DETERMINANTS OF PROFITABILITY OF INDIAN COMMERCIAL BANKS

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Abstract : *Villages are integral part of any nation. They become even more important in the Asian and African context, where a majority of the population lives in villages. Rural Marketing is all about planning and implementation of marketing function for the rural areas. The key for succeeding in rural markets lies in comprehending the psychology of rural consumers and their needs. This study is conducted to assist marketers who are trying to enter into the rural markets of India. To achieve this objective, the researcher has studied the behavior of rural consumers, the importance of rural markets and the possible issues and challenges that will be faced by the companies trying to penetrate into rural market. Strategies for effective rural marketing have also been evolved through the research by focusing on the existing players in the rural markets of India. Rural marketing in India has a tremendous potential. But the key challenge that companies face in rural markets relates to developing appropriate products with affordable pricing taking into account the divergent characteristics of Indian villages.*

Key Words: Rural Marketing, Rural Consumers, Indian Villages, Emerging Economies, Promising Market Place, Rural India

Abstract

The banking sector in India has been providing support to other economic sectors such as agriculture, small-scale industries, exports, and banking activities in the developed commercial metro, urban, and a limited number of semi-urban centres. The purpose of this study is to analyse the financial data of three categories of the commercial banks i.e. public sector banks, private banks and foreign banks in India for the financial period 2005-06 to 2008-09 with a view to examining impact of determinants such as business volume, deposits, advances and investments on operating profit of various categories of Indian banks. An attempt has also been made to examine productivity and profitability thereof. The study found that foreign banks in India occupied first place in profitability followed by public sector banks and private sector banks. It was also found that determinants of profitability have significant impact on profitability of various categories of the banks. The study brought into light that though low output (Business) per input (Employee) suggested low productivity of the public sector banks low output (profit) per input (Employee) suggested low productivity of the private sector banks.

Key words: determinants of profitability, productivity, profitability Determinants of Profitability – A Firm Level Study of Indian Commercial Banks

Introduction

A banking sector is of great significance for any economy because it operates the payment system, mobilizes savings and allocates such savings to investment projects by limiting involvement of risks and costs (Rajan and Zingales, 1998). Through active involvement of the government either by direct ownership of banks or restrictions thereon, it ensures better economic outcome from the banking sector by channeling savings to strategic projects not receiving enough funding (Arun and Turner, 2002). The banking sector in India has been providing support to other economic sectors such as agriculture, small-scale industries, exports, and banking activities in the developed commercial metro, urban, and a limited number of semi-urban centres. The Indian financial system has been regulated mainly by interest rate regulation, credit restrictions, equity market controls and foreign exchange controls. Since implementation of Narasimhan committee Reports, some restrictions have been relaxed including a deregulation of interest rates, an easing of directed credit rules under the priority sector lending arrangements, a reduction of statutory pre-emptions, and a lowering of entry barriers for both domestic and foreign

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players (Bhide et al., 2001). Report by Vaghul committee has contributed to the present deregulation in India. However, the role played by the Indian Public Sector Banks remained unchanged. To improve the functioning of the Indian public sector, report of the Verma committee was implemented but the inefficiency of the Indian Public Sector banks continued. The Reserve Bank of India has been unremittingly working towards the establishment of a facilitating regulatory framework with punctual and effective supervision as well as the development of technological and institutional infrastructure. It has also been making relentless efforts towards adoption of worldwide yardsticks as suitable to Indian conditions and hence Indian financial system stands adjacent to international standards. The purpose of this study is to analyse the financial data of three categories of the commercial banks i.e. public sector banks, private banks and foreign banks in India for the financial period 2005-06 to 2008-09 with a view to examining impact of determinants such as business volume, deposits, advances and investments on operating profit of various categories of Indian banks. An attempt has also been made to examine productivity and profitability thereof with the help of technique of ratio analysis.

It is hypothesised for the study that Business Volume, Deposits, Advances and Investments have impact on profitability Operating Profit of the various categories of banks and there is positive relationship among them. It is also hypothesised for the study that there is significant difference in profitability as well as productivity of various categories of the banks over the period of the study.

The study proceeds as follows: section two gives a brief overview over the literature review. A study methodology follows in section three. Section four describes the result and analysis of the available data and the final section presents the main conclusions.

Literature Review

Due to shifting of the focus of domestic and international banks in India from 'revenue' to 'cost' in order to enhance productivity and guarantee a win-win situation, there have not been many attempts to compare the profitability amongst the various categories of banks. Studies conducted by Divatia and Venkatachalam (1978), Subramanyam and Swamy (1994) and Hansda (1995) found uniformity in banking functions and difference in productivity due to technological improvement and competence with the help of traditional techniques such as ratio analysis and index number approach. Studies conducted by Noulas and Katker (1996), Battacharya et. al (1997) Mukherjee et. al (2002) and Ram Mohan and Ray (2004) revealed that Public Sector Banks were efficient but, still many of them had improper utilization of resources.Sarkar and Das (1997) in their study tried to investigate performance of public sector banks, private banks and foreign banks in India for the year 1994-95 on the grounds of profitability, productivity and financial management and found that performance of public sector banks was not as impressive as that of private banks and foreign banks. Das (1999) in his study attempted to analyse performance of public sector banks for 3 years in the post reform period, 1992, 95 and 98 and found that banks opted for risk free investments as compared to risky loans whenever emphasis on non-interest income has increased. Ganeshan (2001) found that determinants i.e. interest cost, interest income, deposits per branch, credit to total assets, proportion of priority sector advances and interest income loss had significant impact on profits as well as profitability of public sector banks. Ram Mohan (2002) in his study found that despite profitability of public sector banks improved as compared to private banks and foreign banks in India during 1996-97 to 1999-2000, they could not attract depositors and were lagging behind in terms of upgradation of technology, staffing and employment practices. Sathey (2005) in his study revealed that performance of partially privatized banks during 1998-2002 was better than that of fully public sector banks due to privatization of banks. Shanmugam and Das (2004) also divulged that state bank group and private – foreign group banks have performed well during 1992-1999. Singla (2008) studied profitability performance selected sixteen banks during 2000-01 to 2006-07 and found negative correlation between return on net worth and the debt equity ratio and interest income to working funds and non performing assets to interest coverage ratio.

Study Methodology

The major findings of the above mentioned studies did not focus on profitability, productivity and impact of determinants such as business volume, deposits, advances and investments on profitability of commercial banks in India and therefore this study has been initiated with the following objectives during 2005-06 to 2008-09, a period of recession

across the globe:

1. To appraise the profitability as well as productivity of public sector, private and foreign banks in India.
2. To analyse the impact of determinants i.e. Business Volume, Deposits, Advances and Investments on profitability of banks in India.

The data for the accomplishment of the aforementioned research objectives used was secondary. With a view to evaluating performance and calculating profitability ratios, the data was gathered from banks' financial statements as published in their annual reports (2005-06 to 2008-09). The data base of Indian Banking Association has also been utilized. Besides, the review of different articles and research papers was another source of the data.

The sample of this study includes

- 28 Indian public sector banks consisting of (19) nationalised, SBI & its associates (8) and other public sector bank (1),
- 25 Indian private sector banks consisting of old private sector banks (17) and new private sector banks (8) and
- 32 Foreign banks in India.

With a view to evaluating profitability performance and productivity of different categories of banks, technique of ratio analysis has been used. In order to measure profitability performance, profitability ratios have been computed and analysed on the basis of business volume (Total Assets which is used as a base for calculation of spread ratio), while productivity ratios have been computed and analysed on the basis of no. of employees (performance of the banks is judged on the basis of output per input i.e. employee/branch). Following profitability ratios have been used for the study:

(1) Interest Earned Ratio (I)= Interest Earned/ Business Volume

Where, Business Volume = Total Assets

(2) Interest Expended Ratio (E) = Interest Expended/ Business Volume

(3) Other Income Ratio (OI)= Other Incomes/ Business Volume

(4) Other Operating Expenses Ratio (OE) = Other Operating Expenses/ Business Volume

(5) Profitability Ratio = Spread Ratio (S) – Burden ratio analysis (B)

Where, Spread Ratio (S) = Interest Earned Ratio – Interest Expended ratio analysis

Burden Ratio (B) = Other Operating Expenses Ratio – Other Income Ratio

Following hypothesis has been framed for measuring profitability performance on the basis of profitability ratios:

H0 – there is no significant difference in profitability of various banks.

H1 – there is significant difference in profitability of various banks.

Following productivity ratios have been used for the present study:

(1) Business Per Employee = Total Business/ Total Employees

(2) Profit Per Employee = Total Profit/ Total Employees

Following hypothesis has also been framed for measuring productivity of various banks on the basis of productivity ratios:

H0 – there is no significant difference in productivity of various banks.

H1 – there is significant difference in productivity of various banks.

Profitability performance is the dependent variable and is measured by operating profit earned by the bank and therefore operating profit has been taken as dependent variable for the present study. Operating profit depends on variables like Business Volume, Deposits, Advances and Investments and, therefore, they have been taken as determinants (independent variables) for the study.

Above discussed variables have been taken together as determinants of profitability and Profitability model has been developed in order to analyse whether the profitability (Operating Profit – dependent variable) of the banks under the study have significant relationship with determinants (independent variables - Business Volume, Deposits, Advances and Investments) or not. The profitability model has been estimated using data of banks in India for a period of 4 years from 2005-06 to 2008-09. It has been based on Multiple Linear Regression consisting of four variables as shown below:

$$\mathbf{P = (bo + b1BV + b2DEP + b3ADV + b4INVT)}$$

Where,	**P**	**-**	**Operating Profit**
	BV	**-**	**Total Assets**
	DEP	**-**	**Deposits**
	ADV	**-**	**Advances**
	INVT	**-**	**Investment**

In order to examine and compare the impact of independent variables on the dependent variable, techniques of correlations and regression have been applied. Technique of Analysis of Variance (ANOVA) has also been used in testing the hypotheses.

H0 - The Independent Variables (Business Volume, Deposits, Advances and

Investments) have no impact on profitability (Operating Profit) of the various categories of banks.

H1 - The Independent Variables (Business Volume, Deposits, Advances and

Investments) have impact on profitability (Operating Profit) of the various categories of banks.

H2 – There is relationship between dependent and independent variables of various categories of banks.

Result and Analysis:-

Profitability

Table 1 reveals that Interest earned ratio has increased over the study period for all categories of banks. Private sector banks were able to have high interest earned ratio as compared to public sector banks as well as foreign banks. However, marginal decrease in interest earned ratio has been observed in SBI & its associates. As the calculated value of 'F' among the groups (4.412781) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Interest earned ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. Similarly, the calculated value of 'F' among the years (6.534013) is more than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Interest earned ratio during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted.

Table 1 Interest Earned Ratio (I) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005 -06	2006 -07	2007 -08	2008 -09
Public Sector Banks				
Nationalised Banks	6.739219	6.819507	7.158468	7.458638
SBI & its Associates	7.12594	6.635041	6.964981	6.967267
Other Public Sector Bank	6.075461	6.110806	6.152448	6.746789
Overall	6.842832	6.728434	7.050227	7.259052
Private Sector Banks				
Old Private Sector Banks	6.929358	7.146205	7.518687	8.054691
New Private Sector Banks	5.893525	6.513293	7.561317	8.332674
Overall	6.150125	6.649624	7.552496	8.272223
Foreign Banks				
Overall	6.165201	6.532193	6.686194	6.782365
Source of Variation	SS	df	MS	F
Between the groups	3.340495	5	0.668099	4.412781
Between the years	2.967766	3	0.989255	6.534013
Residual	2.271013	15	0.151401	
Total	8.579274	23		

Table 2 divulges that interest expended ratio has also increased over the study period for all categories of banks. However, the lowest interest expended ratio for the foreign banks featured efficiency of management in raising funds at lower cost on one hand and disposing them at high interest earning securities. The interest expended ratio of private banks was somewhat more than public sector banks. As the calculated value of 'F' among the groups (36.94084) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Interest expended ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. Similarly, the calculated value of 'F' among the years (13.61959) is more than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Interest expended ratio during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted.

Table 2 Interest Expended Ratio (E) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	**2006-07**	**2007-08**	**2008-09**
Public Sector Banks				
Nationalised Banks	3.844854	4.159715	4.984588	5.24482
SBI & its Associates	4.052934	4.046501	4.728075	4.825017
Other Public Sector Bank	5.646516	5 .477202	5.634849	5.977715
Overall	3.995496	4.178394	4.926885	5.135684
Private Sector Banks				
Old Private Sector Banks	4.15523	4.393662	5.119585	5.514644
New Private Sector Banks	3.61925	4.41178	5.168355	5.54688
Overall	3.752025	4.407878	5.158263	5.53987
Foreign Banks				
Overall	2.58304	2.77103	2.904411	2.866783
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	17.9523	5	3.59046	36.94084
Between the years	3.971263	3	1.323754	13.61959
Residual	1.457923	15	0.097195	
Total	23.38148	23		

Table 3 confirms that other income ratio was about 15% of interest earned ratio in public sector banks and private banks, while about 50% thereof in foreign banks in India because of having competitive advantage through making available to the customers more and more fees based services. As the calculated value of 'F' among the groups (50.68926) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Other income ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. However, the calculated value of 'F' among the years (1.101566) is less than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was no significant difference in the mean of other income ratio during the study period and therefore null hypothesis is accepted and alternate hypothesis is rejected.

Table 3 Other Income Ratio (OI) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	0.899087	0.864857	0.981854	1.068139
SBI & its Associates	1.376883	1.169071	1.168721	1.255469
Other Public Sector Bank	1.445777	0.989201	1.251373	0.806207
Overall	1.087178	0.970606	1.056031	1.119819
Private Sector Banks				
Old Private Sector Banks	0.819847	0.976717	1.116006	1.200353
New Private Sector Banks	1.614556	1.837186	1.987938	1.905864
Overall	1.417688	1.651839	1.807509	1.75244
Foreign Banks				
Overall	2.69427	2.567034	2.906352	3.330471
Source of Variation	SS	df	MS	F
Between the groups	10.92593	5	2.185187	50.68926
Between the years	0.142464	3	0.047488	1.101566
Residual	0.646642	15	0.043109	
Total	11.71504	23		

Table 4 confirms the private and foreign sector banks in India as high cost operators because of heavy spending on technology upgradation in order to provide better customer support as well as on advertisement campaign for brand promotion. As the calculated value of 'F' among the groups (86.18399) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Other operating expenses ratio of the various categories of banks during the study period and, therefore, null hypothesis is rejected and alternate hypothesis is accepted. Similarly, the calculated value of 'F' among the years (5.486792) is also more than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of other operating expenses ratio during the study period and, therefore, null hypothesis is rejected and alternate hypothesis is accepted.

Table 4 Other Operating Expenses Ratio (OE) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	1.999968	1.730725	1.526886	1.459057
SBI & its Associates	2.277951	1.983977	1.680501	1.569093
Other Public Sector Bank	0.970456	0.749687	0.733607	0.776039
Overall	2.050167	1.772607	1.543977	1.465193
Private Sector Banks				
Old Private Sector Banks	2.029201	1.847962	1.662307	1.689582
New Private Sector Banks	2.122388	2.112196	2.284526	2.242737
Overall	2.099304	2.055279	2.15577	2.122446
Foreign Banks				
Overall	2.93649	2.822464	2.840325	2.75078
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	8.832595	5	1.766519	86.18399
Between the years	0.337389	3	0.112463	5.486792
Residual	0.307456	15	0.020497	
Total	9.47744	23		

Table 5 reveals that despite the lowest interest earned ratio, foreign banks had high spread ratio because of the lowest interest expended ratio. In spite of the highest interest earned ratio, private sector banks occupied the second position due to the highest interest expended ratio. Spread ratio of public sector banks has been decreasing because of rising interest expended ratio during the study period. As the calculated value of 'F' among the groups (53.22583) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of spread ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. However, the calculated value of 'F' among the years (0.851808) is less than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was no significant difference in the mean of spread ratio during the study period and, therefore, null hypothesis is accepted and alternate hypothesis is rejected.

Table 5 Spread Ratio (S)(I-E) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	2.894365	2.659792	2.17388	2.213818
SBI & its Associates	3.073006	2.58854	2.236906	2.14225
Other Public Sector Bank	0.428945	0.633604	0.517599	0.769074
Overall	2.847336	2.55004	2.123342	2.123368
Private Sector Banks				
Old Private Sector Banks	2.774128	2.752543	2.399102	2.540047
New Private Sector Banks	2.274275	2.101513	2.392962	2.785794
Overall	2.3981	2.241746	2.394233	2.732353
Foreign Banks				
Overall	3.582161	3.761163	3.781783	3.915582
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	20.80763	5	4.161526	53.22583
Between the years	0.199799	3	0.0666	0.851808
Residual	1.172793	15	0.078186	
Total	22.18022	23		

Table 6 divulges decrease in burden ratio due to higher other incomes over other operating expenses. Foreign banks in India had enough incomes from fees based services to cover other operating expenses i.e. up gradation of technology, advertisement campaign and establishment expenses incurred on staff as well as branches. As the calculated value of 'F' among the groups (15.79287) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Burden ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. Similarly, the calculated value of 'F' among the years (4.907614) is also more than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of Burden ratio during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted.

Table 6 Burden Ratio (B)(OE - OI) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	1.100881	0.865868	0.545032	0.390918
SBI & its Associates	0.901068	0.814906	0.51178	0.313624
Other Public Sector Bank	-0.47532	-0.23951	-0.51777	-0.03017
Overall	0.962989	0.802001	0.487946	0.345374
Private Sector Banks				
Old Private Sector Banks	1.209354	0.871245	0.546301	0.489229
New Private Sector Banks	0.507832	0.27501	0.296588	0.336873
Overall	0.681616	0.40344	0.348261	0.370006
Foreign Banks				
Overall	0.24222	0.25543	-0.06603	-0.57969
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	3.997126	5	0.799425	15.79287
Between the years	0.745261	3	0.24842	4.907614
Residual	0.759291	15	0.050619	
Total	5.501677	23		

Table 7 reveals that public sector banks were less profitable as compared to private banks and foreign banks in India. As far as public sector banks were concerned, there was decrease in profitability thereof during the study period due to high interest expended ratio and low other income ratio. Private banks were at the second position in profitability due to high interest earned ratio as well as other income ratio. Foreign banks in India occupied first place in profitability due to low interest expended ratio as well as high other income ratio. As the calculated value of 'F' among the groups (54.7875) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of profitability ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. However, the calculated value of 'F' among the years (1.919793) is less than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was no significant difference in the mean of profitability ratio during the study period and therefore null hypothesis is accepted and alternate hypothesis is rejected.

Table 7 Profitability Ratio (S - B) of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	1.793484	1.793924	1.628848	1.8229
SBI & its Associates	2.171938	1.773634	1.725126	1.828626
Other Public Sector Bank	0.904265	0.873114	1.035369	0.799244
Overall	1.884347	1.748039	1.635396	1.777994
Private Sector Banks				
Old Private Sector Banks	1.564774	1.881298	1.852801	2.050818
New Private Sector Banks	1.766443	1.826503	2.096374	2.448921
Overall	1.716484	1.838306	2.045972	2.362347
Foreign Banks				
Overall	3.339941	3.505733	3.847813	4.495272
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	18.10869	5	3.621737	54.7875
Between the years	0.380725	3	0.126908	1.919793
Residual	0.991578	15	0.066105	
Total	19.48099	23		

Productivity

Table 8 represents business per employee of various categories of the banks. It is quite clear that public sector banks were much lower in business per employee as compared to private sector banks and foreign banks in India due to higher denominator i.e. number of staff because of higher number of branches. Consequently, low output (Business) per input (Employee) suggested low productivity of the public sector banks. As the calculated value of 'F' among the groups (155.0702) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of business per employee ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. However, the calculated value of 'F' among the years (2.962988) is less than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was no significant difference in the mean of business per employee ratio during the study period and, therefore, null hypothesis is accepted and alternate hypothesis is rejected.

Table 8 Business Per Employee of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	3.71	4.74	5.97	7.47
SBI & its Associates	3.30	4.04	5.04	6.34
Other Public Sector Bank	17.18	13.87	18.09	20.30
Overall	8.06	7.55	9.70	11.37
Private Sector Banks				
Old Private Sector Banks	363.38	410.06	519.57	594.44
New Private Sector Banks	686.53	677.90	707.35	744.34
Overall	524.95	543.98	613.46	669.39
Foreign Banks				
Overall	995.59	1037.55	1284.61	1384.78
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	4629897	5	925979.4	155.0702
Between the years	53079.17	3	17693.06	2.962988
Residual	89570.35	15	5971.357	
Total	4772546	23		

Table 9 discloses profit per employee of diverse classes of the banks. Despite lowest business per employee ratio due to comparatively greater number of staff, profit per employee ratio of public sector banks was higher than private banks. Though Profit per employee ratio of private sector banks increased moderately during the study period, they were at the second position. Though foreign banks in India had first place in profit per employee, they could not capitalize higher business to have higher profit as compared to public sector banks. Consequently, low output (profit) per input (Employee) suggested low productivity of the private sector banks. As the calculated value of 'F' among the groups (44.92433) is more than the table value thereof (2.9012) at 5 percent level of significance, it can be concluded that there was significant difference in the mean of profit per employee ratio of the various categories of banks during the study period and therefore null hypothesis is rejected and alternate hypothesis is accepted. However, the calculated value of 'F' among the years (1.82014) is less than the table value thereof (3.2874) at 5 percent level of significance, it can be concluded that there was no significant difference in the mean of profit per employee ratio during the study period and, therefore, null hypothesis is accepted and alternate hypothesis is rejected.

Table 9 Profit Per Employee of Indian Banks from 2005-06 to 2008-09

Banks	Years			
	2005-06	2006-07	2007-08	2008-09
Public Sector Banks				
Nationalised Banks	2.24	2.99	3.94	4.55
SBI & its Associates	2.11	2.57	3.43	4.57
Other Public Sector Bank	12.45	8.44	8.86	8.42
Overall	5.60	4.67	5.41	5.85
Private Sector Banks				
Old Private Sector Banks	1.98	1.47	4.37	5.01
New Private Sector Banks	4.45	4.35	4.97	5.58
Overall	3.22	2.91	4.67	5.30
Foreign Banks				
Overall	26.49	26.10	43.63	39.17
Source of Variation	**SS**	**df**	**MS**	**F**
Between the groups	2923.489	5	584.6978	44.92433
Between the years	71.06832	3	23.68944	1.82014
Residual	195.2276	15	13.01517	
Total	3189.785	23		

Determinants of Profitability

Table 10 shows the results of correlations analysis between dependent variables and independent variables. It is clear that operating profit and all independent variables i.e. Business Volume (0.98887), Deposits (0.991853), Advances (0.989229) and Investments (0.988564) have positive correlation. As the values of correlation coefficient in respect of operating profit and all independent variables are closer to +1, the relationships between are more close. As far as correlation between operating profit and Business Volume is concerned, foreign banks have greater correlation as compared to the other categories of banks. As correlation coefficient between operating profit and deposits is higher for private sector banks, it can be said that when deposits are higher in private sector banks, operating profit is also higher. Higher correlation of coefficient between operating profit and advances for public sector banks suggests that the higher the advances in the public sector banks is, the higher the operating profit is. Operating profit and investments in private sector banks are relatively closely related.

Table 10 Correlation Analysis

Variables	Operating Profit		
	Public sector Banks	Private Banks	Foreign Banks in India
Operating Profit	1	1	1
Business Volume	0.98887	0.988261	0.994543
Deposits	0.991853	0.993341	0.991184
Advances	0.989229	0.982133	0.980693
Investments	0.988564	0.996286	0.958217

From multiple linear regression model, it is clear that the model has a coefficient of determination of 98.46% which explains 98.46% of variation in profitability of public sector banks for the study period as shown in Table 11. The model also states that the dependent variable operating profit can be predicted from a linear combination of the determinants of profitability Business volume, Deposits, Advances and Investments. Coefficients of determinants of profitability propose that each 1 percent change in Business volume, deposits, advances and investments leads to moderate increase of 0.003731 percent, the highest increase of 0.020212, reasonable decrease of 0.00722 percent and moderate increase of 0.009328 percent in profitability respectively. The calculated value of 'F' is 368.2228, while the table value with four degree of freedom in numerator and twenty three degrees of freedom in denominator at five percent significant

level is 2.7955. As tabulated value of F is less than calculated value thereof, it can be concluded that determinants of profitability have an impact on profitability. The model fitted is best described as the behaviour of dependent variable against suitable alternatives and hence null hypothesis is rejected and alternate hypothesis is accepted.

Table 11 Determinants of Profitability in Public Sector Banks

Particulars	Coefficient	Std. Error	T	P
Constant	-226.137	111.6851811	-2.02477	0.054652
BV	0.003731	0.008642962	0.431672	0.67
DEP	0.020212	0.007470307	2.705708	0.012614
ADV	-0.00722	0.018568236	-0.38876	0.70103
INVT	0.009328	0.029671046	0.31439	0.756059
$R^2 = 0.984625$				
+ (0.003731*BV) + (0.020212*DEP) – (0.00722*ADV) + (0.009328*INVT)				
Group	**DF**	**SS**	**MS**	**F**
Regression	4	154986118.9	38746530	368.2228
Residual	23	2420192.982	105225.8	
Total	27	157406311.9		

From multiple linear regression model, it is clear that the model has a coefficient of determination of 99.4365% which explains 99.4365% of variation in profitability of private sector banks for the study period as shown in Table 12. The model also states that the dependent variable operating profit can be predicted from a linear combination of the determinants of profitability Business volume, Deposits, Advances and Investments. Coefficients of determinants of profitability propose that each 1 percent change in Business volume, deposits, advances and investments leads to moderate decrease of 0.02895 percent, reasonable decrease of 0.01789, moderate increase of 0.029711 percent and the highest increase of 0.155179 percent in profitability respectively. The calculated value of 'F' is 882.3074, while the table value with four degree of freedom in numerator and twenty degrees of freedom in denominator at five percent significant level is 2.8661. As tabulated value of F is less than calculated value thereof, it can be concluded that determinants of profitability have an impact on profitability. The model fitted is best described the behaviour of dependent variable against suitable alternatives and hence null hypothesis is rejected and alternate hypothesis is accepted.

Table 12 Determinants of Profitability in Private Sector Banks

Particulars	Coefficient	Std. Error	T	P
Constant	-19.396	34.92716	-0.55533	0.584829
BV	-0.02895	0.046191	-0.62685	0.537849
DEP	-0.01789	0.011386	-1.57164	0.131721
ADV	0.029711	0.05813	0.511117	0.614866
INVT	0.155179	0.058443	2.65525	0.015192
$R^2 = 0.994365$				
P = -19.396 - (0.02895*BV) - (0.01789*DEP) + (0.029711*ADV) + 0.155179*INVT)				
Group	**DF**	**SS**	**MS**	**F**
Regression	4	50421008	12605252	882.3074
Residual	20	285733.8	14286.69	
Total	24	50706742		

From multiple linear regression model, it is clear that the model has a coefficient of determination of 98.9924% which explains 98.9924% of variation in profitability of foreign banks for the study period as shown in Table 13. The model also states that the dependent variable operating profit of foreign banks in India can be predicted from a linear combination of the determinants of profitability Business volume, Deposits, Advances and Investments. Coefficients of determinants of profitability propose that each 1 percent change in Business volume, deposits, advances and investments leads to increase of 0.0063559 percent, reasonable decrease of 0.02476, moderate decrease of 0.01811 percent and marginal decrease of 0.0052 percent in profitability respectively. The calculated value of 'F' is 663.1443, while the table value with four degree of freedom in numerator and twenty degrees of freedom in denominator at five percent significant level is 2.7278. As tabulated value of F is less than calculated value thereof, it can be concluded that determinants of profitability have an impact on profitability. The model fitted is best described as the behaviour of dependent variable against suitable alternatives and hence null hypothesis is rejected and alternate hypothesis is accepted.

Table 13 Determinants of Profitability in Foreign Sector Banks

Particulars	Coefficient	Std. Error	T	P
Constant	-22.1308	23.46906	-0.94298	0.354053
BV	0.063559	0.015608	4.072131	0.000366
DEP	-0.02476	0.025376	-0.97565	0.337901
ADV	-0.01811	0.01492	-1.21402	0.235251
INVT	-0.0052	0.015809	-0.32865	0.744954
$R^2 = 0.989924$				
P = -22.1308 + (0.063559*BV) - (0.02476*DEP) - (0.01811*ADV) – (0.0052*INVT)				
Group	**DF**	**SS**	**MS**	**F**
Regression	4	28921745	7230436	663.1443
Residual	27	294388.1	10903.26	
Total	31	29216133		

Conclusion and Suggestions

The study found that public sector banks were less profitable as compared to private banks and foreign banks in India. As far as public sector banks were concerned, there was decrease in profitability thereof during the study period due to high interest expended ratio and low other income ratio. It was also found from the study that Private sector banks had modest profitability due to high interest earned ratio as well as other income ratio, while foreign banks in India occupied first place in profitability due to low interest expended ratio as well as high other income ratio. The study found that public sector banks were much lower in productivity in terms of business per employee as compared to private sector banks and foreign banks in India due to higher denominator i.e. number of staff because of higher number of branches. Despite lowest business per employee ratio due to comparatively greater number of staff, productivity in terms of profit per employee ratio of public sector banks was higher than private banks. Though profit per employee ratio of private sector banks increased moderately during the study period, they were at the second position. Though foreign banks in India had first place in profit per employee, they could not capitalize higher business to have higher profit as compared to public sector banks. From the study, it can also be concluded that determinants of profitability have significant impact on profitability of various categories of the banks. The study found that change in investment causes increase in profitability of the public sector as well as foreign banks in India, while affecting that of the private sector banks. Change in deposits advances profitability of public sector banks, while retreating profitability of private sector and foreign banks in India. Alteration in advances results into decline in profitability of public sector as well as

foreign banks in India while promotes that of private sector banks. Variation in investments can improve profitability of both public and private sector banks while it may impact profitability of foreign banks in India. With a view to improving profitability, public sector banks should reduce overstaffing through Voluntary Retirement Schemes and keeping pace as well as embracing latest technology for enhanced products and services. They should also focus seriously on providing more and more fees based services to increase Non-interest incomes and thereby improve profitability. It is suggested that public sector banks should focus on efficient raising of funds at lower cost on one hand and disposing them at high interest earning securities. Rationalization of branches may be attempted by Public sector banks to improve overall productivity. Public sector banks will have to undertake effective cost management programmes since Government borrowings push up the cost of funds, reducing their interest margins. More effective measures to contain and reduce non-performing assets will also contribute to improved profitability of Public sector banks and Private Banks. This study may help various stakeholders of Indian commercial Banks and other categories of Banks in Indian Banking Sector to concentrate on banking activities and thereby to increase profitability performance thereof. It may also help the management in formulating appropriate strategies for achievement of objectives.

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Appendix

Name of Banks

Sr. No.	Public Sector Banks	Private Sector Banks	Foreign Banks
1	Allahabad Bank	City Union Bank Ltd.	ABN Amro Bank N.V.
2	Andhra Bank	ING Vysya Bank Ltd.	Abu Dhabi Commercial Bank Limited
3	Bank of Baroda	Lord Krishna Bank Ltd.	American Express Bank Limited
4	Bank of India	SBI Commercial & International Bank Ltd.	American Express Banking Corporation
5	Bank of Maharashtra	Tamilnad Mercantile Bank Ltd.	Antwerp Diamond Bank N.V.
6	Canara Bank	The Bank of Rajasthan Ltd.	Arab Bangladesh Bank Limited.
7	Central Bank of India	The Catholic Syrian Bank Ltd.	Bank Internasional Indonesia
8	Corporation Bank	The Dhanalakshmi Bank Ltd.	Bank of America NA
9	Dena Bank	The Federal Bank Ltd.	Bank of Bahrain and Kuwait B.S.C.
10	Indian Bank	The Jammu & Kashmir Bank Ltd.	Bank of Ceylon
11	Indian Overseas Bank	The Karnataka Bank Ltd.	Barclays Bank PLC
12	Oriental Bank of Commerce	The Karur Vysya Bank Ltd.	BNP Paribas
13	Punjab & Sind Bank	The Lakshmi Vilas Bank Ltd.	Chinatrust Commercial Bank
14	Punjab National Bank	Nainital Bank Ltd.	Citibank N.A..
15	Syndicate Bank	The Ratnakar Bank Ltd.	Calyon Bank
16	UCO Bank	The Sangli Bank Ltd.	Deutsche Bank AG
17	Union Bank of India	The South Indian Bank Ltd.	JPMorgan Chase Bank
18	United Bank of India	Axis Bank Ltd.	JSC VTB Bank
19	Vijaya Bank	Centurion Bank of Punjab Ltd.	Krung Thai Bank Public Company Limited
20	State Bank of India (SBI)	Development Credit Bank Ltd.	Mashreqbank psc
21	State Bank of Bikaner & Jaipur	HDFC Bank Ltd.	MIZUHO Corporate Bank Ltd.
22	State Bank of Hyderabad	ICICI Bank Ltd.	Oman International Bank S.A.O.G.
23	State Bank of Indore	Indusind Bank Ltd.	Shinhan Bank
24	State Bank of Mysore	Kotak Mahindra Bank Ltd.	Societe Generale
25	State Bank of Patiala	YES Bank	Sonali Bank
26	State Bank of Saurashtra		Standard Chartered Bank
27	State Bank of Travancore		State Bank of Mauritius Ltd.
28	IDBI Bank Ltd.		The Bank of Nova Scotia
29			The Bank of Tokyo-Mitsubishi UFJ Ltd.
30			The Development Bank of Singapore Ltd.
31			The Hongkong and Shanghai Banking Corporation Ltd.
32			UBS AG