CHAPTER – 2
LITERATURE SURVEY

Literature survey is a basic ingredient of any research study. It helps to avoid the repetition of the work as well as to determine the direction of the future research studies. Taking these into account, in this chapter, the major recommendations of the Committees set up for introducing reforms in the Indian banking sector have been surveyed. Then the important studies of the notable scholars in this field have been reviewed.

2.1 Reports of Different Committees on Reforms

A sound financial system is a fundamental ingredient for a healthy and vibrant economy. A free and efficient system is conducive to economic growth [Baslas and Bansal (2002)]. In an attempt to liberalize the Indian economy and to enhance efficiency through competition, financial sector reforms were introduced in the year 1992 [Dasgupta (2001)]. The financial sector reforms were to serve as a booster injection to an ailing economy. But, how much good it has done to the Indian economy is a controversial issue [Joshi (1999)].

However, let us look into the first phase of financial sector reforms brought about by the Narasimham Committee - I. The recommendations of the committee were based on the fundamental assumption that the resources of the banks came from the general public and held by the banks in trust and that they were to be deployed for maximum benefit of their owners, i.e. the depositors. Thus, the government had no business to endanger the solvency, health and efficiency of the nationalized banks under the pretext of resources for economic planning, social banking, poverty eradication etc. At the same time, the government had no right to get hold of the funds of the banks at low rates of interest and use them for financing its consumption expenditure e.g. paying the salary of the employees etc. As a follow up action of the initial recommendations and to strengthen the banking sector further, reports of Narasimham Committee II were placed in the year 1998 followed by the Verma Committee report in the year 1999. These have been reviewed one by one in the following sub-sections.
2.1.1 Narasimham Committee – I

The major recommendations of this Committee were:

1. **Reduction in Statutory Liquidity Requirements (SLR) and Cash Reserve Ratio (CRR):** The Committee recommended that the government should give up the practice of using SLR as a major instrument of mobilizing funds for the government and the public sector. The Committee asked the government to reduce the SLR from the prevailing rate at that time i.e. 38.5% to 25% in a phased manner over a period of about 5 years. The Committee also proposed to progressively reduce the CRR and recommended RBI to have flexibility to operate CRR for serving its monetary policy objectives.

   The Committee also recommended that interest rate on SLR investments and on CRR in respect of impounded deposits above the basic minimum should be increased. Rates on SLR investments should be raised progressively to the market determined rates while the rate on the CRR above the basic minimum should be broadly related to banks’ average cost of deposits.

2. **Directed Credit:** The Committee recommended that in place of using credit system, the fiscal system should be used for fulfilling redistributive objective and that the directed credit programmes should be phased out. The priority sector should be redefined to comprise of the weaker sections. The credit target for the redefined priority sector should be reduced from the prevailing level of 40% to 10% of the aggregate credit.

3. **Deregulation of Interest Rate:** The Narasimham Committee – I recommended that the interest rates should be deregulated so as to reflect emerging market conditions. Interest rate on government borrowing should be gradually brought in line with the market determined rates. Interest rate structure should bear a relationship to the bank rate. It proposed to provide for a prime lending rate, which would be the floor of the lending rates of banks and DFIs.
4. **Capital Adequacy:** It had recommended that the international standard capital adequacy ratio of 8% should be achieved by the banks and the financial institutions in India within a period of three years i.e. by March, 1996.

5. **Income Recognition and Classification of Assets:** The Committee’s recommendation was that no income should be recognized in the accounts in respect of NPAs. An asset would be considered as non-performing if interest on such asset remained due for a period exceeding 180 days at the balance sheet date.

6. **Transparency of Balance Sheet:** The Committee’s proposal was that the balance sheets of the banks and the Fls should be made transparent with full disclosure.

7. **Creation of Assets Reconstruction Fund (ARF):** The Committee proposed to establish an Assets Reconstruction Fund to take over from the banks and Fls a portion of the bad and doubtful debts at a discount. The level of discount was to be determined by independent auditors on the basis of clearly stipulated guidelines. The capital of the ARF should be subscribed by the public sector banks and the Fls. All the bad and doubtful debts were to be transferred to the ARF in a phased manner.

8. **Proposed Structure of the Banking System:** The Narasimham Committee proposed to bring about a substantial reduction in the number of public sector banks through mergers and acquisitions, based on profitability considerations. The broad pattern would consist of
   (a) 3 to 4 large banks (including SBI), international in character;
   (b) 8 to 10 national banks with a network of branches throughout the country engaged in universal banking;
   (c) Local banks whose operations would be generally confined to a specific region; and
   (d) Rural banks (including RRBs) whose operations would be confined to the rural areas and predominantly engaged in the financing of agriculture / allied activities.
9. **Setting up of Rural Banking Subsidiaries:** The Committee proposed each public sector bank to set up one or more rural banking subsidiaries, to take over all of its rural branches and where appropriate, to swap its rural branches with those of other banks, depending on the size and administrative convenience of the sponsor bank. Such rural banking subsidiaries would be treated at par with RRBs in regard to SLR/CRR requirements and re-financing facilities from NABARD.

10. **Entry of Private / New Banks:** The Narasimham Committee – I recommended that there should be no further nationalization. The private sector banks would be at par with the public sector banks and there should be no bar for the entry of new banks in the private sector, subject to meeting statutory and other requirements.

11. **Branch Licensing / Expansion:** The Committee proposed to abolish branch licensing. Opening / Closing of branches (other than rural branches) should be left to the commercial judgement of the individual banks.

12. **Entry of Foreign Banks:** The Committee’s recommendation was that the RBI should allow foreign banks to open branches or subsidiaries more liberally, subject to the fulfillment of usual requirements and foreign banks should be placed at par with the domestic banks.

13. **Removal of Dual Control:** The Narasimham Committee – I recommended that the RBI should be the primary agency for regulating banking system. Dual control of RBI and the Ministry of Finance – Banking Division should come to an end.

14. **Freedom from RBI / GOI Directives in Internal Administration:** The Committee recommended that the various RBI/GOI (Government of India) guidelines and directives in regard to internal administration such as creation / categorization of posts, promotion procedures, etc. affecting the banks should be rescinded.
15. **Depoliticizing Appointments of CMDs:** The Committee also recommended that the appointment of the Chairman-cum-Managing Director should not be based on political considerations but on professionalism and should be made by an independent panel of experts.

Through these recommendations the Committee sought to consolidate the gains made in the Indian financial sector while improving the quality of portfolio, providing greater operational flexibility and autonomy in the internal operations of the banks and FIs so as to nurture a healthy competitive and vibrant financial sector.

**Action taken by the government in accordance with the implementation of the recommendations of the Narasimham Committee – I**

In spite of stiff opposition from trade unions and political parties in the country, the Government of India had accepted all the major recommendations of Narasimham Committee – I.

1. SLR on the level of outstanding Net Demand and Time Liabilities (NDTL) was reduced from 38.5% to 37% by April, 1992 to 36.5% in April, 1993 to 31.5% on September 30, 1994. Similarly, SLR for any increase in NDTL was reduced from 38.5% to 30% in April, 1992 to 25% in October 1993. By reducing SLR, the lendable resources of the banks would be augmented.

2. Incremental Cash Reserve Ratio (ICRR) of 10% was removed. CRR on net total demand and time liabilities was reduced initially from 15% to 14% and later on it was reduced in a phased manner. The reduction of CRR by 1% was estimated to add about Rs. 2,360 crores to lendable resources of banks.

3. As a part of the reformative process RBI issued detailed guidelines with regard to income recognition, asset classification, provisioning, capital adequacy norms and other related matters. All these were done to ensure that the books to the commercial banks could reflect their financial position more accurately with internationally accepted accounting practices. Banks were expected to reach a 4% Capital to Risk Assets Ratio (CRAR) by March’ 93 and 8% by March’ 96 for all the scheduled commercial banks. The government made the provision of Rs. 5,700 crores in '93-94.
budget and Rs. 5,600 crores in the '94-95 budget to meet the prudential norms then. Banks were also allowed to tap the capital market to raise the funds for that purpose.

4. A separate Department of Supervision (DOS) had been set up in the RBI for strengthening the supervisory arrangement of banks and to ensure adherence to prudential norms.

5. The Government of India passed “Recovery of Debts due to Banks and Financial Institutions Act, 1993” in order to facilitate speedy recovery of old debts. Special Recovery Tribunals were also set up to facilitate quicker recoveries of loan arrears.

6. The Government of India accepted several proposals to set up new private sector banks. Those new banks were allowed to raise capital from foreign institutional investors’ upto 20% and from Non-Resident Indians (NRIs) upto 40%.

However, despite the injection of about Rs. 13,000 crores by the government in the form of non-marketable interest bearing securities, some public sector banks had not been able to raise their capital adequacy standards to the target of 8% CRAR by March, 1996 [Patel (1997)]. Hence, much more needed to be done in order to ensure that the banking system performed its role to its fullest potential.

2.1.2 Narasimham Committee – II

A need was felt to examine the problem issues and to review some of the recommendations of Narasimham Committee – I. Accordingly a Committee was set up again under the Chairmanship of Shri. M. Narasimham to review the progress in banking sector. The report of the Committee was submitted on April 24, 1998. These second phases of financial sector reforms were mainly an exercise in enhancing the prudential regulation.

‘Prudential regulation refers to the set of laws and rules designed to minimize the risks banks assume and to ensure the safety and soundness of both individual institutions and the system as a whole’ [D’Souza (2000) p.287]. The major recommendations of this Committee were:
Strengthening Capital Adequacy:
The Committee recommended that –
(a) The capital adequacy requirements should take into account market risks in addition to the credit risk. It implied taking into account the larger exposure of banks to off-balance sheet risks.
(b) In the next three years the entire portfolio of government securities should be marked to market and the schedule for the same announced at the earliest; government and other approved securities which were subject to a zero risk weight, should have a 5 percent weight for market risk.
(c) Risk weight on a government guaranteed advance should be the same as for other advances. This should be made prospective from the time the new prescription was put in place.
(d) Foreign exchange open credit limit risks should be integrated into the calculation of risk weighted assets and should carry a 100% risk weight.
(e) CRAR should be increased from the existing 8 percent to 10 percent, an intermediate minimum target of 9% be achieved by 2000 and the ratio of 10% by 2002.
(f) PSBs which were in a position to access the capital market should be encouraged.

Asset Quality:
The Committee recommended that –
(a) An asset should be classified as doubtful if it was in the substandard category for 18 months in the first instance and eventually for 12 months and loss if it had been identified but not written off.
(b) For evaluating the quality of assets portfolio, advances covered by government guarantees, which had turned sticky, should be treated as NPAs.
(c) For banks with a high NPA portfolio two alternative approaches could be adopted. One approach could be that all loan assets in the doubtful and loss categories should be identified and their realizable value should be determined. These assets could be transferred to an Assets Reconstruction Company (ARC) which would issue NPA Swap Bonds.
The alternative approach could be to enable the banks in difficulty to issue bonds which could form part of Tier – II capital, backed by government guarantee to make those instruments eligible for SLR investment by banks.

(d) The interest subsidy element in credit for the priority sector should be totally eliminated and interest rate on loans under Rs. 2 lakhs should be deregulated for Scheduled Commercial Banks as had been done in the case of Regional Rural Banks and Co-operative Credit Institutions.

**Prudential Norms and Disclosure Requirements:**

The Committee also recommended that –

(a) In India, income stopped accruing when interest or installment or principal was not paid within 180 days, which should be reduced to 90 days in a phased manner by 2002.

(b) Introduction of a general provision of 1 percent on standard assets in a phased manner should be considered by RBI.

(c) As an incentive to make specific provisions, they might be made tax deductible.

**Structural Issues:**

Regarding structural issues the Committee’s recommendations were as follows:

(a) With the conversion of activities between banks and DFIs, the DFIs should, over a period of time, convert themselves into banks.

(b) Mergers to public sector banks should emanate from the management of the banks. Merger between strong banks / FIs, however, would be made for greater economic and commercial sense.

(c) ‘Weak Banks’ might be nurtured into healthy units by slowing down on expansion, eschewing high cost funds / borrowings, etc.

(d) Small, local banks should be confined to individual states or cluster of districts in order to serve local trade, small industry and agriculture.

(e) The minimum share of holding by Government / Reserve Bank in the equity of the nationalized banks and the SBI should be brought down to 33%.

(f) There was a need for a reform of the deposit insurance scheme based on CAMELS ratings awarded by RBI to banks.
(g) Inter bank call and notice money market and inter-bank term money market should be strictly restricted to banks; only exception be made was primary dealers.

(h) Non-Bank parties should be provided free access to bill rediscounts, CPs, CDs, treasury bills and money market mutual funds.

(i) RBI should totally withdraw from the primary market in 91 day’s treasury bills.

(j) Functions of banks’ boards and management needed to be reviewed so that the boards remained responsible for enhancing shareholders value through formulation of corporate strategy and did not get involved in credit-decision making and other aspects of day to day managements. The Committee made a strong pitch for professionalizing and depolarizing of bank boards, especially for appointment of non-official directors.

**Systems and Methods in Banks**

The Committee also recommended that:

(a) There should be an independent loan review mechanism especially for large borrower accounts and systems to identify potential NPAs. Banks might evolve a filtering mechanism by stipulating in-house prudential limits beyond which exposures on single / group borrowers were taken keeping in view their risk profiles as revealed through credit rating and other relevant factors.

(b) Banks and FIs should have a system of recruiting skilled manpower from the open market.

(c) Public sector banks should be given flexibility to determine managerial remuneration levels taking into account market trends.

(d) There might be a need to redefine the scope of external vigilance and investigation agencies with regard to banking business.

(e) There was a need to develop information and control system in several areas like better tracking of spreads, costs and NPAs for higher profitability, accurate and timely information and customers.

(f) Public sector banks should speed up computerization and focus on relationship banking.
Action taken by the Government:

On 16\textsuperscript{th} November, 2000, the government had announced its intention to reduce its equity stake from 51\% to 33\% in PSBs coupled with the intention of retaining the public sector character. This would provide the much needed funds to banks for their expansion plans rather depending on budgetary support from the government [Baslas & Bansal (2001)]. This would enable the banks to tap capital market for shoring up their equity base and to meet their capital adequacy norms [Saha (2001)].

Deregulation, competition and need for skillful Asset-Liability Management were the other features expected to stimulate the functioning of the Indian banking industry. Hence, from the financial year ended 31\textsuperscript{st} March, 2001, RBI made it compulsory, to publish, along with their Audited Financial Statements, a Statement on Asset-Liability Management duly audited.

Some positive steps towards technology up-gradation and innovative process of banking to enhance customer-service in order to meet international standards were also taken. Thus electronic Funds Transfer, Tele-Banking, Any Where Banking, 7 Day Week, Credit Cash Card, ATMs, etc. had been introduced in the PSBs. Computerization process and inter-connectivity of computerized branches started in the PSBs, though the process was very slow.

The banks started classifying an advance as NPA if interest / installment for 3 months were not recovered and did not book interest income until they were recovered. In view of this the bank’s profits started declining and many of the PSBs came into the picture of huge losses.

Since then consolidation through mergers and acquisitions had been undertaken mainly among the private sector banks. The merger of New Bank of India with Punjab National Bank, the only merger so far among the public sector banks took place. However, there were a couple of mergers among the private sector banks such as merger of HDFC Bank with the Times Bank, Bank of Madura with ICICI Bank and merger of Global Trust Bank with UTI Bank etc.
2.1.3 Verma Committee Report

In the Year 1999, RBI in consultation with the Government constituted panel headed by Shri. M.S. Verma, former Chairman of SBI in order to find out a solution for weak banks. The Committee had submitted its report in October, 1999.

In its report the Committee ruled out privatization, mergers and acquisitions for some time and recommended conditional recapitalization and restructuring of the weak banks. It recommended the infusion of fresh capital accompanied by strict conditions relating to the operating as well as managerial aspects of the recipient bank's working. The Major recommendations of the Panel were to reduce staff strength by 25% in order to reduce cost, introduction of Voluntary Retirement Scheme (VRS) or wage freeze, technology up-gradation, creation of ARF/AMC for NPAs and rationalization of branches. The Panel had opposed the merger or closure of weak banks which was to be resorted to as the last option.

The group had identified three weak banks, viz., Indian Bank, UCO Bank and United Bank of India and placed rest of the 24 nationalized banks into four categories. In order to decide the category, the Panel identified seven parameters for assessing banks' strength in the areas of solvency, earning capacity and profitability. The parameters were capital adequacy ratio, coverage ratio, return on assets, net interest margin, ratio of profit to average working funds, ratio of cost to income, and ratio of staff cost to income. The 27 PSBs were evaluated on the basis of these parameters for the years 1997 – 98 and 1998 – 99. The panel identified, apart from the three weak banks, six other banks, viz, Allahabad Bank, Central Bank of India, Indian Overseas Bank, Punjab & Sind Bank, Union Bank of India and Vijaya Bank as potentially weak, having incipient signs of distress (with the risk of turning into weak banks).

The Committee developed a four dimensional comprehensive restructuring programme covering operational, organizational, financial and systemic restructuring. Operational restructuring involved basic changes in the mode of operation, induction of modern technology, resolution of the problem of high non-performing assets and drastic reduction in the cost of operations. Organizational restructuring recommended
by the group aimed at better governance of the weak banks and enhancement in management involvement and efficiency. Financial restructuring involved conditional re-capitalization of weak banks while systemic restructuring aimed at providing legal changes and institution building for supporting the entire process.

As mentioned earlier, the Panel estimated the overall cost of restructuring the weak banks at around Rs. 5,500 crores over the next three years. The cost included technology up gradation cost Rs. 300 to 400 crore, VRS cost – Rs. 1,100 to 1,200 crore, NPA buyout Rs. 1,000 crore and capital adequacy Rs. 3,000 crore. The funds required for technology up gradation and VRS were to be in the form of cash, whereas requirements for NPA buyouts and capital adequacy were proposed to be in the form of recapitalization bonds. The Panel observed that the percentage of total staff cost to the operating cost for UCO (81.29%) and United Bank of India (82.57%) was very high compared to other PSBs. Therefore, reductions in staff strength in the three weak banks were unavoidable. The Panel recommended the three weak banks to resort to VRS route covering at least 25% of the staff strength. The Committee also recommended that the scheme should aim at separating employees in the age group of 45 years and above specially those in 50-55 age groups and to be open for 6 months. In case the VRS did not yield the desired results, the Panel had suggested the option of wage reduction / freeze, for 5 years. This particular issue was a very crucial one in the entire revival package suggested by the Panel, as the implementation of the other suggestions, for instance, technology upgradation, nationalization of branches etc. would depend upon the success achieved by weak banks in reducing their staff strength or else it might add to the cost.

The Panel had suggested for setting up of an independent agency – a Financial Restructuring Authority (FRA) to co-ordinate and monitor the restructuring of the weak banks. According to the report, the banks would not be entitled to any government funds unless they were able to fulfill commitments made and reach the performance milestones outlined in the Memorandum of Understanding (MOU) to be signed between the banks and the monitoring body. The Committee had also envisaged a role of FRA in the management of NPAs. The FRA would be the owner of the Assets Reconstruction Fund (ARF) on behalf of the Government. The idea of ARF suggested was not a new one; it was initially mooted by the First Narasimham
Committee in 1991 and was reiterated by the Second Narasimham Committee in 1998.

In a nutshell, the entire package recommended by the Panel was two pronged: to increase income and to reduce costs. Income could be increased by revamping the banks’ mode of doing business and by reducing the effect of current and future NPAs on their earnings. The Panel had observed that weak banks had left their traditional areas of business and moved into areas in which they had neither experience nor skills. Hence, the Panel recommended those banks to move into the areas in which they were experienced so that they could develop their business.

The Panel also suggested that the restructuring programme might be implemented in a time bound manner and delay in its implementation would add to the cost. The different measures suggested by the group for financial, operational and systemic restructuring were a unified package and to achieve the best results they were to be implemented as such. If a pick and choose approach was adopted not only a total effect expected from the package would be lost, but even the individual measures picked up for implementation would lose much of their efficacy. A word of caution given by the Panel was that the key to success laid in effective implementation of staff related measures.

2.2 Review of Past Studies

There exist a number of studies carried out in these areas which may be classified into five broad groups, namely:

i) Profitability and other measures of performance of the different groups of banks in India

ii) Reforms and prudential regulations in the Indian banking system

iii) Sources and uses of funds of the banks in India

iv) Risk assessment and management in banks

v) Studies on efficiency in the banking sector through Data Envelopment Analysis (DEA).
2.2.1. Profitability and other measures of performance of the different groups of banks in India

The profitability may be taken as one of the major determinants of overall performance of banks. In order that an institution like a bank can provide the services to its customers in an efficient manner, it must have sufficient income to support the cost of such services. From this view point, it is necessary that there should be continuous growth in the income of a bank and the sufficient improvement in profit earning capacity of a bank. Among others this view was put forward by Desai and Farmer (2001), Dasgupta (2001), Pagaria and Yadav (2001).

Long run performance of public and Private Sector Banks was measured externally by examining long-term returns to stocks of Public and Private Sector Banks in India by Ram Mohan (2003).

The other notable contributors in this field are Bilgrami (1999), Saveeta and Verma (1999), Nair (2000), Saha (2001) and Ghosh (2004). All these nine studies are discussed below separately in details.

In a study Bilgrami (1999) has examined the variability in credit deposit ratio (CDR) state-wise during the pre and post-reforms period. CDR envisages the proportion of the credit sanctioned by the banks in a region or a state to the deposit collected in that region or the state. It reflects the extent to which a region or a state has been benefited out of their deposits.

The author observes that i) in absolute terms bank branches show an increase but its rate of growth has declined sharply during the post-reforms period (1991 to 1996), ii) share of rural branches remained constant in 1985 and 1991 and declined during 1991 and 1996, iii) rate of growth of deposit as well as credit per office shows a declining trend and it declined more sharply during the post reforms period iv) the CDR show a sharp decline from 77.5% in 1969 to 60.6% in 1991 in the pre-reform period and further from 60.6% in 1991 to 58.6% in March 1996 in the post-reforms period.

The author has next grouped the states into two categories major and small including union territories according to area and population size. The CDR of each state has then been compared with the national level at three points of time, viz. 1969,
1991 and 1997. The pre-reform period is covered from 1969 to 1990 and post-reform period from 1991 to 1997. The major findings in terms of state-wise CDR estimates are as follows:

1. The state level CDR shows an improvement during pre-reform period, but a sharp decline during the post-reform period. Except two states Andhra Pradesh and Tamil Nadu, all the other states show a declining trend during the post-reform period.

2. Among the small states/union territories, Delhi shows a continuous declining trend. The other three union territories follow the trend of major states i.e., increasing trend in the pre-reform period and declining trend in the post-reform period. Among the small states Meghalaya shows a continuous declining trend.

3. The other states show an increasing trend during pre-reform period and a declining trend in the post-reform period. The more tiny states show a sharp increase in CDR during pre-reform period but it remained almost stable during the post-reform period.

4. According to the national level of CDR, in 1969 out of 15, only 4 major states were above the national level. In 1991 their number increased to 7, but in 1997 it again reduced to 4 which touched the 1969 level.

5. The CDR range have been divided into three levels: optimum (75% to 100%), middle (74% to 50%) and the lowest (49-25% and below). In 1969, 8 of the 15 states were in the lowest range, 3 in the middle range and 4 in the optimum range. In 1991, only 4 states were in the lowest range and 4 in the middle range but maximum number of them, i.e., 7 was in the optimum range. But in 1997, the number of states in the lowest range again increased to 9 and 3 each in the middle and optimum range. Hence, most of the states show a declining trend in the post-reform period.

According to the author, from the pre and post-reform CDR analysis, it would be apt to conclude that the post-reform performance of the public sector banks in India has been unsatisfactory. The CDR, despite significant reduction in CRR and SLR showed a declining trend. Profitability, efficiency and customer’s service have also reduced and deteriorated. The main reasons behind the sluggish growth rate of bank deposits during the post-reform period are the rapid growth of non-banking financial intermediaries, entry of foreign and private sector banks etc. Another
important reason is that all the public sector banks have touched the saturation level in mobilizing savings through bank expansion programme. During pre-reform period, they were functioning much below their potential in deposit mobilization owing to restrictions on branch expansion programme.

In a study, Saveeta and Verma (1999) have attempted to analyse the profitability trends of the SBI group, other nationalized and foreign banks in India. They have also identified the factors influencing the profitability of each group of banks.

For the purpose of the study, the post-nationalization period has been divided by the authors into three sub-periods, i.e., 1971-80, 1981-90 and 1991-96. It is seen by them that the profitability of the SBI group and other nationalized banks declined over the decade 1971-80. But the profitability of the nationalized banks during the first sub period is higher than that of the SBI group of banks. Hence, the nationalized banks have done well than the SBI group in that period. The profitability of the foreign banks, on the other hand, continued rising in this period and stood at 0.74% in 1980 against 0.35% in 1971. Again this was the period when the PSBs concentrated in branch expansion and acted overenthusiastically in penetrating the far-flung and remotest corners of the country. The priority sector lending at concessional rates must have adversely affected their profitability and the socio-economic responsibilities thrusted upon them digressed them from their profit motive. On the other, the foreign banks concentrated in urban and metropolitan areas and pursued profit motive; this explains their better performance against the other two categories of banks.

The authors have observed that during the second sub-period 1981-90, the profitability of both SBI group and other nationalized banks, after remaining more or less stationary in the initial years, started rising from the second half of the eighties. In case of foreign banks, a steep fall in their profitability was observed in 1981 but still it was higher than that of the other two categories of banks in the public sector. The improvement in profitability of both the SBI group and other nationalized banks may be attributed to slowing down of opening of branches in rural areas during this period.
The study establishes that in the post-liberalization era, i.e., in their third sub-period 1991-96, the profitability of the SBI group of banks continued rising and was much higher than those in the earlier two sub-periods. Also, they outperformed other nationalized banks, the profitability of which was -1.71% in 1992 and -1.98% in 1993. However, in case of other nationalized banks, it started rising from 1994 onwards and attained the highest level in 1996. The profitability of foreign banks started falling after the initiation of financial sector reforms and was negative in the year 1992. But from 1993 onwards, it continued rising, but remained less than that of the SBI group in each year, particularly since 1992.

The authors identified the following factors influencing profitability of banks group-wise:

i) For the SBI group of Banks the ratio of priority sector advances to total advances and net spread influenced profitability, whereas the ratio to total business handled to establishment expenses, the ratio of fixed deposit to current deposit and the credit deposit ratio did not significantly influence profitability.

ii) For the category of other nationalized banks the ratio of priority sector advances to total advances, net spread and the ratio of fixed deposits to current deposits influenced the profitability, but the ratio of total business handled to establishment expenses and the credit-deposit ratio had no significant impact on their profitability.

iii) In case of foreign banks, among different ratios only two ratios, namely the ratio of total business handled to establishment expenses and the ratio of spread to burden significantly influenced their profitability.

The authors suggest that to improve the profitability of the banks, measures should be taken to increase the level of spread and to curtail the burden. Further, spread can be increased by reducing the average cost of resources and consciously avoiding high cost inter-bank deposits and high cost market borrowings.

Wherever such high cost resources are mobilized, they should be matched with suitable avenues of resource deployment after taking into account the inherent risks and returns. Better customer service should be provided as far as the burden is concerned, it can be reduced by way of pricing all products/services/ non fund based facilities based on the cost-benefit analysis and by strict cost control.
Nair (2000) has analyzed the role of commercial banks in rural financial intermediation in the post-nationalization period. He is of the view that one of the major objectives of the nationalization of Indian commercial banks was to improve the flow of formal institutional credit into rural households, especially to the poor, thus relieving them of the burden of usurious debt. The outreach of commercial banks to the rural sector improved considerably between 1971 and 1991, a development which could safely be attributed to bank nationalization and the consequent stress on social banking. There is also a close association between commercial bank's outreach to the rural economy and government's commitment to anti-poverty programmes.

Saha (2001) has examined the performance of the public sector banks vis-à-vis the private and foreign banks during the period 1995-2000 in India with the help of different financial ratios and other indicators. The main observations of the author are noted below:

1. While comparing the core financial ratios namely (ROA, ROE, expense ratio, capital adequacy ratio, net non-performing loans ratio and share of non-interest income in the operating income) it has been found that the State Bank Group has done better in respect of all these ratios as compared to other nationalized banks.

2. It has been further observed that during the study period the SBI and its subsidiaries have registered a higher growth in all the business parameters but not in revenue parameters in comparison to other public sector banks, private banks and foreign banks.

3. None of the banks reveals satisfactory result in asset management and this may be due to the lack of knowledge at the top management level. The leverage ratios of PSBs as well as the private sector banks are not strong where a leverage of 8% is assumed to show a good position; only foreign banks operating in India satisfy that condition.
4. The nationalized banks have the lowest non-interest income, highest staff expense and also the highest overhead expense, resulting in lower operating profit and net profit as compared to those of private and foreign banks.

5. Though the funding base of PSBs is the strongest, but the deployment of funds in low yielding assets is the highest.

6. It has also been found that the PSBs maintain excess liquidity which drains out their profitability. But the new generation private sector banks are maintaining proper liquidity while the foreign banks are too aggressive and their average liquidity ratio is 0.93.

7. It is further observed that the PSBs contribute 90% of the total branches and 92% of the total employees of all scheduled commercial banks in India, but they contribute only 68% of the operating profit of Scheduled Commercial Banks, which should have been more than 90%.

From these observations the author concludes that the PSBs have a better competitive edge than their competitors, but they are unable to take this benefit because of poor governance since inception. Costing of banking services is a crucial success factor in the present scenario and that might improve the competitive advantage of the PSBs.

**Pagaria and Yadav (2001)** have undertaken a variability study of loss making rural branches in the state of Rajasthan where it is found that more than 50 percent of total rural branches are incurring losses. The objectives of their study are: i) to evaluate performance on the basis of key parameters, ii) to examine the factors responsible for low productivity and iii) to suggest measures for improving viability. They have conducted the study for a period of 5 years from March, 94 to March 98.

The authors have drawn a random sample from loss making branches operating in rural area of two adjoining districts of Rajasthan. Apart from quantitative data, qualitative information have also been collected through interview technique and questionnaire from Lead District Managers, Branch Managers and staff members of identified branches, local residents and customers of sample branches. The parameters used to evaluate performance are deposits, deployment of funds, non-performing assets, etc.
The major findings of their study are as follows:

1. The share of low cost deposits as on March 1998 was found to be much lower (20.50%) than that of the state as a whole (32%).

2. At the branch level, almost 90% of the advances were deployed in the priority sectors, most of which were below Rs. 2 lacs carrying lower rate of interest.

3. Credit-Deposit ratio declined from 119% in 1994 to 72% in 1998.

4. Almost the entire NPA was building up from the priority sector lending, specially from the lending in government sponsored programs in each category of branch.

5. Although during the study period the ‘Business per Employee’ was increasing but the ‘Business per rupee of staff expenses’ was decreasing for all the sample branches. Hence the rise in business was not commensurate with the rise in staff expenses, leading to a decline in overall staff productivity in real terms.

6. Through discussions the authors also observed that although branches had opened a plenty of new savings bank accounts during the last two years of the study, but most of those accounts were opened by the loanees of government sponsored programmes.

7. It was further found that around 50% of the sample branches did not have adequate potentiality for mobilizing the low cost deposits.

The authors concluded with the suggestion that

1. Suitable training programmes must be organized for the loss making branches to create awareness about management of NPAs, profitability consciousness etc.

2. The strategies of merger, relocation of branches must be given consideration for those centres where adequate business development is not possible.

**Desai and Farmer (2001)** have evaluated the bank’s profitability using taxonomic evaluation method. The key parameters, namely interest earned, commission and brokerage earned, other income received, interest paid, establishment expenses and other expenses have been converted into one composite measure termed as index of performance relative to an ideal value defined for the purpose. The authors have, first, computed average and standard deviation for each
parameter. Then a standard matrix has been prepared by dividing average by its standard deviation.

From the standardized matrix of ideal unit for each parameter having maximum or minimum standardized value depending upon the direction of the variable is identified. This ideal value is simply the best value held by an unit within the set. Next, they have measured the measure of performance, \( M_p \) as \( P_{io}/P_0 \) where,

\[
P_{io} = \left( \sum (D_{ik} - D_{ok}) \right)^{1/2} \quad \text{and} \quad P_0 = \bar{P}_o + 3\delta D
\]

Here, \( D_{ik} \) = each standard matrix value, \( D_{ok} \) = ideal value

The closer the \( M_p \), is to zero, the closer it is to the defined ideal value and hence nearer it is to the best performance concerned. On the other hand, closer, it is to the unity, the farther away the \( M_p \) is from the best performance.

The major observations of the study are as follows:

1) The profitability index (P-I) of the SBI (State Bank of India) group of banks is higher than that of non-SBI group of banks, which indicates that the performance of the SBI group of banks is better than other groups during 1989-92.

2) The SBI banks have also performed better in the latter period of the study, particularly the State Bank of Saurashtra and the State Bank of Patiala is at the bottom of the service with a very low PI.

Dasgupta (2001) has made a comparative study by analyzing the profitability of Public Sector Banks (PSBs) during the period 1985-86 to 1996-97, covering few years both before and after the reforms.

For the purpose of the study the author has first arranged twenty Indian PSBs, i.e., SBI (other than its subsidiaries) and 19 other PSBs in ascending order on the basis of their owned equity (i.e. capital plus reserves) and then 6 banks have been selected taking 2 each from the top, middle and bottom of the list. Key parameters selected for the study are net profit and net worth. The author then computed two key ratios namely:

\[
Y_{P_0} = \frac{Net \, profit}{Net \, Worth} \times 100 \quad ; \quad Y_{W_1} = \frac{Net \, Profit}{Working \, funds} \times 100
\]
Next the growth rate has been calculated as:

\[ \text{Growth rate} = \frac{\text{Ratio}(Y_n) - \text{Ratio}(Y_{re})}{\text{Ratio}(Y_{re})} \times 100 \]

The major findings of the study are summarized below:

1) The individual banks and public sector banks as a whole were severely hit by the wave of liberalization in 1992-93. Except SBI all other individual PSBs as well as PSBs as a whole recorded a negative growth rate in profitability in that year.

2) 1993-94 was a year of recovery. The performance of the banks had improved and recorded a reduction in their negative growth rates.

3) In 1994-95, the banks recorded a mixed result. Some of the individual banks had shown improved performance while a few suffered from severe setback in the same year.

4) PSBs as a whole had improved their performance and showed positive growth rate.

5) In the year 1995-96, three out of the chosen six banks had shown negative growth rate. But, the growth rate of PSBs as a whole was positive.

6) The year 1996-97 was again a year of recovery, as almost all of the individual PSBs as well as PSBs as a whole recorded a positive growth rate.

7) Like the years of the post-reforms period, we get a mixed result on the profitability of the PSBs during the pre-reform period.

8) In the pre-reform period higher owner’s equity helped the banks to yield good result. But the banks with comparatively smaller sizes did better in the post-liberalization era, specially, if the other parameters like management policy, work culture, risk management capability were favourable with them.

In a study Ram Mohan (2003) has also evaluated the performance of public sector banks (PSBs) consequent to disinvestment by comparing the returns to PSB stocks with returns to the Sensex. The author has also estimated the returns to private sector bank stocks with respect to the reference stock index and has used that data to compare public and private sector bank performance.

The author opines that comparisons of bank performance based on financial ratios suffer from the problem that financial ratios might overstate performance because of inaccurate reporting of non-performing assets or because NPAs tend to be
lower in the initial years in the case of newly established banks. On the other hand, according to the authors, the stock prices capture performance more accurately because markets are reasonably efficient in incorporating information that may not be reflected in the financial statements and further stock prices are forward looking in nature whereas the financial statements capture only past performance.

The author has selected 24 banks: 9 PSBs, 8 old private sector banks and 7 new private sector banks for the study. The holding period returns have been calculated over a period starting from the first trading date on the Bombay Stock Exchange up to November 30, 2002. The stock return is compared with return to a reference index over the same period. The reference index is the sensex which comprises of 30 stocks traded at the Bombay Stock Exchange. The returns with the sensex are compared on an unadjusted and risk adjusted basis. For computing the unadjusted relative return, the holding period return for the stock is computed as:

\[
R_t = \prod_{t=1}^{n} (1 + r_t)
\]

where, \( R_t \) = holding period return, \( r_t \) = return on a given trading days and \( n \) is the total number of trading day since listing.

Holding period return for the Sensex is:

\[
S_t = \prod_{t=1}^{n} (1 + s_t)
\]

where \( S_t \) is the holding period return to the Sensex on a given trading day. Thus, the unadjusted Relative Return for a stock is \( R_t/S_t \). The risk adjusted return for the stock is computed by using the CAPM model: \( R_i = R_f + \beta_i (R_m-R_f) \), where \( R_i \) = return on stock \( i \), \( R_f \) is the risk-free rate of return, \( \beta_i \) is the measure of the market risk of stock \( i \), \( R_m \) is the rate of return on market portfolio. The average risk free rate is computed for the period 1996-02, based on the weekly data on the yield on 364 day Treasury Bills. This annual yield is translated into a daily risk-free rate using an average of 247 trading days in a year. The beta for each stock is estimated by regressing the daily return on the stock against the daily return on the Sensex over the trading period for the stock.
The major findings of the study are summarized below:

i) Both on the unadjusted and adjusted basis, four out of the nine PSBs, three out of the seven new private sector banks and three out of the eight old private sector banks outperformed the Sensex.

ii) On comparing the mean and median of relative returns for the sample of PSBs with the sample of old and new private sector banks, using the t-test and the Wilcoxon rank-sum test, it reveals that the mean and the median returns for the PSBs are not significantly lower than those of either of the other two categories, for both the unadjusted as well as risk adjusted comparisons. This means that the listed PSBs as a group have delivered stock performance comparable to that of not only the old private sector banks but also of the much haunted new private sector banks.

The author thus concludes that the stock price based comparisons suggest that in the perception of the market, PSBs as a category can withstand completion from today's private banks. The author opines that disinvestment in the form of mere dilution of government equity in PSBs can contribute to improvement in performance. Consequent to disinvestment, PSBs have performed as well as the Sensex and the private sector banks. This suggests that listing on the exchanges, a profit orientation and a measure of autonomy can together produce improvements in performance.

_Ghosh (2004)_ has attempted to examine whether the growing presence of foreign banks has improved or retarded the domestic banks' profitability. The author states that on 31st March 1993, there were 24 foreign banks operating in India with 138 branch offices. This number increased to 39 which accounted for 7.9% of total assets of Scheduled Commercial Banks in India. The number stood at 44 by the end of March 1999, which accounted for 8.1% of total assets of Scheduled Commercial Banks in India. At the end of March 2002, consequent upon Mergers/consolidation internationally, the number of foreign banks stood at 40 with their share in total assets of Scheduled Commercial Banks being around 6%.

The author has collected data on the number of foreign banks in the host country (FNS), the share of foreign bank assets to total assets of the host country (FMS). On the income side, the interest income less interest expenses normalized by total assets (SPRD) and non interest expenses to total assets (NONINT) have been
employed. On the profitability side, the ratio of operating profits to total assets (OPTA) has been used. On the cost side, operating expenses to total assets (OVERHD) and loan loss provisioning to total assets (PROV) have been taken into consideration. To control for bank specific factors, non interest earning assets (NIEA), logarithm of total bank assets and capital adequacy ratio (CRAR) have been included. At the macro level, a set of general economic variables, like yearly inflation rate (INFLN) and growth rate of real GDP (GDPGR) have been selected for analysis.

The author has obtained the data on macro variables from different issues of the RBI Annual Report and the Handbook of Statistics on Indian Economy. The data on bank level variables have been collected from the Statistical Tables Relating to Banks in India and data on prudential variables from the Report on Trend & Progress of Banking in India.

For the study the author has estimated the following equation in first differences:

$$\Delta I_{it} = \xi_0 + \beta \Delta FS_i + \gamma \Delta \beta_i + \delta \Delta X_i + \epsilon_{it}$$

Where $I_{it}$ is a vector of variables of interest for bank $i$ at time $t$; $FS_i$ represents the indicator of foreign bank entry, $\beta_i$ is the vector of bank-specific variables for bank $i$ at time $t$ and $X_i$ is a set of country specific variables at time $t$. Also in the equation time dummies are included to capture any time-specific effects. For identification purposes, the dummy for the year 1996 has been excluded, so that the response of the other year dummies can be measured relative to this omitted year.

The major findings of the study are pointed out below:

1. There has been a gradual lowering of intermediation costs, interest margins and also the share of public sector banks measured in terms of loans and deposits over the period 1993-2002.

2. The estimated relation also estimates that the foreign banks’ presence is positively related to profits, loan loss provisions and non-interest income, whereas it is negatively related to spreads and overhead costs. This suggests that foreign banks’ entry significantly reduces costs, improves income and profitability. It also leads to an improvement in the loan loss reserves of domestic banks.
3. The bank specific variables reveal that as SIZE increases, the greater is the associated decline in spread and profits. This suggests that the domestic banks are not able to reap scale economies owing to competitive pressures driven by foreign banks’ entry. This leads to a lowering of spreads along with an associated decline in profitability. Domestic banks are compelled to maintain higher CRAR under the impact of foreign banks’ entry in order to sustain their spreads. Increase in overheads is positively associated with higher income and lower profits. Thus, foreign banks’ entry leads to an improvement in capital position of domestic banks and lowers overhead.

4. The macro environment variables i.e. inflation and interest rate are positively related to operating profits and negatively to non-interest income. They indicate that high interest rate and high inflation lead to higher profits.

5. On using FMS as the alternate foreign bank variable, it is observed that non-interest incomes, overhead and operating profits are negatively related to foreign banks’ entry, while no relationship is found in case of net interest margin and loan loss provisions.

6. The control variables also indicate that greater the SIZE, the larger is the associated decline in interest spread and profits. Better capitalized banks tend to experience greater increase in spreads.

The author finally concludes that there exists an inverted U shaped relationship between foreign banks presence and domestic banks’ performance.

2.2.2 Reforms and Prudential Regulations in the India Banking System

Banking and financial sector reforms have been undertaken in many countries throughout the world in various forms and shapes since early 1980s. In India an outstanding development of the 1990s, closely associated with the economic reforms programme has been the very rapid expansion of the banking and financial sector reforms including the introduction of prudential regulations.

In this sub-section an attempt has been made to analyze those studies which have identified the nature and forms of the Indian banking sector reforms in general and prudential regulations in particular: Jagirdar (1996), Kurup (1996); Patel (1997);
Khatkhate (1998); D’ Souza (2000); Bisht, Mishra, Belwal (2002); Kohli (2003); are some of the notable contributors in this category, whose studies are reviewed here.

**Jagirdar (1996)** has analysed the consequences of prudential norms. The author has also enquired how effectively the banks in India have complied with these norms and whether capital adequacy alone is a sufficient measure of banks’ financial health.

According to the author, the banks which might have failed to meet the capital adequacy norm by March 1996, the impact would be felt on international business as overseas suppliers would not honour letters of credit (LCs) and guarantee offers by those banks. Their credit ratings would suffer and they would also find it difficult to operate lines of credit from foreign banks. This would ultimately push up their cost of funds and make them uncompetitive, even within the country. Such banks might loose out as there was already a directive from the Ministry of Industry requiring PSUs to keep their deposit only with banks which fulfilled the capital adequacy norm. Undercapitalized banks might also face a constraint in increasing domestic lending and opening new branches, as RBI would not approve inadequately capitalized banks to expand their business.

The author finds that by the end of March 1995 only 13 of the 27 PSBs had achieved the benchmark of capital risk weighted asset ratio of 8 percent. SBI had the highest capital adequacy ratio of 12.77%, while among the nationalized banks, Oriental Bank of Commerce topped the list with 18.69% capital adequacy ratio. SBI was the first PSB to access the market and raise fund through equity and bonds. However, several PSBs failed to attain the RBI’s stipulated capital adequacy ratio even by March 31, 1996, though for them the government initially made fresh infusion of capital to the amount of Rs. 5,700 crore in 1993-94. Further the union budget 1995-96 provided Rs. 852 crore for further recapitalization of weak banks. But inspite of recapitalization and conditional bailout by the government, several banks went into the red after implementing the prudential and accounting norms.

Answering to the question of whether capital adequacy is alone a sufficient measure of a bank’s financial health, the author argues that meeting capital adequacy is not enough when NPAs are high and large provisions have to be made. Hence, capital adequacy must not be seen in isolation but along with asset classification,
income recognition and provisioning, all of which have been simultaneously introduced by the RBI. According to the author capital adequacy ratio does not capture the quantity of assets and thus it reflects very inadequately the intrinsic strength of a bank. Therefore, capital risk should be regarded as a part of overall risk management and there is right amount of capital to cover up all the risks being faced by the whole bank.

Jagirdar also examined whether the nationalized banks, after achieving the stipulated capital adequacy norm by March 1996, would be able to sustain it. The author is of the view that it does not seem likely, the reason being that most of the boost to capital had come from government funds. Since the government would not provide further funds in the form of recapitalization, this source would no longer be available. For raising fresh capital, therefore, banks would either have to go to the stock market or generate resources internally and for both these options, banks would have to be efficient in tackling the problems of NPAs and profitability.

The author finally concludes that in focusing too narrowly on capital alone as a measure of a bank's health, there is a danger of overlooking other important aspects of a bank's well-being. In tackling the problems of NPAs, banks should adhere to the recommendations of the Narasimham Committee. The author also opines that the recommendation of the Committee regarding giving greater autonomy to the PSBs should be followed.

According to Kurup (1996), the reform measures in India has been carried out at a hectic pace in the financial sector, of which commercial banks constitute the dominant part. The author has argued that implementing reforms in the Indian financial sector is a difficult process as the system is basically oriented towards stability rather than change. The sector's inherent bias towards stability and against change leads to slow decay. But the crisis of 1990-91 has hastened the process of changes and broke all resistance to changes as the financial institutions' lending funds to the country insisted on major changes in different areas as a pre-condition for loan assistance. The Narasimham Committee Report, 1991 could be said to be directed at Indianisation of the changes taking place elsewhere in the world, particularly in those countries which sought assistance from IMF and World Bank. However, as per the recommendations of other committees many measures were initiated by the RBI even
before the Narasimham Committee; these were the Ghosh Committee Report on new formats for balance sheet and profit and loss statement for banks (1985), the Vaghul Committee Report on Money Market (1987), etc.

The author's view is that the reform measures in the financial sector may be classified into four areas: Firstly, there are overall monetary policy issues relating to interest rates and exchange rates, reduction in SLR and CRR ratios, modifications in refinance facilities, etc. Secondly, there are measures for strengthening ailing banks by way of transparency in the financial statements of banks. It hints at improving the risk absorption capacity by adopting prudential norms for capital adequacy, income recognition, asset classification, provision of better customer service, etc. Thirdly, there are steps to enhance competition in the financial sector by allowing entry of Private Indian and Foreign Banks which are driven by highly upgraded technology-base. Fourthly, there are issues relating to strengthening the regulation and supervision over banks and more particularly over the very large number of non-banking financial institutions. All these measures were intended to improve the financial health of banks and to make them viable and efficient so as to better serve the emerging needs of the real economy.

The author opines that though the reforms in the Indian banking sector have not seriously derailed the system, they have undermined the sector's social commitments. Rural credit and rural branches originally conceived as focal points of rural development, under the reform process have been converted into offices for collection of rural savings to be utilized in urban-metro centre. The acceptance of such reforms by the rural people constituting the majority of the electorate of India is doubtful.

According to the author, to strengthen the banking system, the first step is to know the real financial position of the banks. Indian laws permit banks to conceal much, with the result that the balance sheet and profit and loss accounts rarely reveal the true state of affairs. Since 1991-92 major reforms regarding new set of formats for balance sheet and profit and loss account were made effective. But few years ago window dressing of balance sheets and profit and loss account of some of the best nationalized banks, to show inflated operating profits were detected by the RBI.
Serious actions should be taken against them as some of the banks involved in the irregularity are eager aspirants for entry to the capital market for raising funds.

The Narasimham Committee had recommended that there should be as little divergence as possible between book profits and taxable profits and there should be appropriate incentives in the tax laws to induce banks and financial institutions to adopt the desired accounting practices. The author, therefore, advises banks to make full provision or if they desire, to write off such advances and claim such tax benefits as are applicable.

On examining the reforms initiated data on non-performing assets, provisioning and write-off, the author suggests that a study group should be appointed on banking statistics to establish the credibility of the data base as a prelude to further transparency.

Patel (1997) in his study has suggested the necessities of

1. Maintaining a higher capital adequacy ratio.
2. Facilitating restructuring of the sector by formulating an exit and privatization policy;
3. Implementing stricter and more transparent accounting and disclosure norms and
4. Enhancing rule based supervision in the Indian banking sector.

The author’s suggestions are very important and they are needed to be implemented soon if the Indian banking sector is to be put on a sound footing against a background of increasing global integration of the Indian economy.

Financial intermediation refers to the process by which savings of the scattered economic units in an economy are garnered by institutions, often banks in the initial stages of economic development, to make them available to other investing units in the economy. Thus, the faster the pace of financial intermediation, the higher the growth potential of the economy. If financial intermediation is to be promoted at a speed, the best way to accomplish it is to liberalise the financial systems from the shackles of government regulations or to eliminate the elements of financial repression. With this introductory note Khakhate (1998) argues that the success of
financial sector’s liberalization depends not so much on its intrinsic worth, which still remains unchallenged, as on how it is implemented. There is a certain order in which the various elements of financial reforms have to be introduced. In addition, a careful assessment has to be made of the state and structure of the financial system, the financial position of the borrowers, the fiscal stance of the government, the positioning of the economy in the business cycle, macro-economic stability and the nature and effectiveness of the regulatory framework. These building blocks cannot be put in place all at once but in an appropriate sequential order in a mosaic of financial reforms. In other words, the sequencing and timing of financial reforms are critical for its success or failure.

According to the author four elements are considered to constitute the core of financial sector reforms; they are: interest rate deregulation, directed credit, competition and capital account convertibility. They are discussed below.

a) Interest rate deregulation: It refers to the removal of ceilings and allowing rates to be solely determined by the market. It signifies that if the macro economic environment is unstable and supervisory and prudential controls are deficient or inoperative, the interest rates should not be liberalized at one go, i.e. the ceilings on them should be maintained. As the situation improves, then interest rate ceilings should be gradually removed.

b) Directed Credit: Financial sector reforms lead to the reduction of the size of directed credit. But the most prudent policy in this regard is to avoid abrupt portfolio shifts. It should be phased out in stages and synchronized with the strengthening of the institutions involved and their prudential requirement. This would ensure that banks do not misuse their new freedom to indulge recklessly into lending to particular sectors.

c) Competition: One of the avowed purposes of financial reform is to introduce competition among banks so as to improve their efficiency. However, competition at the very start of reforms is fraught with many risks, unless some basic preconditions are met. On the other hand, if banks are allowed to continue in competition with stronger banks, they would be tempted to follow unsound banking practices. Competition should come after a sustained effort is made to improve the incentive system for banks. Such incentives include insistence on high capital requirement so
that a certain amount of lending would not lead to heavy losses, adequate debt collecting procedures, etc. Thus, sequencing of competition should be carefully planned.

d) Capital account convertibility: It is now generally recognized that capital account convertibility is an integral part of the financial sector reforms. Its sequencing however, is a controversial issue. Some stress the need to open the capital account at the very beginning of the financial reform process, as it broadens the risk diversification choices of the investors and so it minimizes the risk of their investments. Others are of the view that rapid capital account convertibility would cause severe financial crisis. Another argument is that capital inflows following capital account convertibility will permit the country to finance increased investment more cheaply, especially in terms of forgone consumption. Hence, it seems prudent to hold capital account opening till the tail end of the financial reforms.

The author concludes that financial reforms are both desirable and inevitable but those should follow a sequencing pattern taking into account the characteristic specific to the county. The financial sector reforms are to be preceded by the real sector reforms, good corporate governance, a firm control of fiscal deficit as well as consistent macro-economic policies with exchange rate, fiscal and monetary policies in perfect harmony.

D’Souza (2000) has examined different aspects of prudential regulations in the Indian banking business. Prudential regulatory policy has been characterized by inserting best practices as defined by the Basle Accord into banking activities. But this approach has the weakness that it requires substantial reliance on supervision. Second, the best practices were introduced without bank behavioural responses to them being well understood. Third, diversification as a means of making the banking system safer has not been explored. It is argued that the introduction of prudential regulation turned a credit liberal regime coupled with implicit government guarantees of bank safety and stability into a credit constrained regime, which is characterized by a reduction in lending and change in the composition of lending towards assets with a lower risk weighting such as government securities. Shifting from an emphasis on supervision towards more reliance on incentives to ensure safe and sound banking, it
is argued, can be achieved by introducing contingent liability, structured supervision and diversification.

The author has observed that the Narasimham Committee in its recommendations for reforms in the Indian financial system pointed out the adoption of the BIS norms on capital adequacy for banks. The BIS norms or the Basle Capital Accord of 1988 defines capital and lays down norms for adequate capital. It defines capital as a cushion against unforeseen losses and capital adequacy as the measure of a bank’s internal strength to absorb credit which may result in losses on account of advances going bad. The objective was the need to have common norms for all banks which would (a) strengthen the capital resources of international banks in order to improve the stability of the international banking system and b) reduce competitive irregularities arising from differences in capital requirements across nations. Though the norms were not mandatory, the committee had suggested that the banking supervisory authorities of the other countries should also try to adopt the framework, particularly in respect of banks conducting significant international business. The Narasimham Committee’s recommendation on capital adequacy, accepted by the RBI, required public sector banks (PSBs) with international presence and branches of foreign banks in India to attain 8% capital adequacy ratio by March end 1995 and all other banks by March end 1996.

The author opines that the public sector banks need to gear up themselves to meet the challenges posed by a highly competitive post-reforms environment. It is necessary for the Indian banking system to introduce operational efficiency and allocational efficiency in order to increase productivity. Operational efficiency reduces transaction costs and allocational efficiency deals with the distribution of mobilized funds among competing demands. The higher the level of efficiency, accountability and organizational effectiveness, the higher would be the level of deposit and adoptability of credit and hence higher would be the CDR.

Bisht, Mishra and Belwal (2002) are of the opinion that the banking structure as at present is the outcome of a process of expansion, reorganization and consolidation which has been going on for many years and can be perceived in three important phases: pre-nationalization phase, post-nationalization phase and post-liberalization phase. With the advent of internet, one can distinctly perceive the
arrival of the fourth phase which will lead to a mass structural change in the banking
by replacing brick and mortar branches with the electronic delivery channels to
provide more options to customers.

According to the authors, prior to nationalization, growth of banks was
motivated by economic considerations, which were replaced by social objectives after
the nationalization. Public sector banks were the pioneer in this field and started
opening a good number of schemes with a view to develop the backward areas of the
country, soon after nationalization. But, failure of bank managers to adopt a dynamic
outlook in credit extension, their too much pre-occupation with the orthodox
objective of profitability and security, rigid insistence on collateral requirements led
to a concentration of bank advances in a few industrially advanced states. This mis-
management and various other factors contributed to the decline in the level of
earning of the nationalized banks. Hence, a need was felt to overhaul the entire
banking system. First step taken up in this regard was by the appointment of the
Narasimham Committee which submitted its report in November 1991.

The authors opine that in the post-liberalization era a greater emphasis has
been laid on banks’ efficiency in operations recovery and recycling of funds by
reducing and arresting the growth of non-performing assets. This era gave smooth
inlets to the foreign and private banks, amongst the private banks; new private sector
banks witnessed a rapid rise. But in this phase both the public as well as private
sector banks showed a trend of decreasing profits, i.e., a squeeze in the interest rate
spread. The prime factors responsible for this were decreasing interest rate and
increasing competition. The former is the outcome of the RBI’s slashing down the
Bank Rate and CRR, the latter takes its shape from various forces, such as increasing
number of market players, availability of more options etc. But the public sector
banks still dominate our banking system as our 27 public sector banks nearly account
for 83% of the total deposits and 80.5% of the total advances. But their rising cost of
operation needs paramount attention; it is to be reduced. The severe over branching
and overstaffing of the PSBs are to be handled with care as it is badly affecting the
cost of operations.
The author are of the view that emergence of foreign players equipped with new technology is continuously posing a threat for survival of Indian banks. Information not money is taking a prominent place in banking. The present state-of-the-art requires consolidated computerized network of branches. Alternatively, it can be said that the new computer technology can be very helpful in decreasing the operating cost, which is very high in case of public sector banks in India.

They finally concluded that the traditional business has literally collapsed, triggering the end of traditional banking paradigm. A complete privatization of banks can be ruled out in near future. The quantum leap in technology has changed the rule of the game. Hence, in this era of immense competition only the fittest will survive. The nationalized banks can not be assigned the sole responsibility of establishing an egalitarian society by staking their profitability. The responsibilities have to be shared by the banks from various sectors to form a level playing ground. Incorporation of the new technology in banking business is a must to reach the overall efficiency, productivity and profitability and to ensure survival in this technology driven environment.

Kohli (2003) analyses the impact of capital flows upon the domestic financial sector. Capital inflows affect a wide range of economic variables such as exchange rates, interest rates, foreign exchange reserves, domestic monetary conditions and the financial system. These issues are significant for India, which has been gradually dismantling capital controls as part of its broader financial liberalization strategy. Before 1991, India had a closed capital account restricting capital mobility through administrative controls and outright prohibition.

The author argues that the impact of capital inflows is to be determined by the channels through which the inflows are intermediated within the domestic economy as well as the policy response of the monetary authorities to expansion in monetary base due to accretion of foreign currency assets. There are two channels through which the inward capital can be intermediated: the stock market and the banking system. But the banking system predominates in intermediation; hence, a significant proportion of capital inflows are intermediated through its institutions. In theory, it is seen that if there is no policy intervention a capital inflow affects the bank’s balance sheets through an expansion in foreign liabilities, exposing the banks to new risks.
linked to interest rates, currency as well as asset-liability mismatches. Secondary effects of inflows may give rise to a hike in the growth of private domestic credit, lending boom and risky loans. On the contrary, the central bank can sterilize the inflows deposited within the banking system, which can curb the exposure of banks and limit their risks.

Having a close study at the banking activity both before and after capital account liberalization the author indicates that the total assets of banks do not display an extraordinary expansion but a modest 3% increase between 1990 and 2000. A steady increase of investment by bank in government securities (almost doubling between 1990 and 2000) indicates an increasing transfer of risk to the public sector i.e, the central bank, during a period of increasing deregulation of capital account restrictions. Cautious pace of reforms and its sequencing have ensured that the increase in foreign liabilities is kept within limits in India. Several factors are responsible for this muted impact upon the commercial banks. Firstly, the magnitude of net capital inflows in India is small in comparison to the other countries that have undergone such financial liberalization. Secondly, the sequencing of capital account liberalization has been ordered such that liberalization of capital account items directly concerning the banking sector follows relatively late in the process, with many important items still partially or completely restricted, for example foreign currency deposits. Lastly, the most important of all is the policy response of the central bank which has been directed at containing the impact of capital inflows.

Finally, on discussing the impact of portfolio capital flows on capital market, the author says that as the correlation between domestic and foreign financial markets is significant, it indicates India’s vulnerability to external financial shocks. While concluding the author says that the economic policies need to be reappraised in managing capital inflows so as to minimize costs in the event of a heavy inflow of foreign capital into India.
2.2.3 Sources and uses of funds of the banks in India

An important part of banking business is the deployment of available funds properly and efficiently. Realizing its importance, perhaps, different reform measures have been initiated in this direction. Different scholars have also paid their attention to this area of sources and uses of bank funds. The main contributors in this area are the scholars like Kahlon (1991), Ambumani and Niranjana (1999), Ranjan and Dhal (2003), Misra (2003). This section is devoted for in-depth review of the studies of the scholars in this field which is the main focus of our research study.

According to Kahlon (1991), the financial health of rural financial institutions depends on the success of rural borrowers. The defective loan polices and faulty procedures of lending impair farmers’ ability to repay loan. Therefore, the author focuses on the problem from the borrowers’ angle.

The author has opined that defaults in loan repayments in many cases are involuntary or non-willful, arising from lending banks’ imperfect perception of farmers’ repaying capacity, investment failures from faulty lending, recovery procedures followed by the credit institutions and other circumstances beyond the control of the borrowers.

The author is also of the view that some of the major deficiencies in the lending procedures and policies of the credit institutions, which contribute to inventory default of the borrowers, are under financing, short term maturities of loans, delays in sanctions and disbursement of loans and failure of investments. Besides, there are other factors as natural calamities which erode the farm income and repayment capacity.

The author concludes that the shorter loan maturities, absence of initial grace period, non-observance of NABARD guidelines and miscalculation of farmers have led to the mounting overdue in the agricultural sector in India.

Banks have done well in quantitative terms in respect of priority sector lendings, but on examining their qualitative aspect it reveals that those have resulted in interest income loss, mounting overdues, poor recovery and rising volume of non performing assets which adversely affect the profits and profitability of PSBs. With this observation Ambumani and Niranjana (1999) have studied the impact of priority
sector lending on profitability by estimating the interest income loss due to priority sector lending at concessional rates of interest.

The authors have computed the interest income loss to the banks at any $t^{th}$ year as:

$$\sum_{i=1}^{7} L_{it} = \sum_{i=1}^{7} S_{it} X_{it}$$

Where $L_{it}$ denotes loss of interest income, $S_{it}$ is the interest subsidy rate and $X_{it}$ is the outstanding credit at the end of the year for $i^{th}$ priority sector. The interest subsidy rate is computed as the difference between average lending rate for the large and medium industry and the average lending rate of the priority sector concerned.

The major findings of the author are as follows:

1) As the priority sector lending increased from 24.04% in 1969 to 46.15% in 1984, the profit percentage declined from 1.2% to 0.30%. When the target set was reduced to 41.93% in 1989-90, the profit percentage had increased to 0.60%, thus indicating the adverse impact of priority sector lending on profit.

2) The total advances of PSBs had gone up by 48 times in March 1993 than December 1969. During the period of the study, advances to priority sectors had gone up by 80 times. The outstanding credits to priority and non-priority sector have shown noticeable increase over the years implying deep absorption of bank credit. The proportion of priority sector advances also increased from 24.04% in 1969 to 40.42% in 1992. PSBs actually pumped in enormous amount of credit into priority sector thus causing credit deepening.

3) Retail trade was not given any financial assistance in 1969. But, as the period progressed, the credit outstanding across the different constituents of priority sector showed noticeable increase. For the period under review, agriculture was one of the single dominant sectors.

4) The average lending rates to all the sub-sectors as well as large and medium scale industries increased over the period under study i.e. from December 1972 to March 1992. For instance, in case of agriculture the average lending rate had increased from 8.82% in 1972 to 14.84% in 1992 and for small scale industries that had increased from 13.84% in December 1974 to 16.51% in March 1992.
5) As a result of concessional interest rate to priority sector advances the subsidy rate also had increased over the years. Though the subsidy rates are seen to be moderate, since the volume of advances was high, the subsidization exerted adversely high pressure on the profits and profitability of the commercial banks.

6) The total amount of income loss in 1974 was Rs 34.13 crore, which had gone up to the maximum of Rs 973.25 crore in 1990-91 and had declined to Rs 532.08 crore in 1991-92. The quantum of estimated loss was high during 1989-90 and 1990-91 mostly because of lower lending rates, high rate of subsidy and larger quantum of credit outstanding.

7) Agriculture, small scale industries and exports collectively accounted for 91% of the total interest income loss during the period under review. The interest income loss was due to the combined effect of increase in interest subsidy rates and rise in the quantum of priority sector advances.

The authors agree with the recommendations made by Narasimham Committee on Financial Sector Reforms (1991) with respect to priority sector lending, i.e., reduction of target to 10% level from 40% level.

The authors are also of the view that reduction in the priority sector advances will in no way affect the output of either agriculture or small scale industries; as large number of private finance companies have emerged and started supplying credit to these sectors.

Ranjan and Dhal (2003) have made an empirical study on non-performing loans of PSBs in India and investigated the response of non-performing loans to terms of credit, bank size and macroeconomic conditions.

The authors have studied in details the cross country non-performing loans in the global scenario. The various ratios like non-performing loans to total loans, NPA ratios of PSBs in India, gross NPAs to gross advances, net NPAs to net Advances, operating cost to total assets ratio, total expenses to assets ratio, credit-deposit ratio, loan maturity profile of PSBs, share of term loans in total advances, ratio of interest cost to deposits, ratio of operating expenses to assets, ratio of total expenses to assets, credit deposit ratio, ratio of credit to real GDP and ratio of credit to nominal GDP
have been calculated for the study. Then the authors have fitted a regression model of the following form:

$$NPA_{jt} = (E_t, T_o, C_j, B_1, S, P)$$

Where $NPA_{jt}$ is defined as $j$ th bank’s gross non-performing assets to gross advances or net non-performing assets to net advances in period $t$; macroeconomic environment ($E_t$) is captured through the growth rate of aggregate economic activity, i.e., GDP; terms of credit ($T_oC_j$) of $j$th bank is defined through its average loan maturity ($M$) and interest rate ($R$); $S$ is the collateral value backing the credit to the borrower; the set of bank specific indicators ($B_j$) include a measure of bank size ($A$) and credit orientation or culture reflecting a bank’s preference for credit measured by credit deposit ratio (CDR) relative to that of the banking industry and $P$ is a measure of loan exposure to priority sector. In this study, the panel regression model is estimated subject to cross-section specific fixed coefficients (intercepts) in order to capture the effect of the differential social and geo-political environment confronting banks’ operations.

The exact specification of the regression model is:

$$C_j, \beta_1 + \beta_2 Y M_{jt} + \beta_3 \left(R_{jt} - R_{jt}^E\right) + \beta_4 G_t^E + \beta_5 P_{jt-1} + \beta_6 C D R_{jt} + \beta_8 S R_t$$

Where $NPA_{jt}$ is the ratio of non-performing assets to total advances of a bank, $C_j$ is fixed co-efficient, $A_j$ is the ratio of the $j$th bank’s asset to the total asset of the bank group, $R_{jt} - R_{jt}^E$ is difference between the current and past cost conditions, i.e., the difference between present and the average of last three values of ratio of total cost to assets of the bank, $G_t^E$ is the expected (one period lag) of the GDP growth rate to capture borrower’s response to macroeconomic and business environment, $P$ is the ratio of a bank’s priority sector loan to total advances, $CDR_j$ is the difference between the credit deposit ratio of a bank and the bank-group credit deposit ratio, $SR_t$ is the expected change in asset (stock) return.

The authors then proceed for a sensitivity analysis on competitive portfolio by introducing an additional variable ($z$).
Let a dummy variable $D_j$ be defined as

$$D_j = \begin{cases} 1 & \text{if } (CDR_j - CDR) \geq k, \\ 0, & \text{otherwise} \end{cases}$$

Where $D$ takes value 1 when $(CDR_j - CDR)$ is greater than or equal to some positive value of $K$, and zero otherwise. The $Z$ variable is defined as $Z_j = D_j \times (CDR_j - CDR)$, which implies that $Z$ takes a non-zero value when $(CDR_i - CDR)$ is greater than or equal to $K$ and zero otherwise. The modified regression model will be as follows:

$$\gamma = \alpha + \sum \beta_i X_i + \theta_1 (CDR_i - CDR) + \theta_2 (z)$$

[Here $X_i$ are those variables which are defined earlier as associated with $\beta_i$s coefficient]

Thus, the impact of a bank’s competitive portfolio $(CDR_j - CDR)$ will be $(Q_1 + Q_2)$ when $(CDR_j - CDR)$ is greater than and equal to $K$ and the impact will be $Q_1$ otherwise.

The sensitivity analysis has been carried out for gross NPAs equation for various values of $K$ in the range of 1 to 15 percent implying the extent to which a bank can strategically choose its $CDR_j$ higher than the industry average $CDR$.

With these statistical analyses, the authors derive the following major findings:

1) Gross NPAs have increased at a trend rate of 4%. But the annual growth rate of gross NPAs of PSBs shows a decelerating trend since 2000. In terms of various NPA ratios, such as GNPA to gross advances, GNPA to total assets, net NPAs to total assets and net NPAs to net advances, it is observed that PSBs have achieved remarkable improvement.

2) For the PSBs the GNPA ratio has declined amidst an increase in the loan maturity by 8%, declining cost conditions as reflected in declining interest cost of deposits, operating expenses and total expenses and reduction in credit-deposit ratio during the same period.
3) It is seen that banks prefer largely term loans for more than one year maturity. On an average, an increasing trend in the share of term loans in total advances since 1996, reflects bank’s approach to a better portfolio management. However, the cross section statistics such as minimum and maximum values and standard deviation of loan maturity across banks provide evidence of differential portfolio strategies of banks over time.

4) In terms of interest cost of deposits, there is evidence that on an average effective cost of deposits for PSB as a whole has remained almost steady during the analysis period. However, the interest cost of deposits has declined. On the other hand, the average operating cost ratio for banks has declined marginally in the recent years as compared to the earlier years of the analysis.

5) The bank size, as measured by the ratio of a bank’s assets to the total assets of all PSBs has statistically significant negative impact, implying that larger the bank, lower the level of gross NPAs.

6) The maturity terms of credit have significantly negative effect on NPAs, indicating that higher term loans induce lower NPAs.

7) The expectation of higher growth reflecting favourable macroeconomic and business conditions has negative influence on NPAs, suggesting that increased economic activity leads to lower financial distress of borrowers and thus, lower NPAs for banks.

The authors also observe that positive deviation of an individual bank’s CDR from that of industry’s average has favourable effect on reducing NPAs. The authors conclude that appropriate credit culture and lending policy designed with relevant economic and financial factors constituting the terms of credit would make a significant reduction in banks’ non-performing loans.

Misra (2003) has attempted to study whether the various reform measures have helped in improving the allocative efficiency of the banking system. For that the author has compared and contrasted the allocative efficiency of the banking system in the post banking sector reforms period with that of the pre-reform period across different states and different sectors of the economy. Actually the author has measured the allocative efficiency for the 23 states of India individually as well as for
all the states taken together. The three broad sectors, namely, agriculture, industries and service sectors have been taken for studying the allocative efficiency across the sectors. The relative growth rates in credit and output in the pre and post-reforms period have been taken as indicators of allocative efficiency. The pre and post-reforms period under study are respectively 1981-1992 and 1993-2001.

The income originating from states has been used to measure output. The data on output has been taken from the information supplied by the various states to the CSO. The data on credit refers to the outstanding credit to different sectors from all the Scheduled Commercial Banks in a region. The data for credit has been taken from the ‘Basic Statistical Returns’ published by the RBI. The output variable is represented by log of per capita net State Domestic Product (LPNSDP) and the credit variable by the log of per capita credit for the state (LPTCAS). In order to estimate the credit elasticities of output, 12 data point for the pre-reform and nine data points in the post-reform period are used.

In order to ascertain the appropriate estimation technique, the author has first examined the stationarity in each data series by using Dickey-Fuller unit root test. If the variables are found to contain unit root, the variables are then examined for possible cointegration. In the event of cointegration between the variables, Fully Modified OLS (FMOLS) estimation technique is used to obtain estimated coefficients.

The major findings of the study are pointed out below:

1) There has been significant improvement in the allocative efficiency for the majority of the states and also states taken together as far as elasticity of total output to total credit is concerned. For 15 states there has been an improvement in allocative efficiency with respect to the State Domestic Product (SDP).

2) As indicated by the analysis of growth in terms of credit and output, the allocative efficiency of bank’s funds has improved in all states that had higher output and lower credit growth in the post reform phase.

3) At the sectoral level, an improvement in allocative efficiency of bank funds in the services sector is witnessed for 18 states and in the industrial sector for 12 states.
The agriculture and industry sector have witnessed a decline in the allocative efficiency of credit in the post reforms period.

2.2.4 Risk Assessment and Management in Banks

With the advent of Basel norms, presently, risk management is being given more importance in the Indian banking sector than before. Globalization, liberalization, competition and technological innovations are the important drivers of risk management. For literature survey in this area the studies conducted by Kantawala (2001), Al-tamimi (2002), Raghavan (2003) as well as Das and Bose (2005) are worth mentioning.

In a study Kantawala (2001), has analysed different categories of risks faced by the banks in India. He has also defined risk index (RI) and estimated it for the different banks. He then examines the relationship, if any, of risk index with asset size, profitability, liquidity and solvency taking all the banks together as well as group-wise.

The author has taken the study period of ten years i.e., from 1988 to 1998. RI gauges the thickness of the book value cushion which is available to a bank to absorb accounting losses; therefore, a lower RI implies riskier bank and a higher RI implies a safer bank. RI is calculated as $E[(\text{ROA})+\text{CAP}] / \sigma \text{ ROA}$ where, $E(\text{ROA})$ = expected return on assets, $\text{CAP}$ is the inverse of the bank’s ratio of equity capital to total assets and $\sigma \text{ ROA}$ is the standard deviation of ROA. ROA or the return on assets is the most widely accepted accounting measure of overall bank performance. From the risk index the probability of book insolvency is derived as $1/[2 (RI)^2]^3$

The major findings of this study are mentioned below:

1. Indian bank has the highest risk whereas the Canara Bank has the lowest risk. Most of the PSBs, namely New Bank of India, Bank of India, Central Bank of India, Indian Overseas Bank, Syndicate Bank, Indian Bank, United Commercial Bank, Allahabad Bank, United Bank of India, Dena Bank, Corporation Bank and State Bank of India have got the Risk Index lower than the average, which indicates that these PSBs have the higher level of risk then the average risk of the Public Sector Banks. On grouping the banks according to their nature into Nationalized Banks and State
Bank of India group, it is observed that the Nationalized Banks are more risky than the SBI group.

2. The probability of book insolvency is the highest for Indian Bank and the lowest for Canara Bank. Among the groups of banks, it is higher for the Nationalized Banks and lower for the State Bank group.

3. The Spearman Rank Correlation shows that there exists positive relationship between i) risk Index and asset utilization and ii) risk index and net profit margin. This implies that lower the risk, higher the profitability.

4. To examine the relationship with reference to solvency, the capital ratio i.e. the ratio of equity to assets is taken. The correlation is found to be negative, indicating thereby that lower risk index (i.e., higher risk) implies higher capital ratio. This finding is not in line with the expected positive relationship. The relationship of risk index with asset size as well as risk index with liquidity is found to be positive which means as the bank size increase, risk decreases and higher the liquidity, lesser the risk.

5. On computing the same for the two groups of banks i.e., for nationalized banks and SBI group of banks, the correlation between risk index and asset size for nationalized banks is found to be relatively higher.

6. Regarding the correlation between risk index and capital ratio, it is found to be positive as expected for SBI group. But in case of nationalized banks it is found to be negative. This indicates higher solvency of the SBI group of banks ensures lesser risk as is expected.

7. The correlation between risk index and net profit margin is positive for both the groups of banks. It is relatively higher for the nationalized banks.

8. The correlation between risk index and asset utilization is positive for the nationalized banks whereas it is negative for the SBI group of banks.

9. The correlation between risk index and liquidity is positive for both the groups of banks and it is relatively higher for the nationalized group of banks.

On the basis of the above findings, the author concludes that the range of risk index is substantially wide. There are 16 out of the 28 banks having RI lower than the
average. As no guidelines are available regarding what should be the risk index, the probability of book insolvency turns out to be a better guide which is found to be the highest for the Indian Bank and lowest for Canara Bank. The findings of the study are in conformity with the Verma Committee report on weak banks. The rank correlation coefficients give more important clues about better risk management. It implies that better profit management and liquidity management lead to reduction in risk of a given bank.

Banking is a business of risk. All commercial banks in the present day of volatile environment are facing a large number of risks such as credit risk, liquidity risk, foreign exchange risk, market risk, interest rate risk to name a few. Some of these risks may threaten a bank’s success and even its survival.

We find a number of studies carried out in this area of banking both abroad and in India, to mitigate or diversify away such risks. *Al Tamimi (2002)* carried out a study in the risk management techniques in dealing with different types of risk.

The author defines the chief risks faced by the banks one by one as follows:

1) Credit risk arises from a borrowers' failure to pay interest or principal or both on loans and securities as promised

2) Liquidity risk arises from shortage of funds or it arises when a bank has difficulties in raising funds

3) Interest rate risk arises from the decline of earnings because of the movements of interest rates, or it arises when the maturities of banks’s assets and liabilities are mismatched.

4) Market risk arises from the change in the value of portfolios of commercial banks due to volatility in market prices.

5) Foreign exchange risk arises from changes in foreign exchange rates, which affect the value of commercial banks assets and liabilities located abroad.

6) Operational risk arises from the problems of accurately processing, settling and taking or making delivery on trades in exchange for cash.

7) Solvency risk (capital risk) arises from the inability to cover losses, generated by all types of risks with the available capital.
8) Off balance sheet risk arises from activities related to contingent assets and liabilities such as letters of credit, loan commitments by bank and its positions in forwards, futures, swaps and options.

9) Technology risk arises when technological investments do not produce the anticipated cost savings.

10) Compliance risk arises from non-performance with laws, rules and regulations, prescribed practices or ethical standards. Risk management is then defined as any set of actions taken by individuals or corporations in an effort to alter the risk arising from their primary lines of business. Three risk mitigation strategies are identified as:

1. Elimination or avoidance of risks by simple business practices,
2. Transference of risk to other participants,
3. Active management of risks at the bank level (acceptance level).

The methodology used by the author includes a questionnaire analysis based on the sample bank’s

i) Willingness to apply the most sophisticated risk management techniques,
ii) Credit risk management techniques,
iii) Risk identification methods and
iv) Risk management techniques actually used

The answers to the questions have been presented and analyzed in the form of tables, basically dividing the banks into local and foreign banks.

The major findings of the study are pointed below:

a) The main risks faced by the UAE commercial banks were credit risk followed by liquidity risk. The banks also faced other types of risks but those were at a manageable level and did not pose any serious problem to the banking business as such.

b) On inspecting the methods used by the local and foreign UAE banks to identify risks it was observed that the main method was inspection by the branch manager followed by financial statement analysis, which was considered to be an
advanced method compared to the first. The other methods used were internal communications and inspection by the bank risk manager. The other methods of risk identification, namely, inspection by the outside experts, risk survey and flow chart analysis were rarely used.

c) The major risk management techniques used by the local UAE banks were: establishing standards, credit score, credit worthiness analysis, periodical reports and risk rating. The major risk management techniques used by the foreign banks were collateral, credit rating, risk rating, credit worthiness analysis and periodical reports.

d) On testing the hypothesis that there was a difference between local and foreign UAE commercial banks as regards their willingness to apply risk management techniques, it was observed that the hypothesis did not hold good, hence there was no difference between the local and foreign UAE commercial banks in their willingness to apply risk management techniques.

e) On testing the hypothesis that there was difference between local and foreign UAE commercial banks in the context of their risk management practices, it was seen that hypothesis was not supported. Hence there was no difference among the local and foreign commercial banks in the context of their credit risk management practices.

Finally, the author prescribes for the UAE commercial banks to lay more emphasis on credit risk management as this was main type of risk faced by the banks. To undertake this task more efficiently each bank should create a specialized risk department directly connected with the top management.

*Raghavan (2003)* has made a study in the area of risk management by the Indian commercial banks. The author has tried to give a detailed outline of credit risk, market risk and operational risk as well as devise various tools and techniques to manage them. He has also discussed the Basel’s New Capital Accord and role of capital adequacy, risk aggregation and capital allocation, risk based supervision in managing risks in banking sector.

According to the author, till recently, due to regulated environment, banks could not afford to take risks, but of late banks are exposed to some competition and hence are compelled to encounter various types of risks. There are three major kinds of risks encountered by the banks in India they are credit risk, market risk and
operational risk. There is always a scope for the borrower to default from his commitments for one reason or the other which calls for credit risk to the bank. Thus credit risk is the potential that a bank borrower or counter party fails to meet the obligations on agreed terms. The tools and instruments of credit risk management are loan review management, portfolio management, risk based scientific pricing, risk rating models etc. Credit risk is the major component of risk management system and this should receive special attention of the top management of the bank. Any lending decision should always be preceded by detailed analysis of risks and the outcome of analysis should be taken as a guide for the credit decision. Some of the risk rating methods used widely are: a) Altman’s Z score Model: It separates defaulting borrowers from non-defaulting borrowers on the basis of certain financial ratios converted into simple index b) Credit Metrics: It focuses on estimating the volatility of asset values caused by variation in the quality of assets. c) Credit Risk: It is a statistical method which is based on acturial rates and unexpected losses from defaults. d) Mc Kinsey’s credit portfolio view: It is a multifactor model which is used to simulate the distribution of default probabilities, as well as migration probabilities conditioned on the value of macro economic factors like the unemployment rate, GDP growth, forex rates etc.

The author defines market risk as the possibility of loss to bank caused by the changes in the market variables. Market Risk Management provides a comprehensive and dynamic framework for measuring, monitoring and managing liquidity, interest rate, foreign exchange and equity as well as commodity price risk of a bank that need to be closely integrated with the bank’s business strategy. Liquidity risk, interest rate risk, forex risk, country risk all can be grouped under market risk. Liquidity risk is the risk which arises from the inability to efficiently accommodate deposit as also reduction in liabilities and to fund the loan growth. Interest rate risk is the potential negative impact on the net interest income and it refers to the vulnerability of an institution’s financial condition to the movement in interest rates. Forex or foreign exchange risk is the risk that a bank may suffer loss as a result of adverse movements in exchange rates during a period in which it has an open position, either spot or forward or both in some foreign currency. Country risk is the risk that arises due to cross border transactions owing to economic liberalization and globalization. It
comprises the risk on account of possibility of a country being unable to service or repay debts to foreign lenders in time.

Besides, the author also defines operational risk, regulatory risk and environmental risk to mitigate them. Operational risk is the risk that is not categorized as market or credit risk. It is the risk of loss arising from inadequate or failed internal processes, people and system or from external events. In order to mitigate this, internal control and internal audit systems are used as the primary means. Insurance cover is one of the important mitigations of operational risk. As banks deal with public funds and money, they are subject to various regulations from different regulators such as the Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), Department of Company Affairs (DCA), etc. Moreover, banks have to comply with the Banking Regulation Act, the Companies Act etc. so the banks face the risk of multiple regulators which inhibits free growth of business. With the economic liberalization and globalization, more national and international players are entering the banking field. This provides the platform for environmental change and exposes the bank to environmental risk.

The author opines that mitigation of risk is more important than capital allocation against inadequate risk management system. Basel proposal provides proper starting point for forward looking banks. Risk aggregation & capital allocation and risk based supervision can have an important role in managing risk in the banking sector. Under risk based supervision, supervisors are expected to concentrate their efforts on ensuring that financial institutions use the process necessarily to identify, measure and control risk exposure. It is expected to focus supervisory attention in accordance with the risk profile of the bank. It is forward looking enabling the supervisors to differentiate between banks to focus attention on those having high-risk profile.

The author finally concludes that the objective of risk management is not to prohibit or prevent risk taking activity, but to ensure that the risks are consciously taken with full knowledge, clear purpose and understanding so that it can be measured and mitigated. There may not be one-size fits all risk management module for all the banks. But the risk which is subjective and non-quantifiable has to be balanced with return that is objective and measurable. A committee approach is to be adopted to
handle the various aspects of risk like Risk Management Committee, Credit Policy Committee, Asset Liability Committee, etc. An objective and reliable data base has to be built up for which banks have to analyse on their own past performance data relating to loan defaults trading losses, operational losses etc, and come out with bench marks so as to prepare themselves for the future risk management activities.

The study of Das and Bose (2005), has focused on the probabilistic approach of predicting the transition of a loan from one state to another depending upon the financial health of the firm.

The authors have used the Markov Transition Matrix based on the theory of probability to predict the chance of particular state changing to another over time. Most of the large and internationally active banks assign risk grades to each of the borrowers depending upon some characteristics such as type and nature of business, the customer’s track record, average return on the borrowers total assets, etc. To categorize the borrowers the authors have used discriminant analysis based on Altman’s Z score, which is represented as follows:

$$Z = 3.3X_1 + 1.0X_2 + 0.6X_3 + 1.4X_4 + 1.2X_5$$

Where, $X_1 = \frac{Earnings \ before \ interest \ and \ taxes}{Total \ Assets \ (TA)}$

$X_2 = \frac{Sales}{TA}$

$X_3 = \frac{Market \ value \ of \ equity}{Book \ value \ of \ debt}$

$X_4 = \frac{Retained \ Earnings}{TA}$

$X_5 = \frac{Working \ capital}{TA}$

Altman has suggested a cut off score of 2.65 i.e. if the score falls below 2.65, the banker should be more vigilant as it is this juncture that a loan may slip to a lower category. The authors have used this technique to grade different borrowers.

Next, the authors have suggested the use of Markov Chain Theory to provide a vital tool for the supervision of the loans.

Each $P_{ij}$ represents the probability of ‘i’ classification migrating to ‘j’ over a given time period and are historical mean based on the previous five years experience with the most current year being the experience for the twelve month period ending in the calendar year that is most current. Depending upon the efficiency of the bank’s supervisory mechanism a loan may turn from $P_{ij}$ to $P_{j \ (j+n)}$ (where $i,j = 1,2,3,4$ and $n=$
1,2,3) or the reverse can happen. Therefore, it is necessary for the banks to assess the borrower not only at the time of sanctioning the loan but also during the whole tenure of the loan.

2.2.5 Studies on efficiency in the banking sector through Data Envelopment Analysis (DEA)

Traditionally ratio analysis technique was used to study the efficiency in the banking sector. Now a days DEA is being increasingly used for the purpose. Data Envelopment Analysis (DEA) has become a popular measure of efficiency in general and in the financial services sector in particular. It has been widely used to measure the efficiency of performance of individual banks and also peer group performance.

A number of studies have been undertaken on the efficiency aspect of Indian Commercial Banks specially in the post-reforms periods.

*Bhattacharyya, Lovell and Sahay (1997)* measured the technical efficiency of commercial banks operating in India for the period 1986-1991 using DEA. They took three outputs namely investment, advances and deposits, and two inputs namely interest expense and operating expense. They concluded from their study that the PSBs were more efficient than their private and foreign counterparts.

*Das (1997)* estimated the efficiency of SCBs for the years 1970, 1978, 1984, 1990 and 1996 with the help of DEA. He took two outputs, namely, net interest income and interest income of banks and two inputs, namely labour and lonable funds (deposit + borrowing) for the study. The author opined that the State Bank Group, in general, improved in overall efficiency during the 26 year period. The Nationalized Banks, on the other hand, revealed a gradual decline in overall efficiency during the study period and it was more so after the 1990s.

*Saha and Ravisankar (2000)* also studied the efficiency of the Indian PSBs during the period 1992-1995 through DEA. They used three input variables namely interest expenditure, establishment expenditure, non-establishment expenditure and six output variables: deposits, advances, investment, non-interest income, interest spread and total income. They concluded from their study that the performance of the PSBs (with the exception of few banks) had improved over the years of the study.
Kumbhakar and Sarkar (2005) made use of the stochastic cost frontier analysis to study the efficiency of the Indian banks by using panel data. The authors concluded from their study that there exists cost inefficiency in the operation of the Indian banks. But, the author also observed a tendency for inefficiencies to decline overtime. They further noticed that as a result of deregulation the cost inefficiency of the Indian banks increased and also rate of inefficiency reduction declined over time.

Debashish (2006) also evaluated the performance of the banking sector in India. In his study the author had attempted to measure the relative importance of Indian banks over the period 1997 to 2004 by using the output oriented CRR (Charnes, Cooper and Rhodes) version of DEA model. The analysis used 9 input variables:

Input 1: Total deposits received
Input 2: Total liabilities
Input 3: Labour related administrative costs (gross wages)
Input 4: Capital related administrative cost (amortization, office maintenance and office supplies, etc.)
Input 5: Operating Expenses
Input 6: Fixed Assets
Input 7: Total borrowings
Input 8: Net Worth
Input 9: Net NPA

And seven output variables:

Output 1: Total loans extended
Output 2: Total investments
Output 3: Net profits
Output 4: Interest and related revenues
Output 5: Non interest income
Output 6
Short term securities issued by official sectors
CNB bills and MOP treasury bills)
Output 7
NIM (Net Interest Margin)

The author concluded that the foreign owned banks were on the average most efficient and the new banks were efficient than the old ones which were often burdened with old debts. In terms of size, the smaller banks were globally efficient than the larger banks.

Chatterjee and Sinha (2006) compared the cost efficiency of commercial banks in the post-reforms period by using the DEA technique. They chose for their study 20 PSBs and 10 private sector commercial banks, which contributed more than 82% of the assets of the Commercial Banks operating in India. They took 2 input variables viz. no. of branches maintained by the observed commercial banks and the borrowed capital (i.e. deposits plus long-term loans), two input prices [namely, operating cost per branch and interest payment per unit of borrowed capital] and three output variables [namely, net interest income, non-interest income and loan]. The authors concluded from their study that i) the mean cost efficiency of the observed commercial banks declined in 2002-03 significantly, ii) the private sector commercial banks had higher mean cost efficiency in comparison to the observed public sector commercial banks.