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Financial Performance Analysis of Indian Public, Private and Foreign Sector Banks after Second PHASE of Economic Reforms

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Abstract—*Indian banking industry is back bone of Indian economy. It is among the sectors which started growing up during British colonisation in India. So Indian Banking sector is having its historical as well as economical worth.*
In last two decades after the economic reforms, the banking sector has changed a lot. Technology, new services and professionalism has diversified the industry totally. Recently Creation of Mudra bank and reduction of interest rates are few signs of growth of Indian Banking sector. But whether this growth is superficial or permanent? Is there any significant difference in productivity of banks in intra sector? Does geographical advantage plays role in affecting the efficiency of banks?
This research paper tries to find out the overall efficiency of Indian banks categorized in public, private and foreign sector, with the three core parameters of efficiency, profitability and productivity. India is a unique country economically as well as geographically. So this research paper even aims to find out the impact and analysis of Indian Banks through these parameters.

Keywords: *Analysis, Indian banking industry, Profitability, productivity*

1. INTRODUCTION-

Banking system in India is dominated by nationalized banks. The nationalization of 14 privately owned banks in India took place on 19th July 1969. The major objective of nationalization was to ensure mass banking as against class banking with infrastructure aimed at hilly tracts and terrains of the country. Prior to 1969, state bank of India was the only public sector bank in India.SBI was nationalized in 1955under SBI Act of 1955. Prior to nationalization, Banks in India with the sole exception of state Bank of India were in private hands with community and trade orientation. Nationalization of 14 banks in the year 1969 and another set of 6 banks in the year 1980 reduced the importance of private sector banks and public sector banks started playing major role in extending the horizon of banking services to the nook and corner of the country.

With history repeat itself, private sector banking got a fillip with the government of India relaxing the conditions for opening of private sector banks in the year 1994, as a part of their liberalization program.

In 2005, the Reserve Bank released the “Road map for presence of foreign banks in India” laying out a two track and gradualist approach aimed at increasing the efficiency and stability of the banking sector in India. One track was the consolidation of the domestic banking system, both in private and public sectors, and the second track was the gradual enhancement of foreign banks in a synchronized manner.

The Road map was divided into two phases, the first phase spanning the period March 2005 – March 2009, and the second phase beginning after a review of the experience gained in the first phase. However, when the time came to review the experience gained in the first phase, global financial markets were in turmoil and there were uncertainties surrounding the financial strength of banks around the world. At that time it was considered advisable to continue with the current policy and procedures governing the presence of foreign banks in India.

Now the recent movement started by prime minister namely Jan Dhan Yojna is another important step to revolutionize the banking sector. One the noe hand it will connect the poor people to banking, on the other hand it will full fill ream of unique identification yojna in simple words known as adhar card. The recent initiate to transfer the LPG gas subsidy to bank account is another step to connect huge population of India to the core banking system.

Just in April 2015, introduction of Mudra Bank will give more fire to economy because small scale and cottage industries may get loan from banks with tedious exercise but the people who are running business from home are not getting money from anywhere. So this bank is among the most initiative and creative step in banking sector.

In April 2015, the announcement in deduction of interest rate given to banks by RBI is another fuel for gearing up the rail of economic reforms. The overall manufacturing sector is having direct impact on their growth due to interest rates. Indian interest rates are expensive for investors. Though china is having cheapest interest rates. so banking sector and its performance have the direct impact on growth of economy Indian Banking Industry is started being revolutionized with establishment of Reserve Bank of India. Many structural transformations come in the way. Private Banks and Foreign Banks were allowed to participate in the banking business. Competition level augmented among Public Private and Foreign banks in India.

2. EMPIRICAL LITERATURE REVIEW

Sr. no	Years	Authors	Methodology	Brief recommendations	Scope	Assessment Parameters / Drivers
1		Mittal and Dhade	Ratio analysis	The public sector banks are less profitable than the private sector and foreign banks in terms of overall profitability	Ratio Analysis profitability and productivity of Indian public sector banks, private sector banks and foreign banks(1999-2004)	Branch Bank Deposits, advance and business ratio
2	1997	Bhattacharyya	Data Envelopment analysis, Constructed one Grand Frontier	Public sector banks had the highest efficiency among the three categories, with foreign and private banks having much lower efficiencies. However, public sector banks stated showing a decline in efficiency after 1987, private banks showed no change and foreign banks showed a sharp rise in efficiency	Technical Efficiency in Indian Public, Private and foreign Banks 1986-91	Outputs: Advances, Investments Deposits Inputs: Interest expense Operating expense
3		Dr.MillindSathye	Data Envelopment analysis	measured the efficiency of banks in India, using Data Envelopment Analysis	Two models were used to Measured efficiency, one with two inputs and two output variables, and A second DEA analysis was run on DEAP software with deposits and staff numbers as inputs and net loans and non interest income as outputs.	Outputs: 1.net interest income non interest income 2.net loans noninterest income Inputs: 1.Interest expense noninterest expense 2.Deposits and staff members
4	2004	Shanmugam and Das	parametric methodology	the state and foreign banks are more efficient than, nationalized and privately owned domestic banks	efficiency of Indian commercial banks during the reform period, 1992–1999 using a parametric methodology	
5	2005	Chakraborti and Chawla	Data Envelopment analysis	on a 'value' basis, the foreign banks, as a group, have been considerably more efficient than all other bank groups, followed by the Indian private banks. With respect to quantity measures, Indian banks are the best. The public sector banks have, in	DEA to evaluate the reform period of Indian banks 1990–2002	

				comparison, lagged behind their private counterparts in performance		
6		Ram Mohan and Ray	Tornqvist total factor productivity growth and Malmquist TFP growth	Measured productivity Growth	compared the Productivity growth and efficiency of public sector banks, private sector banks and foreign banks (1992-2000)	
7		Sarkar& Das		Performance of Public, Private, and Foreign Banks examine profitability, productivity & financial management. Public sector Banks compare poorly with the other two categories of banks.	performance of Public , Private , and Foreign Banks examine profitability, productivity & financial management 1994-95	
8	2002	Sayuri, Shrai		the performance of public sector banks improved in the second half of the 1990's	Performance of Public sector banks 1990	
9	2001	Kaveri	efficiency parameters; capital adequacy ratio, Net NPA as percentage of Net advances, Net profit to total assets, Gross profit to working funds, net interest income to total assets, interest expended to total assets, intermediation cost to total assets and provisions and contingencies to total assets	No bank can be weak or potential weak all of a sudden. There is a gradual deterioration in the position of default and profitability.	It concludes no bank can be weak or potential weak all of a sudden. There is a gradual deterioration in the position of default and profitability.	Efficiency Parameters
10		Khatri and Kumar	Regression analysis	private sector and foreign banks performed better as compared to the public sector banks	Ownership effect on performance of public sector banks, private sector banks and foreign banks for year 1995-2001.	Ownership effect through regression analysis
11		Bikram De	Regression analysis	Regression analysis has shown that with respect to Return on Assets, there is no significant ownership Effect. With respect to Net Interest	the effects of ownership on Performance of the Banks for the year 1991-2002	Net Interest Margin Operating Cost Ratio

				Margin and Operating Cost Ratio, the results were fairly robust. Public sector banks consistently had higher levels of Net Interest Margin than the other groups but also stated a significantly higher Operating Cost Ratio		

3. RESEARCH METHODOLOGY

OBJECTIVES OF STUDY-

1. To judge the performance of the all sectorial banks in India.
2. To know Overall comprehensive performance index to find out the best output in terms of all three parameters.

DATA COLLECTION-

Type of data- Secondary

Data source- RBI and Indian Banking Association

Variables studied in this paper-

- interest paid
- interest earned
- total deposits and advances
- non operating income and expenses,
- number of employees
- number of branches.

Sample size-

- 28 public sector banks i.e 19 nationalized banks, 8 SBI & Associate banks and 1 other public sector banks.
- 21 private sector banks i.e. 14 old private sector banks and 7 new public sector banks.
- 30 foreign banks in India.

Some of the abnormal data have been rejected in order to derive a consistent index.**Time- from Yr 2010 to 2014-15**

DATA ANALYSIS TOOLS-

PERFORMANCE MEASUREMENT MODEL-

A comprehensive model has been developed to measure performance of banks in terms of.

1. Profitability
2. Productivity
3. Efficiency

The final output of the model is an overall index number on the basis of which, banks are ranked.

The model includes profitability, productivity, and efficiency ratios to measure the performance. The process for calculating various ratios follows

STEP I- PROFITABILITY

In order to have suitable indicator for evaluating the current profitability of the bank we have used the interest income, interest paid, operating expenses and non operating income as numerator and volume of business (Advances & deposits) as the denominator, that give the spread and burden ratio and the deference between spread and burden produces profitability ratios for various banks.

Anatomy of the ratios used for measuring profitability of the banks

Interest earned ratio	=	Total interest earned/Volume of business
Interest paid ratio	=	Total interest paid/Volume of business
Non-interest income ratio	=	Total income–interest income /Volume of business
Operation expenses ratio	=	Total Expense– interest expenses/Volume of business
Spread Ratio	=	interest earned Ratio – interest paid Ratio
Burden Ratio	=	Operating Expense Ratio – Noninterest Income
Profitability Ratio	=	Spread Ratio – Burden Ratio

The equations are derived from the above ratios

STEP II- PRODUCTIVITY

Productivity is defined as the ratio of input to output. In service sector it is difficult to quantify the output because it is intangible. Hence, different proxy indicators are used for measuring productivity of service organizations.

The ratios used for measuring Productivity are of banks:

Deposit per employee	=	Total Deposit/Total Staff
Advances per employee	=	Total Advances/ Total Staff
Total business per employee	=	Total Business/ Total Staff
Profit per employee	=	Profit/ Total Staff

Deposit per branch ratio	=	Total Deposits/ No. of Branches
Advances per Branch Ratio	=	Total Advances/ No. of Branches
Total Business per Branch	=	Total Business/ No. of Branches
Profit per Branch	=	Profit/ No. of Branches

STEP III- EFFICIENCY

For measuring the efficiency of the banks we have used DEA (Data envelopment analysis; it is an application of linear programming that has been used to measure the relative efficiency of operating units with the same goals and objectives which are termed as Decision Making Units. this technique aims to measure how efficiently a DMU uses the resources available to generate a set of outputs.

The performance of DMUs is assessed in DEA using the concept of efficiency or productivity, which is the ratio of total outputs to total inputs. Efficiency estimated using DEA is relative, that is, relative to the best performing DMU. The best performing DMU is assigned an efficiency score of 100 percent and the performance other DMUs vary, between 0 and 100 percent relative to the best performance.

The comparative results are based on performance of the banks on the basis on interest expenses, operating expenses and total (interest & operating expense) as inputs and business measure as output during the period of 2010-11 to 2014-15. In order to have a suitable indicator for evaluating bank's performance

The banks consume different quantities of inputs and produce different levels of output. There is interest expense, operating expense, and total expense as input and only one output is considered in each case. Ratios are used as mentioned below.

1. Output = Busines **= Fund raising**
Input Interest Exp
2. Output = Business = **operational ef**
Input Operating Exp
3. Output = Business = **overall eff.**
Input Total Expense

Specification of Model

The primary output of the model is in terms of three ratios, viz; profitability, productivity & efficiency ratio are used to evaluate and rank the banks on individual criterion.

The primary output ratios are indexed to a common base to eliminate the base effect while deriving a comprehensive measure. The method of derivation of the respective indices follows;

$$\text{Index Value} = \frac{\text{Ratio for bank i}}{\text{Maximum ratio}}$$

The output of the second step will be three different index values for profitability, productivity and efficiency respectively. The output of the second step will be three different index values for profitability,

productivity and efficiency respectively**.**Once the Index values for the three measures are derived, the overall index is determined as follows;

Overall index value = $\sum W_k I_k$

Where, W_k is the weight assigned to the k^{th} index numbers and $I_k$the value of k^{th} index.

Here the assignment of **W** to the various index numbers is done subjectively. Maximum weight is given to profitability i.e. 75% and rest 25% which is distributed to productivity and efficiency equally

Pvt banks	Ranks
City Union Bank Ltd.	11
ING Vysya Bank Ltd	15
Tamilnad Mercantile Bank Ltd.	9
The Catholic Syrian Bank Ltd.	20
Dhanlaxmi Bank Ltd	21
The Federal Bank Ltd.	7
J & K bank ltd	8
The Karnataka Bank Ltd.	18
The Karur Vysya Bank Ltd.	13
The Lakshmi Vilas Bank Ltd.	14
Nainital Bank Ltd.	10
RBL Bank	17
The South Indian Bank Ltd.	16
Axis Bank Ltd.	4
Development Credit Bank Ltd.	19
HDFC Bank Ltd.	3
ICICI Bank Ltd.	2
Indusind Bank Ltd.	5
Kotak Mahindra Bank Ltd.	1
YES Bank	6

Public sector bnaks	rakk		rank
Allahabad Bank	7	TOTAL OF 19 NATIONALISED BANKS	
Andhra Bank	6	State Bank of India (SBI)	3
Bank of Baroda	16	ASSOCIATES OF SBI	
Bank of India	21	State Bank of Bikaner & Jaipur	10
Bank of Maharashtra	26	State Bank of Hyderabad	4
Canara Bank	22	State Bank of Mysore	9
Central Bank of India	27	State Bank of Patiala	20
Corporation Bank	19	State Bank of Travancore	
Dena Bank	24	TOTAL OF 5 ASSOCIATES [III]	11
Indian Bank	2	TOTAL OF STATE BANK GROUP [II + III]	5
Indian Overseas Bank	23	Other Public Sector Bank	
Oriental Bank of Commerce	8	IDBI Ltd.	14
Punjab & Sind Bank	28	TOTAL OF 26 PUBLIC SECTOR BANKS [I+II+III+IV]	11

Punjab National Bank	1		
Syndicate Bank	25		
UCO Bank	17		
Union Bank of India	13		
United Bank of India	19		
Vijaya Bank	29		

****details are attached in annexure in excel file**

Analysis says that thought SBI is no 1 with its associates but as a solo performer PNB is unbeatable.

Name of the foreign Bank	rank		
AB Bank Limited	2	HSBC Bank Oman S.A.O.G.	11
Abu Dhabi Commercial Bank Limited	23	JPMorgan Chase Bank	1
American Express Banking Corporation	26	JSC VTB Bank	17
Antwerp Diamond Bank N.V.	7	Krung Thai Bank Public Company Ltd.	14
Bank of America NA	4	Mashreqbank psc	28
Bank of Bahrain and Kuwait B.S.C.	14	Standard Chartered Bank	12
Bank of Ceylon	3	State Bank of Mauritius Ltd.	19
Barclays Bank PLC	20	The Bank of Nova Scotia	9
BNP Paribas	21	The Bank of Tokyo-Mitsubishi UFJ, Ltd.	8
CTBC Bank Co.,Ltd.	22	The Hongkong and Shanghai Banking Corpn.Ltd.	13
Citibank N.A.	15	The Royal Bank of Scotland	16
Credit Agricole Corporate & Investment Bank	25	UBS AG	5
DBS Bank Ltd.	18	Mizuho bank Ltd	7
Deutsche Bank AG	10	Shinhan bank	13
FirstRand Bank Ltd.	27	Soeicete generale	24
		Sonali bank ltd	6

4. RESULT AND DISCUSSION

- Foreign sector banks are ahead in terms of profitability i.e. 3.67% as compare to private sector banks 1.32 and public sector banks.
- Spread ratio of foreign banks is higher that shows the high interest income, it business is healthy to generate profit. Similarly burden ratio is abnormally lower compare to other public and private sector banks. That shows the high burden bearing capacity, operating expenses are lower than the non interest income, it means foreign sector banks offering more services to the mass as compare to public and private sector banks and additional income other than interest income is generated.
- Private sector banks are at second position in terms of profitability however public sector banks are lagging behind from private sector and foreign sector banks. While considering the overall rank in terms of profitability almost all top ranks are keeping counted by the foreign sector banks and private sector banks. Public banks have to perform on top of things.
- While mulling over the productivity total foreign banks are at the top most position in terms of business per branch, where as total private sector banks are at the succeeding position, and public sector banks are far at rear. it connote that foreign sector banks have less branches, as compare to private sector and public sector banks, higher the numerator and lower the denominator generate more yields.
- On the contrary public sector banks have larger number of branches as compare to foreign and private sector banks. In a nut shell business per branch wise productivity of foreign banks are at the top in the list.
- While taking in to consideration business per employee again foreign sector banks are top in the list, private sector banks are succeeding and public sector bank s are fear legging behind all other banks. Because motive of public sector banks is not to earn profit but to provide service.
- Majority of private and foreign sector banks are having their branches in metros aur in big cities but public sector banks are working even for BPL people. So if we look at the profitability it is naturally flowing towards foreign and private sector banks due to their approach
- Considering the overall efficiency of all the sectorial banks public sector banks are at the peak position, which shows that whatever expense made by the bank it actually yield overall business for the banks. Private sector banks are succeeding in the public sector banks in terms of overall efficiency .where as foreign sector banks are subsequently behind the public and private sector banks.
- We were in search of one output that lead in all of the parameters, Our model reveals that ICICI Bank is leading among all the public, private, and foreign banks in terms of profitability, productivity and efficiency. In profitability kotak Mahindra bank is leading in total but per branch and per employee business is maximum for icici.

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