Chapter 2

Review of Literature
CHAPTER 2
REVIEW OF LITERATURE

This chapter presents the review of literature related to the study undertaken. The purpose of this part is to understand the results of various studies already undertaken in the relevant field and to find out the research gap in the present study. The literature pertaining to the study on “Efficiency, Profitability and Financial soundness of scheduled commercial banks in India – Application of CRAMEL and Bankometer Models” are provided under the following headings:

2.1 Review of literature related to the financial performance of commercial banks.

2.2 Review of literature related to CRAMEL model.

2.3 Review of literature related to Bankometer model.

2.4 Summary

2.1 REVIEW OF LITERATURE RELATED TO FINANCIAL PERFORMANCE OF COMMERCIAL BANKS

Vashist (1987) in his empirical work on “Performance Appraisal of Commercial Banks in India” evaluated the performance of public sector banks with regard to six indicators i.e., branch expansion, deposits, credit, priority sector advances, DRI advances and net profit over the period of 1971-83. A composite weighted growth index was developed to rank the banks and to classify them into four performance levels viz., excellent, good, fair and poor. The study ranked Indian Overseas Bank at the top and Dena Bank at the bottom. The study stressed the need to check the working of commercial banks for ensuring rapid and healthy growth in future and to improve the performance of commercial banks. The study suggested: (i) the development of marketing strategy for deposit mobilization, (ii) profit planning, and (iii) SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis in banks.

Robinson (1988) framed a proposal for the Jamaican Banking System based on the effect of the 1988 Basle Accord Guidelines. The 1988 Basle Accord required that all major international banks operating in the G10 nations maintain minimum capital of 8% to risk-weighted on- and off-balance-sheet items, by end-1992. The data include 32 major banks operating in Canada, Japan, the United Kingdom and
the United States. Using data from 1984 to 1992, growth rates the in capital; assets and profitability are estimated using OLS regression. It is determined that during the time period banks with low capital generally increased capital ratios and decreased balance sheet assets more than banks with high capital. However, banks in the different countries changed assets and capital in different ways in order to meet the end-1992 requirements. Growth rates in profitability are not significantly affected by changes in risk-based capital ratios. Based on the above analysis, the study provides some recommendations for the introduction of the Basle Accord Guidelines into the banking system in Jamaica.

Karunagaran and Benjamin (1989) analysed the performance of commercial banks in Tamil Nadu during 1969 to 1986. The analysis was carried out with the help of indicators like population coverage by banks, distribution of their branches, deposits and advances in different population groups. The progress of commercial banks in the State was also compared with that of the country as a whole. The results of analysis revealed that, by and large, the banking industry in Tamil Nadu was not in a good state of health.

Ramachandran (1992) observed that the profitability of banks is on the decline. In his paper, he traced out in brief the causes for declining profitability and suggests possible measures for arresting this trend. The main causes among others traced by the author are (a) emphasis on social goal (b) increase in establishment cost (c) blocking fund in sick unit (d) compliance with statutory requirement (e) rural branch expansion (f) leakage in income (g) poor cash management and others.

Amandeep (1993) in her study on profitability of commercial banks has attempted to examine the trends in profits and profitability of 20 nationalized commercial banks, with the help of trend analysis, ratio analysis and concentration indices of the selected parameters. The study focuses on identifying the various factors and empirical testing as to which of the identified factors have significantly contributed towards bank profitability in either direction. Using the multivariate analysis, the study concluded that it is the efficient management of the burden (as against the widely believed ‘spread’ element), which plays a major role in determining the profitability of commercial banks. In spite of lack of control of few determinants of burden, it is inferred that judicious management of the burden can significantly enhance bank profitability.

Chidambaram and Alamelu (1994) studied the problem of declining profit margin in Indian public sector banks as compared to their private sector counterparts. It
was observed that in spite of similar social obligations, almost all the private sector banks have been registering both high profits and high rate of growth, with respect to deposits, advances and reserves as compared to public sector banks. Better customer service, technology, innovative products and good marketing strategies, proper monitoring of advances and regional orientation are some of the factors responsible for the success of private sector banks in India.

A study sponsored by the World Bank (1995) and done by a private consultancy organization analysed the problem of poor profitability of commercial banks and regional rural banks in India during early 1990’s. The study revealed that on account of comparatively small operating income on the one hand, and high operating expenses on the other, the commercial banks have been incurring losses. It was suggested that for commercial banks minimum lending rate should be between 16.69 and 17.6 per cent. It was observed further, that the commercial banks can improve their financial health by reducing their operating cost as well as through a decrease in loan loss provisions. Further, the study suggested that there should be a complete deregulation of interest rates in rural loans persuaded by different institutions. The rural operations of the commercial banks can be self-sustaining if loan appraisal and their repayment follow-up systems are tightened.

Thamkirati (1996) studied the relationships among the effects of Banking Deregulation, Asset Management ratios and Profitability of the Banking Industry in Thailand. The purpose of this study was to examine the relationships among the regulatory variables, strategic alternatives, and performance variables of the commercial banks in Thailand, in terms of their composition of loans, sources of interest income, and asset management. A descriptive-correlation method was used to empirically investigate the expected differences of the pre and post-deregulation periods. The major findings of the study were: under deregulation, the average ratio of personal to commercial loans and the amount of total assets increased, as did the ratio of net interest income to total assets. However, deregulation did not influence the income performance of Thai commercial banks in the post-deregulation period (1990-1993).

Sarkar and Das (1997) highlighted the performance of public, private and foreign banks by using measures of profitability, productivity and financial management for the year 1994-95. They found that public sector banks are competing poorly with the other
two categories. However, they caution that no firm inference can be derived from a comparison made for a single year.

**Sarkar et al.** (1998) compared performance across the three categories of banks-public, private and foreign banks in India, using two measures of profitability, returns on assets and operating profit ratio, and four efficiency measures, namely, net interest margin, operating profit to staff expense, operating cost ratio and staff expense ratio. They found that, in the comparison between private banks and PSBs, there was only a weak ownership effect. Traded private banks were superior to PSBs with respect to profitability measures but not with respect to efficiency measures. Non-traded private banks did not significantly differ from PSBs in respect of either profitability or efficiency. There was, however, a strong ownership effect between foreign banks and private banks, with the former outperforming the latter with respect to all indicators. The authors conclude that private enterprises may not be unambiguously superior to public enterprises in a developing economy.

**Bhatia and Verma** (1998) made an attempt to determine empirically the factors influencing profitability of public sector banks in India by making use of the technique of multiple regression analysis. Net profit as percentage of working funds has been used to measure the bank profitability during 1971 to 1995. The analysis revealed that priority sector advances, fixed/ current deposit ratio and establishment expenses affected the profitability of public sector banks negatively. Net spread, which to a great extent depends on the management acumen of the bank staff, influenced the profitability of banks positively and significantly. It was also observed that high credit-deposit ratio positively influencing profitability.

**Ganesan** (1998) in his study on “Priority Sector Advances vis-à-vis Profits and Profitability of Public Sector Banks in India (1969-1993)” analysed the following aspects: i) economies of priority and non-priority sector transactions with reference to spread, burden and surplus; ii) the use of efficiency, liquidity and profitability ratios to assess the operational efficiency; iii) determinants of profitability to derive a profit function model; and iv) the economies of scale regarding cost, production and profit functions. Finally, the study pinpoints certain ideas for the improvement of profitability and the technical change to be made to recover the over dues of priority sector advances.

**Nayak** (2001) made an attempt to compare liquidity, productivity and profitability of foreign and domestic banks in India during 1985-86 to 1996-97. The study is based
on bank-wise secondary data on a number of variables like employees, branches, total assets, interest paid and expended, total deposits and advances, profits and expenses. The results revealed that productivity in terms of labour, branches and profitability was higher in foreign banks than the domestic banks. Foreign banks are least involved in socio-economic policies of the government, on account of which they registered higher profits.

Singh (2001) made an attempt to assess the impact of the reforms on the operational performance and efficiency of the commercial banks in India. The ratio analysis has been used as a major tool for assessing the performance of the selected commercial banks. The study revealed that total income as a percentage of working funds and/or total assets, spread as a percentage of total income and total advances to total deposits have improved in the post-reform period against the pre-reform in most of the banks. Total interest income earned, other income, spread, total expenses, interest expended, operating expenses and establishment expenses are comparatively more consistent in the post–reform period. The hypothesis that the profitability position has improved in post-reform period may be accepted to some extent. It was observed that in the public sector banks the size of NPAs has also reduced to some extent and quality of service has improved in the post-reform period. The priority sector lending has registered a decline in the deregulation era.

Mohan (2002) conducted a study on “Deregulation performance of Public sector Banks” for a period of 1996-97 to 1999-2000 and found that over these years the profitability of the Public Sector Banks did improve in comparison to the Private and Foreign Banks, but they have lagged behind in their ability to attract deposits at favorable interest rates and have been slow in technology gradation and improving staffing and employment practices, which may have negative implication on their long term profitability.

Bhattacharyya et al. (1997) evaluated the impact of limited liberalization initiated before the deregulation of the 1990s on the performance of various categories of banks, using Data Envelopment Analysis. Their study covered 70 banks during the period of 1986-91. They constructed on grand frontier for the entire period and measured the technical efficiency of the banks under study. The author used advances, investments and deposits as outputs and interest expense and operating expense as inputs. They found that public sector banks had the highest efficiency among the three categories, with private and foreign banks having much lower efficiencies. However, public sector
banks started showing a decline in efficiency, private sector banks showed no changes and foreign banks showed a sharp rise in efficiency. The major results accord with the general perception that in nationalized era, public sector banks were successful in achieving their principal objectives of deposits and loan expansion.

_Amandeep_ (1991), in her doctoral work titled, "Profits and Profitability of Indian Nationalised Banks" opined that the banks have become an instrument to meet effectively the needs of the development of the economy to effect the total socio-economic transformation. It has adversely affected the profitability of the bank operations. According to the researcher, the profitability of a bank is determined and affected mainly by two factors: spread and burden. The other factors determining bank’s profitability are credit policy, priority sector lending, massive geographical expansion, increasing establishment expenses, low non-fund income, deposit composition etc. The researcher has chosen 11 factors affecting a bank’s profitability to identify the most significant variable affecting its profitability. The study recommended the banks to focus their attention on the management of spread, burden, establishment expenses, non-fund income and deposit composition. The banks need to adequately charge for various non-fund services (like merchant banking, consultancy, and factoring services) with proper cost benefit analysis, to have maximum profitability.

The _Reserve Bank of India_ (2000) studied that how deregulation has affected the bank’s performance. The RBI’s study covered all categories of the banks. It was observed that there has been a decline in spreads and a tendency towards their convergence across all the bank groups except foreign banks. Intermediation costs as percentage of total assets was also found to have declined especially for the public sector banks and new private sector banks, largely due to a decline in their wage cost. Capital adequacy and asset quality have both improved over the period 1995-96 to 1999-2000. Further, it was found that non-interest income to working funds also rose modestly for the public sector bank. The cost to income ratio declined both in the State Bank of India group and the Nationalised Banks Group.

_Toor_ (2000) identified and examined the problems of weak banks and suggested a strategic plan of financial, organizational and operational restructuring for them. The committee on the basis of seven parameters covering solvency, earning capacity and profitability evaluated the public sector banks. These were, CAR -8 per cent, coverage ratio -0.50 per cent, return on assets –median level, net interest margin – median level,
profit to average working funds – median level, ratio of cost to income – median level, and ratio of staff cost to income – median level for the years 1997-98 and 1998-99. The Committee identified that Indian Bank, UCO Bank and United Bank of India were weak banks and recommended recapitalisation of these banks subject to strict conditionality relating to operational restructuring.

Garai et al. (2001) in their study assigned ranks to the different scheduled commercial banks (68 in numbers) on the basis of their performance score. The study is confined to the period of 1995-96 to 1997-98 and six indicators reflecting different aspects of banks’ operating efficiency were selected. The weights were assigned on the basis of multi-group discriminant analysis. The ranking of banks with respect to their performance did not change much during the period under context. The existence of group difference was also examined applying parametric test procedure. The results confirmed the view that the performances of public sector banks were generally not good enough in comparison with those of private and foreign banks.

Ganesan (2001) examined the determinants of profitability of public sector banks by an empirical estimation of profit function model which showed that interest cost, interest income, other income, deposits per branch, credit to total assets, proportion of priority sector advances to interest income are the significant determinants of profit and profitability of Indian public sector banks. He concluded that the average establishment cost positively contributes to the profitability but in adversely affects the net profit of the public sector banks.

D’souza (2002) in his study evaluated the performance of public sector, private sector and foreign banks during the period 1991 to 2000. The efficiency of the banking system was measured in terms of spread/working funds ratio and turnover / employee ratio. With reference to the spread to working funds ratio, the efficiency of the commercial banks as a whole has declined in the post-reform period. The public sector banks have been responsible for this decline in efficiency, as the efficiency of the private and foreign banks has improved over the course of 1990s. Through the turnover/employee ratio has risen in the public sector banks, the turnover per employee in the private and foreign banks doubled relative to the ratio for public sector banks during this decade. However, the analysis revealed that the profitability of the public sector banks in late nineties improved relatively to that of private and foreign banks.
Mohan (2002) in his study evaluated the performance of the public, private and foreign banks since deregulation in absolute and in relative terms, and attempts to understand the factors behind their improved performance. It was observed that the efficiency of the banking system as a whole measured by declining spreads. The performance of public sector banks had improved both in absolute and relative terms. He alludes the Indian banking industry for its ability to keep its head above water log after deregulation. Further, he takes up issues of trade-off between efficiency and stability in banking. It was observed that efficiency should not be at the cost of stability. He cautions that Indian experience so far suggests that government ownership might conduce to such trade off.

Chaudhuri (2002) examined some important relevant issues relating to growth and profitability in the public sector banks for the year 1995-2001. He opined that the public sector banks are facing triple jeopardy. First they are losing market share, second their profitability is being seriously squeezed and lastly their balance sheets are not strong and their sovereign support, which had buttressed them so far, is becoming open to question. The reason for the less than enviable condition of the public sector banks are many, but a principal operative factor derives from the nature of their ownership and what that translated in terms of goal and priorities. However, it was concluded that the public sector banks in India are neither very strong nor very weak. But they do not have any further capacity to bear the burden of pursuing government policies.

The study carried out by CRISIL (2002) concluded that lower operating expenses improved the profitability of banks, contrary to the popular perception that only trading profits helped the banking sector shore up their bottom lines. The reduction in operating expenses became possible through large scale VRS implemented by PSBs. As this reduction in operating expenses seems sustainable, a brighter future for the banking sector in India is expected. The study concluded that the banking sector is now reaping the benefits of rationalization of employee costs, and undertaking various other cost-reduction initiatives. The study pointed out that banks ability to repeat and sustain such initiatives would be a deciding factor in improving the productivity and profitability of the banks.

Shirai (2002) assessed the impact of reforms by examining the changes in the performance of banking sector. It is found that the performance of public sector banks improved in the second half of the 1990’s. Profitability (measured by the return on assets) of
nationalized banks turned positive in 1997-2000 and that of SBI group have steadily improved their cost efficiency over the reform period. Even though foreign banks and private sector banks performed better than the public sector banks in terms of profitability, earning efficiency (measured by ratio of income to assets), and cost efficiency in the initial stages, such differences have diminished as public sector banks have improved profitability and cost efficiency.

Singh (2003) in his paper “Profitability management in banks under deregulated environment” has analyzed profitability management of banks under the deregulated environment with some financial parameters of the major four bank groups i.e. public sector banks, old private sector banks, new private sector banks and foreign banks, and found that the profitability has declined in the deregulated environment. He emphasized to make the banking sector competitive in the deregulated environment they should prefer non-interest income sources.

Pathak (2003) while comparing the financial performance of private sector banks since 1994-95, explained that the private sector banks have delivered a new banking experience. Looking to the growing popularity of services provided by them, their public sector counterparts have started emulating them. He studied the performance of these banks in terms of financial parameters like deposits, advances, profits, return on assets and productivity. In this paper, the author made an attempt to have an insight into the financial operation of these institutions. A sample of five banks has been taken for financial analysis. A financial track record of all these banks was evaluated, and their financial performance was compared. The working of all the constituents was satisfactory and the HDFC Bank emerged as a top performer among them followed closely by the ICICI Bank.

Pandey and Bandyopadhaya (2003) made an attempt to ascertain the factors affecting the profitability performance of PSBs on the basis of Break Even Analysis. The study includes all the 27 public sector banks of India for the period of 1990-2000. It is observed from this study that all the banks have negative profitability performance during four out of ten years. The results of multiple regression analysis, shows that the profitability is influenced by operating cost, interest earned, interest paid and other income. The study suggested that in order to improve margin of safety, profit earning bank must reduce operating cost and losing bank must reduce the burden of interest payment.
Das et al. (2005) examined the output-oriented technical efficiency, cost efficiency, revenue maximizing efficiency and profit efficiency of Indian (public, private and foreign) banks for the period 1997-2003. They considered four outputs for their study- borrowed funds (deposits and other borrowings), number of employees, fixed assets and equity. The study includes only those banks which had at least three branches, during the entire study period. The result obtained show that the Indian banks are still not much differentiated in terms of input or output oriented technical efficiency or cost efficiency. However, they differ sharply in respect of revenue and profit efficiencies.

Nath et al. (2005) studied efficiency of 68 commercial banks operating in India for the period 1996 -1999 using the output oriented DEA model. They have considered the following as outputs of the banking industry – deposits, net profits, advances given by the banks, non-interest income and interest spread. The input parameters taken into consideration are: net worth of the related expenses like sum of the establishment expenses, rent, taxes, electricity, printing and stationary, advertising, depreciation, director’s fee, auditor fee, law charges, posts, telegram and telephone charges, and a number of bank branches in the country. The results from the study show that the private commercial banks have the highest efficiency figures and the least variation whereas the foreign owned banks exhibits the least average efficiency figure and maximum variation and the public sector commercial banks lie in between.

Kumbhakar and Sarkar (2005) used the stochastic cost frontier analysis to examine the efficiency of the Indian banking system using panel data for the period 1986 -2000. They used a translog specification of the cost frontier to estimate the efficiency of the individual banks. The dataset was related to 27 public sector banks and 23 private sector banks. Their results indicated that the Indian Banks on an average do exhibit the presence of cost inefficiency in their operations. However, there is a tendency for inefficiencies to decline overtime. Further, they found that deregulation in the Indian banking sector resulted in an increase in the cost inefficiency of the Indian banks and a decline in the rate of inefficiency reduction.

Badola and Verma (2006) attempted to identify the key determinants of profitability of public sector banks in India. The study includes 27 public sector banks in India for a period of 13 years from 1992 to 2004. The study used step-wise multivariate regression model to identify the factors influencing profitability of public sector banks in India. The study has brought out that the variables non-interest income, operating expenses,
provision and contingencies and spread have a significant relationship with net profits. The study concluded that control over non-performing assets, operating expenses, provision and contingencies are major areas of concern for the management of public sector banks. The study suggested to ensure a sustainable level of profit and growth, the public sector banks must have control over spread, increasing non-interest income, maximizing business per employee and per branch and the banks must give attention to technology up-gradation, provision for better service quality, inculcating customer driven work culture and modern risk management practices.

Kohli and Chawla (2007), in the paper entitled “Profitability trends in commercial banks: A study of select commercial banks” compared the profitability performance of different banks during the study period and found that most of the indicators that have been shown the performance of the two private sector banks via ICICI Bank and Bank of Punjab has been better than that of the two Public sector banks via SBI group and Punjab National Bank. It is concluded that the entry of private sector banks has undoubtedly contributed to the strengthening of the Indian banking system by creating a competitive atmosphere.

Brinds and Dubey (2007), in their article “Performance of Public Sector Banks” argue that the relative performance of different bank groups, ie. public, private or foreign appears to be correlated with the extent of their link with the market. Foreign banks are found to be more profitable than non-traded private banks. In their analysis they found that the private and the foreign banks are not found to be superior to the public sector banks in any of the performance indicators namely Return on assets, Operating profit ratio and Net interest margin.

Mittal and Dhade (2007) says that the new millennium has brought along challenges and opportunities in the various fields of economic activities including banking. The entry of various private sector and foreign banks exposed the inefficiencies in the public sector banks. This paper compares various categories of banks on the basis of productivity and profitability. While there is no remarkable difference in the spread ratio, there is a significant difference in burden ratio among the public sector, private sector and foreign banks. The key to profitability for the public sector banks is increased productivity. These public sector banks that have been able to increase the productivity found themselves at par with the private sector banks.
Pal and Malik (2007) investigated the differences in the financial characteristics of public sector banks, private sector banks and foreign banks in India based on factors such as profitability, liquidity, risk and efficiency. To identify the differences the multinominal regression analysis was used on the sample of 74 Indian commercial banks comprising 27 public sector banks, 24 private sector banks and 23 foreign banks for the period of 2000-05. The findings suggest that foreign banks were better performers as compared with the other two categories of banks in general and in terms of utilization of resources in particular during the period chosen for the study.

Arora and Kaur (2008) made an attempt to study the determinants of diversification of banks in India and to analyse the financial performance of banks for the period of 2000 to 2005. The study covered nationalized banks, SBI and associates, new private sector banks and foreign banks. Profitability ratios were used to examine the financial performance of banks. It was found out that though the interest income is still a major source of income in the operations of banks in India, but the phenomenon of non-interest income is acquiring added significance in the wake of declined interest margins and increased disintermediation in commercial banking. The study suggested that banks should concentrate more on providing better, faster and more efficient customer service to permit banks to charge higher rates for better and faster service.

Bhaduri and Shanmugam (2008) analysed the ownership-performance issue of the Indian banking sector during the post reform period (1992-2007). The results of the study indicate that both foreign and domestic private banks are superior to their public counterparts with respect to four performance indicators namely, Return on Asset, Operating Profit Ratio, Operating Cost Ratio and Staff Expense Ratio. Private Banks are less efficient than their counterparts with respect to Net Interest Margin. The study highlights that Foreign banks were superior among Private sector banks, while the State Bank Group shows better performance among Public sector banks. The study highlighted that the reform measures help the poor performing banks in reducing the performance gap and also the study suggests that privatization to be an effective policy in improving the performance of public sector banks in India.

Singh and Chaudhary (2009) made an attempt to examine the profitability of banks and to identify the key factors that affect their profitability. They considered bank specific as well as macro economic factors as explanatory variables. The bank specific variables included investment, advances, deposits and assets whereas the macro economic
factors considered include per capita income, index of industrial production, wholesale price index, exports and foreign exchange reserves. They regressed the explanatory variables over the dependent variable operating profit. The study found a positive relationship between profitability and investment, per capita income, index of industrial production, wholesale price index, exports and foreign exchange reserves. The study indicated that advances, deposits and assets are factors that significantly affect the profitability of private and foreign banks but not the state sector banks.

Selvakumar and Kathiravan (2009) analysed the profitability of public sector commercial banks in India for a period from 1997 to 2006. The results of the study show positive correlation between profitability and interest earned, interest paid, operating expenses and other income. The study suggested to collect overdues from the borrowers, to introduce new technology, to conduct awareness programmes among the rural poor, to concentrate on mobilizing current deposits, to take efforts to reduce the operating expenses and to introduce attractive and innovative schemes for the requirements of different clients.

Uppal (2009) examined the profitability which is an important criterion to evaluate the overall efficiency of a bank group. The paper examines the comparative trends in profitability behaviors of five major bank groups in the post liberalization and globalization era. The paper concluded that average profitability is the highest in case of new private sector banks and foreign banks. 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.

Choudhary and Tandon (2010) analysed the financial performance of public sector banks in India for the period from 1997-2007. The study is related to 19 Nationalised banks and State Bank of India (SBI) and its associates. The study calculated compound annual growth rate, co-efficient of variation and range for the selected variables of advances, deposits, total assets, return on assets, return on equity and spread. The results of the study show that State Bank of Indore has shown a maximum CAGR in case of advances, deposits and total assets. Punjab & Sind Bank has shown least growth of deposits and advances and State Bank of India has least growth of deposits. The growth rate of return on equity and return on assets was at peak for United Bank of India whereas Dena Bank, Punjab & Sind Bank and Indian Bank have
shown a negative trend in these ratios. Decline of NPA’s ratio was highest in the case of State Bank of Hyderabad and least in the case of Dena Bank.

Rakhe (2010) analysed the financial performance of foreign banks in comparison with other bank groups in India. The results of the study indicate that access to low cost funds, diversification of income, adequate other income to fully finance the operating expenses are the important factors leading to the higher profitability of foreign banks vis-à-vis other bank groups in India. The results of the panel data regression also indicate that efficiency of fund management is the most important factor determining profitability in the banking system followed by generation of other income. However, with regard to the foreign bank’s policy, a holistic view may be taken by considering factors such as global financial inter-linkages, financial performance of parent banks and also their contribution in achieving social objectives of banking in India.

Kumbirai and Webb (2010) investigated the performance of South Africa’s commercial banking sector for the period of 2005-2009. They employed financial ratios to measure the profitability, liquidity and credit quality performance of five large South African based commercial banks. The study found that overall bank performance increased considerably in the first two years of the analysis. A significant change in trend is noticed at the onset of the global financial crisis in 2007, reaching its peak during 2008-09. This resulted in falling profitability, low liquidity and deteriorating credit quality in the South African Banking sector.

Prasad (2012) evaluated the performance of public and private sector banks for the period of 2006-2010. A sample of 39 banks consisting 26 public sector and 13 private sector banks were selected for the study. The study applied CAMEL model which measure the performance of banks from each of the important parameters like Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality and Liquidity. The study concludes that there is no significant difference between performance of public and private sector banks.

Kavitha (2012) examined the asset and liability management in Indian banking sector. The main objective of the study is to identify the optimal mix of assets and liabilities for the profitability of banks. The sample of the study consists of 56 banks comprising 8 SBI and its Associate banks, 19 Nationalised Banks Group and 29 Private Sector Banks Group for the ten year period of 2000-2001 to 2009-2010. The study used ratio analysis to identify the optimal mix of banks in relation to profitability. The study
calculated Debt-to-Equity ratio, Capital Adequacy Ratio, Ratio of Term Deposits to Total Deposits, Ratio of Liquid Assets to Assets, Ratio of provisions and Contingencies to Total Assets, Cash Deposit Ratio, Ratio of Other Assets to Assets, Credit- Deposit Ratio, Ratio of Fixed Assets to Assets, Ratio of Priority Sector Advances to Advances and Ratio of Borrowings to Total Assets. The findings of the study show those SBI and its Associate bank groups are better performers as compared to Private Banks Group and Nationalized Banks Group.

Uppal and Amit (2012) compared the growth balance sheet of all Indian scheduled commercial banks for the time period of 2008-2011. The study is concerned with banking industry as a whole and it is further divided into four parts namely public sector banks, old private sector banks, new private sector banks and foreign banks. The study takes into consideration each and every parameter of the balance sheet of these four bank groups. The study concluded that public sector banks and foreign banks are performing better on both sides of the balance sheet as compared to the other two bank groups. The study pointed out that the performance of old private sector banks is most disappointing among the four bank groups.

Joseph (2012) compared the financial performance of nationalized banks and new generation banks for the period 2005-2011 by using financial ratios. The study analysed the financial performance of three nationalised banks such as Indian bank, Corporation Bank, Canara Bank and New generation banks such as Axis Bank, ING Vysya Bank and Kotak Mahindra Bank. The study rated individual banks under seven key parameters – Investment valuation, Profitability, Management Efficiency, Balance Sheet, Debt Coverage and Leverage. The study found that the financial performance of nationalized banks is rated higher as compared to new generation banks under all six parameters.

Devanadhen (2013) studied the performance evaluation of large-size commercial banks in India. The study covers 14 public sector and 3 private sector banks under the CAMELS model for the period from 2000-2011. The study found that the Andhra Bank secured the first place followed by Corporation Bank and HDFC Bank. Axis Bank and ICICI Bank were ranked 6th and 14th respectively. Central Bank of India stood last in the overall performance and SBI (largest public sector bank) exhibited better performance than ICICI Bank (largest private sector bank).
Rao (2013) examined the productivity, cost and profitability performance of Traditional banks vis a vis Modern banks for the period from 2005-2011. The study classified SBI group, nationalised group and old private sector banks group as traditional banks and new private sector banks and foreign banks as modern banks. A total number of 12 ratios have been selected with a minimum of three and maximum of five in each category to examine the extent of gap between the modern and traditional banks. The study concludes that the gap between the modern and traditional banks significantly reduced during the study period.

2.2 REVIEW OF LITERATURE RELATED TO CRAMEL MODEL

Boaz.M.W and Donatilla. K.K (2008) studied the financial liberalization and bank efficiency in Kenya. The main objective in this empirical investigation is to measure profit efficiency of the banking sector based on Alternative Profit Efficiency (APE). The researcher applied CRAMEL technique and found that the mean profit efficiency in the banks declined immediately after the reforms. Commercial banks with high net profit loans reported low efficiency scores.

Ravichandran et al. (2010) analysed the efficiency and performance of selected public and private sector banks that have gone through merger process as a result of market forces. The study is to investigate the performance of those banks three years before the merger took place and three years after the completion of the said merger. The study considered three private banks and four nationalized banks for the period 2000 to 2007. The study adopted CRAMEL (Capital Adequacy, Resources Raising Ability, Asset Quality, Management Quality, Earnings Quality and Liquidity) model to assess efficiency and performance of the selected banks. The results suggest that the mergers did not seem to enhance the productive efficiency of the banks as they do not indicate any significant difference. The financial performance suggests that the banks are becoming more focused on their retail activities (intermediation) and the main reasons for their merger is to scale up their operations. However, it is found that the total advances to deposits and the profitability are the two main parameters which are to be considered since they are very much affected by mergers. Also the profitability of the firm is significantly affected giving a negative impact on the returns.

Business India (2003), constituted a panel of experts to identify best bank among the scheduled commercial banks operating in India. The panelists used CRAMEL model (with minor modifications) to compute various ratios under each measure like Capital
adequacy, Resources deployed, Asset quality, Management efficiency, Earning quality and Liquidity and concluded that ICICI was the best bank for the year 2003-04.

**Ravichandran and Sharma** (2012) analysed the efficiency and performance of selected commercial banks in Saudi Arabia. The study considered 8 commercial banks for a period of 10 years (2000-2009). CRAMEL model (Capital Adequacy, Resource Raising ability, Asset Quality, Management Quality, Earnings Quality and Liquidity) was adopted to assess the efficiency and performance of Saudi banks. The results of the study shows that all the Saudi commercial banks were performing well and the only area all the banks has to concentrate was asset quality. The study also noted that concentration over public deposits was very low when compared to the loans. The results of the ranking based on CRAMEL ratio’s performance shows that AI Jazira Bank was rated as best bank when compared to the other Saudi Arabian banks.

**2.3 REVIEW OF LITERATURE RELATED TO BANKOMETER MODEL**

**Makkar and Singh** (2012) made an attempt to evaluate the solvency of 37 Indian commercial banks using Bankometer Model covers the period of 2006-07 to 2010-11. The study found that all the Indian banks are financially solvent and revealed that private sector banks has performed well and are financially more sound as compared to public sector banks. Top five financially sound banks include Kotak Mahindra, Federal, ICICI, HDFC and Development Credit Bank. The worst five banks include Central Bank of India, UCO, Syndicate Bank, Bank of Maharashtra and State Bank of Travancore. The study concluded that Bankometer will help the bank’s internal management to avoid insolvency issues with a proper control over their operations.

**Senthilkumar** (2012) in his study on “Analyzing the financial performance and soundness of select Indian Public sector and Private sector banks: An application of Bankometer Model” examined the financial soundness of the top five public sector and private sector banks in India during the reforms period 2008-09 to 2010-11 by applying Bankometer Model. The study found that all sample banks are financially solvent. The study revealed that private sector banks are performing well and are financially more sound as compared to Indian public sector banks. The study concluded that Bankometer will help the bank’s internal management to avoid insolvency issues and improve the financial soundness with proper control over their operations.
Erari et al. (2013) analyzed the precision and accuracy of the financial ratio model by using CAEL, Z-score and Bankometer in assessing the financial performance development of Bank Papua within the period from 2003 to 2011. The results show that the model CAEL and Bankometer give the same assessment that Bank Papua, from 2003 to 2011, had good well being, was highly liquid, had strong capital, were able to manage debt well, had good profitability, and asset quality but was still lacking efficiency. Z-score model reversely put Bank Papua in a grey area and went bankrupt in 2007 and 2011, weak liquidity and capital. These findings reinforce previous research which suggests that Z-score model is not appropriate to be used in banking, however, the use of Z-score is recommended as the dissenting opinion and early warning system in assessing financial performance of a bank, because it can correctly show critical points in financial management of a bank. All the three models used in the study show that the Bank Papua has good profitability.

Nimalathasan et al. (2013) compared the financial position of state and private sector banks in Srilanka from 2006-2010. The study analysed the efficiency of the banking sector in Sri Lanka using Bankometer approach. Bankometer ratios are derived from both the CAMELS and CLSA stress test parameters with some modifications. On the basis of the Bankometer results it is found that state banks are in a sounder solvency position in comparison to private sector banks.

2.4 Summary

This chapter has exhibited the studies conducted and review of literature available on the subject of research. After this review of literature, it is being observed that the earlier studies were conducted on the financial performance of banks, financial reforms and its impact on individual banks. There are very few studies have been conducted on the financial performance of the banks with CRAMEL model and none of the study is conducted with the application of CRAMEL and Bankometer models. This research gap made the researcher to analyse the “EFFICIENCY, PROFITABILITY AND FINANCIAL SOUNDNESS OF SCHEDULED COMMERCIAL BANKS IN INDIA – APPLICATION OF CRAMEL AND BANKOMETER MODELS”.