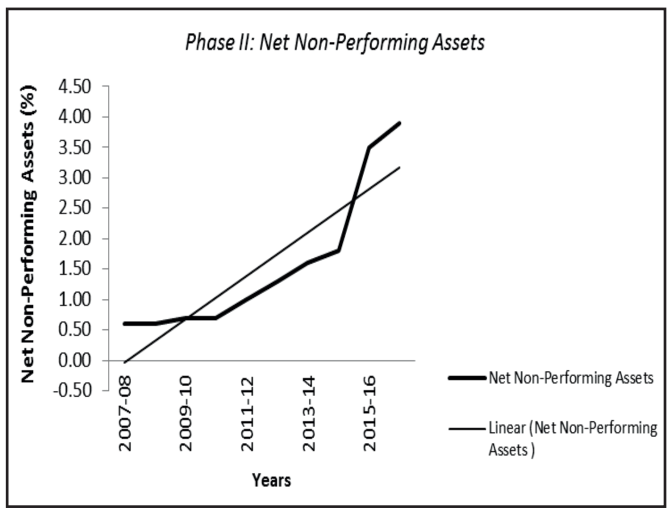


Figure 5 (b).
Phase II: Post-Global Financial Crisis Period



(5) Bank Credit Quality : For assessing bank credit quality, net non - performing assets as a ratio of total assets (NPA) have been measured to compare the credit quality of the public sector banks between the phases of analysis. The behavior of NPAs for the bank group is presented in the Table 5 and in Figures 5(a) and 5(b).

The NPAs of the public sector bank group fell incessantly over the post-reform phase from 3.65% in 1996-97 to 0.6% in 2006-07.The public sector banks showed an average of 2.27% NPAs. The growth in NPAs revealed a declining trend at an average rate of -14%, demonstrating consistent improvement in the credit quality of the banks. In contrast, the crisis period showed a constantly increasing trend in NPAs of the bank group. The mounting NPAs averaged at 1.57%. The NPAs over the second phase grew at an average rate of 25% from a negligible to over 94%. As revealed in the Figures 5(a) and 5(b) of the two distinct phases, the trend line for NPAs of the public sector bank group sharply falls downward for the post-reform phase and is steeply upward rising for the post-global financial crisis phase.

Discussion and Conclusion

(1) Bank profitability represented by return on assets flouted an average increasing growth of 101.6% in the post reform phase. However, it fell drastically with prominent oscillations over the post global financial crisis phase.

(2) Credit-deposit ratio showing the productivity performance of the public sector bank group witnessed a gradual upward trend with an average of 2.5% rate of growth in the post reform phase. During the post global financial crisis phase, the downward movement in the credit-deposit ratio took place at an average rate of change of -0.8%.

(3) Bank efficiency is measured by net interest margin. The public sector bank group witnessed an upward growth in NIM over the post reform phase at an average speed of 4%. During the post global financial crisis phase, the NIM fell continuously at an average rate of -6.8%.

(4) The profit/loss of the public sector bank group indicated the health of banks in this study. It showed a pronounced upward rising trend over the post reform phase. The average accumulated profit of the bank group during this phase was over 90000 mn. Although the average profits that accrued to the bank group were much higher in the post global financial crisis phase (over 290000 mn), the overall trend in profit/loss declined during this phase.

(5) Net NPAs as a ratio of total assets represents the credit quality of the public sector bank group. The sharp fall in NPAs is clearly indicative of a continuous improvement in the bank group's credit quality over the post reform phase. During the post global financial crisis phase, the steep escalation in the burden of NPAs over stressed the public sector bank group and adversely affected its overall performance.

(6) A comparison of the two distinct analysis phases reveals that all the indicators of financial performance of the public sector bank group exhibited improving trends during the post reform phase. For the post global financial crisis period, the financial ratios experienced diminishing trends and worsened over time. This phase witnessed the deterioration in financial performance of the public sector bank group in India. The decline in financial performance is particularly noticeable after the year 2013-14.

Research Implications

The study throws light on the comparative performance of public sector banks in India in the period following reforms and during the global financial crisis period. It will serve as a cue to the banking sector for relevant policy formulation to deal with the pertinent issues facing the government banks.

Limitations of the Study and Scope for Future Research

The main limitation of the study is that it is based on financial performance measurement of public sector banks alone. The study could have included an analysis of other bank groups as well. Another extension of financial performance study of Indian banks could be inclusion of measurement of social performance of banking in order to widen its scope and relevance.

References

Agarwal, R. N. (1993). Analysis of profitability of public sector banks : A case for financial sector reforms. *Journal of Income and Wealth, 15* (2), 123 - 131.

Annapurna, V., & Manchala, G. (2017). Balanced scorecard evaluation of the performance of Indian public sector banks. *Indian Journal of Finance, 11* (9), 7 - 21. DOI: 10.17010/ijf/2017/v11i9/118085

Badola, B. S., & Verma, R. (2006). Determinants of profitability of banks in India: A multivariate analysis. *Delhi Business Review, 7* (2), 79 - 88.

Bhatia, S., & Verma, S. (1998). Factors determining profitability of public sector banks in India : An application of multiple regression model. *Prajnan, 27* (4), 433 - 445.

Das, A. (2002). Risk and productivity change of public sector banks. *Economic and Political Weekly, 37* (5), (Feb. 2-8, 2002), 437-440+443-445+447-448.

Ganesan, P. (2001). Determinants of profits and profitability of public sector banks in India: A profit function approach. *Journal of Financial Management & Analysis, 14* (1), 27- 37.

Karri, H. K., Meghani, K., & Mishra, B. M. (2015). A comparative study on financial performance of public sector banks in India: An Analysis on CAMEL model. *Arabian Journal of Business and Management Review (OMAN Chapter), 4* (8), 18-34.

Kumar, S. (2008). An analysis of efficiency - profitability relationship in Indian public sector banks. *Global Business Review, 9* (1), 115 - 129.

Kumar, S., & Gulati, R. (2009). Measuring efficiency, effectiveness and performance of Indian public sector banks. *International Journal of Productivity and Performance Management, 59*(1), 51 - 74. DOI : https://doi.org/10.1108/17410401011006112

Mustafa, M. S. M., & Taqi, M. (2017). A study on the financial performance evaluation of Punjab National Bank. *International Journal of Business and Management Invention, 6* (1), 5-15.

Nagaraju, T. (2014). An analysis of profitability and marketability efficiencies of Indian public and private banks. *Indian Journal of Finance, 8* (1), 15 - 28. DOI: 10.17010/ijf/2014/v8i1/71981

Naidu, M. G. (2012). A study of financial performance of reputed public bank in India during 2006 to 2010. *Asia Pacific Journal of Marketing & Management Review, 1* (3), 82 - 101.

Parveen, M., & Sameera, S. (2016). A study on fundamental analysis of banking sector (with special reference to public sector banks). *International Journal of Management, 7* (2), 785-794.

Prashanta, A. (2000). Performance of public sector commercial banks - A case study of State Bank of Hyderabad, *Finance India, 14* (1), 183 - 186.

Rao, K. P. V., & Ibrahim, F. (2017). Financial performance analysis of banks - A study of IDBI Bank. *International Journal of Research in IT and Management, 7* (1), 64 - 72.

Sharma, V. K., & Kumar, A. (2013). Assessment of performance of commercial banks in India. *Indian Journal of Finance, 7* (12), 47 - 54.

Shukla, S. (2016). Performance of the Indian banking industry: A comparison of public and private sector banks. *Indian Journal of Finance, 10* (1), 41 - 55. DOI: 10.17010/ijf/2016/v10i1/85843

Srinivas, K. (2010). Pre and post merger financial performance of merged banks in India - A select study. *Indian Journal of Finance, 4* (1), 3 - 19.

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