Chapter III

Research Design and Methodology
3.1 Statement of the problem

Risk and uncertainty form the background to the operations of the financial system and financial institutions develop the strength to withstand the risks inherent in lending and investment. Resources of the financial system are held by financial institutions in trust and have to be deployed for maximum benefit of their owners-viz., depositors and investors. The safety of their fund should be the primary concern of banks and regulatory authorities. Therefore, ensuring the solvency, health and efficiency of the institutions is central to effective management.

Non-performing assets do not generate interest income for the banks, and at the same time banks are required to make provisions for such non-performing assets from their current profits. Non-performing assets would result in stress on profitability and capital adequacy. It causes gradual decline in ability to meet steady increase in cost, increased pressure on net interest margin thereby reducing competitiveness, steady erosion of capital resources and increased difficulty in augmenting capital resources. They limit recycling of funds, capacity to increase good quality risk assets in future and set in asset-liability mismatches. Even for profit making banks, an increase in proportion of non-performing assets is an indicator of poor quality of loans and hence a distress signal.

Financial stability of the transition economies is quite fragile due to the ongoing structural changes and liberalization processes. There is sufficient evidence that the transition economies have experienced bank insolvency and systemic failures due to high non-performing assets. For instance Kuwait(1980s), Mauritania(1984-93), Benin(1988-90), Bolivia(1986-87),
The Indian financial sector underwent a radical change during the nineties. From the relatively closed and regulated environment in which agents had to operate earlier, the sector was opened up as part of the efficiency enhancing structural policies to bring about high sustainable long-term growth of the economy. The banking sector was also not an exception to this rule. New measures were undertaken to induce efficiency and competition into the system. Accounting and provisioning norms, capital adequacy rules, proper risk management measures were brought in place and entry regulations were also relaxed. The international best practices in asset classification and provisioning norms were implemented in a phased manner to align Indian financial system with the global financial system.

The prudential norms on income recognition, asset classification and provisioning thereon, are implemented from the financial year 1992-93, as per the recommendations of the Committee on the Financial System under the Chairmanship of Dr. Narasimham. These norms have brought in quantification and objectivity into the assessment and provisioning for non-performing assets. The new non-performing asset regulations have brought to the surface the hitherto grizzled problem of bad loans in the Indian financial system and along with that the focus of policy makers, regulators and researchers at once to this subject.

Since then there has been a reduction in the non-performing assets in relation to the advances, especially over the last five years, but the quantum of Non-performing assets is ever-increasing. The ratio of non-performing assets to the advances in Indian scheduled banks is 8.8 per cent at the year ending 2002-03 in comparison to 1.3 per cent in the USA, 1.8 per cent in Chile and 2.2 per cent in the U.K. Thus, the level of NPAs in Indian banking system is uncomfortably high in comparison to that of banks in developed nations.
The present study is a modest attempt in this direction to trace the reasons for staggering level of NPAs, more particularly in PSBs.

3.2 Literature review

Banking industry has always evoked the interest of many researchers worldwide and more so in the recent times with the serial financial crashes of many developing and transition economies across the globe triggering a need to gain insights into the interplay of forces that drive the financial system.

Larrain, Mauricio (1989)\(^2\) describes how Chilean crisis was handled. Chile's banking crisis, stemmed from macroeconomic problems, compounded by unsound financial practices, in 1981–83 permeated the entire financial system, affecting roughly 60 per cent of total loan portfolios. The government took an aggressive and comprehensive approach and depending on the level of solvency, some banks were liquidated, others rehabilitated. Rehabilitation took two forms. One was aimed at improving borrowers’ capacity to repay loans to banks. This mainly consisted of across-the-board debt rescheduling (for corporations and consumers) at below-market interest rates and coverage for exchange rate losses, affecting about 25 per cent of the banking system’s total loan portfolio. The other was aimed at rebuilding the capital base of the banking system. Distressed loans were transferred to the central bank. Existing shareholders could not receive dividends until the central bank was repaid. Payments due to the central bank depended on the extent of loan recovery, thus shifting the burden of non-performing assets on to old shareholders. The government strengthened banking supervision by improving loan portfolio analysis, including an early-warning system for potentially problematic loans, and increasing transparency of financial transactions. Banks were also required to be rated by two private credit rating agencies each year and
obligated to the timely publication of information on their financial condition, with stiff penalties for non-compliance.

Narasimham committee on the Indian financial system (1991)\(^3\) describes the progress of public sector banks, in achieving social goals in the form of extending the geographical reach and functional spread of banking services, as impressive. However, this progress is at the cost of decline in productivity and efficiency of the system and as a consequence serious erosion of profitability even to the point of raising doubts about the viability of some important constituents of the system. Factors both external to the banks in terms of the macro policy environment as well as internal to them in terms of organization, staffing and branch spread have been responsible for this. The report submits that directed credit to priority sector, advices of BIFR and courts to extend credit to sick industrial units, political and administrative interferences in credit decision making, loan waivers and absence of any serious credit appraisal, post credit supervision are the major reasons for decline in loan portfolio quality. The disturbing growth of overdues is a consequence of the measure of laxity and departure from the principles of sound banking. The committee has recommended for implementation of international standards in the matters of capital adequacy and income recognition and asset classification norms in phases and called for reforms in legal aspects to speed up the recovery process of delinquent loans.

In a study of loan losses of US banks, McGoven (1993)\(^4\) argued that ‘character’ has historically been a paramount factor of credit and a major determinant in the decision to lend money. Banks have suffered loan losses through relaxed lending standards, un-guaranteed credits, the influence of the 1980s culture, and the borrowers’ perceptions. It was suggested that bankers should make a fairly accurate personality-morale profile assessment of prospective and current borrowers and guarantors. Besides considering personal interaction, the banker should (i) try to draw some conclusions about
staff morale and loyalty, (ii) study the person’s personal credit report, (iii) do trade-credit reference checking, (iv) check references from present and former bankers, and (v) determine how the borrower handles stress. In addition, banks can minimize risks by securing the borrower’s guarantee, using Government guaranteed loan programs, and requiring conservative loan-to-value ratios.

De Juan (1995)$^5$ reviewed a multitude of cases in many countries to conclude that the simplest explanation for bank failures is poor management.

Morris Goldstein and Philip Turner (1996)$^6$, identify macroeconomic volatility (domestic and external), lending booms, asset price collapses and surges in capital inflows, increasing bank liabilities with large maturity/currency mismatches, inadequate preparation for financial liberalization, heavy government involvement and loose controls on connected lending, weaknesses in the accounting, disclosure and legal framework and distorted incentives for bank owners, managers and creditors, as well as bank supervisors are the factors that result in banking crisis.

Caprio Gerard Jr. and Daniel Klingebiel (1996)$^7$, using a database covering some eighty-six episodes of bank insolvency, state that both macroeconomic and microeconomic factors have figured in bank crisis and few governments have responded well to these episodes. In many countries deregulation proceeded faster than improvements in financial infrastructure and incentives suggesting that weak financial infrastructure and poor incentives led to the crisis. Thus to better manage insolvencies, policy makers must develop a regulatory framework that allows banks to respond more robustly to shocks and provide the bankers the incentive to do so.

Bank for International Settlements in its 66th Annual Report (1996)$^8$ states that, non-performing loans in China, India and Indonesia have been particularly heavy in the state sector. The nations with the highest shares of
state owned banks are, on average, also the ones with the higher operating costs and the higher incidence of non-performing loans.

Sergio (1996)\(^9\) in a study of non-performing loans in Italy found evidence that, an increase in the riskiness of loan assets is rooted in a bank’s lending policy adducing to relatively unselective and inadequate assessment of sectoral prospects. Interestingly, this study refuted that business cycle could be a primary reason for banks’ NPLs. The study emphasized that increase in bad debts as a consequence of recession alone is not empirically demonstrated. It was viewed that the bank-firm relationship will thus, prove effective not so much because it overcomes informational asymmetry but because it recoups certain canons of appraisal.

Allen N. Berger and Robert De Young (1996)\(^10\) test four hypotheses bad luck, bad management, skimping, and moral hazard using Granger-causality analysis. The bad luck hypotheses posits that exogenous events can cause nonperforming loans to increase, the bad management hypothesis posits that poorly run banks do bad jobs at both cost control and at loan underwriting and monitoring, the skimping hypothesis posits that banks might achieve low costs by under-spending on loan underwriting and monitoring in the short run, and after time passes this slack results in increases in problem loans. The authors test the moral hazard hypothesis by testing whether equity capital negatively Granger-causes nonperforming loans. The results suggested that the inter-temporal relationships between loan quality and cost efficiency run in both directions. Increases in nonperforming loans tend to be followed by decreases in measured cost efficiency, suggesting that problem loans cause banks to increase spending on monitoring, working out, or selling off problem loans. Decreases in measured cost efficiency are generally followed by increases in nonperforming loans, evidence that bad management practice are manifested not only in excess expenditures, but also in sub-par underwriting and monitoring practices that eventually lead to nonperforming loans. For a
subset of banks that are consistently efficient, however, increases in measured cost efficiency precede increases in nonperforming loans, consistent with the skimping hypothesis that banks trade short-run expense reductions for long-run reductions in loan quality. Finally, decreases in bank capital ratios precede increases in nonperforming loans for banks with low capital ratios, evidence that thinly capitalized banks may respond to moral hazard incentives by taking increased portfolio risks.

Patrick Honahan (1997) identifies macroeconomic shocks, poor management and microeconomic deficiencies and government pervaded banking system as the major causes for banking failures. Poor lending decisions based on over optimistic assessment of creditworthiness, willingness to repay or the recoverability of the delinquent loans; undue concentration of lending in readily available or hot sectors, or to particular borrowers; overly rapid expansion exceeding the capacity of the bank’s lending function or even exceeding the economy’s potential to generate bankable projects are the reasons for individual bank failures.

Fuentes and Maquieira (1998) undertook an indepth analysis of loan losses due to the composition of lending by type of contract, volume of lending, cost of credit and default rates in the Chilean credit market. Their empirical analysis examined different variables which may affect loan repayment: (a) limitations on the access to credit; (b) macroeconomic stability; (c) collection technology; (d) bankruptcy code; (e) information sharing; (f) the judicial system; (g) prescreening techniques; and (h) major changes in financial market regulation. They concluded that a satisfactory performance of the Chilean credit market, in terms of loan repayments hinges on a good information sharing system, an advanced collection technology, macroeconomic performance and major changes in the financial market regulation.
M. Narasimham committee report (1998)\textsuperscript{13} had pointed out that reforms in Indian banking sector can be classified into two phases: The first phase consisted of the \textit{curative measures}, which were brought about for making the banking sector more oriented to the market and impart competition to the environment. The second phase consisted of the \textit{preventive measures} that ensure smooth functioning of the banking sector in the long run. The preventive measures recommended are primarily on privatization and reduction of government stake, more stringent capital adequacy, asset classification & provisioning norms, and establishment of asset reconstruction companies. Banks and Financial Institutions were asked to avoid the practice of \textit{evergreening} and any effort at financial restructuring must go hand in hand with operational restructuring. Banks were asked to ensure that along with the cleaning up of the balance sheet, simultaneously steps be taken to prevent / limit re-emergence of new NPAs.

M.S. Verma committee report (1999)\textsuperscript{14} on restructuring of weak banks states that NPAs have been the single most vexing problem faced by the public sector banks. Banks that have been identified as weak are mainly so because of the loss of their income, high carrying costs of NPAs both in terms of their funding as well as provisioning and the general stagnation of operations caused by the NPAs in their books. The study reveals that a sizeable portion of the aggregate non-performing assets with the public sector banks are chronic i.e., loans which have remained as non-performing in their books for several years in some cases running into decades. Besides, a significant portion of the non-performing assets is locked in legal proceedings or in the BIFR and cannot be expected to be recovered in the foreseeable future. There are also loans given to state or central public sector units which they have failed to repay. The committees opined that the quickest and possibly the most effective way of removing NPAs from the books of the weak banks would be to move these out to a separate agency (Asset
Reconstruction Company) which will buy these loans from the banks and make its own efforts for their recovery apart from internal organizational restructuring of the weak public sector banks.

A.Q. Siddiqi, A.S. Rao & R.M. Thakkar, Department of banking supervision, Reserve Bank of India (1999)\textsuperscript{15} analyzed the causes and composition of non-performing assets and appraised efforts put by the banks to mitigate them. The study revels that apart from internal factors such as weak credit appraisal, non-compliance and willful default, there are several external factors such as preponderance of certain traditional industries in the credit portfolio of certain banks, majority of which are suffering from serious inherent operational problems, natural calamities, policy and technological changes which increase the incidence of sickness, labour problems and non-availability of raw materials and other such factors which are not within the control of banks. While banks cannot be blamed for advances becoming non-performing due to external factors, there is an urgent need that the banks address the problems arising out of internal factors and this may call for organizational restructuring of banks, a change in the approach of banks towards legal action which is generally the last step and not the first step, no sooner the account becomes bad and a clear thrust on improving the skills of officials for proper assessment of credit proposal, risk factor and repayment possibilities. The study concludes that reduction of NPAs in banking sector should be treated as a national priority item to make the Indian banking system stronger, resilient and geared to meet the challenges of globalization. It is necessary that public debate is started soon on the problem of NPAs and for evolving suitable strategies for satisfactory resolution of the problem.

S.V. Naik (1999)\textsuperscript{16} notes that the percentage of Non-performing assets to total assets of private sector banks and foreign banks on an average is far lower than in public sector banks. Influence to grant credit, erosion in decision making capacity to rant finance when badly needed to bring the borrower out
of difficulty, ineffective legal machinery and transition of Indian economy are the contributing factors for non-performing assets and opines that non-performing asset management in Indian banking system results into better management of advances portfolio of public sector banks.

Confederation of Indian Industry's task force on Non-Performing Assets in the Indian financial system (1999) recommends that several public sector banks and financial institutions be either closed down or privatized and legal reforms be introduced to enable quicker liquidation of defaulting companies in order to enable the recovery of dues by the banks.

Brian Peters (1999) opines that when extending credit, both supervisors and bankers should acknowledge that some borrowers experience problems. When problems arise, the bank should recognize and disclose its losses in a timely manner. There are many banks throughout the world today that have been slow to recognize losses and begin the process of working out bad debts. This has left banks and, in some cases, entire banking systems saddled with a mountain of bad debts, which continue to restrict their growth. The bank, therefore, should have a system in place to not only recognize risks but also respond effectively if problems develop. While it is an important role of the banking sector to sometimes help borrowers work out of problems, banks must be exceedingly careful not to throw away "good money after bad". In the United States, the accrual of interest on impaired loans and the capitalization of interest are practices that are frowned upon and usually avoided at all costs.

Niran Bhiraban (2000) investigated the factors contributing to non-performing loans of the Krung Thai Bank (Public Company) Chiang Rai Branch, Thailand, through a survey of non-performing debtors in A3 - A6 debt categories, and also loan officials. The main factors contributing to their inability to repay the loan were found to be the national economic downturn which lead to depression for business in general; reduced buying ability of consumers; misuse of the loan, and the combination internal and external
debts of debtors. The other factors included simultaneous operation of too many kinds of business and the inappropriate use of the loan. Data from bank's loan officials revealed that banks non-performance loans due mainly to the bank's negligence in monitoring and following up performing loans while the debtors concealed some true data in their applications. Moreover, the speedy consideration in granting process in order to serve the bank targets; the loan officials' inexperience and less carefulness in granting loans.

Utaikwan Kanjananirint (2000) used probit model to find factors affecting non performing loans' reduction of Government Housing Bank, Lamphun Branch, Thailand. It was found that there were four influencing factors of non performing loans reduction namely the client's cooperation, the client's residential area or hometown, the length of loan payment, and the ratio between loan amount and the value of collateral assets. The research results indicated that those who able to repay their loans are clients who employed in the government sector or state enterprises, have their residential area in Lumphun and Chiang Mai provinces, have a short-term of loan repayment, have a low ratio between the loan amount and the value of collateral assets.

Pradeep Raje (2000) critically appraised the reform agenda to conclude that the focus on non-disruptive change all through the reform effort seems to have determined the course of reform, and the probability of its success. It has conditioned the policy response, at each step, to the bare minimum elements required to keep the banking system moving. Bank managements have, therefore, failed to internalize the change in incentives, implicit in the reform effort. It is the failure to tackle the complex problems in the supporting real sector, as well as institutional restructuring issues within the banking sector, that lacked in Indian reform agenda. This can be traced to a distinct lack of political will to tackle the many dimensions of the problem at the same time.
The silver lining is that at least the Reserve Bank of India, as banking regulator, has determinedly sought to upgrade regulatory standards.

Ding Lu, Shandre M. Thangavelu, Qing Hu (2001)\textsuperscript{22} have observed a link between non-performing loans and lending behavior in China's state owned banks. The banks are willing to provide liquidity to keep afloat the state owned firms in financial distress despite that the latter's cash flow is already trickling to zero or even has become negative. By keeping these firms from going bankrupt, the banks can avoid a straightforward default of the debts owed by these firms, holding on to the hope for a government-sponsored bailout or takeover. The moral-hazard type of lending was aggravated during 1998-99 when the Chinese government took over huge amount of bad loans from the major state banks through its four state-sponsored asset management companies. This aggravated moral hazard overwhelmed the efforts to improve banking management, resulting in more severe lending bias, slacker credit rationing to the worse-than-average-risk firms and continuous credit liquidity to keep afloat the firms in deep financial distress.

Bloem and Gorter (2001)\textsuperscript{23} suggested that a more or less predictable level of non-performing loans, though it may vary slightly from year to year, is caused by an inevitable number of 'wrong economic decisions' by individuals and plain bad luck (inclement weather, unexpected price changes for certain products, etc.). Under such circumstances, the holders of loans can make an allowance for a normal share of non-performance in the form of bad loan provisions, or they may spread the risk by taking out insurance. Enterprises may well be able to pass a large portion of these costs to customers in the form of higher prices. For instance, the interest margin applied by financial institutions will include a premium for the risk of non-performance on granted loans.

Dr. M.Y. Khan & Dr. T.R. Bishnoi (2001)\textsuperscript{24} categorically state that Indian banking is a case of banking distress during the period 1991-99.
Profitability, non-performing assets and capital adequacy are the indicators of banking distress in India.

G.P. Muniappan (2002)\textsuperscript{25} concludes that non-performing assets should be avoided at the initial stage of credit sanction through a rigorous and appropriate credit appraisal mechanism. The problem of non-performing assets is not just limited to bankers. The beneficiaries of the financial system should equally get concerned as non-performing assets obstruct the smooth flow of credit and create adverse repercussions in the economy. Hence, both lenders and borrowers should realize their roles, responsibilities and appreciate the difficulties of each other to work towards a healthy financial system.

Michael Debabrata Patra and Sunando Roy (2002)\textsuperscript{26} opine that the early efforts of Indian government towards restructuring of financial system have insulated India from the contagious turmoil in the neighbourhood. Although considerable ground remains to be covered in the quest for a vibrant, and well-diversified and competitive financial sector with multiple intermediaries operating in various segments of the financial markets, the initial adaptation responses of financial intermediaries, particularly banks, has been encouraging. There is a distinct country specific flavour to the approach to the responsibility for financial stability in the reforms agenda. The complementarity between macroeconomic and financial policies has provided a sound infrastructure for an overhaul of the financial system in the pursuit of international standards. The stylized facts and the empirical results indicate that those banks which have secured the greatest reduction in non-performing assets have reaped the maximum gains in terms of profitability, or at least in terms of unshackling financial performance from policy intervention. Capital adequacy has almost uniformly produced an improvement in performance. For the Indian banking system in general the adjustment to macro and micro prudential regulation has been relatively rapid although the speed of
adjustment has varied across the industry.

Elijah Brewer III, Hesna Genay et al. (2002)\textsuperscript{27} examine the stock market reaction of over 1,000 Japanese firms to the failure of announcements of the three major banks during 1997-98 to find that, as in previous studies, the market value of customers of the failed banks were adversely affected at the date of the failure announcements. In addition, the effects were related to the financial characteristics of the client firms. Firms that had greater access to alternative sources of funding experienced a less severe adverse impact from bank failure announcements.

Jimenez and Saurina (2003)\textsuperscript{28} used logit model for analysing the determinants of the probability of default (PD) of bank loans in terms of variables such as collateral, type of lender and bank-borrower relationship while controlling for the other explanatory variables such as size of loan, size of borrower, maturity structure of loans and currency composition of loans. Their empirical results suggested that collateralized loans had a higher PD, loans granted by savings banks were riskier and a close bank-borrower relationship had a positive effect on the willingness to take more risk. At the same time, size of bank loan had a negative effect on default while maturity term of loans, \textit{i.e.}, short-term loans of less than 1-year maturity had a significant positive effect on default.

T.T. Ram Mohan and Subhash C. Ray (2003)\textsuperscript{29} have compared efficiency and productivity of public sector banks relative to private sector banks (both domestic and foreign) over a nine year period (1992-00) to conclude that there is no significant difference in productivity, growth and efficiency between the public and private sectors.

Errol D’Souza (2003)\textsuperscript{30} states that profitability of the public sector banks did improve relative to the private and foreign banks, but they have lost ground in their ability to attract deposits at favourable interest rates, technological up-gradation, and in their staffing and employment practices,
which has implications for their longer-term profitability. The share of public sector banks in the total deposits raised by commercial banks declined and private and foreign banks were able to attract deposits at more favourable net interest rates. Also, private and foreign banks have been adopting sounder risk-management practices and this increased prudence on their part has led to greater expenditures on provisioning which has reduced their profitability.

Saibal Ghosh and Subhra Bhattacharjee (2003)\textsuperscript{31} studied the relationship between Net Interest Margins and Gross non-performing assets, Size of the bank, Off-balance sheet exposure, Leverage ratio and index of risk of Public Sector Banks in India. They conclude that the gross non-performing assets have a negative impact on the NIM and the coefficient is -0.41.

Paramita Mukherjee (2003)\textsuperscript{32} empirically states that reduction of NPAs is not the unique and only solution to the problem of weak banks. The banks must also take into account the capital base and the cost aspect in order to maintain good performance both in terms of profitability and solvency. The study points out that high NPA on bank's balance sheet is not the only indicator of weakness of a bank, neither is the NPA targeting desirable.

Bikram De (2003)\textsuperscript{33} reveals that there are no significant ownership effects when performance of public sector and private sector banks is compared. The reach and age of public sector banks gave them an edge in accessing low cost funds and high interest earnings on their investment in government securities but they could not match up with new private sector banks in terms of operating efficiency because the new private sector banks had the lowest operating costs.

Rakesh Mohan (2003)\textsuperscript{34} conceptualized "lazy banking" while critically reflecting on banks' investment portfolio and lending policy. Banks have resorted to huge investments in Government securities drastically cutting down their advances to real sector showing their reluctance to take risk.
Reddy, Y.V (2004)\textsuperscript{35} opines that banks’ lending policy could have crucial influence on non-performing loans. The issue of credit culture is of paramount importance in addition to institutional, legal changes and policy initiatives. Banks should have to work towards evolving a conducive credit culture and perhaps the critical factor on which it anchors is fairness. He argues that interest rate should be fixed considering the risk involved on a case to case basis rather than charging same interest based on category of borrower. Honest repayment by a borrower must be honoured, recognized in the form of soft credit terms.

Rajiv Ranjan and Sarat Chandra Dhal (2004)\textsuperscript{36} attempted an empirical analysis of the non-performing loans of public sector banks in India and investigated the response of NPLs to terms of credit, bank size and macroeconomic condition. It has been concluded that terms of credit variables have significant effect on the banks’ non-performing loans in the presence of bank size and macroeconomic shocks. The changes in the cost of credit in terms of expectation of higher interest rate induce increase in NPAs. On the other hand, factors like horizon of maturity of credit, better credit culture, and favorable macroeconomic and business conditions lead to lowering of NPAs.

Sujata Visaria (2004)\textsuperscript{37} uses a micro data set on project loans to examine the effect of a recent reform in India, aimed at speeding up the formal legal system of dispute settlement between banks and defaulting borrowers i.e. Debt Recovery Tribunals. Results show that borrowers are 2-14 percent less likely to become delinquent on loans as a result of this reform. Further, there is evidence that the interest rates on future loans have fallen by 0.7-1.5 percentage points due to this legal reform.
3.3 Need for the study

The liberalization of financial sector has resulted in more number of private banks and foreign banks and thereby increased competition in the market place. The margins are getting thinner and thinner and sustainability depends on efficient management of operations. Non-performing assets are threatening the survival of the banks and hence need greater attention from the banks. Understanding the severity of the problem of non-performing assets in the context of public sector banks, both Reserve bank of India and Government of India have initiated a series of measures to deal with the problem of problem-loans.

After over a decade of implementation of financial sector reforms and prudential norms, there is a need for systematic study to understand the progress made by the banks in managing their non-performing assets. There is a necessity to appraise the effectiveness of various initiatives of Government of India and Reserve Bank towards the management of non-performing assets in the Indian public sector banks.

The reasons for accretion of non-performing assets are rooted in both external and internal environments to the banks. The process of loan appraisal, pre-sanction and post-sanction monitoring, recovery practices and information systems etc. are the areas that are internal to the bank and can be fine-tuned to effectively reduce the accretion of non-performing assets. Defaulter is at the crux of the problem and his attitude towards bank and its policies is of paramount importance. For a bank to develop any programme to manage non-performing assets, it is quintessential to understand the attitudes and problems of defaulters.

The review of literature reveals that a few studies carried out on non-performing asset management in Indian banks, in general, and public sector banks in particular, failed to focus attention on reasons for NPAs, bankers' perceptions and defaulters' attitude towards the issue. A micro level study to
understand the operational predicaments and effectiveness of various measures initiated by the RBI is found wanting. Better results may be achieved in reducing the NPAs if the reasons for creation of NPAs and operational problems in implementing the NPA management techniques are understood. Hence, there is a need to carryout a micro level empirical study of the bankers' perceptions and the defaulters' attitudes towards the issue of non-performing assets in the state owned banks.

In this backdrop the study is undertaken with the following objectives

3.4 Objectives of the study

The following specific objectives have been set for the study;

i. to analyze the level and impact of non-performing assets on the functioning of public sector banks in India;

ii. to probe the reasons for formation of non-performing loans in the public sector banks;

iii. to evaluate the bankers' perceptions on non-performing assets management in public sector banks;

iv. to understand the socio-economic and attitudinal aspects of the defaulters of public sector banks;

3.5 Hypotheses

The study has formulated certain hypotheses to test the significance of relationship between variables. These relate to attitude and demographics of the respondents. The following hypotheses are tested in the Bankers' study;

H_{01} : Bankers attitude does not significantly differ based on the location of branch.
H02: Experience of the banker does not significantly influence the attitude towards NPAs.

H03: Level of NPAs in the bank does not significantly influence the attitude of banker towards NPAs.

Hypotheses tested to establish the significance of relationships from the defaulters' study are as under;

H04: Political influence of the borrower does not significantly influence the attitude of the borrower towards public sector banks.

H05: There is no significant relationship between educational qualifications and defaulter's attitude towards PSBs.

3.6 Period of study

The period of eight years from 1996-97 to 2003-04 has been adopted to study the level, movement and effectiveness of measures to curtail non-performing asset of the Indian public sector banks.

3.7 Scope of the study

Banks have traditionally been the dominant entities of financial intermediation in India. This is reflected in the predominant share (two thirds share) of banks in the aggregate financial assets of banks and financial institutions, taken together. There are 90 scheduled commercial banks (excluding the Regional Rural Banks) operating in the Indian economy as on 31st March, 2004. Out of which 27 are public sector banks (19 nationalized banks, SBI & its 7 associates), 30 are private sector banks (23 old banks and 8 new banks) and 33 are foreign banks.38 Public sector banks form the major constituent in the Indian banking system with largest network of branches and
accounting for majority share of banking business i.e. deposits, advances and assets. It is a proven fact that the incidence of non-performing assets is more in state owned banks across the world and so also in India.

The study is confined to the Public Sector Banks only and thus excludes the All India Financial Institutions, State Finance Corporations, Private Banks, Foreign Banks operating in the country, Cooperative and Regional Rural Banks from the ambit of study.

The level and impact of NPAs is analyzed taking all the 27 Public Sector Banks operating in the country as a group. The micro level empirical study relating to Bankers and Defaulters is limited to PSBs in Cuddapah district.

3.8 Database

Data has been collected from both primary and secondary sources.

Primary Data

The primary data relating to bankers' perception of the reasons for non-performing assets, appropriateness of various policy imperatives and effectiveness of measures to manage non-performing assets is gathered through administering a well designed schedule to the Branch Managers of selected public sector banks. Attitude of defaulters towards the public sector banks, reasons for default etc. are obtained through a structured schedule from the selected defaulters of public sector banks.

Secondary data

Data has been gathered from the various publications of Reserve Bank of India, published reports of various committees on the financial system, periodicals and journals, published annual reports of banks. Information has also been collected from the websites of Banks, National Bankers Association,
National Institute of Bank Management, Bank for International Settlements, and International Monetary Fund.

3.9 Sample design

The primary data is collected from the Bankers and Defaulters of public sector banks in Cuddapah district. It has been identified that number of public sector bank branches in Cuddapah is 89 and they are spread all over the district.

3.9.2 Sampling for Bankers' Study

A census survey of Branch Managers of all the 89 branches of public sector banks in Cuddapah district is carried out to obtain the Bankers' perception on management of non-performing assets.

3.9.3 Sampling for Defaulters' Study

In case of Defaulters' study, simple random sampling technique is adopted. Five defaulters from each of 89 branches have been selected randomly to make the sample representative. The sample therefore constitutes 445 Defaulters.

Responses from all the 445 defaulters could not be collected due to the following reasons:

• Whereabouts of some of the defaulters could not be traced;
• Some of the defaulters could not be met even after repeated visits;
• A few of the defaulters refused to answer.

Hence, the tabulation is done for 396 respondents only. Analysis is performed only on the responses of the 396 respondents.
3.10 Tools of analysis

The primary data and secondary data collected for the purpose of study has been analyzed with the help of various analytical tools such as averages, percentages, ratios, trend methods. Statistical techniques were applied at appropriate junctures to statistically corroborate the conclusions.

To identify the reasons for NPAs, ranks are awarded to the responses based on the score and rank correlation technique is employed to ascertain the correlation between reasons quoted by Bankers and Defaulters. The hypotheses formulated to test the relationship between variables are evaluated with chi-square test. Linear regression technique is used to find the extent of relationship between variables and parametric tests like F and T – tests are carried out to know the significance of the coefficients of regression.

3.10.1 SPSS Software

The SPSS computer programme is used in the study for the purpose of statistical analysis. The output of SPSS statistical analysis is presented for each test. The result contains the appropriate statistic calculated from the data and its statistical significance expressed as asymptotic probability. The probability indicates the chance of making a Type I error.

Type I error means rejecting a true null hypothesis and it is expressed as probability called alpha (α). When the value of α is less than 2.5 per cent the null hypothesis is rejected with 95 per cent level of confidence.

Variety of graphs and charts like Bar, Pie, Scatter, Bubble and Boxplots are generated to visually present the data gathered.

3.10.2 Interpretation of Boxplots

The boxplots are extensions of the five-number summary of a distribution. This summary consists of the median, upper and lower quartiles, and the largest and smallest observations. The median and quartiles are used
because they are particularly resistant statistics. Resistance is a characteristic that provides insensitivity to localized misbehaviour in data. Resistance statistics are unaffected by outliers and change only slightly in response to the replacement of small portions of data set.

The basic ingredients of the boxplot are

- rectangular plot that encompasses 50 per cent of the data values,
- a centre line marking the median and going through the width of the box,
- the edges of the box called hinges and
- the whiskers that extend from the top and bottom hinges to the largest and smallest values. These values may be found within 1.5 times the interquartile range from either edge of the box.
- Outliers, the data points that exceed +1.5 interquartiles of a boxplot hinges.

Boxplots are excellent diagnostic tools as they visually represent the variance, skewness and extreme outliers. Comparisons can be made by plotting multiple boxes of a group of variables on same scale.

3.11 Limitations

1. The present study is limited to Public sector Banks and does not cover the other bank groups operating in India. The empirical study of Bankers and Defaulters is confined to Cuddapah district.

2. The study grouped the data collected from banks and analysis is done on the aggregates to ensure confidentiality. Hence Bank wise analysis could not be presented. PSBs are a homogeneous group and hence the conclusions and suggestions can be generalized to all the PSBs.

3. The primary data collected for the purpose of the study from the defaulters may be biased as it pertains to financial aspects of the respondents. Care has been taken to avoid bias in attitudinal aspects with a well designed set of statements.
4. The secondary data pertaining to the year 2003-04 is provisional and hence some minute variations are observed in data presented in different reports of Reserve Bank of India.

The above limitations in no way act as deterrents for the validity and credibility of the study.

3.12 Presentation of the study

The study is divided into seven chapters. The first chapter introduces the concept of financial stability and reasons of financial crisis in the recent past, highlighting the role of Banks. It also provides historical background of Indian banking system.

Second chapter presents an overview of Non-performing Assets of banks in Indian and international context. The cross country comparison of levels, reasons, and measures to deal with NPAs are described lucidly. An elaborate discussion of guidelines and procedures relating to NPAs and their management in the Indian banks is presented in this chapter.

Third chapter consists of research design and methodology of the study. A review of literature pertaining to the study, statement of the problem, need for the study, objectives, hypotheses, scope and methodology of the study, limitations are presented along with a concise description of the area of operation i.e. Cuddapah District.

Fourth chapter analyses the trend of NPAs, asset quality and sectoral composition of NPAs, and impact of NPAs on profitability, liquidity and capital adequacy of Indian public sector banks.
Fifth chapter presents the empirical study which evaluates bankers’ perception on non-performing assets. The reasons for NPAs in various segments of loan, effectiveness of NPA management initiatives and attitude of bankers towards the issue of NPAs are measured.

Sixth chapter pertains to defaulters. Reasons for default and socio-economics of the defaulters are analyzed. The attitude of defaulters towards Public Sector Banks is measured.

Seventh chapter summarizes the conclusions drawn from the analysis of secondary and primary data and presents the suggestions.
3.12 District Profile of Cuddapah

The micro level empirical study is carried out in the Cuddapah district of Andhra Pradesh. In order to better understand the demographics of the region, a brief profile of the Cuddapah district is present hereunder.

Introduction

Cuddapah has got its historical importance since a long time and it was connected with Mouryans in BC era and Sathavahanas in the third century AD. It was part of the area ceded to the British by Nizam. The District was first formed in the early nineteenth century during the British rule, thus it is one of the four ceded districts, otherwise known as Rayalaseema, commemorating the name of Raya, who ruled the area in 16th century. Cuddapah District was named after its headquarters. The old records of the District reveal that Cuddapah previously called "Gadapa" which means in Telugu language 'Threshold'. The ancient village of Cuddapah with its large tank and temple of Lord Venkateswara at Devuni Kadapa was a convenient camping place for the pilgrims traveling to the holy shine of Tirupathi. There was a belie that the pilgrims have to first visit Devuni Kadapa, before going to Tirupathi to pray of saint Annamacharya and saint Potluri Veera Brahmam who foretold about the future and advocated a classless society. The ancient temple at Vontimitta which inspired Potana to compose Andhra Maha Bhagavatham is also in the district.

Besides its historical importance, the district has occupied an important place in the Industrial map of Andhra Pradesh with its highly valued rich mineral resources. It has the worlds single largest and the best deposits of Barytes and enjoying monopoly in the superior variety of Asbestos. It is worth mentioning that the status first one million tonnes capacity cement plant was established in Cuddapah District. However the District has not been industrially developed as the expectations due to various reasons.
Location

Cuddapah District is in Rayalaseema Region of Andhra Pradesh which is situated within the geographical co-ordinates of 13° 43' to 15° 14' of North latitude and 77° 5' to 79° 29' of eastern longitude. The attitude varies from 259' to 3787' above seal level. The District is bounded and on the East by Nellore District.

Cuddapah District is in the eastern part of the Rayalaseema Region with a Geographical area of 15359 Sq Km. Comprising of 958 villages and 13 Town. The District is divided into 3 Revenue Divisions for administrative convenience viz., Cuddapah, Jammalamadugu and Rajampet. These Revenue Divisions are further divided into 51 Revenue Mandals for taking the administration close to the people.

Cuddapah district at a glance

**Boundaries**

<table>
<thead>
<tr>
<th>East</th>
<th>Nellore District</th>
</tr>
</thead>
<tbody>
<tr>
<td>West</td>
<td>Anantapur District</td>
</tr>
<tr>
<td>North</td>
<td>Kurnool District</td>
</tr>
<tr>
<td>South</td>
<td>Chittoor District</td>
</tr>
<tr>
<td>Area</td>
<td>15,359 Sq.Kms</td>
</tr>
<tr>
<td>Rivers</td>
<td>Pennar and its tributaries</td>
</tr>
<tr>
<td>Soils</td>
<td>Black Clay, Black Loam, Red Sand and Red Clay.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Normal Rainfall(m.m’s) (2001 Census)</th>
<th>700</th>
</tr>
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<tbody>
<tr>
<td>Gross Cropped Area (Lakh’s Hec.) (2000-01)</td>
<td>4.56</td>
</tr>
<tr>
<td>Net Cropped Area (Lakh’s Hec.) (2000-01)</td>
<td>4.01</td>
</tr>
<tr>
<td>Net Irrigated Area (Lakh’s Hec.) (2000-01)</td>
<td>1.37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Rice (Hectares)</td>
</tr>
<tr>
<td>2) Jowar(Hectares)</td>
</tr>
<tr>
<td>3) Bajra(Hectares)</td>
</tr>
<tr>
<td>4) Ground Nut(Hectares)</td>
</tr>
<tr>
<td>5) Cotton(Hectares)</td>
</tr>
<tr>
<td>Live Stock (1991 Census)</td>
</tr>
<tr>
<td>Veterinary Hospitals(2001 Census)</td>
</tr>
<tr>
<td>Veterinary Dispensaries (2001 Census)</td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Rural Live Stock Units (2001 Census)</td>
</tr>
<tr>
<td>No. of Villages Electrified</td>
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</table>

### Population

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (2001 Census)</td>
<td>25.73 lakhs</td>
</tr>
<tr>
<td>Male Population (2001 Census)</td>
<td>13.03 lakhs</td>
</tr>
<tr>
<td>Female Population (2001 Census)</td>
<td>12.70 lakhs</td>
</tr>
<tr>
<td>Rural Population (2001 Census)</td>
<td>19.73 lakhs</td>
</tr>
<tr>
<td>Urban Population (2001 Census)</td>
<td>6.00 lakhs</td>
</tr>
<tr>
<td>Density of Population (2001 Census)</td>
<td>168 persons / Sq.Km</td>
</tr>
<tr>
<td>Literates (2001 Census)</td>
<td>14,40</td>
</tr>
<tr>
<td>Literacy rate (2001 Census)</td>
<td>64%</td>
</tr>
<tr>
<td>Working Population (2001 Census)</td>
<td>9.16</td>
</tr>
</tbody>
</table>

### District administration

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Mandals</td>
<td>51</td>
</tr>
<tr>
<td>No. of Revenue Divisions</td>
<td>3</td>
</tr>
<tr>
<td>No. of Revenue Villages</td>
<td>965</td>
</tr>
<tr>
<td>No. of Gram Panchayats</td>
<td>844</td>
</tr>
<tr>
<td>No. of Municipalities</td>
<td>2</td>
</tr>
<tr>
<td>No. of Habitations</td>
<td>4761</td>
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</tbody>
</table>

### Industrial infrastructure

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Commercial Bank Branches</td>
<td>95</td>
</tr>
<tr>
<td>A.P.S.F.C.</td>
<td>1</td>
</tr>
<tr>
<td>No. of Industrial Estates</td>
<td>7</td>
</tr>
<tr>
<td>No. of Industrial Development Areas</td>
<td>3</td>
</tr>
</tbody>
</table>

### Industries

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Large and Medium Scale Industries existing</td>
<td>11</td>
</tr>
<tr>
<td>No. of SSI Units as on 31.1.2003</td>
<td>10,792</td>
</tr>
</tbody>
</table>
Banks in the district

There are fourteen PSBs (Table 3.3), three Old private banks (INGVysya, Karur Vysya and Karnataka Bank), one Regional Rural Bank (Rayalaseema Gramina Bank) and one District Central Cooperative Bank (Cuddapah DCC Bank) are working as on 31st March 2004. Syndicate Bank is designated as the Lead Bank in the district.

There are bank branches in all the mandal head quarters and major panchayats in the district. Public sector banks are the dominant ones in the district supported by Rayalaseema Gramina Bank in the rural areas. In all, there are 165 branches in the district. 89 belong to PSBs, 70 branches belong to Rayalaseema Gramina Bank and 6 belong to the private banks. Among the PSBs State Bank of India has the highest number of branches in the district followed by Syndicate Bank and Andhra Bank. Table 3.1 gives the list of PSB branches along with their location in the Cuddapah district.

The aggregate deposits of all banks are Rs. 1601.41 crores and advances are 809.30 crores as on June 2003. PSBs have the major share with Rs. 1156.49 crores of deposits and Rs. 548.32 crores of advances.
Table 3.1: List of Public Sector Bank Branches in Cuddapah District

<table>
<thead>
<tr>
<th>BANK</th>
<th>LOCATION OF BRANCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE BANK OF INDIA (37)</td>
<td>Badvel, Balapanur, Bhakarapet, Chenur, Chilamakur, Chinnamandem, Chitvel, Cuddapah (Bazar Branch), Cuddapah (Main), Duvvur, G.K.Rachipalli, Jammalamadugu, Kamalapuram, Kodur, Kondapuram, Kurnooathala, Lakkireddypalli, Madhavaram, Mydukur, Nandalur, Nandimandalam, Parnapalli, Penagalur, Proddatur (Main), Proddatur (ADB), Pulivendla, Rajampet (ADB), Rajampet (Main), Rayachoty, Sidhout, T.Sakibanda, Tekurpet, Vempalli, Vonatimitta, Vonipenta, Yerraguntla, Yerramukkapalli</td>
</tr>
<tr>
<td>SYNDICATE BANK (19)</td>
<td>Badvel, Chilamakur, Cuddapah (Main), Cuddapah (R.S.Road), Devapatla, Jammalamadugu, Khajipet, Kodur (RS), Muddanur, Proddatur, Pulivendla, Pullampet, Rajampet, Rayachoty, Sibyala, Simhadripuram, T.Sundupalli, Thalla Proddatur, Y.Kota</td>
</tr>
<tr>
<td>ANDHRA BANK (12)</td>
<td>Badvel, C.M.R.Palli, Cuddapah (Main), Cuddapah (NGO Colony), Gopavaram, Jammalamadugu, Kodur, Mydukur, Proddatur, Pulivendla, Rampet, Sanipaya</td>
</tr>
<tr>
<td>CORPORATION BANK (4)</td>
<td>Cuddapah, Chapadu, Chintakunta, Proddatur</td>
</tr>
<tr>
<td>CANARA BANK (3)</td>
<td>Cuddapah, Proddatur, Rajampet</td>
</tr>
<tr>
<td>STATE BANK OF HYDERABAD (3)</td>
<td>Cuddapah, Kogatam, Proddatur</td>
</tr>
<tr>
<td>CENTRAL BANK OF INDIA (2)</td>
<td>Cuddapah, Proddatur</td>
</tr>
<tr>
<td>INDIAN BANK (2)</td>
<td>Cuddapah, Proddatur</td>
</tr>
<tr>
<td>INDIAN OVERSEAS BANK (2)</td>
<td>Cuddapah, Rajampet</td>
</tr>
<tr>
<td>BANK OF INDIA (1)</td>
<td>Cuddapah</td>
</tr>
<tr>
<td>BANK OF BARODA (1)</td>
<td>Cuddapah</td>
</tr>
<tr>
<td>PUNJAB NATIONAL BANK (1)</td>
<td>Cuddapah</td>
</tr>
<tr>
<td>VIJAYA BANK (1)</td>
<td>Cuddapah</td>
</tr>
<tr>
<td>UNION BANK OF INDIA (1)</td>
<td>Cuddapah</td>
</tr>
</tbody>
</table>

Map 3.1: Map of Cuddapah District

Cuddapah
(Andhra Pradesh)

Source: www.mapsofindia.com
3.13 Summary:

The NPAs in Indian PSBs have assumed importance in the wake of changes that are taking place in the Indian economy and banking sector. The problem of NPAs has become a national priority as it can cause a systemic crisis if unchecked. The present study aims at understanding what has been done on this aspect and what need to be done. A survey of bankers and defaulters in Cuddapah district is carried out to obtain firsthand information on the management of NPAs in PSBs. Hypotheses are formulated to verify influence of socio-economic and other variables on attitudes of bankers and defaulters. The data collected, secondary and primary, is analyzed with statistical tools using SPSS package. The scope of study is limited to PSBs only. The thesis is organized in seven chapters.
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