Chapter 3

Review of Literature

3.1 REVIEW OF LITERATURE

There were a good number of literature and studies relating to the performance and efficiency of the commercial banks in India. A brief review of some of the selected works during the period 1963 to 2008 is given here.

Kumar (2008) had applied the DEA technique on the data of Indian Public Sector Banks for the year 2005 to study the relationship between technical efficiency and profitability. Three inputs and two outputs were used in the DEA technique to measure the efficiency. The study found that 48 percent of the public sector banks as inefficient due to underutilization of resources and wastages. The study also observed that SBI group has outperformed Nationalized Bank group.

Ketkar and Ketkar (2008) in their paper “Performance and Profitability of Indian Banks in the Post Liberalization Period” has used data envelopment analysis to identify the banks that are on the output frontier given the various inputs at their
disposal. He had used two specifications of inputs and outputs. In the first specification, number of bank branches, equity, and total operating expenses are input factors while loans; non-interest income and deposits are output factors. In the second specification, inputs include number of bank branches, equity, total operating expenses and deposits while output includes loans and non-interest income. The study has used data from 1997 to 2004 and found that relative efficiency of banks by ownership does not critically depend upon whether deposits are treated as an input or output. In general, foreign banks were found to be most efficient followed by new private banks.

Mahesh and Meenakshi\textsuperscript{3} (2007) in their study have examined the changes in Total Factor Productivity (TFP) of Indian Commercial banks for the period 1985-2004, using Malmquist Productivity Index Approach. The findings have shown that TFP has improved significantly after liberalization across bank groups. Foreign banks have experienced the highest TFP growth for the total study period. The results also suggest that, on an average, the TFP growth is more due to technological change than efficiency change.

Ram Mohan\textsuperscript{4} (2007) has observed that public sector banks have shown a remarkable transformation in the post reform period. There has been a trend towards convergence in performance between public sector and private sector banks.
Debasish (2006) in his paper “Efficiency Performance of Indian Banking—Use of Data Envelopment Analysis” has evaluated the performance of banking sector in India over the period 1997-2004. He has used the output oriented Charnes, Cooper and Rhodes model of Data Envelopment Analysis (DEA). The analysis uses nine input variables and seven output variables and finds foreign owned banks as most efficient. New private sector banks are found to be more efficient than older ones and showed an increasing trend in average efficiency.

Ramsastri and Samuel (2006) in their paper “Banking Sector in India, 1980-2005: What the Annual Accounts Speak?” have analyzed the trends in important banking indicators for the banking sector as a whole and for different groups. The study finds that:

1. The public sector banks continued to play a very prominent role in both deposit mobilization and credit disbursal even after implementation of reforms since 1991. The entry of private sector banks has altered this trend to some extent since nineties.

2. There has been a change in the composition of deposits, with a clear shift in favour of term deposits whereas demand deposits witnessed a decline.

3. All banks are witnessing an increase in non-interest income that constitutes to profit.
(4) Public sector banks have been spending more than sixty percent of operating expenses in wages while private sector and foreign banks have reduced their wage component in operating expenses.

(5) In post-reform phase, public sector banks have improved significantly though it is still lower as compared to foreign banks.

Sinha and Chatterjee\(^7\) (2006) in their study assessed the relative cost efficiency position of 30 commercial banks for the years 1996-97, 1998-99, 2000-01 and 2002-03 using Data Envelopment Analysis. The study found that the cost efficiency of the banking sector improved during the period when non-interest income is taken as the output indicator whereas on taking loan as output indicator the result was not same. Again, it is observed that the private sector commercial banks have an edge over the public sector banks in the matter of generating fee-based income which is attributed to the superior technical efficiency of the private sector banks.

Chatterjee\(^8\) (2006) in their work has attempted to assess the inefficiency of banks in India during the post reform period 1995-96 to 2001-02 by adopting a parametric approach. He has found that cost inefficiency of domestic banks in the post reform period is not very high and the inefficiency has declined over the period of study. He has also found that public sector banks have slightly higher inefficiency in comparison to others.
Chakrabarti and Chawla\textsuperscript{9} (2005) in their study “Bank Efficiency in India since the Reforms – An Assessment” have applied the popular methodology of Data Envelopment Analysis to evaluate the relative efficiency of Indian Banking during the period 1990-2002. Their findings suggest that on a ‘value’ basis, the foreign banks, as a group, have been considerably more efficient than all other bank groups, followed by the Indian private banks. From a ‘quality’ perspective however, the Indian private sector banks sector banks dominate the foreign banks.

Galagedera and Edisuriya\textsuperscript{10} (2005) in their paper “Performance of Indian Commercial Banks (1995-2002): An Application of Data Envelopment Analysis and Malmquist Productivity Index”, have investigated the efficiency using data envelopment analysis and productivity growth using Malmquist index in a sample of Indian commercial banks over the period 1995-2002. Using total deposits and operating expenses as input and loans and other earning assets as output in the DEA, they observed no significant growth in productivity during the study period. The rate of increase in technical efficiency though small is likely to be due to scale efficiency compared to managerial efficiency. In general, smaller banks are less efficient and highly DEA efficient banks have a high equity to assets and high return to average equity ratios. There has been no growth in productivity in private sector banks whereas the public sector banks appear to demonstrate a modest positive change through 1995-2002. Technological change in public sector banks reveals a growth while the private sector banks experienced a negative growth of almost the same magnitude.
Sathye\(^\text{11}\) (2005) has examined the impact of privatization in bank performance and efficiency using data of banks in India for the five year period 1998-2002. The study has found that partially privatized banks have performed better as compared to the fully public sector banks in respect of certain financial performance and efficiency parameters. No significant performance or efficiency difference was seen in these two cohorts of banks.

Shanmugam and Das\(^\text{12}\) (2004) in their paper "Efficiency of Indian Commercial Banks during the Reform Period" has measured the technical efficiency of banks in four different ownership groups in India during the reform period 1992-1999. It employs the stochastic frontier function methodology. The results indicate that the efficiency of raising interest margin is time invariant while the efficiencies of raising other outputs- non-interest income, investments and credits are time varying. The State Bank group and foreign banks are more efficient than counterparts. The reform period witnessed a relatively high efficiency for augmenting investments, which is consistent with economic growth objective of the reform measures.

Chodhuri and Tripathy\(^\text{13}\) (2004) have made an attempt to measure the bank performance by applying DEA. In their study banks were ranked on the basis of a set of indicators namely, profitability, financial management, growth, productivity and liquidity. The result of this study shows that most of the banks form efficient frontier in profitability and financial indicators compared to productivity, growth
and liquidity indicators. This means banks are not emphasizing more on measures like productivity, growth and liquidity compared to profitability and financial performance. The study is based on performance of banks during 1999-2000.

Reddy\textsuperscript{14} (2004) has examined the competitiveness of Indian commercial banks in the regulated period 1996-2002, by using data envelopment analysis and window analysis. The main finding indicates increase in technical efficiency and scale efficiency of most of the banks in deregulated period. Bank profitability has increased while interest margin has decreased in the deregulated period. In terms of overall technical efficiency, nationalized banks and private banks logged behind State banks and foreign banks. The study also shows that, public sector banks have witnessed a decreasing return to scale due to widespread bank branches in remote and rural areas and low technological upgrade.

Kantawala\textsuperscript{15}(2004) examined the impact of reforms on credit-deposit ratio, credit to GDP ratio, investment on government securities to deposits, share of business of public sector banks, the proportion of various advances etc. and made a comparative study on the performance of public sector in private sector and foreign banks during 1992-97. The study found a substantial fall in CD-ratio due to reduction in liquidity, improvement in asset liability management of banks, and a reduction in share of SBI group and nationalized banks due to entry of foreign banks. The comparative analysis of the working results indicates a significantly lower ‘interest income to total asset ratio’ and ‘other income to asset ratio’ for SBI group and nationalized banks.
Kumbhakar and Sarkar\textsuperscript{16} (2003) in their study analyses the relationship between deregulation and total factor productivity (TFP) growth in the Indian banking industry, using generalized shadow cost function approach. TFP growth is decomposed into technological change, scale and miscellaneous components. A disaggregate panel data analysis using the population of public and private banks over the period 1985-96 that covers both the pre and post deregulation periods, indicates that a significant decline in regulating distortions and the anticipated increase in TFA growth have not yet materialized following deregulation. Private sector banks have improved their performance mainly due to the freedom to expand output, public sector banks have not reported well to the deregulation measures.

Misra\textsuperscript{17} (2003) has examined the allocative efficiency of the Indian Banking System during pre-reform period (1981-92) and the post reform period (1993-2001). The study reveals that overall allocative efficiency of the banking system has almost diluted in the post-reform period. This suggests the success of reforms in improving allocative efficiency of the banking system in India. The study also finds more improvement in allocative efficiency in service sector than that of industry.

Trehan and Soni\textsuperscript{18} (2003) have examined the efficiency and profitability of Indian public sector banks by using Data Envelopment Analysis for the panel data of 2001-02. The study found that the average level of technical efficiency was 0.891 for the Indian public sector banking segment. It has also been found that
about 41 percent of public sector banks are technical efficient. The study further found that, the SBI group banks are more efficient than that of nationalized banks and the difference in efficiency levels of these two groups was statistically significant.

Koeva\(^1\) (2003) has studied the impact of reform on the performance of commercial banks in India by using data envelopment analysis for all Indian commercial banks between 1991-92 and 2000-01. The main findings of the study are as follows:

1. Industry concentration, bank spreads and profitability in the banking sector has broadly declined during the period of financial liberalization.
2. The ownership type is found to affect some of the performance indicators of the banks in sample.
3. The main determinants of bank intermediation costs and profitability in India are - operating cost, priority sector lending, non-performing loans, investment in government securities and the composition of deposits.
4. The increase in competition has lowered the spreads and profitability of Indian banks.

Chipalkatti and Rishi\(^2\) (2003) have critically assessed the post-reform performance of Indian banks by examining quantitative data on bank profitability and risk during the period 1995-96 to 2000-01. The study found that the reform process has been largely unsuccessful in India in reducing asymmetries and
promote the functioning of a market disciplining mechanism as a regulatory device. The study also underscores an urgent need for an improvement in the risk management skills and transparency.

Kumar and Verma\textsuperscript{21} (2003) studied the extent of technical efficiency, benchmarks and targets for Indian public sector banks using Data Envelopment Analysis (DEA). It has been observed that the overall level of technical inefficiency in Indian public sector banking industry was around 17 percent. This has the implication that public sector banks had the scope of producing 1.21 times as much output from the same inputs. The study also found that the State Bank of India Group outperformed the nationalized banks in terms of resource use. Further, the study found that large banks are more efficient than small and medium banks in utilizing the critical inputs in their production process. On examining the relationship between efficiency and profitability, it has been observed that about 63 percent of the public sector banks have potentials for increase in profitability through efficiency improvement. The study also established that technical efficiency is positively related to higher profitability, larger branch network and higher staff productivity.

Shirai\textsuperscript{22} (2002) has observed significant favourable changes in India’s highly regulated banking sector in his study. Her empirical estimation showed that regulation lowered the profitability and cost efficiency of public sector banks at the initial stage of reforms, but such a negative impact disappeared once they adjusted to new environment. Banks have improved their profitability by enhancing their
non-traditional activities. Further, foreign banks and private domestic banks have performed better than other banks in terms of profitability and income efficiency. This suggests that ownership matters and foreign entry has a positive impact on banking sector restructuring.

Shirai23 (2002), in another study, has found that foreign banks and private banks generally perform better than public sector banks in terms of profitability, earnings efficiency and cost efficiency in initial stage of reforms and such differences have diminished as public sector banks have improved profitability and cost efficiency.

Raypati24 (2002) has found that banks can manage their profitability by increasing other income and controlling of costs. In other words burden is important in managing profitability.

Ravi25 (2002) has studied the impact of transfer price mechanism, non-performing assets, cost of deposits, yield in advances and non-interest income on profitability of bank branches and non-interest income do not have significant influence over profitability of bank branches while interest income, deposit mix and cost of deposits, non-performing assets have significant influence in improving profitability of bank branches.

Kaveri26 (2001) has studied loan default and profitability of banks by selecting nine efficiency parameters. The study shows that weak and potential weak banks are characterized with lower interest spread, poor return and high level of
non-performing asset while there is a marginal difference of intermediation cost between weak and potential weak bank and strong banks.  

Shanmugam and Lakshmanasamy (2001) utilized three approaches, namely, non-parametric approach, stochastic frontier approach and random coefficient approach to measure efficiency and assess the robustness of the efficiency measures using data on domestic banks in India for the year 1999. It has been found that overall mean technical efficiency ranges between 52 and 80 percent in different approaches. The efficiency values of the banks vary drastically in different methods. A high rank correlation among efficiency values computed in different methods has also been observed. The estimated results show that the deposit is the dominant factor in determining the output of the banks in all the models.

Sood (2001) had studied the impact of non-performing assets (NPAs) in public sector banks had found that NPAs are directly and indirectly hitting the bottom-line of PSBs and also nullifying their efforts to increase their profitability. The profitability has been affected not only because of provisioning but also due to the cost of funding these unproductive assets. Again, NPAs reduce earning capacity of assets i.e. returns on assets.

Satyamurthy (2001) in his paper, “Ratio Analysis Model (RAM): A Strategic Tool for Performance Evaluation and Monitoring of Bank Branches” has suggested Ratio Analysis Model as an effective tool to analyse and improve overall
performance of bank branches. The model can be used to evaluate factors having a bearing on the profitable performance of bank branches.

Subbiah\textsuperscript{30} (2001) in his work “Application of Median Test to Compare the Profitability of Commercial Banks of Different Classifications in India”, shows that profitability performance of foreign banks operating in India is the best followed by private sector banks. However, the study is based on a small sample covering a period of five years.

Saha and Ravishankar\textsuperscript{31} (2000) rated 25 public sector banks using data envelopment analysis. Their study was confined to the period 1991-92 to 1994-95. They had observed that barring a few exceptions; the public sector banks had in general improved their efficiency scores over the study period.

Das\textsuperscript{32} (1999) analyzed the technical and allocative efficiency of 27 public sector banks using cross section data for the year 1998. In the study, data envelopment analysis has been used to obtain efficiency scores. The study found that public sector banks had the scope of producing 1.23 times as much output from the same inputs. The results further indicate that banks belonging to State Bank Group are, in general, more efficient than nationalized banks. Furthermore, the inefficiency that existed in public sector banks was more a result of both technical and allocative inefficiency. The study also confirmed the significant negative relations between non-performing assets and efficiency; and size and efficiency.
Bhatia, S and Verma, S.33 (1999) in their study made an attempt to determine empirically the factors influencing profitability of public sector banks in India by using the technique of multiple regression analysis. The study found that profitability of the banks depends both on exogenous and i.e. policy determined variables such as reserve requirements, directed credit programmes; and endogenous variables such as composition of deposits, establishment expenses, spread and burden etc. The study also recommends improving profitability by reducing priority sector lending, cost of funds, and reserve requirements.

Rao and Augustine34 (1998) in their work had observed that the portfolio behaviour of commercial banks has undergone radical changes with the induction of the financial sector reforms with relatively low credit-deposit ratios in the post reform period, compared to those in the preceding years.

Louis35 (1997) in his study has emphasized on the relevance of asset and liability management to maximize the profit. He had developed a model for this purpose.

Rangaswamy and Subbiah36 (1997) in their paper “Analysis of Performance of Financial Agencies in Priority Sector Lending under the Local Bank Scheme in Kamarnagar District by using Kruskal-Wallis Test” has found that the performance of public sector commercial banks is relatively poor, in lending to the agriculture sector.
Das\textsuperscript{37} (1997) examined the X-efficiency of public sector banks since nationalization using longitudinal data. He found that the State Bank of India Group is more efficient than the nationalized banks. The main source of inefficiency was found to be technical in nature, rather than allocative. It has been concluded that inefficiency in public sector banks is due to underutilization or wasting of resources rather than incorrect input combination. Also, public sector banks improved their allocative efficiency significantly in the post-liberalization period.

Rammoorthy\textsuperscript{38} (1997) has made a study on profitability and productivity of Indian Banks and found that: (1) Indian banks have higher interest spread than the banks abroad, (2) Indian banks have higher operating cost than banks in foreign countries, (3) Indian banks have higher risk provision levels. The higher interest spread of Indian banks is more than offset by the higher operating costs and higher provision levels, thus bringing down the return on assets.

Bhattacharya, et al\textsuperscript{39} (1997) examined the impact of partial liberalization during mid-eighties on the productive efficiency of different categories of banks using data envelopment method. Their study covered seventy commercial banks in the period 1986-91, and found that public sector banks had the highest efficiency followed by foreign banks. The private banks were found to be least efficient. They also found a temporal improvement in the performance of foreign banks, virtually no trend in the performance of private banks, and a temporal decline in the performance of public sector banks.
Noulas and Ketkar\textsuperscript{40} (1996) analyzed the technical and scale efficiency of public sector banks using data envelopment analysis. On studying cross-section data of 18 public sector banks for the year 1993, they observed that overall technical inefficiency was approximately 3.75 percent of which only 1.5 percent is on account of pure technical inefficiency and 2.25 percent is due to scale inefficiency. Also, majority of the public sector banks were found to be operating under increasing returns to scale.

Raut and Das\textsuperscript{41} (1996) in their study observed that foreign banks performed well in respect of profitability i.e. profit as a percentage to working funds followed by nationalized banks. However, private sector banks in terms of profit as a percentage of total income have outperformed the nationalized banks.

Swami and Subrahmanyam\textsuperscript{42} (1994) utilized “taxonomic method” for studying the interbank differences in the performance of public sector banks in India. The taxonomic method aims for deriving out a single measure of performance based on several individual indicators of banks’ business activity. It has been found that many banks show wide disparities in their measures of performance especially with differential weighting of individual indicators of business activity. No bank has shown a measure of performance close to the ideal of the respective groups of banks. Almost every bank in the study has never attained even 50 percent efficiency measures in both periods 1971-73 and 1987-89.
Garg (1989) studied the main determinants of cost, profits and profitability of the banking sector and also observed the inter-group differentials of SBI and its subsidiaries, the nationalized banks, the private sector banks and foreign banks. The study found that the profitability of various bank groups except foreign banks showed a steep decline during 1977-82. The study also found that increase in operational expenses as the reason to decline in profitability.

Deb (1988) in his book “Indian Banking since Independence” has critically examined the extent to which nationalization banks have served its purpose. He pointed out that changes in the policy and operational system of banks came about very slowly much after nationalization and that too in not adequate measures. As a result there was a disparity in development among different states/regions in the country. The basic reason behind this is lack of performance orientation, corporate culture, trained personnel etc.

Kamal Nayan (1985) in his study “Commercial Banks in India: Performance Evaluation” has evaluated the performance of commercial banks in the nationalization sector by selecting branches of two nationalized banks. He has observed that the existing system of ranking of banks on the basis of aggregate deposit fails to show their overall achievement and hence a ‘performance evaluation model’ should be adopted. He also found that bank profitability is not influenced by the size of bank and branch profitability and depends to a considerable extent on the transfer price.
Bhatia\textsuperscript{46} (1982) in his work “Banking Structure and Performance” has studied the Indian banking system during the period 1950-68. The noteworthy observations of his study are:

1. The structure of banking industry had an insignificant influence on the economic performance of the Indian banking system;

2. Both the public and private sector of Indian banking system had output performance superior to that of the foreign sector during the period 1950-68;

3. None of the sectors of Indian banking system had significant difficulties in the profitability during the period of the study; and

4. Public and private sector banks can increase their profits by intensive involvement in foreign trade financing.

Shah\textsuperscript{47} (1979) has observed that profitability cannot be increased by increasing the spread i.e. margin between lending and borrowing rates. He pointed out that inefficient staffing and valuing patterns, poor fund investment management as the reason of decline in spread.

Singh\textsuperscript{48} (1979) had studied the relationship between cost of bank credit and prices. He concluded that: (i) it would be wrong to argue that the present high rates of interest produce in general a significant tendency for the prices to rise further; (ii) the effect of rise in interest rates is somewhat significant only in case of those companies which are inefficient and burdened with excess banking from
commercial banks; and (iii) the percentage spread or the difference between interest received and interest paid has been declining for the banks.

Hester (1963) in his work “Indian Banks: Their Portfolios, Profits and Policy” had an empirical study on the Indian banking during the period of 1951-61. One of the important findings of his study is that large differences in earnings and expenditure exist between Indian banks and Kansas District (America) banks. The ratio of profits to liabilities, its profit margin in bank services exceeds the Indian banks by 100 percent, but profits as a percentage of capital and surplus is higher in India owing to the low level of capitalization.

3.2 GAP IN THE EXISTING LITERATURE

Most of the studies on performance and efficiency of Indian Commercial Banks are confined to either post-reform or pre-reform period only. No comparative study between pre-reform and post reform period has been made. Studies on performance of commercial banks in pre-reform period were with help of traditional analytical tools like trend and regression analysis using ratios which were mostly parametric in nature. The present study aims at a detailed analysis of performance and efficiency of commercial banks in India during pre-reform as well as post-reform period. The present study makes use of traditional techniques like ratio analysis, analysis of variance and trend analysis along with widely accepted non-parametric test ‘Data Envelopment Analysis’.
3.3 SUMMARY

A good number studies and literature are seen in profit, performance and efficiency of banks, it is found that most of the studies were confined to either post-reform or pre-reform period only. No significant comparative study between pre-reform and post reform period has been seen. Hence it is justified to make a comparative study on performance of Indian Commercial Banks of the pre and post reform period.
REFERENCES


