EVALUATION OF PRODUCTIVITY, COST AND PROFITABILITY PERFORMANCE ANALYSIS OF PUBLIC SECTOR BANKS IN INDIA

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ABSTRACT
The SBIG and NBs are collectively known as Public Sector Banks (PSBs). Many of the public sector banks and old private sector banks have their existence for over 75 years and have numerous legacy issues that needs to be addressed, while the new private sector banks which come into existence consequent RBI's liberalization policy on banking sector in the year 1991 and foreign banks are well equipped with contemporary innovations, monetary tools and techniques to handle the complexities of modern banking needs and thereby stand a better chance to be more competitive as compared to public sector and old private sector banks. For the purpose of the study SBIG, NBs and OPRSBs been classified as traditional banks (TBs), while NPRSBs and FBs have been classified as modern banks (MBs) The study aims to examine the productivity, cost and profitability performance of Traditional banks Vis a Vis Modern banks for the period from 2005-2011. A total number of 12 variables/ratios have been selected with a minimum of three and maximum of five in each category to examine the extent of Gap between the modern and traditional banks. The study reveals that the gap between the modern and traditional banks significantly reduced during the study period. We have used statistical tools for projection of trend. Banks are the arteries of any financial system. Their performance widely reflects the economic scene of the country. The consistent performance evaluation of these banks gives an overview of the ongoing economic conditions. Present paper is a study to compare major banks operating in India. Top 5 banks, based on their net profits in FY 14-15, have been taken up for study. Parameters like business indicators, staff productivity, efficiency and assets quality have been considered for performance analysis. Ranking have been used to evaluate these 5 banks and accordingly they have been overall ranked. The Indian banking sector is characterized by large numbers of banks with varied ownership. Based on their ownership, the landscape is classified into five major groups - State Bank of India Group (SBIG), Nationalized Banks (NBs), Old Private Sector Banks (OPRSBs), New Private Sector Banks (NPRSBs) and Foreign Banks (FBs).

KEYWORDS*:* Cost Efficiency, Gap Index, Modern Banks, Ownership, Productivity, Profitability Traditional Banks NIM and NPA

1. Introduction

The reforms in the Indian banking sector were initiated in the early 1990's with the main objective to create a more profitable, efficient and sound banking system. While in the past several committees have been constituted to resolve problems of Commercial Banking in India, three of them, namely– the Narasimham committee -I (1992) and II (1998) and the Verma committee have aimed at major changes in the banking system. The regime of reforms began with radical departure from regulated banking towards market oriented banking. The strategy adopted was to improve operational efficiency of the banking system and to impart functional autonomy through reduced regulator's direct intervention in the working of the institutions. During this phase of reforms the commercial banks, particularly the public sector banks had overcome several challenges and progressed significantly in many facets. This study primarily aims to assess the performance of scheduled commercial banks on productivity, cost efficiency and profitability dimensions. The paper is organized into 4 sections. Section I provides a brief of literature review. Section II presents objectives of the study, while methodology and data base for the study is presented in Section III. Data Analysis is discussed in Section IV. The concluding section presents the findings of the study. Performance evaluation is an effective tool of proper implementation of any policy. Many of the government policies are implemented through banks which on one hand provide funds and customer base to banking industry but on other hand, also puts some strain on the existing resources. A comparative performance analysis of the top PSBs is needed to evaluate their functioning through all dimensions i.e. from financial, business, employee performance and asset quality aspect. Present paper undertakes the study of top 5 public sector banks, selected on the basis of their net profit in FY 2014-15, under following parameters:

Business Indicators: Deposits, Advances, Net Profit and CASA

Staff Productivity: Business per Employee and Profit per Employee

Efficiency: Return on Assets (ROA), Capital Adequacy Ratio (CAR) and Net Interest Margin (NIM)

Asset Quality: Gross NPA Ratio and Net NPA Ratio

A comparative analysis of 5 banks viz. State Bank of India (SBI), Bank of Baroda (BOB), Punjab National Bank (PNB), Canara Bank and Union Bank of India (UBI) has been done for five financial years from 2010-11 to 2014-15. The data regarding above fields have been collected through the annual reports of the concerned banks and from the official website of Reserve Bank of India wherever needed.

2. LITERATURE REVIEW

Several studies that examined the productivity, efficiency and profitability of commercial banks in the reforms era revealed that public sector banks have shown improvement during the past two decades, however the inter group comparisons display that public sector banks are far beyond their private and foreign counterparts.

Sayuri, Shirai (2002) assessed the impact of reforms by examining the changes in the performance of banking sector. It is found that the performance of public sector banks improved in the second half of the 1990's. Profitability (measured by the return on assets) of nationalized banks turned positive in 1997-2000 and that of SBI group have steadily improved their cost efficiency over the reform period. Even though foreign banks and private sector banks performed better than the public sector banks in terms of profitability, earning efficiency (measured by ratio of income to assets), and cost efficiency in the initial stages, such differences have diminished as public sector banks have improved profitability and cost efficiency.

Mckinsey &Company (2007), report highlighted a clear divide between the new private sector and foreign banks (attackers) and the public and old private sector banks (incumbents). The report reveals that between 2000 and 2007 attackers have increased assets from 12% to 26%, profits from 21% to 32 % and market capitalization from 37% to 49%.

3. METHODOLOGY AND DATA BASE

For the purpose of this study SBI group, nationalized banks and old private sector banks are classified as traditional banks while the new private sector banks and foreign banks are classified as modern banks based on the legendary aspects faced by these banks. The data on the select variables/ratios are retrieved from "Performance Highlights of Banks" and "Indian banking at a Glance" – reports published by Indian Banks' Association, Mumbai. The ratios have been categorized as productivity, cost efficiency and profitability. Finally, gap index has been calculated to trace the extent of gap between traditional and modern banks of during the period of study. The results are based on the time period 2005-2011. The following ratios are used for the study.

3.1. Productivity Ratios

1. Business per employee
2. Profit per employee
3. Net income per employee
4. Business per branch
5. Profit per branch

3.2. Cost efficiency Ratios

1. Staff cost as percentage to operational expenses

2. Staff cost as percentage to net income
3. Staff cost to Total business

3.3. Profitability Ratios

1. Return on Assets
2. Interest Income as percentage to Total income
3. Spread as percentage to total assets
4. Credit – deposit ratio

3.4. The Gap Index Calculation

Gap Index is the percentage difference of the value of ratios between modern banks and traditional banks as a ratio of their aggregate. To calculate gap index for productivity ratios, the value of ratios of traditional banks have been subtracted from modern banks. For cost efficiency, modern banks have been subtracted from traditional banks. In case of profitability, for variables like ROA, credit -deposit ratios and spread as % to total assets, the value of ratios of traditional banks have been subtracted from modern banks, while for interest income as % to total income the values of ratios of modern banks have been subtracted for traditional banks. The gap index primarily helps us to trace the extent of gap of during the period of study.

4. Empirical Analysis

4.1. Productivity Ratios (Employee and Branch Productivity)

Business per employee: (Table-1) presents productivity of traditional and modern banks in terms of business per employee. The business per employee of traditional banks increased 2.68 times (Rs.32.87 million to Rs.88.20 million) from the year 2005 to 2011, whereas in case of modern banks the increase in only 0.79 times (Rs.91.55 million to Rs.114.60 million).The business per employee has marginally declined during 2007 in case of modern banks. The ratios between the modern and traditional banks have shown a significant decline from 2.78 times in 2005 to 1.30 times in 2011, implying that traditional banks made a significant improvement on this indicator. The gap between the modern and traditional banks reduced significantly from 47.15 percent in 2005 to 13.02 per cent in 2011(72.39 per cent reduction).

Table 1. Business for Employee **(**Rs. in Millions)

Year	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
SBIG	28.48	33.78	43.64	54.92	65.03	73.70	79.30
NBs	30.81	37.00	47.52	59.56	74.81	89.40	110.50
PSBs	29.65	35.39	45.58	57.24	69.92	81.55	94.90
OPRSBs	36.10	42.90	49.70	56.90	60.60	69.70	81.50
TBs	**32.87**	**39.14**	**47.64**	**57.07**	**65.26**	**75.63**	**88.20**
NPRSBs	90.00	90.40	80.80	83.20	78.70	84.00	82.60
FBs	93.10	95.50	97.50	103.90	125.20	133.60	146.60
MBs	**91.55**	**92.95**	**89.15**	**93.55**	**101.95**	**108.80**	**114.60**
Gap Index	**47.15**	**40.73**	**30.41**	**24.22**	**21.94**	**18.00**	**13.02**

Profit per employee : It can be observed from that the profit per employee of traditional banks during the period 2005-2011 increased from Rs.0.13 million to Rs.0.55 million (4.34 times increase), while for the modern banks the increase is 1.80 times (Rs.1.01 million to Rs.1.82million). It is pertinent to note that the profit per employee declined in 2010 as compared to previous year for modern banks. The ratios between modern and traditional declined from 7.96 times in 2005 to 3.31 times in 2011 indicating improvement shown by traditional banks on this front. The gap between modern and traditional banks reduced from 77.70 per cent in 2005 to 53.67 per cent in 2011(30.93 per cent reduction).

Net income per employee: The performance in terms of net income per employee is depicted that It can be observed that per employee net income of traditional banks increased from Rs. 0.98 million in 2005 to Rs.2.22 million in 2011 (2.26 times increase) and that of the modern banks reported an increase from Rs.2.78 million to Rs.5.43 million (1.95 times increase) during the same period. The gap between the traditional and modern banks revealed a slight decline till 2007 and thereafter assumed low to moderate fluctuations for the remaining years during the period of the study.

Business per branch: It can be observed from (Table-2) that the business per branch of traditional banks increased from 456.4 million in 2005 to Rs.1048.41 million in 2011 (2.29 times increase) ,whereas in case of modern banks the increase in only 1.67 times. It is pertinent to note that the modern banks have shown exemplary performance through out the period as compared to traditional banks The gap between the modern and traditional banks reduced significantly from 164.72 in 2005 to 153.20 in 2011 (6.99 per cent reduction).

Table 2. Business per Branch (Rs. in Millions)

Year	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
SBIG	573.00	655.92	789.41	880.33	1070.05	1124.79	1215.95
NBs	425.17	502.62	616.53	724.56	861.78	986.20	1140.20
PSBs	498.59	579.27	702.97	802.45	965.92	1055.50	1178.07
OPRSBs	414.15	477.79	526.62	612.32	656.65	758.26	918.74
TBs	**456.37**	**528.53**	**614.79**	**707.38**	**811.29**	**906.88**	**1048.41**
NPRSBs	2282.50	2783.47	2811.94	2871.13	2301.05	2093.12	1977.59
FBs	7155.18	8286.55	10339.14	12792.50	12996.30	12878.17	13848.49
MBs	**4718.84**	**5535.01**	**6575.54**	**7831.81**	**7648.68**	**7485.65**	**7913.04**
Gap Index	**164.72**	**165.14**	**165.80**	**166.86**	**161.64**	**156.78**	**153.20**

Profit per branch:

It can be observed from (Table-3) that the profit per branch of traditional banks increased steadily during the period 2005-2011 from Rs.2.0 million to Rs.6.5 million (3.21times increase), whereas in case of modern banks, profit per branch increased from Rs.55.1 million to 133.1 million (2.41 times increase) during this period. Modern banks reported decline in profit per branch in 2010 as compared to the previous years. The gap between the modern and traditional banks reduced marginally from 9.30 per cent in 2005 to 9.06 per cent in 2011 (2.48 per cent reduction)

Table 3. Profit per Branch (Rs. in Millions)

Year	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
SBIG	4.10	4.30	4.60	5.80	7.30	7.10	6.40
NBs	2.80	2.90	3.70	4.50	5.50	6.20	7.00
PSBs	3.50	3.60	4.20	5.10	6.40	6.60	6.70
OPRSBs	0.60	1.70	3.30	4.40	4.80	4.60	6.30
TBs	**2.00**	**2.70**	**3.70**	**4.80**	**5.60**	**5.60**	**6.50**
NPRSBs	22.40	22.30	20.40	23.60	19.80	21.10	21.40
FBs	87.70	120.40	171.10	239.60	257.20	154.20	244.80
MBs	**55.10**	**71.30**	**95.80**	**131.60**	**138.50**	**87.70**	**133.10**
Gap Index	**9.30**	**9.27**	**9.26**	**9.30**	**9.22**	**8.80**	**9.07**

Cost Efficiency Ratios

Staff cost as % to operational expenses:

It can be observed from that the staff cost as a ratio of operating expenses with regard to traditional banks is more or less constant with slight fluctuations towards the close of the period. In case of modern banks, the ratios revealed a upward trend during the entire period. The staff cost to operational expenses of traditional banks have been significantly higher than modern banks during the period of study (almost double in the year 2005 and 2006) The gaps between the modern and traditional banks on this indicator reduced from 37.77 per cent in 2005 to 20.39 percent in 2011 (46.02 per cent reduction) implying the efforts made by traditional banks to reduce the percentage staff cost to operating expenses.

Staff cost to net income:

It can be observed from (Table-4) staff cost to net income of traditional banks and modern banks remained more or less constant with slight to moderate fluctuation during the period. The staff cost to net income of traditional banks were almost double the cost of modern banks during the year 2005, 2006 and 2007 and thereafter showed a declining trend revealing significant efforts made by traditional banks to be cost efficient. The gap index between the traditional and modern banks reduced from 38.99 per cent in 2005 to 23.39 per cent in 2011 (40.02 per cent reduction)

Table 4. Staff cost % net income (In per cent)

Year	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
SBIG	31.52	34.64	34.58	29.89	28.35	31.23	29.78
NBs	34.50	35.01	31.61	29.83	28.11	27.99	30.31
PSBs	33.01	34.83	33.09	29.86	28.23	29.61	30.04
OPRSBs	30.18	33.13	27.37	26.38	25.46	28.59	29.52

TBs	**31.60**	**33.98**	**30.23**	**28.12**	**26.85**	**29.10**	**29.78**
NPRSBs	12.57	13.88	15.50	16.26	16.92	15.76	18.21
FBs	15.18	16.02	17.74	17.15	15.08	17.18	18.77
MBs	**13.87**	**14.95**	**16.62**	**16.70**	**16.00**	**16.47**	**18.49**
Gap Index	**38.99**	**38.89**	**29.05**	**25.48**	**25.32**	**27.72**	**23.39**

4.2. Profitability

Return on Assets:

It can be observed from that traditional banks have reported a steady increase in terms of ROA during the study period except for the year 2007 and 2010 wherein the ROA was reported significantly high and significantly low as compared to the previous years. The ROA has increased 1.66 times (0.55 per cent to 0.91 per cent) from 2005 to 2011. In case of modern banks the ROA has increased 1.21 times. The ratios of ROA between modern banks and traditional banks have decreased from 2.24 times in 2005 to 1.59 times in 2011. The gap index between traditional and modern banks reduced from 38.2 in 2005 to 22.88 in 2011 (40.10 per cent) implying the traditional banks made efforts to improve on the profitability front.

Interest income as % to Total income:

(Table-5) presents the performance in term of Interest income to total income. It can be observed that the income interest to total interest of traditional banks remained more or less constant with sight fluctuations in their year to year performance and so is the case of modern banks during the study period. The ratios between traditional banks and modern banks decreased marginally from 1.42 times in 2005 to 1.15 times in 2011. The gap index between traditional and modern banks reduced from 17.38 in 2005 to 7.06 in 2011 (59.38 per cent)

Table 5. Interest income to Total income (In per cent)

Year	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
SBIG	82.29	83.81	85.02	85.63	84.73	**84.19**	**85.09**
NBs	83.94	88.23	88.75	87.40	87.47	**87.46**	**89.96**
PSBs	83.12	86.02	86.89	86.52	86.10	85.83	87.53
OPRSBs	87.72	89.21	87.83	87.08	87.03	86.67	88.50
TBs	**85.42**	**87.62**	**87.36**	**86.80**	**86.57**	**86.25**	**88.01**
NPRSBs	49.90	78.44	78.00	79.18	81.38	78.30	80.60
FBs	70.34	69.59	71.79	69.70	67.06	72.62	72.22
MBs	**60.12**	**74.02**	**74.90**	**74.44**	**74.22**	**75.46**	**76.41**
Gap Index	**17.38**	**8.41**	**7.68**	**7.67**	**7.68**	**6.67**	**7.06**

Spread as % to total assets: The spread as % to total assets of traditional and modern banks is presented that It can be observed that traditional banks reported an increase in 2006 as compared to the previous year, subsequently registered decline from 2007 to 2010 and significant increase in the year 2011. In case of modern spread as % to total assets increased from 2.76 percent in 2005 to 3.25 per cent in 2011(1.17 times increase). Except for the year 2005, modern banks have reported higher ratio on this indicator during the period of study. The gaps between traditional banks and modern banks during the period of study revealed a year to year fluctuations.

Credit -Deposit Ratio: The performance of traditional banks and modern banks with respect of credit-deposit ratio is presented at (Table-6). It can be observed that Credit -deposit ratio of traditional banks increased by 1.27 times (57.49 per cent to 73.18 per cent) from the year 2005 to 2011. In case of modern banks the credit -deposit ratios were more or less constant except for the year 2010. The gap index between traditional and modern banks reduced from 18.04 per cent to 5.75 per cent (68.13 per cent)

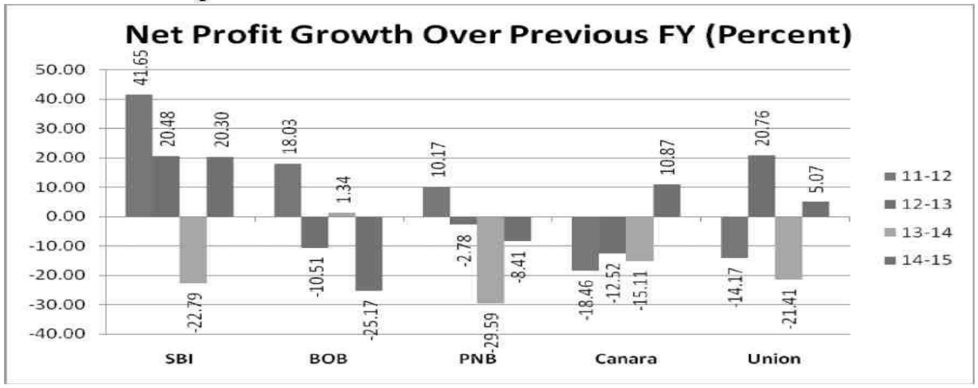
Table 6. Credit- Deposit ratio

Year	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
SBIG	56.31	68.52	76.13	76.72	73.44	77.43	79.80
NBs	57.22	64.69	67.97	69.79	71.09	70.56	73.11
PSBs	56.77	66.61	72.05	73.26	752.27	74.00	76.46
OPRSBs	58.21	63.53	67.69	67.44	64.28	67.02	69.90
TBs	**57.49**	**65.07**	**69.87**	**70.35**	**68.27**	**70.51**	**73.18**
NPRSBs	78.39	77.37	77.79	79.84	83.19	80.68	82.98
FBs	87.18	85.77	83.81	84.74	77.27	70.34	81.24
MBs	**82.79**	**81.57**	**80.80**	**82.29**	**80.23**	**75.51**	**82.11**
Gap Index	**18.04**	**11.25**	**7.25**	**7.82**	**8.05**	**3.42**	**5.75**

5. Performance Evaluation

Net Profit: Graph-1 shows the growth of net profit of these banks over 5 years. It is observed that net profit followed a zigzag growth pattern. It was so because in the initial years i.e. in 2010-11 & 2011-12, the economy was slow and was recovering from the clutches of worldwide economic depression due to sub prime crisis. The investment and development works in the economy slowed down which hampered the growth of banking industry. In later years of study i.e. 2013-14 & 2014-15, there emerged a big problem of NPAs which then required provisioning thereby putting a drain on profit. Also, there was wage revision in banking industry during this period which put further load on the profitability of banks. Thus, it was observed that banks' growth in net profit remained in negative zone for the maximum time during the period under study. SBI again accounted for highest net profit in the banking industry. However, its net profit growth rate declined by around 23% in FY 2013-14 mainly due to higher NPAs and wage revision. It was also observed that net profit growth rate of PNB (-30%), UBI(-21%) and Canara Bank(-15%) also dipped due to higher NPA provisioning. It was observed that PNS was worst hit by NPA crisis and its net profit rate further dipped. However, in FY 2014-15, BOB topped the list as its net profit dipped the most (around 25%).

Graph-3: Net Profit Growth over Previous Financial Year



Source: Compiled from Annual Reports of Various Banks of Various Years

Graph:1 Net profit growth over previous year

6. CONCLUSION

The analysis of data on productivity ratios i.e. Business per employee, Profit per employee Net income per employee, Business per branch, Profit Per Branch reveal that modern banks have outperformed the traditional banks. However the gap between the modern banks and traditional banks registered declining trends on all the five indicators during the period 2005-2011. On cost efficiency ratios, modern banks out performed traditional banks in terms Staff cost as % to operational expenses and Staff cost to net income .Traditional banks registered exceptional improvement post 2006 with regard to Staff cost as % to total business by registering low on this ratio .

In terms of profitability, modern banks have registered above the benchmark (more than one per cent) on ROA, while the traditional banks displayed a significant improvement on this ratio during the period of study. With regard to interest income as % to total income, traditional banks outperformed the modern banks while modern banks performed better than traditional banks in terms Credit -Deposit ratio.

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