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Prime Determinants Of Profitability Of Major Bank Groups In The Liberalized And Globalized Era

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Abstract: Profitability is an important criterion to evaluate the overall efficiency of a bank group. The present paper examines the comparative trends in profitability behavior of five major bank groups in the post liberalization and globalization era. The paper further examines the factors, which are affecting the profitability of these bank groups. The paper concludes that average profitability is the highest in case of New Private Sector Banks and in Foreign Banks. The selected factors have differently affected the profitability of these bank groups. With the help of Correlation Co-efficient Matrix and R - Square, paper examines the impact of each selected variable on the profitability of each group. The paper offers suggestions on the basis of empirical results to increase the profitability and measures should be taken to increase the level of spread and curtail the burden. On the basis results the present paper also suggests some emerging issues particularly for our Public Sector Banks. The new private sector and foreign banks have become threat for Public sector banks and at the same time they are motivation also. It is the right time that all public sector banks should adopt latest technology and compete with their counterparts.

Keywords: Prime Determinants of profitability, Emerging Issues and Future Agenda

1. INTRODUCTION

Banking scenario since 1991 has been a process of transformation. With financial sector reforms implementation, the microenvironment of banking sector has undergone a radical change. Liberalization, deregulation and privatization process started in 1991, and now, from a totally regulated environment, we have gradually moved into a market driven competitive system. Deregulation of international financial market, technological revolution, liberalization in the cross border movements of capital and above all, financial liberalization across the developing countries have established a new international architecture. Globalization of financial markets has also intensified competition leading to creation of best performing financial institutions. Hence, there has been paradigm shift in operational, functional, environmental, technological spheres. The two phases of banking sector reforms introduced in 1991 and 1998 respectively by the Narasimham Committee have provided a landscape for the banks to perform better and helped them to stand on a firm footing.

Liberalization, privatization and globalization have been recognized as the key elements propelling the world towards the present era characterized by rapid changes and increased challenges in various fields. LPG policy has totally changed the view of our banking system and due to the changing scenario our banks are facing much competition in the world economy to line up with the international standards. Only 20 Indian banks are in the list of top 1000 world banks according to the list prepared by “The Banker” (Financial Times

London) in July, 2004. The said position of Indian banks is mainly due to the following challenges they are facing due to globalization and liberalization:

1. industry is flooded with operators many of them with international presence
2. the rules and regulations are slowly relaxed
3. the protective cover earlier existing for the public sector is withdrawn
4. information on money markets is becoming increasingly relevant
5. loyalty of customers can not be taken for granted
6. profits/margins has become the center stage of the activity

With the above challenges relevant for all commercial banks, it is equally important to examine where and how do we go from here in terms of realizing global aspirations remains to be seen? Although, Indian banking industry is witnessing the best performance but still the major threats to their health comes from the high level of NPAs, decreasing interest income, lesser non-interest income, low level of priority sector advances etc. To tackle these problems, Indian banks have to be prepared and make capable strategically to meet these challenges.

With the pace of globalization, present banking system is shifting to e-banking system. Technology is playing an important role in improving the performance of the banks and even makes them capable to compete in the world market. Although, public sector banks are responding positively and still are partially computerized are unable to meet the international challenges whereas, private sector banks and foreign banks as are totally computerized and delivering almost all the services through e-channels, are performing their best in the world banking industry. This is the strength of these banks to perform better than public sector banks and capturing various opportunities also. Hence, technology is a crucial factor affecting the banks performance and making them capable to earn more through new opportunities. So, it is important to answer the following questions:

1. Is the performance of our public sector banks is poorer than the private sector banks and foreign banks?
2. What are the prime determinants that affect the profitability of the bank groups?
3. To what extent these parameters affect the profitability of the bank groups?

Due to the transformation every aspect of banking system is affected. So, it is important to know what are those aspects, which affect the profitability of the bank groups the most. Hence, in this paper various factors affecting the profitability are studied and it is evaluated that to what extent these factors affect the profitability.

The present paper is divided into five sections. After brief introduction of the topic, section II reviews various related studies. Section III derives the objectives, hypothesis and database and research methodology of the paper. Section IV analyses the results. Last part concludes the paper.

2. REVIEW OF LITERATURE

Bhasin, (2001), he analyzed the impact of IT on banking sector. The IT has revolutionized various aspects of our life. It has transformed the repetitive and overlapping systems and procedures, into simple single key pressing technology resulting in speed, accuracy and efficiency of conduction business. The computerization of banks has provided a major push for enabling them to enter into the newer activities. The banking industry has itself prepared and is strongly emerging to play a major supplementary role in nurturing e-commerce applications, which is still in the infancy stage in India. While few of the new generation private banks have taken an early initiative in these innovative areas, other banks are gradually catching up. The author feels that utmost importance that proper security infrastructure should be in place for routing seemed transactions through the public network.

Bhattacharya (1997), studied the impact of the 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 in the period1986-91. They constructed one grand frontier for the entire period and measured technical efficiency banks under study. They found PSBs had the highest efficiency among the three categories with foreign and private banks having much lower efficiencies. However PSBs started showing a decline in efficiency after 1987, private banks showed no change and foreign banks showed sharp rise in efficiency. The main results accord with the general perception that in the nationalized era, public sector banks were successful in achieving their principal objective of deposit and loan expansion.

Das, (1999), compares performance among public sector banks for three years in the post-reform period, 1992,1995 and 1998. He finds a certain convergence in performance. He also notes that while there is a welcome increase in emphasis on non- interest income, banks have tended to show risk-averse behavior by opting for risk- free investments over risky loans.

Kaveri, (2001), this study attempts to extend the study conducted by the Verma Committee more specifically to ascertain whether enough signals of weakness were indicated much before the event. The present study considers 1998-99 as the year of event when the Verma Committee identified weak banks, strong banks and potential weak banks. This study considers nine efficiency parameters, which are computed, based on the data collected from the Reserve Bank of India publications. The parameters include:-

- Capital Adequacy Ratio.
- Net Non Performance Assets/ Net Adequacy.
- Net Profit / Total Assets.
- Gross Profit / Working Funds.
- Net Interest Income / Total Assets.
- Interest Expended / Total Assets.
- Intermediation Cost / Total Assets.
- Provisions and Contingencies / Total Assets.

The above parameters focus on two major concerns of banks i.e. loan default and profitability whereas the Verma Committee covered all aspects of financial health. This article has given some evidence to indicate that no bank can weak or potential weak all of a sudden. There is a gradual deterioration in the position of loan default & profitability. Hence it is suggested to develop a ratio model to arrive at a single score to classify banks into three categories i.e. weak, strong and potential weak.

Murty, (1996), he analyzed various factors which can helpful to improve the profitability of public sector banks. The study examine the impact of monetary policy and market interest rates on the bank profitability and also suggest various measures to improve the profitability of the public sector banks in India.

Passah, P.M., (2002), he analyzed the Indian financial system comprising the commercial banks, the financial institutions and the capital markets. He concluded that Indian banking has undergone a very rapid transformation in the past three decades. There is a sea change in the Indian banking sector in the post financial sector reforms.

Sabnani, (2000), he analyzed the importance of "Universal Banking" in India. Globalization, Liberalization and Deregulation of financial markets in many developed and developing countries have resulted in increased dis-intermediation and has made commercial banks vulnerable to interest rate risk. Relaxing exchange controls, adopting uniform accounting practices in regard to income recognition, assets classification and provisioning norms and prescribing capital adequacy norms has further aggravated the position. Now the developments in IT and telecommunications are allowing international pooling of financial resources thereby spreading the risk across more than one market. He feels that Universal Banking System will come to stay in India in the near future. There is therefore need to prepare ourselves right now.

Sarker and Das, (1997), compare performance of public, private and foreign banks for the year 1994-95 by using measures of profitability, productivity and financial management. They find PSBs comparing poorly with the other two categories. However, they caution that no firm inference can be derived from a comparison done for a single year.

Satyamurty, (1994), clarified the concepts of profits, profitability & productivity applicable to the banking industry. It is organized by the bank managements that the pressure on the profitability is more due to the factors beyond their control. He suggested the technique of ratio analysis to evaluate the profit and profitability performance of banks. He opined that endeavors should be made to improve the spread performance through better finds management.

Shah, (1977), in his various papers discussed bank profitability and productivity. He expressed concern about increased expenses and overheads. Slow growth in productivity and efficiency, wasteful work of banks that higher profitability can result from increased spread and that innovations have a limited role. He favored written job descriptions for improvement of staff productivity. He also emphasized reduction of costs, creation of a team spirit improvement in the management for improving bank profitability and productivity.

Shveeta and Satish Verma, (2002), they analyzed the inter-temporal profitability behavior of SBI group, other nationalized and foreign banks in India. They empirically estimated factors influencing the profitability of banks. They concluded that priority sector advances (in case of PSBs) and spread and burden (for all categories of banks) were the major and significant factors that influent the profitability of banks.

Swamy and Subrahmanyam (1993), attempted to focus on profitability within public sector banks in an attempt to set benchmarks for laggards.

Swamy, (2001), studied the comparative performance of different bank-groups since 1995-96 to 1999-2000. During this period, IT, new competition, deregulation took place. He studied three important aspects:

i) what has been the impact of financial sector reforms on the structure of the Indian banking system?

ii) What are the advantages reaped by some of the new Indian private and foreign banks vis-à-vis PSBs ?

iii) Whether new competition has enhanced the overall efficiency of the banking system?

3. OBJECTIVES, RESEARCH METHODOLOGY AND DATABASE

Objectives

1. To study and evaluate the profitability of various major bank groups and industry.

2. To study the various prime determinants of the profitability of major bank groups.

Hypothesis

1. All the parameters of profitability are significantly and highly correlated with the profitability.\

Research Methodology

The present paper examines the comparative trends in profitability of five major bank groups in the era of liberalization and globalization. For this purpose, the universe for the study is Indian Banking Industry. The profitability is measured at group level and industry level.

G-I	Nationalized Banks
G-II	State Bank of India and Its Associates
G-III	Old Private Sector Banks
G-IV	New Private Sector Banks
G-V	Foreign Banks

The Regional Rural Banks are excluded as only commercial banks are taken for the study. The profitability of the bank groups is evaluated in the post liberalized and globalized era i.e. 2000-01 to 2003-04. The following factors affecting the profitability in either direction have been selected for the study:

1.	Net Profits as percentage of Working Funds	Y_1
2.	Interest Income as percentage of Total Assets	X_2
3.	Interest Expended as percentage of Total Assets	X_3
4.	Spread as percentage of Total assets	X_4
5.	Non-Interest Income as percentage of Total Assets	X_5
6.	Non-Interest Expenditure as percentage of Total Assets	X_6
7.	Burden as percentage of Total assets	X_7
8.	Establishment Cost as percentage of Total Cost	X_8
9.	Priority Sector Advances as percentage of Total Advances	X_9
10.	Rural Branches as percentage of Total Branches	X_{10}
11.	Fixed Deposits as percentage of Total Deposits	X_{11}
12.	Saving Deposits as percentage of Total Deposits	X_{12}
13.	Current Deposits as percentage of Total Deposits	X_{13}
14.	Total Credit as percentage of Total Deposits	X_{14}
15.	Net NPAs as percentage of Net Advances	X_{15}

Mean, S. D., and co-efficient of variations have been calculated for each variable and bank group and industry also. For evaluating empirical estimates, correlation co-efficient matrix has been calculated and similarly, R^2 has been calculated, which tells us the effect of each variable on group profitability. To calculate all the statistical results, software SPSS 10.0 Version has been used.

Database

1. Performance Highlights of Banks 2000-01 to 2003-04 Indian Banking Association IBA, Bulletin, Vol. XXIII No.3, January, 2005

4. ANALYSIS

Net Profit as Percentage of Working Funds (Y_1)

Table I analysis the profitability of major bank groups and also at bank industry level. All the bank groups and also industry show increase in profitability in all the years under study except G-IV & V shows decrease during 2001-02 but further increased in next years. On an average, profitability of G-V is the highest i.e. 1.18 pc with 35.59 pc fluctuations in terms of coefficient of variations. On the other hand, year-wise profitability is the highest in 2003-04 i.e. 1.14 pc. Fluctuations are the highest in G-I with 46.25 pc C.V.

Prime Determinants of Profitability of Major Bank Groups

Interest Earned as Percentage of Total Assets (X_2)

Table II shows that percentage of interest earned to total assets is decreasing in all the bank groups and in industry also in all the yeas except 2001-02. On an average, it is the highest in case of G-III i.e. 9.17 pc whereas G-IV shows the least ratio with 7.36 pc and year-wise it is the highest in 2000-01 i.e. 8.71 pc decreased to 7.53 pc in 2003-04. Fluctuations in terms of C.V. are the highest in 2001-02 i.e. 24.40 pc and group-wise, G-IV shows the highest i.e. 26.49 pc. It is decreasing mainly due to the falling rate of interest.

Interest Expended as Percentage of Total Assets (X_3)

Table III disclose the trends in interest paid to total assets ratio. It shows sharp decrease in all the bank groups where G-III results in the highest ratio i.e. 6.22 pc and G-V shows the least i.e. 4.84 pc with maximum variations of 28.5 pc C.V. Year-wise, it is decreased from 6.17 pc in 2000-01 to 4.35 pc in 2003-04. The decrease in the rate of interest expenditure to total assets is also due to the falling rates of interest.

Spread as Percentage of Total Assets (X_4)

Spread is a difference between interest earned and interest paid. It shows the interest margin of the concerned organization. The trend in this ratio is of increasing nature in all the years under study except 2001-02 as shown by Table IV. Although, the interest earned and interest paid are decreasing but still spread shows increasing trend, which is a sign of sound performance. On an average, it is the highest in G-III i.e. 2.95 pc whereas industry shows 2.73 pc spread to total assets. Year-wise, it is the highest in 2003-04 i.e. 3.18 witnessing an increasing trend.

Non-Interest Expenditure as Percentage of Total Assets (X_5)

Table-V shows fluctuating trend in the ratio of non-interest expenditure to total assets. On an average it is the least in G-IV i.e. 2.80 pc where industry shows 3.61 pc of this ratio. Year-wise, it is the least in the year 2001-02 with maximum fluctuations of 34.18 pc in terms of C.V.

Non-Interest Income as Percentage of Total Assets (X_6)

Non-interest income as percentage of total assets shows increasing trend (Table VI) in all the years in all the bank groups except G-III & IV. On an average, G-V shows the highest ratio i.e. 2.84 pc whereas yearly basis, it is the highest in the year 2003-04 i.e. 2.36 pc. Fluctuations are the highest in G-IV i.e. 39.90 pc and in the year 2001-02 i.e. 39.78 pc. Overall, it is a good sign of banks focusing on fee-based activities more that yield good returns.

Burden as Percentage of Total Assets (X_7)

Burden is a difference between non-interest expenditure and non-interest income that reflects the capacity of the banks to meet their non-interest expenses from non-interest income. Lesser the burden more capable the banks will be to meet these expenses. Table VII shows decreasing trend in all the years under study in all the bank groups but G-III, IV & V shows increase in the year 2003-04. On an average, burden to total assets ratio is the least i.e. 0.87 pc in case of G-IV with the highest fluctuations i.e. 35.63 pc C.V. Yearly basis, it is the least in 2002-03 i.e. 1.42 pc but further increased to 1.44 pc in 2003-04 with the highest variations i.e. 40.14 pc in terms of C.V.

Net NPAs as Percentage of Net Advances (X_8)

Table VIII shows decreasing trend of this ratio in all the bank groups and industry in all the years except 2001-02 in case of G-IV & V. On an average, this ratio is the least in G-V i.e. 1.74 pc and on yearly basis, it is the least in 2003-04 i.e. 2.70 pc. Variations are maximum in case of G-II i.e. 33.62 pc. Overall, this ratio shows sharp decrease during the four years from 5.1 pc to 2.71 pc, almost two times.

Establishment Cost as Percentage of Total Cost (X_9)

Table IX shows trend in establishment cost to total cost ratio, which includes salary, wages, allowances and other payments to the employees. All the bank groups show increase in this ratio in all the years under study except 2001-02 whereas industry shows decrease till 2002-03 but further increased in 2003-04. On an average, it is the least i.e. 4.7 pc in case of G-IV and on yearly basis, it is the least in 2001-02 i.e. 12.21 pc but increased in 2003-04 to 13.53 pc. Fluctuations are the highest in 2000-01 i.e. 61.74 pc and 19.79 pc in case of G-IV. Overall, establishment cost shows sharp increase, matter of consideration is that it should be reduces as number of employees goes on decreasing under VRS scheme.

Priority Sector Advances as Percentage of Total Advances (X_{10})

Table X shows an increasing trend in the share of priority sector advances from total advances in all the years except in the year 2001-02 G-III, IV & V and industry. On an average, it is the highest in G-I i.e. 33.20 pc followed by G-III with 31.35 pc share, but fluctuations are the highest in case of G-IV i.e. 38.77 pc, year-wise, the share of priority sector advances from the total advances is the highest in 2003-04 i.e. 29.20 pc. Although this ratio shows an increasing trend even not achieved its target of at least 40 pc even by a single bank group.

Rural Branches as Percentage of Total Branches (X_{11})

Table XI shows that the entire bank groups and industry also have a trend of continuous decrease in the share of rural branches from the total branches in all the years. On an average, the share of rural branches in the total branches is the highest i.e. 42.16 pc in case of G-I and year-wise, it is the highest in 2000-01 i.e. 31.80 pc decreased to 29.34 pc in 2003-04. Variations in terms of coefficient of variations are the highest in case of G-IV i.e. 27.56 pc. Overall, rural branches of each bank group are decreasing continuously.

Total Credit as Percentage of Total Deposits (X_{12})

The ratio of credit to deposits depicts the percentage of deposits utilized for the purpose of loans. Table XII reveals that G-V & industry show increasing trend in this ratio whereas all other bank groups show fluctuating trend in C-D ratio. On an average, it is the highest in G-V that is 72.28 pc followed by G-IV i.e. 70.93 pc, where industry shows only 53.12 pc with maximum fluctuations of 6.59 pc in terms of coefficient of variations in the case of G-V. On yearly basis, it is the highest in 2001-2002 i.e. 61.90 pc with 28.14 pc variations. Overall, the share of credit from the deposits shows tremendous increase of almost one and half times.

Fixed Deposits as Percentage of Total Deposits (X_{13})

Table XIII shows a continuous decrease in the share of fixed deposits from the total deposits, even the industry shows decrease, on an average from 70.11 pc in 2000-01 to 64.51 pc in 2003-04 with the highest variations of 10.57 pc in the same year. On the other hand, G-III shows the highest share of fixed deposits in the total deposits i.e. 75.39 pc followed by G-IV with 74.73 pc ratio. Fluctuations are the highest in case of G-V. The reason for decreasing share of fixed deposits in the total deposits is the falling rate of interest on these deposits.

Saving Deposits as Percentage of Total Deposits (X_{14})

Table XIV shows an increasing trend at sharp rates in saving deposits share in the total deposits in all the bank groups and even on average basis, industry shoes increase from 15.48 pc in 2000-01 to 19.51 pc in 2003-04. On the other hand, G-I shows the highest share of saving deposits in the total deposits i.e. 25.54 pc followed by G-II with 22.23 pc share, whereas fluctuations are the highest in G-V with 21.37 pc C.V. The basic reason for increasing share of saving deposits in the total deposits is the introduction of attractive packages like zero balance salary account and students account etc.

Current Deposits as Percentage of Total Deposits (X_{15})

From Table XV, it is concluded that share of current deposits in the total deposits is continuously decreasing in the bank groups I, II & III and the whole industry, whereas G-IV & V shows sharp increase in 2003-04. On an average, G-V shows the highest share of current deposits in the total deposits with 22.35 pc followed by G-II with 15.13 pc share. On yearly basis it is the highest in the year 2003-04 and fluctuations are maximum in G-IV with 17.61 pc of coefficient of variations. As current deposits are good source of income in the form of commission, overdraw charges etc, so decrease in the share of current deposits doesn't show a sound position of the bank deposits.

Empirical Estimates of Bank Profitability (Correlation Analysis)

Here, Correlation Coefficient matrix of the selected determinants of the profitability with the dependent variable profits as percentage of working funds is analyzed for all the bank groups and the whole bank industry.

Nationalized Banks (G-I)

Table XVI shows that variable X_6 (Non-Interest Income to Total Assets) and X_{14} (Saving Deposits to Total Deposits) has significant and positive correlation with the profitability of nationalized banks whereas X_8 (Net NPAs to Net Advances), X_{11} (Rural Branches to Total Branches) and X_{15} (Current Deposits to Total Deposits) have significant but negative correlation with the profitability. Other independent variables have insignificant correlation with the profitability.

From the table, it also emerges that some independent variables are also significantly correlated with each other. One of the variables X_{14} (Saving Deposits to Total Deposits) has significant correlation with six other independent variables i.e. X_2, X_3, X_8, X_{10}, X_{11} & X_{13} out of these, the correlation of X_{14} with X_{11} (-.99) i.e. rural branches to total branches is the highest. Similarly, X_{13} (Fixed Deposits to Total Deposits) has significant correlation with X_2, X_3, X_8, X_{10} & X_{11} from these correlation between X_{13} & X_{10} (Priority Sector Advances to Total Advances) is the highest i.e. -.99. X_{15} (Current Deposits to Total Deposits) has significant and high correlation with five other independent variables i.e. X_6, X_8, X_{11}, X_{13} & X_{14}. X_{11} (Rural Branches to Total Branches) has a significant correlation with X_2, X_3, X_6, X_8 & X_{10}. Similarly, X_8 (Net NPAs to Net Advances) and X_{10} (Priority Sector Advances to Total Advances) has significant correlation with other independent variables and X_{12} (Credit to Deposits) is significantly correlated only with X_7 (Burden to Total Assets) i.e. -.96. Overall, X_{15} (Current Deposits to Total Deposits) and X_6 (Non-Interest Income to Total Assets) has significantly high and positive correlation with the profitability while X_8 (Net NPAs to Net Advances) and X_{11} (Rural Branches to Total Branches) have significant but negative effect on the profitability of the major bank groups.

State Bank of India & Its Associates (G-II)

Table XVII shows that profitability of SBI Group is significantly but negatively correlated only with X_7 (Burden to Total Assets) i.e. -.97 & with X_8 ((Net NPAs to Net Advances) i.e. -.96 that means burden and net NPAs dominating in negatively affecting the profitability of this bank group.

The independent variables also are significantly correlated with other independent variables as shown by this table. X_{13} (Fixed Deposits to Total Deposits) has significant correlation with four other independent variables namely X_2, X_3, X_{10} & X_{12}, out of these the highest correlation is with X_2 & X_3 (.99). X_{12} (Total Credit to Total Deposits) is significantly correlated with X_2, X_3 & X_5 and X_{14} (Saving Deposits to Total Deposits) is significantly correlated with X_6 (.99), X_8 (-.99) & X_{11} (-.97). X_9 (Establishment Cost to Total Cost) and X_{11} has not significantly correlated even with a single variable. Overall, profitability of the SBI group is negatively affected by burden and NPAs where other variables have insignificant effect on their profitability.

Old Private Sector Banks (G-III)

From Table XVIII, it emerges that profitability of old private sector banks is significantly correlated only with non-interest income to total assets i.e. X_6 (.99) and burden to total assets i.e. X_7 (-.99). It is negatively correlated with burden that affects the profitability negatively whereas non-interest income is affecting the profitability positively. The correlation between profitability and other variables is insignificant.

Some independent variables like X_9 (Establishment Cost to Total Cost) is significantly correlated with $X_{3,}$ $X_{4,}$ $X_{8.}$ X_{11} (Rural Branches to Total Branches) is significantly correlated with X_3 (.99), X_8 (.99) & X_9 (-.96) and X_8 (Net NPAs to Net Advances) with X_3 & X_4 whereas other independent variables have no significant correlation with each other.

New Private Sector Banks (G-IV)

It is concluded from the Table XIV that profitability of new private sector banks is significantly and positively correlated with X_2 (Interest Earned to Total assets) whereas other variables are insignificant to affect the profitability.

As independent variable also have correlation with other independent variable but in this bank group only variable X_{10} (Priority Sector Advances to Total Advances) have a significant positive correlation with X_4 (Spread to Total Assets) i.e. .99, the other independent variables of this bank group have no significant correlation even with a single other independent variable. Overall profitability of this bank group has a greater contribution from interest earned as it is highly correlated with interest earned to total assets ratio.

Foreign Banks (G-V)

It is concluded from the Table XIV that profitability of foreign banks is insignificantly correlated with all the independent variables. It is observed that not even a single variable has significant correlation with the profitability of this bank group.

On the other side, some independent variables are significantly correlated with other independent variables as shown by this table. X_8 (Net NPAs to Net Advances) has significant and positive correlation with X_2 (.99). X_9 (Establishment Cost to Total Cost) has significant and positive correlated with X_6 (Non-Interest Income to Total Assets). X_{12} (Total Credits to Total Deposits) is significantly correlated with X_7 (-.96) & X_9 (.98). X_{14} (Saving Deposits to Total Deposits) is significantly but negatively correlated with X_3 (-.96) & X_{13} (-.97). X_{13} & X_{15} both are significantly correlated with X_2 (.96) & X_{13} (-.98) respectively. Overall, all the variables have insignificant effect on the profitability of foreign banks.

Bank Industry

Table XXI shows that profitability at the industry level is significantly and positively correlated with $X_{6\text{ i.e.}}$ .99 (Non-Interest Income to Total Assets) and $X_{14\text{ i.e.}}$ .96 (Saving Deposits to Total Deposits) but negatively with X_8 (Net NPAs to Net Advances) and X_{11} (Rural Branches to Total Branches).

On the other side, some independent variables are significantly correlated with other independent variables also. Variable X_{14} (Saving Deposits to Total Deposits) have significant and positive correlation with X_6 (.96) & negative but significant correlation with X_3 (-.96) & X_8 (-1.00) whereas, X_{12} (Total Credits to Total Deposits) is significantly but negatively correlated with X_7 (-.99) & X_{11} (-.95). X_8 (Net NPAs to Net Advances) has significant and positive correlation with X_3 (Interest Expended to Total Assets) but negatively correlated with X_6 (-.96). Other variables like $X_{11,}$ X_{13} & X_5 are significantly correlated with $X_{6,}$ X_3 & X_4 respectively. Overall, the profitability of the whole bank industry is significantly and positively affected by non-interest income and saving deposits but NPAs and rural branches affect the profitability negatively. The other variables have ignorable affect on the profitability of the industry.

Regression Analysis – R^2

Table XXII reveals the results of R^2, which represents to what extent the changes in the independent variables affect, the profitability of the bank groups and industry. All the variables witnessed more than 50 pc changes in the profitability of G-I except X_4 & X_5. X_6 and X_{15} have the highest effect i.e. 99 pc on profitability of this bank group.

In case of G-II the variables X_7 as much as 94 pc variations and X_8 explain 93 pc variations in the profitability. Whereas the variable X_4 has the least effect i.e. only 11 pc variations in the profitability.

On the other side, in case of G-III, X_7 explains as much as 98 pc of the variations in the profitability. This shows that the increase/decrease in burden as percentage of total assets might have significantly contributed towards the decline/increment in the profitability.

Whereas, in G-IV, X_2 explains as much as 98 pc variations in profitability and shows that during this time period increase in interest earned have significant contribution towards increasing profitability.

G-V shows that the profitability is fluctuated as much as 87 pc by X_4 that means variations in spread are affecting the profitability of this group by 87 pc whereas X_5 explains 86 pc variations in the profitability.

At industry level, variable X_{11} explains as much as 96 pc of the variations in the profitability followed by variable X_8 with 92 pc variations X_{14} with 91 pc variations. Hence, we can say that results of this regression analysis are exactly in conformity with the results of correlation analysis.

5. SUMMARY OF CONCLUSIONS

We may conclude from the above analysis that in the post liberalized and globalized era new dimensions in profitability behaviour of major bank groups are emerging. E-banks i.e. G-V is leading group in profitability behaviour. G-IV & V are enjoying maximum benefits of liberalized and globalized policies.

Overall, rural branches and NPAs are negatively affecting the profitability of the whole banking industry. At present, the public sector banks should give more importance to control NPAs and should modify the different strategies. All the bank groups should concentrate more on fee-based activities in downswing era of falling rate of interest. The public sector banks should follow new technology to live in the competitive environment to line up the international standards.

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Annexure - I

Table-I: Net Profits As Percentage of Working Funds (Y_1)

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	0.33	0.69	0.98	1.19	**0.80**	**0.37**	**46.25**
G-II	0.55	0.77	0.91	1.02	**0.81**	**0.20**	**24.69**
G-III	0.62	1.08	1.17	1.16	**1.01**	**0.26**	**25.74**
G-IV	0.81	0.41	0.90	0.84	**0.74**	**0.22**	**29.73**
G-V	0.92	0.73	1.56	1.50	**1.18**	**0.42**	**35.59**
Industry	0.50	0.71	1.00	1.12	**0.83**	**0.28**	**33.73**
Average	**0.65**	**0.74**	**1.10**	**1.14**			
S.D.	**0.23**	**0.24**	**0.28**	**0.24**			
C.V. (%)	**35.38**	**32.43**	**25.45**	**21.05**			

Table-II: Interest Earned As Percentage of Total Assets (X_2)

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	9.09	8.78	8.39	7.43	**8.42**	**0.72**	**8.55**
G-II	8.47	8.62	8.26	7.46	**8.20**	**0.52**	**6.34**
G-III	9.54	9.35	9.30	8.50	**9.17**	**0.46**	**5.04**
G-IV	8.17	4.52	8.91	7.86	**7.36**	**1.95**	**26.49**
G-V	8.28	8.47	7.75	6.40	**7.72**	**0.93**	**12.05**
Industry	8.81	8.25	8.28	7.29	**8.16**	**0.63**	**7.72**
Average	**8.71**	**7.95**	**8.52**	**7.53**			
S.D.	**0.58**	**1.94**	**0.60**	**0.76**			
C.V. (%)	**6.66**	**24.40**	**7.04**	**10.09**			

Table-III: Interest Expended As Percentage of Total Assets

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	6.19	6.03	5.39	4.38	**5.50**	**0.82**	**14.90**
G-II	5.68	5.91	5.50	4.62	**5.42**	**0.56**	**10.33**
G-III	6.97	6.93	6.03	4.95	**6.22**	**0.95**	**15.03**
G-IV	6.03	3.33	6.43	4.68	**5.12**	**1.41**	**27.54**
G-V	5.98	5.93	4.33	3.13	**4.84**	**1.38**	**28.51**
Industry	6.05	5.73	5.51	4.43	**5.43**	**0.70**	**12.89**
Average	**6.17**	**5.63**	**5.54**	**4.35**			
S.D.	**0.48**	**1.35**	**0.79**	**0.71**			
C.V. (%)	**7.78**	**23.98**	**14.26**	**16.32**			

Table-IV: Spread As Percentage of Total Assets

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	2.90	2.75	3.00	3.05	**2.93**	**0.13**	**4.44**
G-II	2.79	2.71	2.76	2.84	**2.77**	**0.15**	**5.05**
G-III	2.57	2.42	3.27	3.55	**2.95**	**0.54**	**18.31**
G-IV	2.14	1.19	2.48	3.18	**2.25**	**0.83**	**36.89**
G-V	2.30	2.54	3.42	3.27	**2.88**	**0.55**	**19.10**
Industry	2.76	2.52	2.77	2.86	**2.73**	**0.15**	**5.49**
Average	**2.54**	**2.32**	**2.99**	**3.18**			
S.D.	**0.32**	**0.56**	**0.38**	**0.26**			
C.V. (%)	**12.60**	**24.14**	**12.71**	**8.18**			

Table-V: Non-Interest Expenditure As Percentage of Total Assets

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	3.71	3.54	3.69	3.73	**3.67**	**0.08**	**2.04**
G-II	3.53	3.28	3.47	3.80	**3.52**	**0.21**	**5.97**
G-III	3.07	3.67	3.54	3.40	**3.42**	**0.26**	**7.60**

G-IV	2.67	1.91	3.37	3.26	**2.80**	**0.67**	**23.93**
G-V	5.40	5.30	4.41	4.77	**4.97**	**0.46**	**9.26**
Industry	3.67	3.40	3.63	3.74	**3.61**	**0.15**	**4.16**
Average	**3.68**	**3.54**	**3.70**	**3.79**			
S.D.	**1.05**	**1.21**	**0.42**	**0.59**			
C.V. (%)	**28.53**	**34.18**	**11.35**	**15.57**			

Table-VI: Non-Interest Income As Percentage of Total Assets

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	1.14	1.49	1.67	1.86	**1.54**	**0.31**	**20.13**
G-II	1.30	1.34	1.62	1.99	**1.56**	**0.32**	**20.51**
G-III	1.22	2.35	2.45	2.29	**2.08**	**0.58**	**27.88**
G-IV	1.35	1.20	2.74	2.44	**1.93**	**0.77**	**39.90**
G-V	2.38	2.90	2.88	3.20	**2.84**	**0.34**	**11.97**
Industry	1.30	1.56	1.86	2.01	**1.68**	**0.32**	**19.05**
Average	**1.47**	**1.86**	**2.27**	**2.36**			
S.D.	**0.51**	**0.74**	**0.59**	**0.53**			
C.V. (%)	**34.69**	**39.78**	**25.99**	**22.46**			

Table-VII: Burden As Percentage of Total Assets

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	2.57	2.05	2.02	1.87	**2.13**	**0.31**	**14.55**
G-II	2.23	1.94	1.85	1.81	**1.96**	**0.19**	**9.69**
G-III	1.85	1.32	1.09	1.11	**1.34**	**0.35**	**26.12**
G-IV	1.32	0.71	0.63	0.82	**0.87**	**0.31**	**35.63**
G-V	3.02	2.40	1.53	1.57	**2.13**	**0.72**	**33.80**
Industry	2.37	1.84	1.77	1.73	**1.93**	**0.30**	**15.54**
Average	**2.20**	**1.68**	**1.42**	**1.44**			
S.D.	**0.65**	**0.67**	**0.57**	**0.46**			
C.V. (%)	**29.55**	**39.88**	**40.14**	**31.94**			

Table-VIII: Net NPAs As Percentage of Net Advances

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	7.01	6.01	4.74	3.13	**5.23**	**1.68**	**32.18**
G-II	6.27	5.45	4.12	2.71	**4.64**	**1.56**	**33.62**
G-III	7.30	7.10	5.50	3.80	**5.93**	**1.63**	**27.49**
G-IV	3.10	4.90	4.60	2.40	**3.75**	**1.20**	**32.00**
G-V	1.82	1.89	1.76	1.49	**1.74**	**0.17**	**9.77**
Industry	6.20	5.50	4.40	2.90	**4.75**	**1.44**	**30.32**
Average	**5.10**	**5.07**	**4.14**	**2.71**			
S.D.	**2.48**	**1.96**	**1.42**	**0.86**			
C.V. (%)	**19.61**	**38.66**	**34.30**	**31.73**			

Table-IX: Establishment Cost As Percentage of Total Cost

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	21.19	18.21	18.19	18.81	**19.10**	**1.42**	**7.43**
G-II	21.08	16.36	16.72	18.05	**18.05**	**2.15**	**11.91**
G-III	12.11	11.82	12.92	13.78	**12.66**	**0.88**	**6.95**
G-IV	3.64	4.88	4.40	5.87	**4.70**	**0.93**	**19.79**
G-V	6.94	9.79	10.16	11.14	**9.51**	**1.80**	**18.93**
Industry	18.36	15.64	15.23	16.22	**16.36**	**1.39**	**8.50**
Average	**12.99**	**12.21**	**12.48**	**13.53**			
S.D.	**8.02**	**5.31**	**5.51**	**5.31**			
C.V. (%)	**61.74**	**43.49**	**44.15**	**39.25**			

Table-X: Priority Sector Advances As Percentage of Total Advances

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	31.48	31.38	33.68	36.25	**33.20**	**2.30**	**6.93**
G-II	29.06	28.93	28.94	30.81	**29.44**	**0.92**	**3.13**
G-III	32.39	31.52	29.93	31.56	**31.35**	**1.03**	**3.29**
G-IV	15.49	8.62	18.18	24.16	**16.61**	**6.44**	**38.77**
G-V	23.77	22.42	21.95	23.23	**22.84**	**0.81**	**3.55**
Industry	29.35	27.44	29.51	32.06	**29.59**	**1.90**	**6.42**
Average	**26.44**	**24.57**	**26.54**	**29.20**			
S.D.	**6.98**	**9.65**	**6.31**	**5.45**			
C.V. (%)	**26.40**	**39.28**	**23.78**	**18.66**			

Table-XI: Rural Branches As Percentage of Total Branches

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	42.70	42.44	41.94	41.56	**42.16**	**0.51**	**1.21**
G-II	40.67	40.52	40.51	40.21	**40.48**	**0.19**	**0.47**
G-III	30.92	30.41	29.14	27.74	**29.55**	**1.42**	**4.81**
G-IV	12.92	10.22	8.47	7.86	**9.87**	**2.72**	**27.56**
G-V	-	-	-	-	**-**	**-**	**-**
Industry	41.43	40.23	39.59	38.98	**40.06**	**1.05**	**2.62**
Average	**31.80**	**30.90**	**30.02**	**29.34**			
S.D.	**13.60**	**14.76**	**15.46**	**15.61**			
C.V. (%)	**42.77**	**47.77**	**51.50**	**53.20**			

Table-XII: Total Credit As Percentage of Total Deposits

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	48.34	51.09	52.21	51.92	**50.89**	**1.77**	**3.48**

G-II	48.18	46.87	48.38	50.94	**48.59**	**1.70**	**3.50**
G-III	50.70	51.61	54.07	53.03	**52.35**	**1.49**	**2.85**
G-IV	47.96	87.46	77.34	70.97	**70.93**	**16.75**	**23.61**
G-V	65.48	72.48	75.27	75.87	**72.28**	**4.76**	**6.59**
Industry	49.40	53.66	54.55	54.86	**53.12**	**2.53**	**4.76**
Average	**52.13**	**61.90**	**61.45**	**60.55**			
S.D.	**7.55**	**17.42**	**13.73**	**11.90**			
C.V. (%)	**14.48**	**28.14**	**22.34**	**19.65**			

Table-XIII: Fixed Deposits As Percentage of Total Deposits

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	64.60	64.54	63.78	63.22	**64.04**	**0.66**	**1.03**
G-II	63.36	63.49	63.03	60.68	**62.64**	**1.32**	**2.11**
G-III	75.77	75.21	75.73	74.85	**75.39**	**0.44**	**0.58**
G-IV	76.39	79.19	76.46	66.86	**74.73**	**5.40**	**7.23**
G-V	70.42	67.52	66.14	56.93	**65.25**	**5.83**	**8.93**
Industry	66.03	66.16	65.57	63.38	**65.29**	**1.30**	**1.99**
Average	**70.11**	**69.99**	**69.03**	**64.51**			
S.D.	**6.07**	**6.89**	**6.56**	**6.82**			
C.V. (%)	**8.66**	**9.84**	**9.50**	**10.57**			

Table-XIV: Saving Deposits As Percentage of Total Deposits

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	24.31	24.81	26.05	26.99	**25.54**	**1.21**	**4.74**
G-II	20.46	21.33	22.48	24.65	**22.23**	**1.81**	**8.14**
G-III	13.86	14.70	14.96	15.90	**14.86**	**0.84**	**5.65**
G-IV	9.27	9.60	10.79	14.26	**10.98**	**2.28**	**20.77**
G-V	9.50	11.38	12.97	15.76	**12.40**	**2.65**	**21.37**
Industry	20.72	21.30	22.30	23.72	**22.01**	**1.31**	**5.95**
Average	**15.48**	**16.36**	**17.45**	**19.51**			
S.D.	**6.70**	**6.51**	**6.52**	**5.85**			
C.V. (%)	**43.28**	**39.79**	**37.36**	**29.98**			

Table-XV: Current Deposits As Percentage of Total Deposits

(Percent)

Bank Groups	2000-01	2001-02	2002-03	2003-04	Average	S.D.	C.V. (%)
G-I	11.09	10.65	10.17	9.79	**10.42**	**0.57**	**5.47**
G-II	16.18	15.17	14.49	14.67	**15.13**	**0.76**	**5.02**
G-III	10.37	10.09	9.31	9.25	**9.76**	**0.56**	**5.74**
G-IV	14.34	14.23	12.75	18.88	**15.05**	**2.65**	**17.61**
G-V	20.08	21.10	20.89	27.31	**22.35**	**3.34**	**14.94**
Industry	13.25	12.75	12.13	12.90	**12.76**	**0.47**	**3.68**
Average	**14.41**	**14.25**	**13.52**	**15.98**			
S.D.	**3.96**	**4.42**	**4.60**	**7.45**			
C.V. (%)	**27.48**	**31.02**	**34.02**	**46.62**			

Table-XXII: Impact of Various Selected Variables on Group Profitability of Major Bank Groups - R^2

Variables	G-I	G-II	G-III	G-IV	G-V	Industry
Y_1	1	1	1	1	1	1
X_2	0.86	0.57	0.34	0.98	0.59	0.74
X_3	0.83	0.52	0.39	0.76	0.80	0.76
X_4	0.40	0.11	0.35	0.73	0.87	0.24
X_5	0.05	0.22	0.71	0.89	0.86	0.14
X_6	0.99	0.79	0.97	0.54	0.28	1.00
X_7	0.87	0.94	0.98	0.04	0.73	0.76
X_8	0.95	0.93	0.43	0.28	0.54	0.92
X_9	0.53	0.43	0.28	0.01	0.34	0.47
X_{10}	0.79	0.41	0.53	0.68	0.07	0.42
X_{11}	0.96	0.80	0.53	0.05	-	0.96
X_{12}	0.84	0.39	0.68	0.29	0.45	0.80
X_{13}	0.86	0.55	0.29	0.27	0.42	0.61
X_{14}	0.94	0.87	0.70	0.17	0.58	0.91
X_{15}	0.99	0.89	0.68	0.02	0.28	0.33