Profitability Performance of New Private Sector Banks – An Empirical Study

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INTRODUCTION

Banks play an active role in the economic development of a country. Their ability to make a positive contribution in igniting the process of growth depends on the effective banking system. These banks mostly deal with money collected in the form of deposits along with their own funds in the form of share capital and resources constituting around 5% of the total resources of the banks. So the banks have the obligation of meeting the demand of the customers promptly, paying interest for the amount and meeting the expenses to carry out its activities. This necessitates the banks to maintain adequate liquidity and earn required profit from their activities. Maintenance of liquidity and profitability are contradictory in nature. (Therefore, the banks have to perform the difficult task of maintaining equilibrium between liquidity and profitability) The maintenance of liquidity is necessary to prove the fact that the bank is able to meet its commitments without fail and is paying the day to day expenses. Thus, liquidity refers to the ability of the concern to fulfill its obligations promptly. Whereas, profitability is primarily the measure of the overall success of business and so, it is the ability to earn profit. Profitability is the most powerful motivational factor in any business. The larger the profit, the more efficient and profitable a business is deemed to be. It is the engine that drives a business concern. It also enables a concern to discharge its obligations to the various segments of the society.

PRIVATE BANKING IN INDIA

Since ancient times, private banking activities in the form of money lending have been prevalent and it is the foundation for the present sophisticated system in India. But the growth of the banking system was quite muted on account of a series of crisis and lack of coordinated banking policy and inadequate control by proper authorities. In the second half of the 20th century, especially after obtaining independence, the Indian banking system experienced a rapid rate of growth and recorded a fast progress. To speed up the growth further and also to meet out the national objectives and plans, the government initiated the nationalization process. Accordingly, the SBI and its subsidiaries in 1955, 14 major banks in 1969 and 6 other banks in 1980 were nationalized to take up their business in line with national plans and priorities. Certain other banks which were not under the criteria of nationalization operated mostly in South India and are regarded as old private sector banks. Such banks are 23 in number and most of them are very old.

The present banking system experienced a radical transformation on account of the globalization process. The phenomenon of globalization brought about significant changes in terms of products and services that are being offered to the Indian customer and consequently, the complexion of the banking sector in India underwent a noteworthy change. On the basis of the recommendations of the Narasimham committee, a high level committee was appointed to examine the structure, organizations, functions and procedures of the financial system. In July 1991, the RBI decided to give a go-ahead for setting up of new banks in the private sector by the individuals, corporations, foreign and non-residents, subject to the regulations and other requirements. In line with this announcement, the RBI received 19 applications which fulfilled all the formalities. Presently, there are nine banks, popularly known as the "New Private Sector Banks". The banks use latest technology to provide customer oriented services. They give stiff competition to the public sector and foreign banks.

STATEMENT OF THE PROBLEM

The new private sector banks have brought with them state-of-art technology for business processing and service delivery to provide efficient service in catering to the customers' demand. They also have the advantages of standing with a clean state, adequate capital resources, well trained and professional man-power, absence of non-performance assets, computerization, lien organizational system, a handful of branches in chosen centers and a

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new variety of products and services to meet the latest requirements of the present day corporates. Along with this, the global players have also brought in many foreign banks into India to fulfill the requirements of WTO accord. They offer new range of products and services like ATMs, EFTs, Credit Cards, Portfolio Management etc. This environment created a new level playing field to accept perfect competition among all types of banks. Hence, a study was conducted to know whether these new private sector banks are adept in retaining market shares and profit margins amidst their reliability and overall performance.

With this background, the present study was carried out by researchers with the following objectives:

OBJECTIVES OF THE STUDY

The following are the specific objectives of the present study:

1. To assess the nature of profitability of the new private sector banks.
2. To analyze the consistency of the profitability of the new private sector banks.
3. To offer suggestions for the improvement of efficiency of the new private sector banks.

REVIEW OF LITERATURE

Sathya and Bhattacharya et el (1997)[1] studied the impact of privatization on the performance of the public sector banks. The results of these two studies were contradictory. Bhattacharya found that the performance of the public sector banks was sound as compared to the private sector banks; whereas Sathya found the opposite results in his study.

Chowdari Prasad and K. S. Srinivasa Rao (2004)[2] in their paper, "Private Sector Banks in India- A SWOT Analysis" studied the performance of all private sector banks. As per the criteria selected like efficiency, financial strength, profitability and size of scale, it is revealed that the private sector banks are in a position to offer cost – effective, efficient products and services to their customers using technology, best utilization of human resources along with professional management and corporate governance principles.

Sanjay J. Bhayani (2006)[3] in his study, "Performance of the New Indian Private Banks: A Comparative Study", analyzed the performance of new private sector banks with the help of the CAMEL model. The study covered 4 leading private sector banks – ICICI, HDFC, UTI and IDBI for a period of five years from 2000-01 to 2004-05. It is revealed that the aggregate performance of IDBI Bank is the best among all the banks, followed by UTI.

Chidambaram R. M and Alamelu (1994)[4], in their study entitled, "Profitability in Banks, a Matter of Survival", pointed out the problem of declining profit margins in the Indian Public Sector Banks as compared to their private sector counterparts. It was observed that inspite of similar social obligations; almost all the private sector banks have been registering both -high profits and high rate of growth with respect to deposits, advances and reserves as compared to the public sector banks. Regional orientation, better customer service, proper monitoring of advances and appropriate marketing strategies are the secrets behind the success of the private sector banks.

Das A. (1997)[5] in his paper on "Technical allocation and Scale Efficiency of Public Sector Banks in India" reviewed the overall efficiency (technical allocation and scale) of the public sector banks for the period 1900-96. The study found that there is decline in overall efficiency due to fall in technical efficiency which was not offset by an improvement in allocative efficiency. However, it is pointed out that the deterioration in technical efficiency was mainly on account of a few nationalized banks.

Deb and Kalpada (1998)[6] in their study entitled, "Indian Banking Since Independence" studied the growth of banking system in India covering the period from 1966 to 1987. The analysis revealed that the structure of the banking system changed considerably over the years. It was further pointed out that the quantitative growth of the public sector banks was no doubt significant in some of the areas, but qualitative improvement, by and large lacked in desired standards. In spite of substantial increase in deposit mobilization, their share in national income continued to be very low. It was concluded that the public sector banks were neither guided by the consideration of returns nor were they very much concerned with developmental strategies.

SCOPE OF THE STUDY

The present study analyzed the profitability of New Private Sector Banks. For the purpose of the study, the existing nine new private sector banks were taken up. Initially, there were 10 banks that were granted approval by the RBI. But one bank, Global Trust Bank was merged with UTI and so the remaining 9 banks have been

taken up for the study. The analysis covers five categories of ratios to analyze the profitability position of the banks to determine their efficiency.

METHODOLOGY

Sources of Data

The study is based on secondary data. The data were collected from the official directory and data base of Centre for Monitoring Indian Economy (CMIE) namely PROWESS. The published annual reports of the selected banks taken from their websites, magazines and journals on finance have also been used as sources of data.

Period of Study

The study covers a period of 10 years from 1998-2007.

Sampling

The universe of new private sector banks consists of nine banks. For the present study, the universe as a whole is taken irrespective of their size to see to what extent they are profitable. The list of such banks is presented in table 1.

TABLE 1: SAMPLE BANKS

S. NO	NEW PRIVATE SECTOR BANKS
1	Bank of Punjab (BOP)
2	Centurion Bank
3	Development Credit Bank (DCB)
4	Housing Development Financial Corporation (HDFC)
5	Industrial Credit Investment Corporation of India (ICICI)
6	Indus Ind Bank
7	Kodak Mahindra Bank (KMB)
8	AXIS Bank
9	Yes Bank

FRAMEWORK OF THE ANALYSIS

The secondary data collected from different sources are analyzed using ratios which are grouped under 5 categories. Calculations were made to test the profitability performance of the new private sector banks and statistical tools like Mean, Standard Deviation, Co-efficient of Variation, Correlation, and Multiple Regression are used.

ANALYSIS AND INTERPRETATION

Profitability refers to the ability to earn profit. It is the primary measure of the overall success of business. It reflects the final result of the business operations. Profits affect the operating efficiency of a firm and the shareholders' return. The management's task is to maximize the profits. The larger the profit, the more efficient and profitable a business is deemed to be. Therefore, it is necessary to analyze and interpret the profitability of the new banking sector as it communicates useful information to interested parties like management, present and prospective shareholders and debenture holders, the creditors, employees and government. The profitability ratios considered for the study are Spread Ratio, Spread Related Ratio, Burden Ratio, Burden Related Ratio and Profitability Ratio. The ratios are calculated and statistical tools are used for the analysis and the results are presented in the form of tables.

SPREAD RATIOS

Spread is the difference between interest earned (on loan and advances) and interest paid (on deposit and borrowing) by the banks. These ratios play a major role in determining the profitability of the banks. It is the net amount available to the banks for meeting their operating and managerial expenses. In order to analyze the profitability performance, it becomes imperative to study the magnitude of this spread and its components i.e., interest earned and interest paid in relation to working fund of the banks. Hence, the following ratios are calculated for the present study.

1. Ratio of Interest Income to Working fund (X_1).
2. Ratio of Interest expenses to Working fund (X_2).
3. Ratio of Spread to Working fund (X_3).

The ratios calculated are subjected to the statistical analysis using Mean, SD, and CV. The results are shown in the Table 2 below.

TABLE 2: SPREAD RATIOS

Banks	Interest Income to Working fund (X_1)			Interest expenses to Working fund (X_2)			Spread to Working fund (X_3)		
	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV
BOP	8.935	1.098	12.294	6.339	1.067	16.838	14.303	2.195	15.349
Centurion	10.244	2.898	28.292	7.185	2.252	31.345	16.313	4.395	26.943
DCB	8.641	0.978	11.323	6.478	1.22	18.827	13.973	2.269	16.237
HDFC	7.344	0.956	13.012	4.243	0.909	21.412	10.824	2.045	18.894
ICICI	7.076	2.012	28.43	5.071	1.634	32.226	11.14	3.33	29.888
Indus Ind	8.505	1.29	15.172	6.258	1.375	21.967	13.916	2.713	19.498
KMB	14.579	8.843	60.659	5.841	3.526	60.374	17.515	10.12	57.76
Axis	7.631	1.316	17.242	5.218	1.936	37.099	12.802	2.99	23.353
Yes Bank	5.625	2.627	46.701	3.825	2.165	56.594	8.227	4.227	51.373
Overall	**8.731**	**22.018**	**25.902**	**5.606**	**1.787**	**32.964**	**13.224**	**3.809**	15.349

Source: Compiled from Annual Reports of the Banks

The above table reveals that the mean ratio X_1 of the sample banks is ranging from 5.625 to 14.579 with the overall ratios of 8.731, SD of 22.018. The ratio of BOP, Centurion and KMB is above the overall ratio and also, interest income is more consistent in case of BOP, DCB, HDFC, Indus Ind and Axis as it is less than the average. It is also revealed that the mean ratio X_2 of the sample banks is ranging from 3.825 to 6.478 with the overall ratio of 5.606, SD of 1.787 and CV of 32.964. The ratio X_2 of BOP, Centurion, DCB, Indus Ind and KMB is higher than the overall ratio and the interest expenses are consistent in the case of all banks except KMB, Axis and Yes bank as it less than the average.

It is also understood from the table that the ratio X_3, which is the difference between X_1 and X_2, is ranging from 8.227 to 17.515 with an overall ratio of 13.224, SD of 3.809 and CV of 15.439. The ratio of BOP, Centurion, DCB, Indus Ind and KMB is above the average. It is also a fact that the spread is consistent in case of DCB.

SPREAD RELATED RATIO

Interest earned and interests paid are the main ingredients of spread ratios. But the magnitude of the changes in the contents of interest earned and interest paid are much important to analyze the spread ratios in a more imperative way. So, the following (further) ratios are considered relevant to analyze the spread.

1.Ratio of Interest income to Total income (X_4).

2.Ratio of Interest expenses to Total expenses (X_5).

3.Ratio of Interest on Deposit to Total expenses (X_6).

The calculated ratios are further analyzed with the statistical tools Mean, SD and CV and results are given in the Table 3 below.

TABLE 3: SPREAD RELATED RATIOS

Banks	Interest income to Total income (X_4)			Interest expenses to Total expenses (X_5)			Interest on Deposit to Total expenses (X_6)		
	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV
BOP	75.48	90.19	7.097	59.143	45.03	76.135	56.889	11.97	21.046
Centurion	76.24	93.2	6.489	49.969	13.01	26.043	45.748	11.07	24.197
DCB	73.23	89.87	5.843	59.669	11.49	19.254	56.287	11.04	19.619
HDFC	79.21	87.19	3.167	53.739	9.709	18.066	42.958	6.676	15.54
ICICI	74.18	89.78	6.356	49.699	16.7	33.594	45.69	15.23	33.332
Indus Ind	76.74	95.41	7.944	62.264	4.553	7.3125	57.589	6.083	10.563
KMB	67.21	99.21	12.96	19.365	16.31	84.249	14.376	14.26	99.168
Axis	54.31	88.07	12.13	80.106	14.5	18.101	62.636	10.32	16.472
Yes Bank	64.18	83.7	12.44	46.34	17.89	38.604	39.878	17.54	43.995
Overall	**71.198**	**90.74**	**8.27**	**53.366**	**16.577**	**35.707**	**46.895**	**11.577**	**31.548**

Source: Compiled from Annual Reports of the Banks

The above table presents that the ratio X_4 is ranging from 54.31 to 79.21 with an average of 71.198, SD of 90.74 and CV of 8.27 and it is more than the average in case of BOP, Centurion, DCB, HDFC, ICICI and Indus Ind Banks. The degree of variability is less in case of the same 5 banks.

The ratio X_5 is ranging from 19.365 to 80.106 with an average of 53.366 and SD of 16.577 and 35.707 and it is more than the average in case of BOP, DCP, HDFC, Indus Ind and Axis. The degree of variability is also less in case of centurion, DCB, HDFC, ICICI and Axis Bank.

The ratio X_6 is ranging from 14.376 to 62.636 with an overall mean of 46.895, SD of 11.577 and CV of 31.548. The ratio of BOP, DCB, Indus Ind and Axis bank is more than the average. The degree of variability of BOP, Centurion, DCB, HDFC, Indus Ind and Axis banks is less.

BURDEN RATIOS

Burden is defined as the difference between non-interest expenditure and non-interest income of the banks. It represents non- interest expenditure that is covered by non-interest income. It is an important factor in determining the profitability of the banks. Because, in the present day, apart from the traditional activities, the banks are taking up core banking activities like ATM, credit card etc. The following are the different ratios calculated for the study:

1. Ratio of Non-interest expenditure to Working fund (X_7).
2. Ratio of Non-interest income to Working fund (X_8).
3. Ratio of Burden to Working fund (X_9).

These ratios are calculated and are further analyzed with the statistical tools – Mean, SD and CV and the results are shown in Table 4.

TABLE 4 :BURDEN RATIOS

Banks	Non-interest expenditure to Working fund (X_7)			Non-interest income to Working fund (X_8)			Burden to Working fund (X_9)		
	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV
BOP	4.219	1.436	34.04	2.67	0.942	35.277	9.371	3.673	39.195
Centurion	5.386	2.036	37.8	2.994	0.864	28.845	7.607	2.591	34.057
DCB	4.717	1.701	36.07	2.505	0.497	19.854	6.111	1.78	29.123
HDFC	7.855	12.08	153.8	1.836	0.628	34.193	4.859	0.75	15.425
ICICI	2.762	0.623	22.55	2.3	0.792	34.421	4.367	1.361	31.171
Indus Ind	3.532	0.687	19.45	2.248	0.656	29.161	4.757	0.954	20.054
KMB	7.589	3.949	52.03	3.777	1.231	32.587	12.08	4.683	38.761
Axis	2.84	0.557	19.61	3.411	4.193	122.93	4.903	2.28	46.512
Yes Bank	3.188	0.07	2.209	2.135	0.615	28.808	4.875	0.563	11.551
Overall	**4.676**	**2.571**	**41.951**	**2.653**	**1.158**	**40.675**	**6.548**	**2.071**	**29.539**

Source: Compiled from Annual Reports of the Banks

The above table describes that the ratio X_7 is ranging from 2.762 to 7.855 with an overall ratio of 4.676, SD of 2.571 and CV of 41.951. The ratio of Centurion, HDFC and KMB is above average. The degree of variability is less in case of BOP, Centurion, DCB, ICICI, Indus Ind, Axis and Yes Bank.

The ratio X_8 is ranging from 1.836 to 3.777 with an overall ratio of 2.653, SD of 1.158 and CV of 40.675. The ratio of BOP, Centurion, KMB and Axis is more than average. The degree of variability is less in case of all banks except Axis.

The ratio X_9 is ranging from 4.367 to 12.08 with an overall ratio of 6.548, SD of 2.071 and CV of 29.539. The ratio of BOP, Centurion and KMB is more than the average ratio. The degree of variability is less in case of DCB, HDFC, Indus Ind and Yes Bank.

BURDEN RELATED RATIOS

The sub-items involved in the non-interest expenditure and non-interest income are the main causes for the

changes in the respective variables which ultimately affect the burden ratios. Hence, to probe further into the sub elements, non-interest expenses and non-interest incomes are studied.

1. Ratio on Non-interest income to Income (X_{10}).
2. Ratio of Establishment expenses to the Total expenses (X_{11}).
3. Ratio of Operating expenses to Total expenses (X_{12}).
4. Ratio of Burden to Total income (X_{13}).

The ratios are calculated and are further analyzed with SD and CV. The results are given in the Table 5 below

TABLE 5: BURDEN RATIOS

Banks	Non-interest income to Income (X_{10})			Establishment expenses to the Total expenses (X_{11})			Operating expenses to Total expenses (X_{12})			Burden to Total income (X_{13})		
	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV
BOP	5.096	2.378	46.661	18.098	10.77	59.516	18.098	10.77	59.516	37.994	15.24	40.108
Centurion	8.553	6.608	77.265	20.002	9.626	48.126	20.002	9.626	48.126	45.119	17.54	38.875
DCB	6.991	3.25	46.484	18.12	10.69	58.972	18.12	10.69	58.972	39.076	21.44	54.869
HDFC	11.94	3.599	30.157	12.772	7.768	60.824	12.772	7.768	60.824	39.458	7.487	18.974
ICICI	9.93	3.966	39.938	16.155	4.477	27.71	16.155	4.477	27.71	31.572	4.054	12.841
Indus Ind	5.85	6.196	105.91	18.423	4.871	26.441	18.423	4.871	26.441	30.362	3.915	12.893
KMB	3.412	3.969	116.32	11.332	3.494	30.829	11.332	3.494	30.829	50.191	5.119	10.199
Axis	10.14	3.534	34.864	10.717	3.761	35.09	10.717	3.761	35.09	29.273	7.899	26.983
Yes Bank	14.39	1.577	10.962	13.645	6.187	45.342	13.645	6.187	45.342	48.378	24.1	49.811
Overall	**8.478**	**3.897**	**56.507**	**15.474**	**6.849**	**43.65**	**15.474**	**6.849**	**43.65**	**39.047**	**11.87**	**29.506**

Source: Compiled from Annual Reports of the Banks

The above table describes that the ratio X_{10} is ranging from 3.412 to 14.39 with an overall ratio of 8.478, SD of 3.897 and CV of 56.507. The ratio is greater than its average in case of Centurion, HDFC, ICICI, Axis and Yes Bank. There is lesser degree of variability in case of ratio of BOP, DCB, HDFC, ICICI, Axis and Yes Bank.

The ratio X_{11} is ranging from 10.10.717 to 20.002 with an overall ratio of 15.474, SD of 6.849 and CV of 45.65. The ratio of ICICI, BOP, Centurion, DCB and Indus Ind is more than the average. It is more consistent in case of ICICI, Indus Ind, KMB and Axis.

The ratio X_{12} is ranging from 10.717 to 20.002 with an overall ratio of 15.474, SD of 6.849 and CV of 43.65. The ratio is greater than the average in case of BOP, Centurion, DCB, ICICI and Indus Ind and it is more consistent in case of ICICI, Indus Ind, KMB and Axis.

The ratio X_{13} is ranging from 29.273 to 50.191 with an overall ratio of 39.047, SD of 11.87 and CV of 29.506. The ratio is greater than average in case of Centurion, DCB, HDFC, KMB and Yes Bank. The ratio has less degree of variability in case of HDFC, ICICI, Indus Ind, KMB and Axis Bank.

PROFITABILITY RATIOS

To analyze the profitability of the banks, the relationship between the earnings and the funds used is analyzed. So, the ratio indicates the efficiency with which a bank deploys its total resources to maximize its profit. So, the present study seeks to analyze the profitability with the help of the following ratios.

1. Ratio of Gross profit to Working fund (X_{14}).
2. Ratio of Gross profit to Total deposit (X_{15}).
3. Ratio of Net profit / loss to Total income (X_{16}).
4. Ratio of Net profit / loss to Total deposit (X_{17}).
5. Ratio of Net profit / loss to Working fund (X_{18}).

TABLE 6: PROFITABILITY RATIOS

Banks	Gross profit to Working fund (X_{14})			Gross profit to Total deposit (X_{15})			Net profit / loss to Total income (X_{16})			Net profit / loss to Total deposit (X_{17})			Net profit / loss to Working fund (X_{18})		
	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV	Mean	SD	CV
BOP	0.394	0.221	56.184	0.52	0.283	54.364	9.456	5.379	56.887	1.369	1.126	82.239	0.845	0.962	113.84
Centurion	-0.821	2.118	-257.99	-0.861	2.563	-297.62	-0.031	11.11	-35840	0.158	1.78	1126.8	-0.128	1.448	-1131.3
DCB	-0.867	1.841	-212.36	-0.736	1.713	-232.74	10.64	19.13	179.73	0.062	2.302	3712.9	0.047	1.624	3456
HDFC	0.956	0.308	32.264	1.441	0.46	31.933	12.4	2.216	17.872	2.376	0.825	34.714	1.394	0.37	26.524
ICICI	0.021	0.03	144.52	0.035	0.048	138.18	12.28	2.376	19.349	1.974	0.72	36.472	0.984	0.344	35.009
Indus Ind	0.26	0.278	106.8	0.309	0.329	106.33	9.06	5.661	62.479	2.13	0.704	33.066	0.864	0.577	66.819
KMB	4.178	2.278	54.534	20.57	24.17	117.49	16	7.662	47.896	12.16	10.15	83.432	2.26	1.519	67.206
Axis	0.56	0.219	39.069	0.703	0.246	34.973	10.16	2.776	27.329	1.844	1.584	85.918	0.869	0.167	19.229
Yes Bank	0.218	0.326	149.9	0.28	0.424	151.38	9.003	12.2	135.57	1.248	1.804	144.6	0.768	0.733	95.499
Overall	**0.544**	**0.847**	**12.547**	**2.473**	**3.36**	**11.588**	**9.885**	**7.612**	**-3921**	**2.591**	**2.333**	**593.35**	**0.878**	**0.86**	**305.43**

Source: Compiled from Annual Reports of the Banks

The above table indicates that the ratio X_{14} is ranging from -0.867 to 4.178 with an overall ratio of 0.544, SD of 0.847 and CV of 12.547. The ratio is greater than average in case of HDFC, KMB and Axis Banks. The degree of variability is less in case of centurion and DCB banks.

The ratio X_{15} is ranging from -0.861 to 20.57 with an overall ratio of 2.473, SD of 3.36 and CV of 11.588. The ratio is greater than average in case of KMB only. The degree of variability is less in case of Centurion and DCB.

The ratio X_{16} is ranging from -0.031 to 12.28 with an overall ratio of 9.885, SD of 7.612 and CV of -3921. The degree of variability is more in case of all banks.

The ratio of X_{17} is ranging from 0.062 to 12.16 with an overall ratio of 2.591, SD of 2.333 and CV of 593.35. The ratio is above average in case of KMB, HDFC, ICICI, Indus Ind, KMB and Axis Bank.

The ratio X_{18} is ranging from -0.128 to 2.26 with an overall ratio 0.878, SD of 8.6 and CV of 305.43. It is more than average in case of HDFC and ICICI. The ratio is more consistent in case of BOP, Centurion, HDFC, ICICI and Axis Bank.

CORRELATION ANALYSIS

KARL PEARSON CORRELATION

To study the degree of inter relationship between the ratios selected for the study, Karl Pearson' co-efficient of correlation has been calculated. It describes the extent to which one variable is linearly related to another. Correlation can be used to measure the degree of relationship among two variables, which is usually represented by the symbol "r". Statistical formula of correlation is as below.

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{n(\Sigma x^2) - (\Sigma x)^2}\sqrt{(\Sigma y^2) - (\Sigma y)^2}}$$

Table 7 shows the inter correlation coefficient between various ratios. The significance of correlation is also tested at 5 % and at 1 % level of significance using't' test.

TABLE 7: INTER CORRELATION ANALYSIS

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
X_1	1																	
X_2	0.55	1																
X_3	0.9**	0.84**	1															
X_4	0.05	0.31	0.14	1														
X_5	-0.63	0.04	-0.3	-0.2	1													
X_6	-0.61	0.2	-0.2	-0.01	0.96**	1												
X_7	0.75*	0.42	0.73*	-0.55	-0.23	-0.32	1											
X_8	0.6	0.05	0.41	0.37	-0.58	-0.63	0.15	1										
X_9	0.89**	0.45	0.76*	0.02	-0.64	-0.59	0.69*	0.53	1									
X_{10}	-0.8*	-0.75*	-0.9**	-0.22	0.26	0.14	-0.54	-0.26	-0.72*	1								
X_{11}	-0.06	0.69*	0.25	0.67*	0.15	0.4	-0.31	-0.22	-0.04	-0.27	1							
X_{12}	-0.06	0.69*	0.25	0.67*	0.15	0.4	-0.31	-0.22	-0.04	-0.27	1**	1						
X_{13}	0.44	-0.05	0.18	0.03	-0.78*	-0.77	0.21	0.56	0.59	-0	-0.11	-0.11	1					

X_{14}	0.68	-0.19	0.34	-0.24	-0.66	-0.77	0.53	0.55	0.64	-0.39	-0.67	-0.67	0.39	1				
X_{15}	0.83**	0.01	0.52	-0.2	-0.77	-0.84*	0.64*	0.58	0.76	-0.51*	-0.52	-0.52	0.51	0.95**	1			
X_{16}	0.18	-0.46	-0.1	-0.18	-0.31	-0.39	0.07	0.24	0.16	-0.18	-0.65	-0.65	-0	0.68*	0.58	1		
X_{17}	0.78*	-0.05	0.46	-0.19	-0.74	-0.82*	0.59*	0.54	0.69	-0.49*	-0.55	-0.55	0.42	0.97**	0.99**	0.63	1	
X_{18}	0.43	-0.42	0.08	-0.16	-0.54	-0.66	0.27	0.46	0.41	-0.23	-0.72*	-0.72*	0.18	0.94**	0.8**	0.81**	0.87**	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The above table reveals the correlation matrixes of profitability ratios of new private sector banks. It is learnt from the table that there is a close relationship between X_1 and X_3, X_9 and X_{15} at 0.01 level and X_1 and X_7, X_{16} and X_{17} at 0.05 % level. In case of X_2, there is a close relationship with X_2 only at 0.01% level and with X_{10}, X_{11}, and X12 at 0.05 % level. Regarding X_3, the analysis throws light on the fact that there is a close association between X_3, X_7 and X_9 at 0.01 % level and with X_{10} at 0.05 % level. A close took at the table led us to conclude that X_4 is closely associated with X_{10} and X_{11} at 0.05 % level only. A penetrating observation of the tables brings us to average and infer that X_5 is having a close relationship with X_6 at 0.01 % and with X_{13} at 0.05 % level. A close observation of the table reveals that X_6 is correlated with X_{15} and X_{17} at 0.05 % level. There is relationship between X_7 and X_9, X_{15} and X_{17} as revealed by the analysis of the table at 0.05 % level. It has been found that there is close association between X_9 and X_{10} at 0.05 % level. Like wise, X_{10} is having a close relationship with the variable X_{15} and X_{17} at 0.05 % level. The variable which is significantly correlated at 0.01 % is X_{11} with X_{18}. It is observed that the variable X_{12} is closely related with X_{18}. There exists a significant and close relationship between X_{14} and X_{15}, X_{17} and X_{18} at 0.017 level and at 0.05 % level between X_{14} and X_{16} at 0.05 % level. The variable which is significantly correlated at 0.01 % level is X_{15} with those of X_{17} and X_{18}. It is observed that the variable X_{16} and X_{17} are closely related with X_{18} at 0.01 % level.

REGRESSION ANALYSIS

Stepwise multiple regression analysis is used to ascertain the percentage of contribution of each independent variable on the dependent variable. In this section, multiple regression analysis is used to analyse the level of influence of financial ratios on the independent variable X_{16} relating to the merger period for the study. The financial ratios of X_1, X_2…… and X_{18}.

The following regression model is fitted for financial ratios:

$$Y = b_o + b_1X_1 + b_2 X_2 + b_3 X_3 + \text{…….}$$

and the results are presented in the following Table 8.

The Table 8 describes the results of multiple regression analysis in terms of regression co-efficient, the standard error, co-efficient of determination of (R^2 and t value), when variable is introduced.

TABLE 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804(a)	.647	.597	2.75026

a Predictors: (Constant), X_{18}

TABLE 9 : REGRESSION MODEL FOR X_{16}

Ratios	Regression Coefficient	Standard Error	t- value (d.f = 2)	R^2
Constant	5.505	1.528	3.603	0.647*
X_{18}	4.988	1.392	3.583	

Source: Compiled from Annual Reports of the Banks

X_{16} Dependent Variable

*: Significant at 5 %

The step wise multiple regression model indicates that out of the 18 ratios, X_{18} is alone significantly contributing to X_{16}.

Regression Fitted: $X_{16} = 5.505+4.988\ X_{18}$

TABLE 10: ANALYSIS OF VARIANCE FOR REGRESSION

Source:	D F	S S	M S	F
Regression	97.122	1	97.122	12.840**
Residual	52.947	7	7.564	
Total	**150.070**	**8**		

**- Significant at 1 % level

The analysis of variance of multiple regression models for X_{16} indicates the overall significance of the model fitted. The coefficient of determination R^2 value shows that the six ratios put together explains the variations of net profit to working fund (X_{16}) to the extent of 64.7 %.

Thus, it is concluded that the step wise multiple regression analysis (Partial Model) for the variable Y, the dependent financial ratio net profit / loss to working fund (X_{16}) has estimated a functional relation between Y net profit / loss to working fund (X_{16}) with the predictor ratio X_{18} which has significantly contributed to net profit / loss to working fund (X_{16}) to the extent of 64.7%. The model has excluded the other ratios.

SUGGESTIONS

The primary objective of any firm is not only to earn profit but also to increase the value of the firm through profitability. To achieve this status, the private sector banks may pay attention to few suggestions that are given below:

The interest income and interest expenses in relation to working fund are more than average in case of limited number of banks. As these are the out come of the main activities of the banks, the new private sector banks may concentrate their attention on improving their interest income.

The operating expenses of majority of banks are more than average. So, the banks may take steps to reduce these expenses by increasing the activities or otherwise.

The above steps may increase the profitability of the banks which, in turn, increases the value of any organization, including private sector banks.

CONCLUSION

The new economic environment facilitated the growth and development of these private sector banks. But these new private sector banks can improve their performance by identifying and concentrating on the relevant areas where the attention is much needed and there is scope for improvement. Thereby, the banks could help the stakeholders like management, employees, investors and policy holders to take relevant decisions in their respective areas of operation resulting in economic efficiency and overall growth.

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