

# Correlation Study of Financial Performance Indicators in Indian Public Sector Banks & Private Sector Banks

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## ABSTRACT

*This study attempts to analyse the relationship between financial performance indicators (variables) ROA (Return on Assets) and Interest Income size to Bank size (Total Assets), Assets Management measured by Assets utilization ratio (operational profit divided by total Assets), Operational Efficiency measured by the operating efficiency ratio (total operating expenses divided by net interest income). Also compares the various types of banks in Indian Banking industry i.e. PSB's (Public Sector Banks), Private Sector banks on the above measures to find out if there is any difference between PSB's and Private Bank's performance with reference to points like role of other incomes, credit deposit ratio. This study uses correlation analysis as a method to analyse relationship between independent and dependent variables and some banking ratios. Comparing PSB's with Private Banks will allow us to underline the difference in their performance. The study will help to show, how by concentrating on some parameters can enhance performance of a bank. Study will also provide base for further research in the domain of comparative analysis of financial performance of banks*

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**Keywords:** ROA, Public Sector Banks, Private Sector Banks, Efficiency

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## I. INTRODUCTION

Banking sector is of immense importance for economic & social progress of the nation. A common assumption is that improved financial performance will lead to improved organizational functions of the enterprise. The three principal indicators of financial performance are considered i.e. institution size, its Assets management & operational efficiency. In Indian banking sector there are some general assumption underpinning the research & discussion on performance indicators of banks. Private sector banks are considered to be more efficient than PSB's.

Likewise PSB's had the benefit of size and deposits with them. The study will not look into the liquidity aspect as the figure change on daily basis, but however its importance cannot be overlooked. This study proposes that there are measurable linkages among bank's size, Assets management, the operational efficiency, and the financial performance amongst the two types banks i.e. PSB's & Private Banks. The study also attempts to underline role of other income in performance of the two categories of banks and their liquidity position with the help of credit to deposit ratio.

## II. LITERATURE SURVEY

Hawast and John (1977) in their study concluded that profitability of banks is significantly determined by the cost control methods adopted by a particular bank. They concluded that the high profit earning banks recorded lower operating costs.

Srivastava (1981) analyzed an important reason of low profitability is because of low productivity, and low productivity could be the result of inefficient methods of operation, bad layouts, excessive product variety, not up to par working conditions, power breakdowns and poor maintenance of records.

Ojha (1992) in his study attempts to measure the productivity of commercial banks in India especially public sector. The study concludes that Indian commercial banks have less productivity compared with western countries.

Mishra (1993) in his study has analyzed various factors, which have a bearing on a bank's profitability.

## III. INDIAN BANKING

The Banking Regulation Act, 1949 defines a *banking company* as a company which transacts the business of banking in India. *Banking* is defined as accepting, for the purpose of lending or investment, of deposits of money from the public, repayable on

demand or otherwise and withdrawable by cheque, draft, order or otherwise.

Section 49A of the Act prohibits any institution other than a banking company to accept deposits from the public withdrawal by cheque. RBI is the apex regulator for banks.

There are various types of banks which operate in India to meet the financial requirements of different categories of people engaged in agriculture, business, profession, etc. On the basis of functions, the banking institutions in India may be divided into the following types:

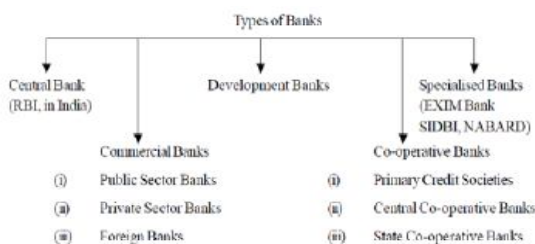


FIG. 1

Banks can be broadly categorized as Commercial Banks or Co-operative Banks.

*Commercial Banks include:*

- Public Sector Banks (SBI, SBI Associates and Nationalised Banks)
- Private Sector Banks (Old, New and Foreign)
- Regional Rural Banks
- Co-operative Banks include:
- Urban co-operative banks
- Rural / Agricultural co-operative banks.

#### Indian Banking Sector: Recent Developments

- The US Export-Import Bank, with a commitment of US\$ 7 billion, is on a way to diversify its portfolio in India by financing projects in education, healthcare and agriculture. After Mexico, India is the second biggest investment destination for the bank as the entity anticipates the country to become the largest market in next 12-18 months.
- India Infrastructure Finance Company Ltd (IIFCL) and IDBI Bank have inked a five year memorandum of understanding (MoU) to launch infrastructure debt fund (IDF) schemes. The IDF, for which IDBI Bank and IIFCL would play strategic investors, is expected to get launched by the end of February 2012.
- With 'green power' projects getting highly popular in India, especially in the states of Gujarat and Rajasthan,

banks are increasingly opening up to projects from non-conventional (solar and wind) energy space. After receiving project proposals that were meant for a particular industry/consumer or group of industries/consumers for their own use, banks are now getting projects that entail commercial viability (25-100 mega watt).

- With an intension to strengthen its hold in Southern India, the Uco Bank is planning to add 11 more branches in Andhra Pradesh to its 66-branch-strong network in the state. The bank has made exemplary progress in recent past with 2,004 branches in the country and four abroad.

#### IV. OBJECTIVES

- To study the relationship between ROA and Total Assets, Assets utilisation ratio, operating efficiency ratio.
- To study the relationship between Interest Income and Total Assets, Assets utilisation ratio, operating efficiency ratio.
- To compare the Interest income and other incomes share in PSB's and Private Banks.
- To compare Credit-Deposit Ratio in PSB's and Private Banks.

#### V. METHODOLOGY

To accomplish the aforesaid objectives, data was gathered from websites of the banks and Indian Banking Associations data was also used. For analysis purpose descriptive statistics, financial ratios and correlation analysis technique was used.

The analysis undertaken is of comparative nature. The explanatory variables under study are measured as; Bank size (Total Assets), Assets Management measured by Assets utilization ratio (operational profit divided by total Assets), Operational Efficiency measured by the operating efficiency ratio (total operating expenses divided by net interest income). This study uses correlation analysis as a method to analyse relationship between independent and dependent variables and some banking ratios. Comparing PSB's with Private Banks.

In order to process data for the analysis purpose the data is consolidate for the two categories of banks as follows; Public sector banks 19 nationalised banks, State bank and its six associated banks and IDBI bank i.e. in all 27 PSB's. For Private Sector Banks 15 old private sector banks and 7 new in all 22 private sector banks. All the figures are taken as a total of that sector and ROA figure is taken as a average for the sector. Three years data is taken for analysis.

**V. RESULTS & ANALYSIS**

**Comparison of Total Assets, Assets Utilization Ratio, Operating Efficiency Ratio to ROA & INTEREST Income**

The above data is generated by consolidating the data available for individual banks. Assets utilization ratio is calculated as a ratio between operating profit and total Assets. Operating efficiency ratio is calculated as a ratio between operating expenses and interest income. Along with this two performance indicator total Assets is used as the predictor variable and Interest income and average ROA are treated as dependent variables. To see if there exists a relationship between this variables correlation analysis is used.

The results of this analysis are explained as follows,

TABLE 1: PUBLIC SECTOR BANKS INDICATORS

Performance Indicators	2009	2010	2011
Operating Profit/ Total Assets	0.0176868	0.0173076	0.0189023
Operating expenses/ interest income	0.2032445	0.2159434	0.0064841
Total Assets	37.65.757	44.40.872	52.93.817
Interest Income	2.73.088	3.05.983	3.66.318
Average ROA	0.9774074	0.9766667	0.9407407

Source: of raw data: Indian Banks Association

TABLE 2: PRIVATE SECTOR BANKS INDICATORS

Performance Indicators	2009	2010	2011
Operating Profit/ Total Assets	0.0235414	0.0253515	0.0234812
Operating expenses/ interest income	0.2097076	0.2190116	0.2272755
Total Assets	1027756	1150736	1388176
Interest Income	85071	82807	96837
Average ROA	1.0977273	0.9445455	1.0936364

Source: of raw data: Indian Banks Association

TABLE 3: CORRELATION MATRIX FOR PUBLIC SECTOR BANKS INDICATORS

	Operating Profit/Total Assets	Operating Expenses/ Interest Income	Total Assets	Interest Income	Average Roa
Operating Profit/ Total Assets	1				
Operating expenses/ interest income	0.691849	1			
Total Assets	0.773727	0.99273	1		
Interest Income	0.833789	0.975483	0.99788	1	
Average ROA	-0.96959	-0.84752	-0.90525	-0.94355	1

\*dependent variables

TABLE 4: CORRELATION MATRIX FOR PRIVATE SECTOR BANKS INDICATORS

	Operating Profit/Total Assets	Operating Expenses/ Interest Income	Total Assets	Interest Income	Average Roa
Operating Profit/ Total Assets	1				
Operating expenses/ interest income	0.005863	1			
Total Assets	-0.21814	0.974621	1		
Interest Income	-0.64642	0.759181	0.885621	1	
Average ROA	-0.99866	-0.05757	0.167379	0.606091	1

\*dependent variables

TABLE 5: INCOME COMPARISON PUBLIC SECTOR BANKS

	Interest Income	Other Income	Total Income	% Other Income PSB'S
2009	273088.2	42466.21	315554.4	13.45765
2010	305982.5	48893.22	354875.8	13.77756
2011	366318	47865.41	414183.4	11.55657

Source: Indian Banks Association

TABLE 6: INCOME COMPARISON PRIVATE SECTOR BANKS

	Interest Income	Other Income	Total Income	% Other Income Pvt Bank
2009	85071.37	17860.2	102931.6	17.35153
2010	82807.05	20422.41	103229.5	19.78351
2011	96826.89	20725.88	117552.8	17.63113

Source: Indian Banks Association

TABLE 6: INCOME COMPARISON PRIVATE SECTOR BANKS

	Public Sector Banks	Private Sector Banks
2009	72.59695	78.12843
2010	73.1583	76.86441
2011	75.59212	79.57384

Source: Indian Banks Association

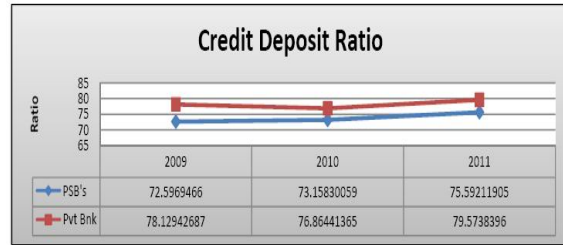


FIG. 1: CREDIT DEPOSIT RATIO

The results of the correlation analysis shows that there is positive correlation between independent variables Assets utilization ratio, operating efficiency ratio, Total Assets i.e. 0.833789, 0.975483, 0.99488 respectively for PSB's where as except for Assets utilization ratio where it has a negative but strong correlation i.e. 0.64642 for the other two variables it is positively correlated i.e. 0.759181 and 0.885621 respectively for operating efficiency ratio and total Assets for Private sector banks.

For the second predictive variable Average ROA we can see that there is strong through negative correlation between Average ROA and the independent variables Assets utilization ratio, operating efficiency ratio, Total Assets i.e. -0.96959, -0.84752, -0.90525 respectively where as for Private Sector banks we see comparatively weak correlation. Thus this gives us sufficient ground to further analyse whether other incomes play important role in their performance.

**Comparison of Interest Income & Other Income**

The comparison shows in private sector banks the percentage of other income in the total income is considerably high i.e. for the second and third year the difference is above 5%. This is sufficient enough to make the performance indicator better on some parameters. Also the correlation analysis proved that public sector banks depend on interest income for their efficiency in performance. And operating efficiency of private sector banks is better than the PSB's as shown in table 1 & 2. This shows us that how liquidity and Assets quality will affect private sector banks future. But private sector banks use their Assets better than PSB's for this we have to look at the credit deposit ratio of the banks.

**Comparison of Credit-Deposit Ratio in PSB's and Private Banks**

The comparison shows us that private sector banks are using their Assets better than public sector banks, but this also underline the possible liquidity issue as the public sector banks have better Assets quality than private sector banks. So the banks have to seek the trade off between advances given verses deposits as meeting unforeseen liquidity requirement. Even though statutory

ratios are maintained by the banks still they have to focus on Assets Quality as well as Assets utilisation.

## VI. CONCLUSION

The analysis of the study revealed that how the performance indicator were correlated in the two categories of banks, where in Public Sector Banks we saw high degree of positive correlation between independent variables and Interest Income. The comparison of percentage of other income showed that Private Sector Banks are generating more percentage of other income than PSB's. For credit deposit ratio results showed how private banks use their assets to the fullest for revenue generation. Also this highlighted the issue of Assets quality of banks. On the theoretical front this paper will provide for further research into areas highlighted like, assets quality, productivity, liquidity and alternative revenue generation models. On the practical front this paper gives another way to analyse and manage performance of the banks.

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