A Research upon Advanced Technology Lead to Superior Financial Performance in Indian Commercial Banks

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Abstract – While the efficiency of financial markets is widely and extensively studied, little has been done to date to develop our under-standing of what drives the performance of the institutions that operate in these markets. Unavoidably, however, the efficient operation of financial intermediaries - banks, insurance and pension fund firms, government agencies, and so on - is instrumental for the efficient functioning of the financial system.

It has been a matter of debate whether Technology provides better financial results and improves productivity. The present paper attempts to study the inter-group comparison of financial performance of Indian banks by classifying the banks on the basis of usage of Technology. Further, for the purpose of temporal comparison, the period for the study has been divided into two parts, i. e. low technology induction period and high technology induction period. Findings of the paper show that the fully it oriented banks are financially better off than the partially it oriented banks. Moreover, the performance of almost all the banks under study has tremendously improved in the high technology induction period. However, for the Indian banking industry, the correlation between Technology induction and financial productivity is negative though statistically insignificant and low.

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INTRODUCTION

The financial services sector is perhaps the most significant economic sector in modern societies. In the more advanced service economies - like the United States' - the financial sector employs more people than the manufacturing of apparel, automobiles, computers, pharmaceuticals, and steel combined; 5.4 million people are employed by financial ser- vices firms in the U.S. Financial services account for almost 5% of the Gross Domestic Product in the U.S., about 5.5% in Germany, 3.5% in Italy, and similar statistics are found for other European Union economies with highly developed financial intermediaries. The Japanese financial sector accounted for almost 9% of the GDP until 1993 (recently it has experienced severe decline), and the Singapore sector is 6.5% of the GDP. (Data are obtained as the sum of all entries in the rows of Table 5 of Demirguc-Kunt and Levine. 1996.) In smaller economies – especially those that aspire to a significant presence in the international markets through offshore banking activities - the financial services sector could be even more significant. The Swiss financial sector accounts for over 9% of the country's GDP. Cyprus - a small Mediterranean economy offering off-shore banking services to the former Soviet Union states and Eastern European countries - has more than 18% of its GE)P arising from financial and business services, and these sectors employ almost 10% of the population. Eighteen percent of the Israeli GDP is due to the combined financial and business services sectors, which employ 10% of the population.

For decades, it has been a matter of debate whether Technology/Information Technology (it) provides better financial results. To date there is no conclusive evidence that spending on it improves financial performance.

The scholars call it the 'it Productivity Paradox.' The term 'paradox' indicates a negative correlation between it investments and productivity. Morrison and Berndt (1990) found that additional it investments contributed negatively to financial productivity. They concluded that the estimated marginal benefits of investment in it are less than the estimated marginal costs. On similar lines, studies by Strassman (1990) and Dos Santos, Peffers andMauer (1993) have also concluded that there is an insignificant correlation between it spending and profitability measures, which means it spending is unproductive.

There are, on the other hand, studies which show that there is no correlation between it investment and financial productivity (Loveman 1994; Barua et al. 1991). Jordan and Katz (1999) found that even the most successful banks offering Internet banking were able to serve only a relatively small share of their customer base with it channels. Thus, it was difficult to determine whether Internet banking has a significant impact on bank performance. And there are studies which have found significant contributions from it toward financial growth (Lichtenberg 1995; Brynjolfsson and Hitt 1996). Most of these firm-level studies have been restricted to the manufacturing sector (that too, outside India), in large part owing to lack of firm-level data from the service sector.

There are studies which have drawn on the statistical correlation between it spending and profitability or stock value for their analyses and they have concluded that the impact of it on productivity is positive ((Brynjolfsson 1993; Wilson 1993). It is apparent that most of the studies relating to the contribution of it towards productivity have been restricted to the manufacturing industry. The problem is particularly relevant to the banking industry, which is the focus of the present study. In India, there are notmany studies that have focused on it contribution in the banking sector. Mariappan (2006) found that the it revolution has brought stunning changes in the business environment. No other sector has been influenced by advances in technology as much as banking and finance, as a result, the Indian banking has a totally new face today. Similarly, Kamakodi (2007) examines how computerization has influenced the banking habits and preferences of Indian bank customers and what factors influence these preferences. He found that change of residence, salary account and non-availability of the technology based services were the three main reasons for shifting to another bank. Further in the technology direction, Patnaik (2004) found that shared atms are taking place and they are mutually beneficial. This mushrooming new dimension of shared atms has increased the non-interest income of the banks. This is the most popular e-channel and widely used in all the bank groups. Paul andMukherjee (2007) explained that cash management in atms is a new concept which facilitates the banks to source cheaper funds and serve its clients more efficiently.

Another significant area which has emerged recently and been explored by the researchers is that of risk management in the banks. Madhavankutty (2007) concludes that the banking system in India has attained enough maturity and is ready to address prudential management practices as comprehensively as possible. Similarly, Mohan (2003) highlights the need for each bank to have in place the technical systems and managements processes necessary not only to identify the risks associated with its activities, but also to effectively measure, monitor and control npa (Non-Performing Asset) levels.

LITERATURE REVIEW

Roma Mitra, Shankar Ravi (2008), A stable and efficient banking sector is an essential precondition to increase the economic level of a country. This paper tries to model and evaluate the efficiency of 50 Indian banks. The Inefficiency can be analyzed and quantified for every evaluated unit. The aim of this paper is to estimate and compare efficiency of the banking sector in India. The analysis is supposed to verify or reject the hypothesis whether the banking sector fulfils its intermediation function sufficiently to compete with the global players.

The results are insightful to the financial policy planner as it identifies priority areas for different banks, which can improve the performance. This paper evaluates the performance of Banking Sectors in India.

B.Satish Kumar (2008), in his article on an evaluation of the financial performance of Indian private sector banks wrote Private sector banks play an important role in development of Indian economy. After liberalization the banking industry underwent major changes. The economic reforms totally have changed the banking sector. RBI permitted new banks to be started in the private sector as per the recommendation of Narashiman committee. The Indian banking industry was dominated by public sector banks. But now the situations have changed new generation banks with used of technology and professional management has gained a reasonable position in the banking industry.

Brijesh K. Saho, Anandeep Singh (2007), this paper attempts to examine, the performance trends of the Indian commercial banks for the period: 1997-98 - 2004-05. Our broad empirical findings are indicative in many ways. First, the increasing average annual trends in technical efficiency for all ownership groups indicate an affirmative gesture about the effect of the reform process on the performance of the Indian banking sector. Second, the higher cost efficiency accrual of private banks over nationalized banks indicate that nationalized banks, though old, do not reflect their learning experience in their cost minimizing behavior due to X-inefficiency factors arising from government ownership. This finding also highlights the possible stronger disciplining role played by the capital market indicating a strong link between market for corporate control and efficiency of private enterprise assumed by property right hypothesis. And, finally, concerning the scale elasticity behavior, the technology and market-based results differ significantly supporting the

empirical distinction between returns to scale and economies of scale, often used interchangeably in the literature.

Vradi, Vijay, Mauluri, Nagarjuna (2006), in his study on´ Measurement of efficiency of bank in India concluded that in modern world performance of banking is more important to stable the economy .in order to see the efficiency of Indian banks we have see the fore indicators i.e. profitability, productivity, assets, quality and financial management for all banks includes public sector, private sector banks in India for the period 2000 and 1999 to 2002-2003. For measuring efficiency of banks we have adopted development envelopment analysis and found that public sectors banks are more efficient then other banks in India.

LIBERALISATION

In the early 1990s, the then Narsimha Rao government embarked on a policy of Liberalization, licensing a small number of private banks. These came to be known as New Generation tech-savvy banks, and included Global Trust Bank (the first of such new generation banks to be set up), which later amalgamated with Oriental Bank of Commerce, Axis Bank (earlier as UTI Bank), ICICI Bank and HDFC Bank. This move, along with the rapid growth in the economy of India, revitalized the banking sector in India, which has seen rapid growth with strong contribution from all the three sectors of banks, namely, government banks, private banks and foreign banks.

The next stage for the Indian banking has been set up with the proposed relaxation in the norms for Foreign Direct Investment, where all Foreign Investors in banks may be given voting rights which could exceed the present cap of 10%, at present it has gone up to 74% with some restrictions.

Currently (2007), banking in India is generally fairly mature in terms of supply, product range and reach-even though reach in rural India still remains a challenge for the private sector and foreign banks. In terms of quality of assets and capital adequacy, Indian banks are considered to have clean, strong and transparent balance sheets relative to other banks in comparable economies in its region. The Reserve Bank of India is an autonomous body, with minimal pressure from the government. The stated policy of the Bank on the Indian Rupee is to manage volatility but without any fixed exchange rate-and this has mostly been true.

METHODOLOGY

The financial performance of a bank can be measured in a number of ways. The Operational Profitability is the most widely used indicator to judge the financial position of a business. For measuring the profitability of commercial banks, various banking and financial ratios have been computed. To measure the extent of a technology induction quantitatively, technology index was formulated for each bank group. An average figure based on atms, Fully Computerised Branches, Internet Banking Branches,Mobile Banking Branches and Tele-banking Branches for each bank for each year starting from 1996–1997 till 2007–2008 has been computed and averaged for each bank group. The numbers so arrived at represent, in percentage as a score, the extent of technology induction for each bank group.

Thus, Technology Index of a Bank = [(Number of atms/Total Branches) + (Number of Fully Computerised Branches/Total Branches) + (Number of Internet Banking Branches/Total Branches) + (Number of Mobile Banking Branches/Total Branches) + (Number of Tele-Banking Branches/Total Branches)] × 100.

On the basis of usage of technology rbi (Reserve Bank of India – India's Central Bank) recognizes different bank groups as 'Partially it-oriented Banks' or 'Fully it-oriented Banks.' 'Fully it-oriented Banks' are 100 per cent automated banks that are providing their customers with access to all the technological channels, such as atms, Credit Cards, Ebanking, Mobile Banking etc., whereas 'Partially it-oriented Banks' are those banks which are still in the process of automation and are not providing their customers with all the technological channels to perform banking operations.

TECHNOLOGY AND FINANCIAL EFFICIENCY

This section highlights the impact of technology and its various channels on banks' performance and productivity.

Group	Average	Burden Ratios		
		NIE%AAS	NII%AAS	B%AAS
Group I	X_1	3.55	1.07	2.48
	X_2	3.24	1.25	1.99
	Mean Gap	0.31	0.18	0.49
	SE	0.41	0.39	0.15
	t-value	1.22	0.73	5.28
	LOS	—	—	**
Group II	X_1	3.68	1.37	2.31
	X_2	3.58	1.40	2.18
	Mean Gap	0.10	0.03	0.13
	SE	0.20	0.32	0.35
	t-value	0.80	0.14	0.60
	LOS	—	—	—

Table 1 Burden Ratios of Indian commercial banks.

The ratio of computerized branches as a Percentage of total branches in the new private sector and foreign banks is 100 % in both the Lowtechnology induction period and the High-technology induction period.

But this ratio was lowest in the case of Group i banks in the low technology era, i. e. 18.16%; however this ratio increased to 81.42%on an average at the end of the high technology period. In the case of sbi group banks this ratio increased to 97.14% from 76.75% average in the Lowtechnology induction period. In the high-technology induction period this ratio ismore consistent in Group ii banks (where cv is only 2.67 %). ATM is the most popular e-channel and the maximum bank customers use this e-channel. The ratio of ATMS as a Percentage of Total Branches increased very sharply in all the bank groups in the high-technology induction period. In the high-technology induction period this ratio is more consistent in Group i banks (where cv is only 11.90 %).

However, the maximum rise is observed in Group iv banks and similar is the case of Group iii banks. Overall, in the Indian Banking Industry, this ratio has increased from average 44.82% in the low-technology induction period to 82.63 % in the High-technology induction period.

In India, after ATMS, Internet banking is the biggest and most popular technological channel for banking operations. This ratio represents the extent of branches providing internet banking services.

In India, Mobile banking – also known as sms Banking – is used mainly for balance checking, billing and other account related information by the customers. Tele-banking provides the access to limited banking operations through telephone. The coefficient of variations (cv) is also less in the case of fully it-oriented banks in both the low and high technology induction periods, which denotes steadier growth.

CONCLUSION

It is right time to take suitable and stringent measures to get rid of NPA problem. An efficient management information system should be developed. The bank staff involved in sanctioning the advances should be trained about the proper documentation and charge of securities and motivated to take measures in preventing advances turning into NPA. Public banks must pay attention on their functioning to compete private banks. Banks should be well versed in proper selection of borrower/project and in analyzing the financial statement In the present study, it is found that the partially it oriented banks are less profitable than the fully it oriented banks. However, in terms of overall productivity and profitability their performance is gradually improving over the recent years. Foreign banks are on the top in terms of the overall productivity and profitability parameters (which supports the findings of Sarkar et al, 1998). Analyzing further, it is found that sisi and associate banks (Partially it oriented banks) are ranked second after the foreign Banks (Fully it oriented banks) in terms of the spread ratios, but they have higher Burden ratios, which makes them less profitable as compared to the Private Banks. The Private Banks (Fully it oriented banks) are more profitable as they have the lowest financial burden in the two periods. Moreover, they have a high proportion of non-interest income and a comparatively low level of non-interest expenditure ratios as compared to the s b 1 group of banks. The Interest earned ratios are declining over the years for all groups of banks because over the last few years rbi (Central bank) has pursued the policy of lowering the interest rates. Still, foreign Banks were able to have highest Interest earned ratios in the low technology era as compared to the Indian Banks. In the high technology period, the sbi group has the highest Interest earned ratio. The Interest earned ratio for the Indian Banks has almost been the same across all the categories. The Interest paid ratio is the lowest for the foreign Banks (followed by private sector banks) in the high technology era. This can be attributed to the effective and efficient fund management by these banks through which they were able to raise funds at lower costs and use them for profitable avenues.

Overall, for the banking industry, the correlation between financial productivity and the Technology index is low and negative and statistically insignificant. The co-efficient of determination indicates that the effect of other factors is more than the effect of Technology on financial productivity. These factors may be liberalization of interest rates, managerial effectiveness, risk management, internal and external policies of the banks and so on. Finally, we can conclude that the effect of it on financial productivity of banks is negative, though not much.

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