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Financial Appraisal of Commercial Banks in India: A Post Reforms Asessment

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Abstract
Banking sector, commercial banks in particular, dominate the India's financial services industry that contributes significantly to the revenues of this industry. Indian banking, as a matter of fact has undergone a metamorphosis in the very concept, percept and outlook since nationalisation. The massive and speedy expansion and diversification of banking scenario has not been without its strains. Being a commercial organization, they must earn a fair return on capital after providing adequately for business risks. Even operating under environmental constraints, there exists considerable scope for freedom of action for achieving higher operational efficiency of the banking sector.The Indian bank management, today, is facing a two-sided challenge to improve their profitability and productivity, and to serve the public in new ways with greater efficiencies and effectiveness. Commercial viability of banking can seldom be ignored. Banking industry in India is undergoing a major transformation due to changes in economic conditions and continuous deregulation. The implementation of reforms has had an all round salutary impact on the financial health of the banking system, as evidenced by the significant improvements in a few salient financial indicators of the banking system. Since deregulation and liberalization of economic policy and banking regulation, a number of studies have been made on the impact and analysis of performance of commercial banks in India in different time frame. Therefore, to be more precise, it is required that one such study which analyses of financial performance of the banks during post reform period should be carried on.
Keywords: Commercial Banks in India, Profitability, Factor analysis

01. INTRODUCTION:

The economic growth and stability of a country substantially depends on its capital formation and accumulation. To achieve the same, financial resources of the country must be mobilized towards productive avenues. Among the financial institutions, commercial banks play a vital role in capital accumulation in the form of saving, credit creation and act as intermediaries for different financial services like investment, broking, forex etc. The country's economic policy framework combines socialistic and capitalistic features with a heavy bias towards public sector investment. The new millennium has brought with it challenges and opportunities in various fields of economic activities including banking.

Today, 20 years after economic liberalization began; we have a vibrant banking sector, powered by both improved-efficiency public sector banks and growth-hungry private ones. However, the last couple of decades have witnessed continuous change in regulation, technology and competition in the global financial services industry. Rising cost-income ratios and declining profitability reflect increased competitive pressure. The massive expansion in branches, the rapid growth in deposits and advances are quite phenomenal and unprecedented. It is thus imperative to examine the impact of banking reforms on commercial banks performance. To assess the stability of the banking system, it is therefore crucial to benchmark the performance of banks operating in India.

02. IMPORTANCE OF THE STUDY:

In the process of satisfying the canon of social purpose in their lending operations, banks could not adequately take care of the traditional canons of viability, productivity, liquidity and profitability. As a matter of fact, commercial banks in India in the recent past have developed certain rigidities and weaknesses. The profitability of the banking sector during recent times has been under tremendous strain and therefore, the operational efficiency in the present phase has to be measured by the measuring rod of profitability alone. While there have been several piecemeal studies covering the various aspects of profitability of various banks groups, there has been no systematic and comprehensive effort to study the trend of performance, the different parameters of profitability and a comparative analysis of various bank groups operating in India in terms of profitability. In view of the importance of improving the profitability and productivity of the banking sector in recent years, an effort to identify the various factors which significantly influence that performance bottom of banks in either direction is all most essential.

03. OBJECTIVE OF STUDY:

The main thrust of the study is to make an empirical analysis of performance in terms of profitability and

operational efficiency of commercial banks in India over 20 years period covering 1990-2010. The broad objectives of the study are detailed below:

(i) To evaluate the operational performance of the commercial banks through a comparative study between different banking groups.

(ii) To examine the profitability of different scheduled commercial banks with application of a model framework.

(iii) To analysis the factors contributing to the low/high profitability, increased/decreased liquidity position and operational efficiencies of each group during the period of study.

04. RESEARCH METHODOLOGY:

The present study aims at analyzing the performance of commercial banks during 1990-91 to 2009-10. For the purpose of this study, all banks are grouped under four group like SBI & Associates, Nationalized Banks, Private Sector Banks and Foreign Banks. The study includes twenty-eight public sector banks, twenty-one private banks and thirty foreign banks. It is prominent to mentioned here that state bank of Saurashtra has been merged with State Bank of India since September 2008. The entire study is based on the secondary data only. The secondary data have been collected from various publications of Reserve Bank of India, Central Government and Indian Banks Association. The analysis has been made with statistical tools of analysis like correlation, regression, co-efficient of variation and Factor Analysis.

05. REVIEW OF LITERATURE:

Earlier a number of studies have been conducted relating to financial performance analysis, cost analysis and productivity of Indian commercial banks. A close review of those dispersed efforts at research field is attempted in the following paragraphs.

Goiporia (1992)[1] in his article has made a general view about the profitability of banks and maintained that if adequate profit have to flow, following priorities will have to be observed by the banks (a) among fund based operation the lending operation have to be directed to areas which would maximize profitability and growth, consistent with the long term objectives of the institution, after priority sector lending goals are attained (b) to promote non fund based operation (c) charging fees from banks services after taking into consideration the cost benefit of services offered, etc.

Chidambaram R.M. and Alamelu K (1994)[2] 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 banks counterparts. It was observed that in spite of similar social obligations; all most 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.

Bhattacharyya et al (1997)[3] evaluated the impact of limited liberalization initiated before the deregulation of the nineties on the performance of the different categories of banks, using data envelopment analysis. Their study covered 70 banks during the period 1986-91. They found that the public sector banks had the highest efficiency among the three categories, with private and foreign banks having much lower efficiencies. However, public sector banks started showing a decline in efficiency, private banks showed no change and foreign banks showed a sharp rise in efficiency after 1987.

Ram Mohan (2003)[4] in his paper documented and evaluated the performance of the public, private and foreign banks since deregulation in absolute and in relative terms, and attempts to understand the factors behind their improved performance. It was observed that the efficiency of the banking system as a whole measured by declining spreads has improved both in absolute and relative terms. It is observed that efficiency should not be at the cost of stability. He cautions that Indian experience so far suggests that government ownership might conduce to such trade off.

Santi and Soma (2006)[5] analyzed the productivity and profitability of five public and five private sector bank in India during the period 1996-97 to 2003-04 and revealed that except for a few cases the productivity index was greater than on for all the selected banks through definite trend was not observed. In the matter of achieving target level of profitability, SBI and PNB were the most successful banks followed by HDFC bank and ICICI bank. On the there hand, the performance of Jammu & Kashmir Bank, Canara bank, and Bank of India was very poor in terms of achievement of target.

Kumar Sharad and Sreeramulu M (2007)[6] have compared the 12 year's data from 1997 to 2008 on

productivity factors viz. 'Business per Employee' (BPE) and 'Profit per Employee' (PPE) and employee cost factors viz. 'Employee Cost to total Business', 'Employee Cost to total Assets' and 'Employee Cost to Operating Expenses' of banks in India. It was observed that the performance of the modern banks (foreign and new private sector banks) was much superior to the traditional banks (public sector and old private sector banks). However, the gap between the performance of modern and traditional banks on all the five variables has shown a decreasing trend, which has significantly reduced during the period of 12 years under study.

Arora Sangeeta and Kaur Shubpreet (2008)[7] in their article entitled " Diversification in Banking Sector in India Determinants of Financial Performance" attempted to study the determinants of diversification of banks in India and to analyzed the financial performance of banks over the period of 2000 to 2006. It was found that though the interest income is still a major source of income in the operation of banks in India, but the phenomenon of non interest income is also acquiring added significance in the wake of declined interest margins and increased disintermediation in commercial banking.

Dr. N. Bharathi (2010)[8] in his study " Profitability Performance of New Private sector banks- An Empirical Study" analyzed the profitability and consistency of nine new private sector banks over the period of 10 years from 1998 to 2007. He used 18 different ratios and concluded that the new economic environment facilitated the growth and development of these private sector banks and can improve their performance by identifying and concentrating on the relevant areas where the attention is much needed and there is scope for improvement.

Dey Sanjeeb Kumar (2010)[9] has made an empirical analysis of performance in terms of profitability and productivity of public sector banks in India over 06 years period covering 2003-04-2008-09. All twenty nationalized banks (including IDBI bank) among the public sector bank have performed well in comparison to SBI and its eight associates banks. It was also seen that the average spread ratio was maximum in Panjab & Sindh Bank results in more contribution to profits and reverse is for IDBI bank.

Dr. R K Uppal (2011)[10] his study mainly concerned with the analysis of comparative performance of specific bank groups during the period of 2003-04 to 2008-09. He concluded that although most of the banks have succeeded to bring down their non-performing assets and costs, but still they are facing deterioration in their profitability. Most of the public sector banks even with the highest share in assets, rural branches, priority sector advances and investments of all scheduled commercial banks, still have to face competition in terms of new challenges from new private sector banks and foreign banks as their cost is the highest along with continuous deterioration in profits and spread.

06. ANALYSIS & INTERPRETATION:

The primary objective of this analysis is to determine the factors that significantly influence the bank's profitability in either direction. Profitability performance of commercial banks can be studied by measurement of net profit. In this study total business has been considered as base for calculating the various profitability ratios instead of working funds i.e. net profit ratio as percentage of total business (Y), the dependent variable for multivariate statistical analysis.To have a more precise analysis, the following 9 factors (independent variable i.e. X1 to X9) were selected for the study i.e. Interest earned as percentage of total business (X1), Interest expended as percentage of total business (X2),Spread as percentage of total business (X3), Non-interest expenses as percentage of total business (X4), Non-interest income as percentage of total business (X5), Burden as percentage of total business (X6), Total advances as percentage of total deposit (X7), Non-Interest income as percentage of total income (X8), Interest Income as percentage of total income (X9).

Correlation Analysis: SBI Groups:

Table No.1 presents the bivariate correlation matrix of the selected variables with bank profitability for State Bank of India and its associate banks for the period over 20 years i.e. 1990 to 2010. Two variables namely Non-Interest income as percentage of total income (X8), Interest income as percentage of total income (X9) are observed to have significant positive and negative relationship respectively with profitability (Y) i.e. net profit as percentage of total business, the coefficients are 0.653 and -0.654. Analysis of correlation coefficient between the independent variables reveals that X1 (interest earned) is highly correlated with X2 (interest paid), X3(spread), X4(non-interest expenses) and X6 (Burden as percentage of total business) where degree of association is above 0.875. X2 (interest paid) is highly correlated with X4 and X8. X3 is having high degree of positive correlation with X4 and X6. Similarly X6 (burden) has high degree of negative correlation with X8 i.e. -0.759.

Table No. 1: Correlation Matrix of SBI and Associates (1990-2010)

	Y	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y	1									
X1	-.343	1								
X2	-.347	.983**	1							
X3	-.305	.938**	.859**	1						
X4	-.421*	.965**	.915**	.969**	1					
X5	.215	.701**	.678**	.678**	.678**	1				
X6	-.640**	.875**	.823**	.891**	.931**	.363	1			
X7	-.125	-.283	-.261	-.299	-.233	-.481*	-.057	1		
X8	.653**	-.579**	-.599**	-.486*	-.535**	.162	-.759**	-.199	1	
X9	-.654**	.579**	.599**	.485*	.535**	-.162	.759**	.199	-1.000	1

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (1-tailed).

Correlation Analysis: Nationalised Banks:

Table No.2 presents the bivariate correlation matrix of the selected variables with bank profitability for 19 Nationalised banks and IDBI bank for the period over 20 years i.e. 1990 to 2010. Only three variables namely Burden as percentage of total business (X6), Interest expenses as percentage of total business (X2) and non Interest expenses as percentage of total income (X4) are observed to have significant relationship with profitability (Y) i.e. net profit as percentage of total business, the coefficients are –0.849, -0.449 and -0.765. Analysis of correlation coefficient between the independent variables reveals that X1 shows a high degree of positive correlation coefficient with X2, X3 and X4 where as it is negatively correlated with X7 & X8. Similarly X6 witnesses highly degree of positive correlation with X4 and X7 registers a high negative correlation with X4. Unlike SBI groups, Nationalised banks also witness a high degree (1.000) correlation between X8 and X9. On the other hand, X7 has almost strong negative correlation matrix with all variables except y.

Table No. 2: Correlation Matrix of Nationalised Banks (1990-2010)

	Y	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y	1.000									
X1	-0.388	1.000								
X2	-0.449*	0.976**	1.000							
X3	-0.096	0.773**	0.618	1.000						
X4	-0.765**	0.753**	0.715**	0.641**	1.000					
X5	0.122	0.281	0.163	0.543**	0.323	1.000				
X6	-0.849**	0.703	0.702**	0.498*	0.950**	0.011	1.000			
X7	0.312	-0.768**	-0.693	-0.758**	-0.767**	-0.705**	-0.577	1.000		
X8	0.423	-0.546	-0.634	-0.128	-0.328	0.645**	-0.559	0.011	1.000	
X9	-0.423	0.547	0.634	0.129	0.328	-0.645**	0.559	-0.012	-1.000	1.000

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (1-tailed).

Correlation Analysis: Private Banks:

Table No. 3 presents the bivariate correlation matrix of the selected variables with bank profitability for Private Banks for the period over 20 years i.e. 1990 to 2010. Only two variables namely Non-interest income as percentage of total business (X5) and Burden as percentage of total business (X6) are observed to have significant positive and negative relationship respectively with profitability (Y) i.e. net profit as percentage of total business, the coefficients are 0.759 and –0.720. Analysis of correlation coefficient between the independent variables reveals that X1 shows a high degree of positive correlation with X2 & X9 and negative correlation with X7 and X8. Similarly, X3 shows a high degree of positive correlation coefficient with X4 and X6 witnesses a high degree of positive relation with X9. Unlike SBI groups, Private banks also witness a high degree (1.000) correlation between X8 and X9. Among X6, X7,X8 And X9 ,there exists a high degree of colleniality with each other.

Table No. 3: Correlation Matrix of Private Banks (1990-2010)

	Y	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y	1.000									
X1	-0.112	1.000								
X2	0.020	0.932**	1.000							
X3	-0.348	0.548*	0.209	1.000						
X4	-0.492*	0.589**	0.295	0.913**	1.000					
X5	0.759**	-0.222	-0.008	-0.584**	-0.504*	1.000				
X6	-0.720**	0.471	0.176	0.866**	0.870**	-0.864**	1.000			
X7	0.387	-0.759**	-0.647**	-0.556	-0.657**	0.406	-0.614**	1.000		
X8	0.574**	-0.767**	-0.581**	-0.730	-0.706	0.793	-0.864	0.747	1.000	
X9	-0.571**	0.770**	0.585**	0.730	0.707	-0.789	0.862	-0.751	-1.000	1.000

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (1-tailed).

Correlation Analysis: Foreign Banks:
Table No.4 presents the bivariate correlation matrix of the selected variables with bank profitability of Foreign Banks for the period over 20 years i.e. 1990 to 2010.

Table No..4: Correlation Matrix of Foreign Banks (1990-2010)

	Y	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y	1.000									
X1	-0.489*	1.000								
X2	-0.538*	0.965**	1.000							
X3	0.256	-0.010	-0.272	1.000						
X4	-0.672**	0.508*	0.498	-0.037	1.000					
X5	0.651**	-0.367	-0.463	0.419	-0.064	1.000				
X6	-0.902**	0.608**	0.657**	-0.276	0.807**	-0.641**	1.000			
X7	0.363	-0.356	-0.305	-0.144	-0.123	0.462	-0.368	1.000		
X8	0.658**	-0.830**	-0.866**	0.255	-0.324	0.818**	-0.733	0.521*	1.000	
X9	-0.705**	0.820**	0.855**	-0.251	0.350	-0.828**	0.759	-0.525*	-0.997**	1.000

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (1-tailed).

Only two variables namely non interest income as percentage of total business (X5) and non interest income as percentage of total income (X8) are observed to have significant and positive relationship with profitability (Y) i.e. net profit as percentage of total business, the coefficients are 0.651 and 0.658. However interest earned as percentage of total business (X1), Interest expended as percentage of total business (X2) reveal a negative but insignificant relationship with profitability i.e. -0.489 and –0.538 (at 0.01 significant level).

Regression Analysis of SBI Group Banks:
Table No. 5 indicates the regression equation along with analysis of variances of selected variables of SBI group in response to its profitability over the period of 20 years. In response to all two variables (X3 & X6), VIF stands below 10 which indicate multi co linearity of variables not influencing the regression result . On the other hand, analysis of variance indicates that DF (degree of freedom) for the variables that are considered for the regression is 2 and SS (sum of squares) is 0.85. Similarly, p value in the analysis of variance (0.000) shows that the model estimated by the regression procedure is significant at 0.05. On the other hand, F value (25.89) is much more than p value. Thus it signifies that the regression equation is well-matched for measuring the profitability of SBI groups.

Table No. 5: Regression Analysis of SBI Group Banks

The regression equation is
Y = 0.166 + 0.428 X3 - 0.740 X6

Predictor	Coef	SE Coef	T	P	VIF
Constant	0.1660	0.1554	1.07	0.300	
X3	0.42763	0.08805	4.86	0.000	4.855
X6	-0.7399	0.1098	-6.74	0.000	4.855

S = 0.128298 R-Sq = 75.3% R-Sq(adj) = 72.4%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	0.85226	0.42613	25.89	0.000
Residual Error	17	0.27983	0.01646		
Total	19	1.13209			

Durbin-Watson statistic = 1.06297

Regression Analysis: Nationalised Banks (1990-2010):
Table No.6 indicates the regression equation along with analysis of variances of selected variables of Nationalised bank in response to its profitability over the period of 20 years. The regression equation is proving the results of stepwise regression analysis that results in 72.80% of coefficient of determination (Adjusted R-sq). In response to all three variables (X2, X4, & X6), VIF stand around10 which indicate multicollinearity of variables not influencing the regression result. On the other hand, analysis of variance indicates that DF (degree of freedom) for the variables that are considered for the regression is 3 and SS (sum of squares) is 6.71. Similarly, p value in the analysis of variance (0.000) shows that the model estimated by the regression procedure is significant at 0.05. On the other hand, F value (17.92) is much more than p value. Thus it signifies that the regression equation is compatible for measuring the profitability of Nationalised Banks.

Table No. 6: Regression Analysis of Nationalized Banks

The regression equation is
Y = 0.387 + 0.161 X2 + 0.308 X4 - 1.47 X6

Predictor	Coef	SE Coef	T	P	VIF
Constant	0.3869	0.4803	0.81	0.432	
X2	0.1605	0.1054	1.52	0.147	2.071
X4	0.3082	0.4163	0.74	0.470	10.763
X6	-1.4660	0.4316	-3.40	0.004	10.362

S = 0.353461 R-Sq = 77.1% R-Sq(adj) = 72.8%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	6.7170	2.2390	17.92	0.000
Residual Error	16	1.9990	0.1249		
Total	19	8.7160			

Durbin-Watson statistic = 1.31010

Regression Analysis: Private Banks (1990-2010):
Table No. 7 indicates the regression equation along with analysis of variances of selected variables of Private bank in response to its profitability over the period of 20 years. The regression equation is proving the results of regression analysis that results in 80.0% of coefficient of determination (Adjusted R-sq). In response to all three variables (X3, X4, & X6), VIF stands much below 10 which indicate multicollinearity of variables not influencing the regression result. On the other hand, analysis of variance indicates that DF (degree of freedom) for the variables that are considered for the regression is 3 and SS (sum of squares) is 0.69.

Table No. 7: Regression Analysis of Private Banks (Profitability Analysis)

The regression equation is
Y = 0.231 + 0.572 X3 - 0.212 X4 - 0.667 X6

Predictor	Coef	SE Coef	T	P	VIF
Constant	0.2306	0.2354	0.98	0.342	
X3	0.5719	0.1199	4.77	0.000	6.885
X4	-0.2123	0.1985	-1.07	0.301	7.110
X6	-0.66702	0.09408	-7.09	0.000	4.703

S = 0.0939155 R-Sq = 83.2% R-Sq(adj) = 80.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	0.69818	0.23273	26.39	0.000
Residual Error	16	0.14112	0.00882		
Total	19	0.83930			

Durbin-Watson statistic = 1.00086

Similarly, p value in the analysis of variance (0.000) shows that the model estimated by the regression procedure is significant at 0.05. On the other hand, F value (26.39) is much more than p value. Thus it signifies that the regression equation is well-matched for measuring the profitability of Nationalised Banks.

Regression Analysis: Foreign Banks (1990-2010):

Table No. 8 indicates the regression equation along with analysis of variances of selected variables of foreign bank in response to its profitability over the period of eleven years. The regression equation is proving the results of regression analysis that results in 79.7% of coefficient of determination (Adjusted R-sq). In response to selected six variables (X2, X4, & X6), VIF stand below 10 which indicate multicollinearity of variables not influencing the regression result. On the other hand, analysis of variance indicates that DF (degree of freedom) for the variables that are considered for the regression is 3 and SS (sum of squares) is 14.95. Similarly, p value in the analysis of variance (0.000) shows that the model estimated by the regression procedure is significant at 0.05. On the other hand, F value (25.88) is much more than p value. Thus it signifies that the regression equation is well-matched for measuring the profitability of Nationalised Banks.

Table No. 8: Regression of Foreign Banks (Profitability Analysis)

The regression equation is
Y = 0.977 + 0.0609 X2 + 0.220 X4 - 1.10 X6

Predictor	Coef	SE Coef	T	P	VIF
Constant	0.9767	0.7224	1.35	0.195	
X2	0.06091	0.07866	0.77	0.450	1.770
X4	0.2198	0.2261	0.97	0.345	2.882
X6	-1.1000	0.2001	-5.50	0.000	3.814

S = 0.438875 R-Sq = 82.9% R-Sq(adj) = 79.7%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	14.9522	4.9841	25.88	0.000
Residual Error	16	3.0818	0.1926		
Total	19	18.0340			

Durbin-Watson statistic = 1.46235

Factor Analysis: SBI groups:

Table No. 9 represents factor loading of selected variables for the SBI and its seven associate banks over the period 1990-2010.Factor analysis have identified three factors out of the selected variables under study. The most important determinant of Factor-I is X1 (interest earned as percentage of total business) with factor loading 0.966 and its influence on the other common factors is very less. The other significant variables in Factor-I are X4 (Non-interest expenses as percentage of total business), X6 (Burden as percentage of total business) and X8 (Non-Interest income as percentage of total income) with factor loading 0.962, 0.963 and -0.729 respectively.

Further, it observed from the communality factor column, except for five variables (Y, X2, X3, X8,X9),

all other variables could explain the variations in selected variables to the extent of above 93.20%. This is in conformity with the results of correlation and regression analysis, each of which revealed that spread as percentage of total business (X3) has positive effect on bank profitability (Y) and Burden as percentage of total business (X6) has negative effect on profitability of banks.

Table No..9: Factor Analysis of SBI Group Banks (1990-2010)

Principal Component Factor Analysis of the Correlation Matrix				
Unrotated Factor Loadings and Communalities				
Variable	Factor1	Factor2	Factor3	Communality
Y	-0.537	0.595	-0.348	0.763
X1	0.966	0.224	-0.071	0.989
X2	0.941	0.189	-0.070	0.927
X3	0.923	0.268	-0.066	0.929
X4	0.962	0.201	-0.079	0.973
X5	0.518	0.819	-0.182	0.971
X6	0.963	-0.152	-0.010	0.950
X7	-0.186	-0.652	-0.713	0.968
X8	-0.729	0.627	-0.038	0.926
X9	0.729	-0.627	0.038	0.926
Variance	6.1798	2.4570	0.6868	9.3236
% Var	0.618	0.246	0.069	0.932

Principal Component Factor Analysis of the Correlation Matrix, Rotated Factor Loadings and Communalities, Varimax Rotation

Factor Analysis: Nationalised Banks:

Table No. 10 represents factor loading of selected variables for the nineteen Nationalised Banks and IDBI bank over the period 1990-2010.Factor analysis has identified three factors out of the selected variables under study. The most important determinant of Factor-I is X3 (Spread as percentage of total business) with factor loading 0.906 and its influence on the other common factors is very less. The other significant variables in Factor-I are X1 (Interest Earned as percentage of total business) and X7 (Total advances as percentage of total deposit) with factor loading 0.876 and -0.868 respectively.

In case of Nationalised bank, the variations of X3 accounted for the Factor-I is square of factor loading of the variable i.e. $(0.906)^2 = 0.8208$. It implies that 82.08% of the total variation is counted by Factor-I. Similarly, X8 (non Interest income as percentage of total income) has relatively higher loading (0.961) with Factor-II and all the three factors could explain nearly 99.80% variation in banks profitability. Further, it observed from the communality factor column, except for three variables (X2, X3, X7), for all other variables, the six factor derived could explain the variations in selected variables to the extent of above 95.50%.

Table No..10: Factor Analysis of Nationalised Banks (1990-2010)

Variable	Factor1	Factor2	Factor3	Communality
Y	-0.034	0.209	0.960	0.966
X1	0.876	-0.374	-0.275	0.982
X2	0.777	-0.473	-0.310	0.924
X3	0.906	0.027	-0.088	0.829
X4	0.601	-0.061	-0.785	0.982
X5	0.626	0.765	-0.004	0.978
X6	0.428	-0.317	-0.829	0.970
X7	-0.868	-0.213	0.346	0.919
X8	-0.147	0.961	0.230	0.998
X9	0.147	-0.961	-0.229	0.998
Variance	3.9252	2.9902	2.6299	9.5453
% Var	0.393	0.299	0.263	0.955

Principal Component Factor Analysis of the Correlation Matrix, Rotated Factor Loadings and Communalities, Varimax Rotation

Factor Analysis: Private Sector Banks:

Table No. 11 represents factor loading of selected variables for the twenty three Private sector banks over the period 1990-2010.Factor analysis has identified three factors out of the selected variables under study. The most

important determinant of Factor-I is X2 (Interest Expended as percentage of total business) with factor loading 0.989 and its influence on the other common factors is very less. The other significant variables in Factor-I are X1 (Interest Earned as percentage of total business) and X7 (Total advances as percentage of total deposit) with factor loading 0.929 and -0.720 respectively.

Table No. 11: Factor Analysis of Private Sector Banks (1990-2010)

Variable	Factor1	Factor2	Factor3	Communality
Y	-0.006	0.902	0.152	0.837
X1	0.929	-0.052	-0.344	0.984
X2	0.989	0.057	-0.004	0.981
X3	0.226	-0.271	-0.921	0.973
X4	0.293	-0.293	-0.873	0.933
X5	-0.071	0.906	0.320	0.928
X6	0.212	-0.688	-0.691	0.995
X7	-0.720	0.306	0.378	0.755
X8	-0.623	0.628	0.432	0.968
X9	0.627	-0.624	-0.432	0.969
Variance	3.3277	3.1496	2.8466	9.3239
% Var	0.333	0.315	0.285	0.932

Principal Component Factor Analysis of the Correlation Matrix, Rotated Factor Loadings and Communalities, Varimax Rotation

In case of Private Sector bank, the variations of X2 accounted for the Factor-I is square of factor loading of the variable i.e. $(0.989)^2 = 0.9781$. It implies that 97.81% of the total variation is counted by Factor-I. Similarly, X5 (Non-interest income as percentage of total business) has relatively higher loading (0.906) with Factor-II and all the three factors could explain nearly 92.8% variation in banks profitability.

Factor Analysis: Foreign Banks:

Table No. 12 represents factor loading of selected variables for the Thirty Foreign banks over the period 1990-2010. Factor analysis has identified three factors out of the selected variables under study. The most important determinant of Factor-I is X8 (Non-Interest income as percentage of total income) with factor loading 0.867 and its influence on the other common factors is very less. The other significant variables in Factor-I are X7 (Total advances as percentage of total deposit) and X9 (Interest Income as percentage of total income) with factor loading 0.765 and -0.857 respectively.

Table No. 12: Factor Analysis of Foreign Banks (1990-2010)

Variable	Factor1	Factor2	Factor3	Communality
Y	0.394	-0.706	-0.352	0.777
X1	-0.683	0.580	-0.123	0.819
X2	-0.648	0.583	0.121	0.774
X3	-0.036	-0.092	-0.914	0.844
X4	0.006	0.975	-0.067	0.956
X5	0.717	-0.095	-0.608	0.894
X6	-0.420	0.806	0.309	0.921
X7	0.765	-0.004	0.173	0.615
X8	0.867	-0.380	-0.277	0.973
X9	-0.857	0.407	0.285	0.981
Variance	3.8041	3.1033	1.6462	8.5536
% Var	0.380	0.310	0.165	0.855

Principal Component Factor Analysis of the Correlation Matrix, Rotated Factor Loadings and Communalities, Varimax Rotation

In case of Foreign bank, the variations of X8 accounted for the Factor-I is square of factor loading of the variable i.e. $(0.867)^{2 =} 0.7516$. It implies that 75.16% of the total variation is counted by Factor-I. Similarly, X4 (Non-interest expenses as percentage of total business) has relatively higher loading (0.975) with Factor-II and all the three factors could explain nearly 95.60% variation in banks profitability.

07. SUGGESTIONS

Productivity and profitability are interrelated. Though productivity is not the sole factor, it is an important factor in influencing profitability. The key to increase profitability is increased productivity. Public sector banks (both SBI group and Nationalised banks as a whole) have not been as profitable as the other banks primarily because of two reasons – Low Productivity and High Burden ratio. To overcome these drawbacks they should chalk out a program to increase productivity. We have the following suggestions for the public sector banks.

1. Public sector banks have been trying to reduce the number of staff employed either by encouraging second round of VRS or opening new branches with the existing manpower.
2. They should have a strategic tie up with the rural regional banks for reaching the far off areas instead of opening branches themselves in the areas, which cannot provide them the break even business.
3. Indian public sector banks have a unique advantage over their competition in terms of their branch network and the large customer base, but it is the use of technology that will enable PSBs to build on their strengths.
4. Irrespective of bank groups, especially SBI group should pay attention to make a set off between the deposits and advances.
5. Banks should develop core competencies in niche markets, introduce innovative products and adopt product-branding techniques to augment their business along with income. More and more ancillary financial services should be undertaken to at least break even the operating expense out of non-interest incomes.
6. The commercial banks should conduct regular customer survey in order to identify the emerging demand/ changing need for banking services. No doubt, activation of Banking Ombudsman for consumer complaint by the RBI is a welcome step since 2006. However, attention must be given not only to resolve the complaint as quickly as possible but also to initiate action to reduce the same.
7. To improve productivity of banks employees, bank should introduce performance based compensation plan.

08. CONCLUSION

Mainly two variables namely Non-interest income as percentage of total business (X5) and Non-Interest income as percentage of total income (X8) are observed having significant positive relation with profitability (Y) i.e. net profit as percentage of total business irrespective of bank groups. The variables having significant negative correlation coefficient with bank profitability are Non-interest expenses as percentage of total business (X4) Burden as percentage of total business (X6) and Interest Income as percentage of total income (X9). Multiple Regression analysis reveals that X4 and X6 play major role in determination of banks profitability. In case of SBI Group and private banks, spread as percentage of total business (X3) influences profit significantly . Factor analysis is primarily used to examine the structure of data by explaining the correlations among variables. It has identified three factors out of the selected variables under study. This is in conformity with the results of correlation analysis and multiple regression analysis, each of which revealed that spread as percentage of total business (X3) has almost positive effect on bank profitability (Y) and Burden as percentage of total business (X6) has negative effect on profitability of banks.

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