CHAPTER-2
REVIEW OF LITERATURE

Banks play a significant role in financing the economic needs of the country. To compete effectively in present day competitive world, banks have been permitted to undertake new activities such as investment banking, securities trading, insurance business, etc. The number of market players has increased as their entry barriers have erased. The researchers and economists have recognized that the measurement of productivity and profitability in banking is necessary to improve the financial soundness of banks. A large number of studies have been conducted in the field of operational and financial performance of banks. A brief review of some of these studies has been presented in this chapter.

**Angadi and Devraj (1983)** measured productivity of Indian banks for the period 1970-80. They took total working funds (deposits and credits) as output indicator while establishment expenses as input indicator. They calculated return per rupee of establishment expenses. The results indicated that the productivity of the banking system as a whole witnessed a considerable decline during the years 1970-75. Between the years 1975 and 1978, the productivity improved but again in the year 1979 it declined. Among the bank-groups, the productivity of public sector banks, which declined to 45.5 per cent in 1975 from 53.3 per cent in 1970 improved in 1977. However, it showed a sharp decline in 1980. The productivity of private sector banks, which had been mostly lower than that of other bank-groups, showed an improvement in 1979. In the case of foreign banks, the productivity was always higher than other bank-groups. They concluded that the rapid expansion in rural and semi-urban commercial banks in the initial period of nationalization, without corresponding growth in business of these offices, contributed to the deceleration in productivity of these banks.

**Verghese (1983)** evaluated the profits and profitability of Indian commercial banks during the period 1970 to 1979. He measured the profitability of commercial banks in terms of gross profit, net profit, operating margin, gross yield on assets, spread and spread ratios. Trends of productivity in
terms of average deposits per employee, salaries and wages per unit of deposits and advances, share of establishment expenses in total current operating expenses and net income per employee has also been calculated. The study revealed that gross profits and net profits have shown an increasing trend while spread and spread related ratios declined over the study period. Average assets per employee, average deposits, advances per employee, salaries and wages per employee, and net income per employee have shown an increasing trend while share of establishment expenses in the current operating expenses declined during the study period. The study analyzed an overall improvement in employees’ productivity but it varied from year to year basis. The study found that the monetary policy measures like interest rate changes, credit reserve ratios and statutory liquidity ratios have an impact on the profits and profitability of banks.

**Nayan (1985)** conducted a study on the performance evaluation of commercial banks and presented a performance evaluation model on the basis of important quantifiable parameters of performance. The main findings were that the present system of ranking the banks on the basis of aggregate deposits failed to reflect their overall achievements. The existing system of performance budgeting is not suitable at branch level. On the basis of all important and quantifiable parameters of performance, an integrated performance index needs to be developed for evaluating the performance of commercial banks.

**Ojha (1987)** made international comparison with respect to productivity of banks between countries like India, Iraq, Japan, United States of America, Britain, Australia, Brazil and Pakistan for the year 1985. The key efficiency indicators used by him were: per employee assets, deposits, net interest and pre-tax profits as well as percentage of pre-tax profits on assets. The results showed that Japan was the first in respect of assets per employee, which was more than 63 times of the State Bank Group of India. Japan was also the top performer in terms of deposits. United States of America showed the highest net interest income per employee and Iraq was the top pre-tax profit earner. Brazil occupied the top position with respect to the pre-tax profits as
per cent of assets, India was at the bottom. He also analyzed the productivity growth for 4 selected years of public sector banks in India since 1969. The years considered were 1969, 1979, 1983 and 1984. The results showed that there had been a substantial growth in productivity per employee in public sector banks since 1969. Net profits of these banks, however, showed a much lower increase. He concluded that the growth in productivity had not been enough to offset the declining trend in profitability. The reason behind this was the excessive recruitment of staff by banks in order to cope with the rapid expansion of branches and volume of business since 1969 without giving serious thought to computerization of banks. He suggested that in order to increase productivity banks should pay attention towards human resource development through training. A deliberate system of planning in banks should be introduced.

Chawla (1988) analyzed the development and growth of banking activities after nationalization especially in the Punjab state during the period 1969-83. The study found that nationalization of major commercial banks in 1969 made a highly positive impact on deposit mobilization, credit deployment and branch expansion in the state. Although inter-district disparities continue to exist, yet a trend was noticed for reduction in these disparities. The performance of banks in relation to schemes and programmes initiated for upliftment of weaker sections after nationalization both in quantitative as well as qualitative terms was found to be unsatisfactory. The researcher observed that within priority sector the relatively well-off have got the maximum benefits, whereas the poor have remained credit starved.

Nyong (1989) examined the impact of managerial effectiveness on profitability of Nigerian Banks. He had also discussed the various other measures which affected the profitability of banking industry in Nigeria. For the analysis purpose, a sample of 40 Nigerian banks including 27 retail banks and 13 wholesale banks has been taken which were in existence in the year 1987. Cross-sectional data has been used along with questionnaires and interviews. The study found that if banks employed strong motivation factor, then the bank employees’ which were having long
years of experience along with good education were proved to be most productive and profitable. The study suggested that the human capital programmes should be included to improve the efficiency of managerial employees, and higher attainable targets should be set to motivate the employees of the banks.

Singh (1990) examined the trends and changes in productivity in Indian banking industry in relation to employee productivity and branch productivity. The researcher used 17 indicators to analyze productivity trends and these indicators were divided into three categories – Per employee indicators (labour productivity), per branch indicators (branch productivity), and Financial ratios measuring productivity. The study period (1969-85) was divided into four sub periods. Cross-sectional and inter-temporal analysis has been done on the basis of various productivity indicators, and compound annual growth rate has also been calculated. In addition to the comparison of growth rates of various indicators assessment of relative position performance has been made on the basis of average T- scores and ranking based on it. Indian Bank and Indian Overseas Bank made the most significant improvement. The bank which recorded the maximum deterioration was United Commercial Bank, in terms of employee productivity. There was a notable slide down in the positions of Allahabad Bank, Bank of Maharashtra and State Bank of Patiala. The researcher recommended that the role played by the structure of subsidiaries of State Bank of India in their relative poor performance needed to be examined.

Kaur (1991) studied the profits and profitability of 20 Public Sector Banks during the period 1976 to 1985. The researcher employed trend analysis, ratio analysis and regression analysis for the study purpose taking 11 variables, which reflected different dimensions of banks’ operations, and hence, affected the banks’ profitability. The study was primarily based on the secondary data. The researcher was of the view that spread and burden were the two main factors, which influenced the profitability of a bank. The other factors determining bank’s profitability were credit policy, priority sector lending, massive geographical expansion, increasing establishment
expenses, low non-fund income, deposit mobilization, etc. Further, she recommended that nationalized banks need to focus attention on the management of spread, burden, establishment expenses, ancillary income, deposit composition and diversification into wide range of financial services.

**Vashisht (1987)** evaluated the performance of public sector banks on the basis of branch expansion, deposits, credit, priority sector advances, differential rate of interest (DRI) advances and net profit over the period pertaining to 1971-83. For the study purpose, the researcher ranked the banks as excellent, good, fair and poor by using composite weighted growth index. The study ranked Indian Overseas Bank on the top and Dena Bank on the bottom among the banks taken under study. The researcher suggested the development of marketing strategies for deposit mobilization, profit planning and SWOT analysis in order to improve the performance of public sector banks.

**Nayar (1992)** studied the profitability and profit planning of nationalized banks for the years 1970 to 1986. Growth and trends in performance and profitability were analyzed in terms of three main ratios, i.e., return on investment, deposit mobilization and profit margins. The study evaluated that in terms of deposits, advances to priority sector and number of branches, Central Bank of India ranked first followed by Bank of India and Bank of Baroda. The maximum compounded annual growth rate in terms of deposits was confined to the period 1976 to 1981 by all the banks except Central Bank of India. Indian Overseas Bank recorded maximum return on investment followed by Central Bank and Bank of Baroda. Finally, she suggested the various measures to improve the profitability of commercial banks which included acceleration of recovery process, mixture of credit portfolio, control over volume, deposit mobilization, diversification of activities into non-traditional banking business such as merchant banking and mutual funds.

**Singh (1992)** carried out a comprehensive study to analyze the trends in the productivity of the Indian banking industry since nationalization of 14 major banks in 1969 till the year 1985. The State Bank of India and its
subsidiaries along with the banks nationalized in 1969 were considered for analysis. He performed cross-sectional and inter-temporal analysis on the basis of 17 indicators. The indicators were: deposit per employee; credit per employee; business per employee; establishment expenses per employee; spread per employee; deposit per branch; credit per branch; business per branch; total earnings per branch; total expenditure per branch; total earnings as percentage of total credit; establishment expenditure as percentage of total expenditure; establishment expenditure as percentage of total earnings; volume of business per Rs. 100 of establishment expenses; and volume of business per Rs. 100 of total expenditure. The results provided that all the banks under study showed improvement in their productivity except that UCO Bank, which showed decline in productivity from all angles. He suggested that banks should monitor the productivity and its growth on the basis of key indicators identified by him. All banks should create productivity cells. These cells should develop and implement productivity improvement programmes. He further suggested that the information relating to productivity should become a part of the annual reports of banks.

Vyas (1992) made an attempt to measure, compare and analyze the profitability of public sector banks, private sector banks and foreign sector banks operating in India. The study evidenced that public sector banks had low profitability as compared to private sector banks and foreign banks. Public sector banks suffered from poor asset management and low exposure on non-fund based activities. The study evaluated that non-interest income was very high in the case of foreign banks as compared to Indian public sector banks and private sector banks. The researcher suggested that public sector banks have to emphasize on the improvement of asset management and exposure to profit yielding services like merchant banking, mutual funds, personal advisory services, credit cards, personal banking and international banking.

Kaur (1993) studied the trends in profitability in commercial banks and examined the factors responsible for the erosion of bank profitability. She
employed trend analysis and ratio analysis for this purpose. She observed that the banks needed to focus attention on the management of spread, burden, establishment expenditure, ancillary income and deposit mobilization for improving their profitability. Her results contradicted the traditional belief that in the post-nationalization period, the profitability of Indian commercial banks declined mainly due to priority sector lending and rural banking. According to her, the social obligations of banks were not a major drag on the banks’ profitability. Rather, a default lied somewhere else, may be in the organizational structure, funds management or overall efficiency of banking operations.

**Kaushik (1995)** studied the social objectives and profitability of public and private sector banks during the period 1973 to 1991. He compared the public and private banks with the help of various profitability and productivity indicators through ratios, average, correlation, regression and factor analysis. He found that public sector banks were having lower profitability as compared to private sector banks. Further, he found that the various productivity indicators showed an increasing trend during the period of study for all the banks though the increase was much higher in the case of private sector banks. He concluded that the profitability of public sector banks showed a declining trend due to social objectives not because of cost inefficiency and low productivity. He suggested that productivity could be increased with the help of innovative banking, improved technological and managerial knowledge, well educated and trained manpower and infrastructural facilities.

**Das (1997)** examined the efficiency of public sector banks in India since nationalization by using longitudinal data. The data considered was related to the years 1969, 1970, 1984, 1990 and 1996. The two outputs considered were: the spread and commission, the exchange and brokerage. The two inputs were: the deposits and the loanable funds. A non-parametric approach was used to calculate the overall, technical, allocative, pure technical and scale efficiency. The State Bank Group was more efficient than the Nationalized banks. The main cause of inefficiency was technical in
nature rather than allocative. Inefficiency in public sector banks was due to wasting or under utilization of resources. The public sector banks improved their allocative efficiency significantly in the post-nationalization era. He found that the public sector banks in the year 1996 had scope of producing 1.3 times as much output from the same inputs. He concluded that the deregulation was not the only change required to affect the efficiency of a bank. There are many other factors in the economy, which influence and shape the performance of a bank favourably or unfavourably depending on the bank’s risk exposure.

Ramamoorthy (1997) measured the productivity of Indian commercial banks for the period 1991 to 1996 using business per employee as the measure of productivity. The results showed that productivity for the whole banking system had gone up from Rs. 45.33 crore to Rs.73.40 crore with a growth rate of 12.80 p.a. during the post-reform period (1992-96). The nationalized group, which was incurring losses, had the highest productivity at Rs.44 lakh in the pre-reform period (1991-92). This prime position was taken over by private sector banks with productivity level of Rs. 83.39 lakh in the year 1995-96. He observed that the productivity figures of new private sector banks and foreign banks were incomparable with others due to their limited network, class banking character and fully automated conditions. He concluded that measuring productivity as the business per employee did not truly represent the business in all its facets both from quantitative and qualitative angles. Therefore, the researchers should keep trying to evaluate productivity on various other alternative criteria.

Sarkar and Das (1997) examined the inter-bank performance differences in the efficiency of the banking sector with respect to various indicators of profitability, productivity and financial management for the year 1994-95. For each of the performance criteria, the area-specific efficiency index was worked out based on 15 indicators using the principal component analysis. Fifteen indicators used were: net profit as percentage of total income, return on assets, return on equity, net profits as percentage to deposits, net profits as percentage to spread, advances per employee, deposits per employee,
income per employee, spread per employee, number of accounts per employee, yield on assets, yield on advances, yield on investment, spread as percentage to establishment expenses, spread as percentage to total assets. The results showed that out of the top 25 banks, 22 banks were the foreign banks and remaining 3 banks belonged to the private sector bank group. Among the nationalized banks, the Oriental Bank of Commerce showed a relatively better performance as compared to the other nationalized banks. They concluded that there were wide differences in efficiency among banks with different ownership patterns. The performance of public sector banks was relatively poor as compared to other categories of banks. This was due to their typical organizational culture, technological development, employment pattern, managerial skills, etc.

Chen and Yeh (1998) measured the operating efficiency of Taiwan’s commercial banks for the year 1996. Data relating to seven Public Sector Banks and twenty-seven Private Sector Banks has been analyzed. Data Envelopment Analysis model has been used to measure the operating efficiency of Taiwan’s Banks. Most efficient Decision Making Unit (DMU), i.e., Bank was considered the standard for comparison for all other Banks. Efficiency and profitability has been calculated by using correlation coefficient. The results revealed that fifteen commercial banks were relatively more efficient than other selected banks, and Public Sector Banks were found to be inefficient as compared to Private Sector Banks because they lack in managing their resources. The authors suggested that better handling of labour, effective resource mobilization, proper use of available capital could help inefficient banks to improve their performance.

Chandan and Rajput (2002) evaluated the performance of banks on the basis of profitability analysis. The researchers analyzed the factors determining the profitability of banks in India with the help of multiple regression technique. They found that spread, i.e., net interest income is the major source of income for banks. The study found public sector banks at weaker position in relation to foreign banks and private sector banks. The authors suggested that public sector banks should concentrate on non-
performing asset management and also make investment in technology upgradation for better data management and quicker flow of information. **Cheema and Agarwal (2002)** analyzed the productivity of commercial banks in India and compared the performance of public sector banks, private sector banks and foreign banks in India. Public sector banks were divided into two categories, i.e., State bank group and nationalized banks. The input variables like owned funds, deposits, borrowings and wage bills were used. The output variables like spread, non-interest income were used. The mean productivity scores of all public sector banks were found to be the same. Among public sector banks, State Bank of Patiala and Allahabad Bank were found to be most efficient banks in their bank groups, and Jammu & Kashmir Bank in private sector bank group. ING Bank was on the top among foreign banks group. The study revealed that the inefficiency among public sector banks was found due to excessive amount of owned funds, and inefficiency among foreign banks was due to excessive borrowings. The researchers suggested that concentration should be put on the proper utilization of deposits and borrowings, and on the diversification of their activities in order to improve the efficiency of banks. **Kumar (2002)** analyzed the impact of information technology on growth and performance of Indian banks in terms of profitability and productivity for the period ranging from 1995 to 2000. The researcher evaluated the perception of bank customers regarding the use of modern technological services provided by the banks. For the purpose of study, banks were divided into four groups. These groups are classified as: Group-I comprised of three new fully computerized private sector banks providing online services (ICICI Bank, HDFC Bank and Centurion Bank of Punjab, Group-II consisted of three fully computerized private sector banks but providing partially online services (Bank of Punjab, IndusInd Bank and IDBI Bank), Group-III included Nationalized Banks partially computerized (Punjab National Bank, Oriental Bank of Commerce, and Punjab & Sind Bank), and Group-IV comprised of partially computerized State Bank of India and its subsidiaries (State Bank of India, State Bank of Patiala and State Bank of Bikaner &
Ratio analysis has been used to calculate employee productivity, branch productivity and financial productivity. The study evaluated that almost on all accounts fully computerized banks with online service providing facilities banks performed relatively better. This has also been supported by the respondents who were found to be satisfied in the case of Group-I and Group-II category rather than Group-III and Group-IV categories. The researcher suggested that public sector banks should emphasize on providing computerization and IT related customer services, and extending information technology in rural and semi-urban sectors.

**Sangmi, M. (2002)** analyzed the profitability of ten selected commercial banks in India. Five best performing banks were taken in Class-1 and five poor performing banks were taken in Class-2 categories. The period of study was from 1991-92 to 1997-98. The profitability ratios like spread, burden, interest revenue, non-interest revenue, interest cost, manpower cost and facility cost have been calculated. The study revealed that operating cost was higher in the case of Class-2 banks and in these banks the profitability was affected due to low level of spread. These banks required more scientific attempts for the investment of funds. The researcher suggested that the position of operating cost can be improved with the introduction of high level technology as well as by improving the per employee productivity.

**Kumari (2003)** studied the profitability and productivity of both public and private sector banks in India. The study primarily based on the secondary data covering the time period from 1980 to 1999 by taking into account the 50% of total public and private sector banks in India. Various indicators relating to employee and branch productivity as well as ratios relating to financial productivity and profitability of commercial banks have been employed for the purpose of study. The researcher found that in terms of deposit mobilization, branch expansion, credit deployment and employment generation both public and private sector banks have shown increasing trend. Bank-wise analysis revealed that private sector banks have shown higher growth as compared to public sector banks. The researcher suggested that public sector banks should improve their profitability and productivity.
performance by adopting innovative modern technological changes, opening up of new branches, adopting aggressive marketing strategies and by fixing responsibility of officers for recovery, etc.

Qamar (2003) examined 100 scheduled commercial banks including 42 foreign banks, 8 new private sector banks, 23 old private sector banks and 27 public sector banks in terms of endowment factors, risk factors, revenue diversification, profitability and efficiency parameters. Data relating to financial year 2000-01 has been used from the annual accounts of the banks. Banks for the study purpose were categorized into public sector banks, old private sector banks, new private sector banks and foreign sector banks. The study indicated that all the selected scheduled commercial banks were found to be different in terms of total assets, share capital, capitalization ratio and efficiency factors. Much difference in the profitability performance of banks was found due to human resources efficiency as measured in terms of business per employee.

George et al. (2004) used Camel Model to evaluate the performance of private sector banks like Bank of Punjab, Centurion Bank, Development Credit Bank, HDFC Bank, ICICI Bank, IDBI Bank, IndusInd Bank, Kotak Mahindra Bank, UTI Bank and Yes Bank of India from the year of their inception. In this study, researchers used 20 variables in total for capital adequacy, asset quality, management quality, earnings and liquidity parameters. The study brought out that the performance of Kotak Mahindra Bank was the most excellent during all the years under study, followed by HDFC Bank and IndusInd Bank.

Kumar (2004 a) analyzed the efficiency of Indian Banking Sector comprising of four groups, i.e., SBI and its associates, Nationalized banks, Indian Private Sector banks, New Private Sector banks and Foreign banks for the period 1992-93 to 2002-03 by using various indicators. The study was primarily based on secondary data; and data envelopment analysis has been employed on various financial parameters to compute the productivity and efficiency of bank groups. The researcher found that public sector banks outperformed in case of total income, total expenditure, net profits, number
of branches, return on equity, return on assets, spread as per cent of total income and volume of business, while private sector banks and foreign banks were better in terms of net profit as per cent to spread, per employee and per branch productivity. It was found that private sector banks and foreign banks have branches mainly in metropolitan cities, while public sector banks are having small sized bank branches covering small masses. The study suggested the scope of further improvement for public sector banks by following appropriate marketing practices.

**Kumar (2004 b)** studied the impact of liberalization on productivity and profitability of 27 public sector banks for the period extending 1991 to 2002. He used the statistical tools like trend analysis, ratio analysis and concentration indices on various indicators based on secondary data for the purpose of study. He analyzed that in terms of productivity, Oriental Bank of Commerce registered continuous improvement, while Central Bank, Bank of India and Bank of Baroda performed well in branch productivity. The researcher suggested that public sector banks should improve their appraisal system, operational efficiency, non-performing assets management and management information system.

**Shannugam and Das (2004)** made an attempt to measure the technical efficiency of banks in India during the period 1992-99 by using stochastic frontier approach. For analyzing the efficiency of banks, four outputs, i.e., Interest Margin, Non-Interest Income, Investment and Credit; and four inputs, i.e., Deposits, Borrowings, Labour and Fixed assets have been used. The results revealed that there has been dominance of deposits in producing all the outputs during the study period and an improvement in banking industry has been found in raising non-interest income, investments and credits. The study indicated that state bank group and private owned foreign group performed better than their counterparts.

**Sooden and Bali (2004)** made an attempt to find out the major determinants of profitability in banks. With a view to make a comparison in the profitability trend in all 27 public sector banks different indicators of profitability have been formulated. A rising value of the indicators had taken
as a positive sign in the sense that profits were increasing directly or indirectly with only exception of establishment expenses to total expenses. The analysis revealed that in later years of 1990s the economic profitability of public sector banks appeared to be improving. But at the same time, the falling priority sector lending had the chances to erode the social profitability linked with public sector banks in coming years.

Aggarwal (2005) measured the relative productivity of Public Sector Banks. Productivity of all the existing twenty-seven Public Sector Banks for the year 2003 has been calculated. The researcher used Data Envelopment Analysis technique to measure the productivity. The researcher found five out of eight banks under State Bank Group and nine out of nineteen Nationalized Banks to be efficient. Their inefficiency was due to excessive borrowings. The researcher pointed out that these banks were not properly maintaining their income from commission, income from exchange and income from borrowings.

Arora and Verma (2005) studied the banking sector reforms in India and evaluated the performance of public sector banks during the reforms period. The data of 27 public sector banks, i.e., 19 nationalized banks, and State Bank of India and its seven associates for the year 1992 has been taken. Banking sector reforms were studied in relation to Prudential Norms, Capital Adequacy Measures, Structural Regulation, Deregulations of interest rates, accounting and disclosure norms, HRD initiatives, asset liability management system and risk management guidelines. Performance of public sector banks has been evaluated on the basis of Financial Parameters, Operational Parameters, Profitability Parameters and Productivity Parameters. The authors concluded that in order to remove subjectivity in banking sector, major steps like Prudential Norms, Income Recognition Provisioning should have been taken. The researchers suggested that to correct the impact of directed investments on profitability reserve requirements should be reduced.

Debasish and Mishra (2005 a) evaluated the performance of public sector banks (Nationalized banks and State Bank of India). The study was confined
to 9 years from 1993 to 2001. The data for the study purpose has been collected from both primary as well as secondary sources. The researchers analyzed the financial performance, profitability and productivity of public sector banks by employing various statistical tools like ratio analysis, correlation and regression analysis, factor analysis etc. The study found that spread as percentage to working funds has a positive effect and burden as percentage to working funds has a negative effect on the profitability of nationalized banks and State Bank of India. Satisfaction level among customers regarding performance of banks has also been studied through a questionnaire. The study concluded that nationalized banks in India need to adopt specific improvement in order to survive in present day world of stiff competition.

Debasish and Mishra (2005 b) tried to develop a discriminant function for bank profitability by using ratio analysis and measured the extent to which such ratios influenced the bank profitability. The study was confined to 78 banks including 27 public sector banks, 23 private sector banks and 28 foreign sector banks. The data related to the year 1999-2000 has been analyzed. The ratios relating to liquidity, return performance, expense parameters and operational efficiency have been calculated. In total 13 ratios have been employed. Step-wise discriminant analysis has been used for developing the discriminant function. Discriminant analysis identified that out of calculated 13 ratios, only 5 of the ratios proved to be significant discriminators of banks’ profitability. The study found that classification accuracy was 75% in the case of foreign banks, 54% in private sector banks and 60% in public sector banks.

Reddy and Rao (2005) made an attempt to identify factors in context of financial sector reforms which could lead to change the position of different bank groups i.e. public sector banks, private sector banks and foreign banks in terms of their share in overall banking industry. The authors found that the share of public sector banks has declined in total assets of banking sector due to new competitive environment. The researchers further suggested the adoption of customer-oriented banking practices with new
technologies for public sector banks to face stiff competition.  

**Singla and Arora (2005)** measured the financial performance of two nationalized banks, i.e., Canara Bank and Indian Bank; and the comparison has been made about the performance of selected banks. The data used for the study pertained to four years, from 2000-01 to 2003-04. The data for the study purpose mainly related to Deposits, Advances, Average Working Funds, Net Profits and Operating Profits. The study revealed that both Canara Bank and Indian Bank have improved their financial performance. The growth of Deposits, Advances, Average Working Funds of Canara Bank was better than Indian Bank. But the ratio of Net Non-Performing Assets to Net Advances has decreased in the case of both the banks under study, i.e., Canara Bank and Indian Bank. However, the performance comparison of both the banks in terms of Growth Rate showed Indian Bank in a better position than Canara Bank. The analysis revealed that when productivity Ratios like Business per employee, per Branch and operating Profit per employee, per Branch were compared then both Canara Bank and Indian Bank showed an increasing trend but it remained higher in the case of Canara Bank.

**Arora and Kaur (2006)** reviewed the financial performance of Indian banks during post-reform era. For the analysis banks were categorized on the basis of ownership, i.e., Foreign Sector Banks, Private Sector Banks, Nationalized Banks, and State Bank of India and its seven associates. Secondary data pertaining to the period 1996-97 to 2004-05 has been used for the study purpose. Financial Performance of banks was analyzed on the basis of Return on Assets, Capital Asset Risk Weighted, Non-Performing Assets to Net Advances, Business per Employee, Net Profitability Ratio, Non Performing Assets level and Off Balance-Sheet Operations. The researchers recommended that for enhancing financial viability of public sector banks, efforts should be made to reduce the Non-Performing Assets and to upgrade the technology. For enhancing business per employee, continuous and compulsory Training and Development Programmes should be introduced in the banks.
Bodla and Verma (2006), in their paper, evaluated and compared the performance of two banks in India, one from the public sector, i.e., State Bank of India and the other from the private sector, i.e., ICICI Bank. The analysis was done on the basis of CAMEL Model. The study covered the time period from 2000-01 to 2004-05. The results showed that both the banks have maintained higher level of capital adequacy ratios than the level prescribed by Reserve Bank of India. Assets quality ratios of both the banks have been improved. State Bank of India has an edge over ICICI Bank in terms of liquidity ratios and ICICI Bank has outperformed SBI Bank in terms of ratios of operating profit to average working funds and net profits to average assets. On the whole, ICICI Bank has performed better than SBI Bank.

Debasish (2006) measured the relative performance of Indian banks over the period 1997-2004 by using output-oriented data envelopment analysis model. For the study purpose, the banking sector in India has segregated on the basis of bank assets size, ownership status and years of operation. The study revealed that Foreign Owned Banks were more efficient than Public Sector Banks and Private Sector Banks. It was found during the study period that at local level Large sized banks and at global level Small sized banks were found to be more efficient than Medium sized banks. The study supported the conclusion that new private sector banks were more efficient than the old private sector banks because old private sector banks were often overburdened with old debts.

Kohli and Chawla (2006) made an attempt to analyze the emerging trends in profits and profitability. The study related to four banks, two each from the public sector and private sector banks. The study covered a time period of ten years from 1995-96 to 2003-04, and data relating to variables like interest income, interest expenditure, non-interest income, non-interest expenditure, total assets, operating expenditure, deposits and advances have been utilized. Trend analysis and ratio analysis have been employed to measure the profitability and efficiency in banking operations. The study revealed that the performance of selected private sector banks (ICICI Bank
and Bank of Punjab) has been better than the selected public sector banks (SBI Group and Punjab National Bank). The researchers recommended that the use of Information Technology should be expanded in public sector banks as in the changing scenario volume of business, growth and profitability of banks would be determined by the technology.

**Maji and Day (2006)** examined the productivity and profitability of the banks in India, selecting five banks each from the public and private sector banks. The Banks have been selected on the basis of quantum of deposit mobilization. The data covered the time period from 1996-97 to 2003-04. The study revealed the productivity index of greater than 1 has been found for all the selected banks except few banks. In case of achieving the target level of profitability State Bank of India and Punjab National Bank were found to be more successful and the performance of Jammu & Kashmir Bank, Canara Bank and Bank of India was found to be poor. The authors pointed out that in their opinion Interest Spread has been an important influencing role in determining the profitability of Banks. The authors suggested that Bank of India and Jammu & Kashmir Bank should take necessary steps to utilize their available resources for enhancing their profitability.

**Ramathilagam and Preethi (2006)** tried to measure the cost efficiency and scale efficiency of the Indian Commercial Banks during the period 1992 to 2001. Distribution Free Approach has been used to specify the levels of efficiency of banks. It was evidenced that loans played an important role in influencing the total costs in the years 1992, 1998 and 2001. The bank costs were found to be inelastic with respect to personnel expenses. This inelasticity was due to adoption of new technology in banks as measured by the researchers. The average banks’ costs were higher than the minimum standard cost set in the banking industry. It was recommended that the banks should undertake proper cost audit to cut down the level cost and to improve the use of banks’ resources.

**Sanjeev (2006)** evaluated the efficiency of banks in India from the year 1997 to 2001. The study was conducted by using DEA Model, and to
evaluate the efficiency of banks these were categorized as public sector banks, private sector banks and foreign banks. The study was based on the hypothesis that the efficiency of commercial banks has improved during the reforms period, public sector banks to be less efficient, more competition to banks due to liberalization and deregulation and negative relationship between efficiency and non-performing assets of the banks. Based on these assumptions the study highlighted that the banks should be free to decide the level of deposits and interest rates. Loan appraisal and monitoring of banks should be strengthened along with upgrading of banking technology. The banks should adopt suitable measures to reduce wastages and to reduce the operating cost.

**Sharma (2006)** studied the performance of Punjab National Bank in comparison to other Public Sector Banks and all Commercial Banks (Public, Private and Regional Rural Banks) operating in rural, semi-urban and urban areas of Haryana state. The time period for the study has been taken from 1993 to 2004. The study is primarily based on the secondary data. The researcher employed various statistical tools for analysis purpose like arithmetic mean, standard deviation, coefficient of variation, correlation coefficient, simple growth rate and trend growth rate. The study depicted that Punjab National Bank is having highest growth rate in terms of non-agricultural sector advances but minimum growth rate in agricultural advances. The study found that Punjab National Bank has introduced the fee based income approach to improve the profitability of bank and accelerated the economic growth of Haryana state. The researcher further suggested that the Public Sector Banks should improve their communication system, customer relationship in rural market and suitable marketing strategies.

**Singh and Kohli (2006)** made an attempt to examine the performance of 30 Private Sector Banks for the years 2003, 2004 and 2005. The performance of selected banks has been evaluated by using CAMEL Model and individual ranks as well as composite scores have been calculated. To analyze the strengths and weaknesses of the banks SWOT Analysis has been done. On
the basis of composite scores top position among Private Sector Banks has
been attained by Bank of Punjab followed by HDFC Bank and Jammu & Kashmir Bank, while ING Vysya Bank, South Indian Bank and Lord Krishna Bank stood at bottom. The study concluded that the banks with innovative new products, better utilization of manpower resource and which offered strong brands have performed in a better way. The study further pointed out that the banks were facing stiff competition from foreign banks. To compete against foreign sector banks they should aim at providing efficient services to improve their position. They also need to adopt effective strategies to tackle the problems posed by the present competitive environment.

Sinha (2006) compared the cost efficiency position of Public and Private Sector Banks. The data related to thirty banks covering time period from 1998 to 2003. For the study purpose, 7 Public Sector Banks, 13 Nationalized Banks and 10 Private Sector Banks were selected. Data envelopment analysis has been used and means technical efficiency scores, mean allocative efficiency scores and mean cost efficiency scores have been calculated by taking the assumption of constant returns to scale. Numbers of Bank Branches and Amount of Borrowed Capital have been taken as Input and Non-Interest Income as Output to find out the ownership effect and size effect. The study evidenced that small banks exhibit higher cost and higher mean technical efficiency scores as compared to large banks. It was found that Public Sector Banks were 73% as efficient as Private Sector Banks under technical efficiency scores and 93% under allocative efficiency scores. The author observed that difference in mean cost efficiency was mainly due to divergence in technical efficiency.

Rajkumar (2007) examined the performance of 28 Private Sector Banks during the period 2005-06. The author used the data relating to income, expenditure and profits. He calculated the ratios relating to interest, expenditure, income and operating profit. The ratios showed that there was more increase in interest income in the year 2005-06 as compared to 2004-05, but operating expenses among total expenditure decreased. The profitability ratios of all the 28 Private Sector Banks showed a positive trend.
During the period ICICI Bank ranked No. 1 with highest amount of profits followed by HDFC Bank, UTI Bank and Federal Bank respectively; whereas Development Credit Bank Ltd. and United Western Bank Ltd. incurred losses.

**Uppal and Kaur (2007)** made an attempt to study the trends in costs and profits of partially and fully IT-oriented bank groups and to analyze the correlation between the variables. The data relating to five bank groups, i.e., nationalized banks, State Bank of India and its associates, old private sector banks, new private sector banks and foreign banks has been used from 1999-00 to 2005-06. Further, these banks have been divided into two categories, i.e., partially IT-oriented banks and fully IT-oriented banks. Parameters like net profit and operating expenses ratios to total assets and per employee expenditure have been used. Averages, standard deviation, coefficient of variation and T-test have been applied. A decreasing trend has been observed in per employee expenditure, and an increasing trend in net profits to total assets. The study revealed that cost should be properly managed to improve the profitability of banks because the net profits were affected by the increase or decrease in operating cost.

**Wu et al. (2007)** made an attempt to empirically examine the operational performance of Chinese banks. The study pertained to the period 1996-97 to 2004-05. Pooled Cross Section and Time Series Data were used for the empirical results. The data relating to fourteen Chinese banks has been used for the years 1997-2005. The researchers studied the factors which have an impact on the operational performance of banks like age of the bank, ratio of non-interest income to total income, size of banks in terms of assets and per capita. The study found that more control could result into better Return on Assets and performance of banks. The study evidenced that the Chinese banks were facing intense competition from foreign sector banks and suggested various steps to improve the operational performance like upgrading corporate governance mechanism, speeding the process of stock market listings. To improve the quality of personnel and to reduce the
operating cost system, human resource management system should be established.

Arora and Kaur (2008) made an attempt to study the determinants of diversification of banks in India and also analyzed the financial performance of banks in India. Bank group-wise data has been used for nationalized banks, SBI Group, new private sector banks and foreign banks for the period 2000-05. Profitability ratios like return on assets, interest income to total income, non-interest income to total income and capital ratios have been used to examine the financial performance of banks. Along with those ratios correlation technique has also been used to find out the degree of association between interest income and non-interest income among different bank groups. The researchers evaluated that continuous decline in interest margin pushed the banks to generate income from various alternative sources of revenues other than interest income. They found that public sector banks relied heavily on interest income while private sector banks and foreign banks relied more on generating income from non-traditional sources of income.

Goyal and Kaur (2008) analyzed the performance of seven new private sector banks for the years 2001-07. The various statistical tools like mean, standard deviation, annual compound growth rate and one-way Anova have been applied. The researchers calculated various ratios relating to capital adequacy, asset quality, employee productivity, earning quality and liquidity of banks. The study evidenced that capital adequacy ratio of all the banks has been above 9 per cent, the prescribed limit of Reserve Bank of India. Average debt/equity ratio is found to be maximum in the case of Axis Bank. Kotak Mahindra Bank registered maximum percentage increase in NPAs over the previous years. Ratio of advances to total assets increase in NPAs has shown an increasing trend for all the banks under study which showed an increase in lending operations. The study witnessed significant differences among the mean ratios of all parameters except for liquid assets to total assets, liquid assets to total deposits, net profit to average assets and percentage change in NPAs.
Shukla (2009) aimed at examining the recent trends in Indian Banking System and its impact on cost and profitability of 27 public sector banks, 27 private sector banks, and 29 foreign banks in India during the period 1991-06. The secondary data used for the study has been collected from annual reports of banks and published material from Reserve Bank of India. The study analysed that in the post-reform period Indian Banking System has become more competitive, more developed and financially viable due to several structural changes. The study evaluated that banks should focus on high operating cost and diversification of activities to remain competitive and profitable. The study evidenced the use of technology based services to intensify competition and to reduce operating cost and achieve higher profitability. The researcher recommended that some critical factors like security and integrity of system should be addressed, and greater emphasis should be given on banking and financial policies to strengthen the banking sector.

Bansal (2010) studied the impact of liberalization on productivity and profitability of public sector banks in India. The study has been conducted on the basis of primary as well as secondary data for the period 1996-07. The study concluded that the ability of banks to face competition was dependent on their determined efforts at technological upgradation and improvement in operational and managerial efficiency, improvement in customer service, internal control and augmenting productivity and profitability. The study found that public sector banks have to pay great attention to strategic management, strategic planning and to greater specialization in the technical aspect of lending and credit evaluation. It was recommended that public sector banks should strengthen their project appraisal capabilities. In order to raise their productivity and profitability, public sector banks should spell turnover strategies, income-oriented and cost oriented strategies from time to time.

Uppal (2010) studied the extent of mobile banking in Indian banking industry during 2000-07. The study concluded that among all e-channels, ATM is the most effective, while mobile banking does not hold a strong
position in public sector banks and old private sector banks. In new private sector banks and foreign banks, mobile banking is good enough with nearly 50 per cent average branches providing mobile banking services. Mobile banking customers are also the highest in banks providing electronic services, which have a positive impact on net profits and business per employee of these banks. Among all, foreign banks are on the top position followed by new private sector banks in providing mobile banking services; and their efficiency is also much higher as compared to other groups. The study also suggested some strategies to improve mobile banking services.

*Prasad and Ravinder (2011)* analyzed the profitability of four major banks in India, i.e., State Bank of India, Punjab National Bank, ICICI Bank and HDFC Bank for the period 2005-06 to 2009-10. Statistical tools like arithmetic mean, one-way ANOVA, Tukey HSD Test have been employed for the purpose of study. The profitability of these banks have been evaluated by using various parameters like Operating Profit Margin, Gross Profit Margin, Net Profit Margin, Earning per Share, Return on Equity, Return on Assets, Price Earning Ratio and Dividend Payout Ratio. The study revealed that State Bank of India performed better in terms of earning per share and dividend payout ratio, while Punjab National Bank performed better in terms of operating profit margin and return on equity. The study found that HDFC Bank outperformed in terms of gross profit margin, net profit margin, return on assets and price earning ratio. The study evidenced that ICICI Bank paid highest portion of earning as dividends to shareholders. Analysis ranked HDFC Bank on the top position followed by Punjab National Bank, State Bank of India and ICICI Bank.
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