CHAPTER - 2
LITERATURE REVIEW
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REVIEW OF LITERATURE

2.1 INTRODUCTION

As the topic of this dissertation broadly deals with Financial Management of banking units, it has been found appropriate to carry out literature review under two major headings:

1. **PERIPHERAL LITERATURE REVIEW** dealing with banking and financial management in general and
2. **FOCAL LITERATURE REVIEW** dealing with bank specific financial management, risk management, Asset-Liability Management and such other interrelation concepts.

**PERIPHERAL LITERATURE REVIEW**

2.2 *Prof. Marshall* ¹ mentioned about the activities of money changers in the temple of Olympia and other sacred places in Greece, around 2000 B.C. He wrote “Private Money Metallic Currencies, More or less exactly, to a Common Unit of value, and even to accept money on deposit at interest, and to lend it out at higher interest permitting meanwhile drafts to be drawn on them”.

2.3 *Sayers R.S.* ² Steles: we can define bank as an institution whose debts (bank deposits) are widely accepted in settlement of other people’s debts to each other.

2.4 *S.B. Gupta* ³ A bank is an institution that accepts deposits of money from the public withdrawable by cheque and used for lending. Thus, there are two essential functions which make a financial institution a bank:

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¹ *Money, Credit and Commerce (1923)*
² *Modern Banking Oxford University Press, oxford (1964)*
i. Acceptance of chequable deposits (or money) from the public and
ii. Lending, the word lending is used here broadly to include both
direct lending to borrowers and indirect lending through
investments in open market securities.

2.5 **Graham Bannock, William Manser** Banking – The business of taking
deposits and making loans. As a financial intermediaries, banks may
offer a whole range of other financial services e.g. Insurance, Credit
Cards, Foreign Exchanges but their distinguishing characteristics in their
role in the money supply through creation of deposits.

2.6 Section 5(1) (b) of the Banking Regulation Act, 1949 defines ‘banking’
on the accepting, for the purpose of lending or investment, of deposits of
money from public, repayable on demand or otherwise and
withdrawable by cheque, draft, order or otherwise. The above definition
brings out two important functions of banks: acceptance of deposits and
lending of funds. These two functions are the core activities of banking.

2.7 **Khan M.Y.** noted that the objective of enacting the Banking
Regulation Act was to weed out the small, non-viable banking units,
tone up the administration by eradicating unsound practices and
managerial abuses; and to afford greater protection to depositors. The
effective control by the RBI led to the emergence of a strong, united and
compact banking system.

2.8 **Mithani D.M. and Gordon E.** have described a bank as a profit
seeking business firm, dealing in money and credit. It is a financial
institution dealing in money in the sense that it accepts deposits of
money from the public to keep them in its custody for safety, so also, it
deals in credit i.e. it creates credit by making advances out of the funds

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4 International Dictionary of Finance
5 Indian Financial System, Tata Mc Grow Hill, 2004
received as deposits to needy people. It, thus, functions as a mobiliser of savings in the economy.

2.9 Ezra Solomon\(^7\) has defined finance function as study of the problems involved in the use and acquisition of funds by a business. Its main concern is to find a rational basis for answering three questions:

iii. What total value of funds should be invested in the business? That is, what size and growth rate should the business aim to achieve?

iv. What specific assets should the business acquire? That is, in what form the assets be held?

v. How should the required funds be financed? How should the liabilities side of the balance sheet be composed?

2.10 Alan Shapiro\(^8\) stated that “Corporate finance deals with the acquisition and allocation of resources among the firm’s present and potential activities and projects. The ultimate objective of both finance function is to maximise the shareholders wealth”.

2.11 Samuels J.M. and Wilkes F.M.\(^9\) noted that Financial Management entails constructing a conceptual framework within which to establish a meaningful interrelationship of three main variables:

i. The financial goals of the Company.

ii. The valuation of the Company, and the extent to which this valuation is influenced by Company decisions and

iii. The means of measuring the performance of the company.

\(^7\) The Theory of Financial Management.

\(^8\) Modern Corporate Finance, Mac Millan Publishing House, New York (1990)

\(^9\) Management of Company Finance, "Thomas Nelson & Sons (1971)
They have also expressed that “since, however, financial activities surround and permeate all corporate action and because, in general, organisations are geared to economic opportunities, it is suggested that interest of the shareholders should constitute the chief operational objective of a limited company – that is, given the existing legal, political and economic environment.

2.12 Bhalla V.K.\textsuperscript{10} explains that “Corporate finance is the study of the generation of corporate capital and its allocation among corporate investment needs in a manner consistent with company goals. In as much as solvency is certainly one of these goals, this necessarily implies corporate finance concern itself with the planning and control of cash flows through the organisation.

2.13 According to O Maurice Joy\textsuperscript{11} the title finance can be categorised into three broad subheadings – Business Finance, Investment Analysis and Money and Capital Markets.” He presented the Financial Management process diagrammatically as follows:

\begin{center}
\begin{tikzpicture}
  \node (financial) {Financial Planning and Control};
  \node [below=1cm of financial] (financial_management) {Financial Management Decisions: \begin{itemize} 
  \item 1. Investment
  \item 2. Financing
  \item 3. Dividends
  \end{itemize}};
  \node [right=1cm of financial_management] (risk_return) {Risk – Return characteristics of firm};
  \node [right=1cm of risk_return] (stock_price) {Stock Price};
  \node [right=1cm of stock_price] (wealth) {Shareholders’ wealth \( W_0 = NP_0 \)};
  \draw [->] (financial) -- (financial_management);
  \draw [->] (financial_management) -- (risk_return);
  \draw [->] (risk_return) -- (stock_price);
  \draw [->] (stock_price) -- (wealth);
\end{tikzpicture}
\end{center}

The diagram integrates the scope and activities of financial management. The firm monitors itself as part of control function and this monitoring includes supervision of the implementation of financial management decisions and observation of the firm’s risk return characteristics and stock prices.

\textsuperscript{10} Financial Management: An overview, Anmol Publication.
\textsuperscript{11} Introduction to Financial Management, Irwin Inc. Illinois (1976)
2.14 Jim McMenamin observed "a significant trend in finance has been shift to a global financial market place. This has been greatly aided by changes such as the deregulations and liberalisation of financial products and services, a practice referred to as financial innovation and the trend by financial institutions to build up their worldwide network of operations.

2.15 Bhatia Saveeta and Verma Satish in their research paper "Factors Determining Profitability of Public Sector Banks in India: An Application of Multiple Regression Model" have made an attempt to determine empirically the factors influencing the profitability of public sector banks in India by making use of the technique of multiple regression analysis. They have confined their study to SBI group banks and other fourteen nationalised banks and used the time series data from 1971 to 1995. They have concluded that

i. The priority sector advances influenced negatively the profitability of public sector banks in India.

ii. Net spread which depends to a great extent as the management acumen of bank staff also, influenced positively and significantly the profitability of banks.

iii. Similarly, establishment expenses influenced inversely the profitability of banks.

iv. Credit-Deposit ratio was also observed to be influencing positively their profitability.

Profitability of the banks depends both on exogenous i.e. policy determined variables such as reserve requirements, directed credit

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programmes and on endogenous variables such as composition of deposits, establishment expenses, spread, burden etc.

2.16 Madhumathi R. and Lakshmi Kumar 14 in their research paper entitled “Multifactor Evaluation and Forecasting of Bank performance in India” have analysed the commercial banks operating in India with respect to their financial ratio. The study through facto analysis reveals the most important factors a bank needs to consider and deliberate on. Further, cluster analysis brings out three clusters into which a bank can fall in, namely, niche banks, sound banks and mass banks and justifies the same with its distinguishing features. The analysis also discloses to a bank the strategy it needs to follow for long run sustainability.

2.17 Chowdhari Prasad and K.S. Srinivasa Rao 15 in their paper have attempted to undertake SWOT analysis and other appropriate statistical techniques to rank 30 private sector banks using four parameters – efficiency, financial strength, profitability and size and scale. The authors have carried out Analysis of variance (ANOVA) for each of these four parameters using F-test as a parametric case. They have found that private banks are professional, dedicated and efficient. They have strong financials and comply with capital adequacy requirements and prudent norms. Their major weaknesses identified are confinement to limited area, limited number of branches, higher employee turnover ratio, etc. However, with high level of autonomy and faster decision making processes, cost effective services they have capacity to perform better in future. The authors have cautioned private sector banks, mergers and takeover threat from other large banks and entry of foreign banks as possible areas of threat.

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2.18 **Das Abhiman, Nag Ashok and Ray Subhash**\(^{16}\) in their article entitled “Liberalisation, ownership and efficiency in Indian Banking” have carried out empirical study analysing various efficiency scores of Indian Banks for the period 1997 to 2003 using Data Envelopment Analysis (DEA). They have found that Indian banks are still not much differentiated in terms of input oriented or output oriented technical efficiency and cost efficiency. However, they have been found sharply differentiated in terms of revenue efficiency and profit efficiency. It has an implication that even within the existing environment, a bank can still improve its profitability significantly, by adopting the best practice observed within the section. They have also inferred that asset size, ownership structure and listing on stock exchange have positive impact an average profit efficiency and to some extent an average revenue efficiency. Finally, they have concluded that the reform process have impacted performance of Indian banks in a positive manner.

**FOCAL LITERATURE REVIEW**

2.19 **Kosmidou Kyriaki and Zopounidis**\(^{17}\) have stated that Asset Liability Management is an important dimension of risk management, where the exposure to various risks is minimised while maintaining the appropriate combination of asset and liability, in order to satisfy goals of the firm or the financial institution. The authors have discussed in brief models that were developed regarding the optimal management of the assets of the firms, the risk, the return and the liquidity namely Stochastic programming, Decision Rules, Capital growth and Stochastic control. Advantages and disadvantages related to above mentioned four approaches have also been brought out the authors. In another chapter entitled “Review of the asset liability management techniques” the authors have discussed at length various Asset Liability Management

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\(^{16}\) Economic and Political Weekly (March 19, 2005)

techniques / models such as Deterministic Models, Multi objective linear programming Models, Stochastic Models, Chance constrained Programming Models, Sequential Decision Theoretic Approach, Dynamic Programming, Stochastic linear Programming, Simulation Models.

2.20 Subrahmanyam Ganti (Dr.)\(^{18}\) has observed in article "Asset Liability Management for Banks in a Deregulated Environment" that Asset Liability Management (ALM) is a philosophy under which banks can target asset growth by adjusting liabilities to suit their needs. The focus of ALM should be the bank profitability and long term operating viability. The author has contended that a large size bank using interest sensitive funds should aim at an equally interest sensitive asset structure to ensure a stable flow of net interest income whereas a small sized bank with a predominantly retail deposit mix of fixed nature needs to aim at fixed-rate earning assets. Banks with sufficient liquidity and safety built into their asset and liability structure can easily withstand the financial turbulences created by deregulation and disintermediation.

2.21 Sinkey Joseph (Jr.)\(^{19}\) referred to Asset Liability Management (ALM) as coordinated management of a bank’s balance sheet to allow for alternative interest-rate and Liquidity Scenarios. The total variable of ALM in the short run is Net Interest Income (NII) or its ratio form Net Interest Margin (NIM=NII/Earning Assets). This accounting approach determines the change in a bank’s NII as the product of unexpected changes in interest rates and its dollar gap (i.e. the difference between rate sensitive assets (RSAs) and rate-sensitive liabilities (RSLs). Thus NII = \(\Delta r \times GAP\). In contrast, the economic model of ALM focuses on the sensitivity of the market value of a bank’s equity to unexpected changes in interest rates.

\(^{18}\) Prajnan, Vol. XXXIII No. 1(1994-95)

He suggested a three stage approach: Balance sheet Management: A Three Stage Approach.

2.22 Harrington R. 20 noted that "Modern asset and Liability Management involves, continually, monitoring the existing position of a bank, assessing how this differs from what is desirable, and undertaking transactions to move the bank towards the desired position. The objective is to sustain and, where possible enhance, profitability, while controlling and limiting the different risk inherent in present day banking, as well as complying with the constraints of monetary policy and supervision.

Asset and Liability Management is therefore, not just a set of static techniques. It is an approach and one which varies in line with changes in the goals of bank managers and in the problems that they face. As balance sheets became more complex and on the volatility of interest rates and exchange rates increased, so asset and liability management evolved to provide an integrated approach to managing all assets and all liabilities.

2.23 Dattatreya Ravi E. 21 observed in his article that "Financial Institutions Provide a valuable service by assuming intermediation risk of various types including liquidity, credit and interest rate risks. Given the recent volatility of interest rates, the major intermediation risk is interest risk. ALM is a systematic approach that attempts to provide a degree of protection to the institution. ALM consists of necessary framework to defined, measure, monitor, modify and manage interest risk.

He has also noted that "ALM is not always perfect. It is based on several assumptions and approximations. However, the risks of commission are

nothing compared to the risk of omission. For most financial institutions, there is simply no alternative to prudent Asset / Liability Management.

2.24 Mason John M.\textsuperscript{22} have opined that the time horizon relevant for asset liability management is somewhat longer than that for short run reserve management and is defined primarily by the makeup of the financial markets in which the bank operates. They have identified five major problem areas in managing their assets and liabilities within the intermediate time period, namely, seasonal loan and deposit flows, local and national economic activity, monetary policy and financial markets. They have discussed in brief seven techniques of asset liability management namely, Asset Conversion, Asset Allocation, Trend Analysis, Forecasting, Simulation Models and Linear and Dynamic Programming Models and Profit Planning and Control.

2.25 Vij Madhu\textsuperscript{23} in her article “Asset Liability Management in Indian Banks” has observed that the importance of managing the asset-liability mix in the Indian financial markets has emerged from the increasing volatility in the domestic interest rates as well as foreign exchange rates that has evolved after liberalisation. This deregulated interest rate environment has brought pressure on the management of banks to maintain a good balance among spreads, profitability and long-term viability. Over the last few years their has been an intense competition and banks and financial institutions have been required to take up strategic planning as an exercise for asset liability management in order to survive and grow in the ever increasing competitive and risky environment.

The ALM exercise would essentially involve estimating the core sources of funds i.e. core deposits; effective management of funds with respects

\textsuperscript{22}\textit{Financial Management of Commercial banks, Warren, Gorham and Lamont Boston (1979)}
\textsuperscript{23}\textit{Contemporary Issues in Finance}
to size and duration; and finally, minimising undesirable maturity mismatch so as to avoid liquidity problems; evolve limits and other methods to limit the gap according to the risk taking ability of the bank / financial institution.

2.26 Murali Mohana Krishna Y.\textsuperscript{24} has observed in the article entitled “Asset-Liability Management: Some Issues” that the multidimensional problem of asset-liability management with due consideration of avoiding: (a) maturity mismatch and 9b) rate specific mismatch, banks have to act in a more “sophisticated” way to retain their earning potential and simultaneously suitably reward their shareholders. The banks can analyse the trends and attempt changes in specific areas which include:

i. Building a data-base
   - term-wise distribution of assets and liabilities.
   - Rate-wise classification of assets and liabilities.

ii. Organisational structure

With regions / zones being viewed as profit centres, they may decide upon raising resources within region / zones at specific cost, which may be utilised for deployment within their areas or lent to others at market related cost. This calls for a “decentralised asset-liability management” of key variables at the micro-level with the overall guidance from central management.

2.27 Hudson Robert, Coley Alian and Largan Mark\textsuperscript{25} have observed that “The standard accounting schedules that detail the nature of a bank’s assets and liabilities reveal relatively less about risks that banks are running in their exposure to movements in rates and prices in the international money markets. It is the function of the asset liability

management unit to analyse these hidden exposures and ensure that the level of risk that is being taken is consistent with the profitable survival of the bank. In doing so, they will consider not only the on-balance sheet items but also relevant exposures arising from guarantees, commitments and all activities in off-balance sheet instruments.

2.28 **Raghvan R.S.**\(^{26}\) in his article “Risk Management - An Overview” has observed that “the objective of risk management is not to prohibit or prevent risk taking but to ensure that the risks are consciously taken with full knowledge, clear purpose and understanding so that it can be measured and mitigated. The purpose of managing risk is to prevent an institution from suffering unacceptable loss causing an institution to fail or materially damage its competitive position. Functions of risk management should actually be bank specific dictated by the size and quality of balance sheet, complexity of functions, technical / professional manpower and the status of MIS in place in that bank. There may not be one-size-fits-all risk management module for all the banks to be made applicable uniformly.”

The effectiveness of risk measurement depends on efficient Management Information System, Computerisation and Networking of branch activities. An objective and reliable database has to be built up which has to analyse its past performance data relating to loan defaults, trading losses, operational losses etc. and came out with benchmarks so as to prepare themselves for the future risk management.

2.29 **Lonkar M.V.**\(^{27}\) in his article “Risk Based Supervision and Changing role of Auditors” has noted that Banks in the process of financial intermediation are confronted with various kinds of financial and non-financial risk viz. credit, interest rate, foreign exchange rate, liquidity, equity price, commodity price, legal, regulatory, reputational,

\(^{26}\) [IBA Bulletin November 2002 (pp 13-20)]
\(^{27}\) [IBA Bulleting Vol. XXV No. 2, February 2003]
operational, etc. These risks are highly interdependent and events that affect one area of risk can have ramifications for a range of other risk categories. The Reserve Bank of India (RBI) has issued discussion papers on Risk Based Supervision (RBS) and Prompt Corrective Action (PCA) Framework.

The earlier supervision process of RBI is based on CAMELS (Capital adequacy, Asset quality, Management, Earning, Liquidity, Systems and control) (applicable to all domestic banks) and CALCS (Capital adequacy, Asset quality, Liquidity, Compliance and Systems.) (applicable to Indian operations of banks incorporated outside India) approach where capital adequacy, asset quality, management aspects, earnings liquidity were considered.

The Reserve Bank of India is now embarking on the path to Risk Based Supervision (RBS), which would be introduced in phases beginning from 2003.

The RBS model consists of:

- development of risk profile for each bank
- designing a customised supervisory action plan for each bank based on the risk profile.
- Delineating the scope and extend of supervision to target high risk areas and areas of supervisory concern, and strengthening quality assurance and enforcement functions to maintain objectivity and neutrality in application of supervisory standards.

2.30 **Gupta S.C.**²⁸ in the article entitled “Risk – the New Strategic Imperative in Financial Management” has defined Risk as the possibility of suffering loss”, is the fundamental element that influences financial behaviour. Progressive liberalisation, globalisation, introduction of a

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²⁸ IBA Bulleting Vol. XXV No. 4, April 2004
wide range of products and services, improvement in technology and communication have profoundly impacted the operating environment of financial systems in general and the banking sector in particular. The Balance sheets of banks have undergone significant changes. Risks faced by banks have multiplied posing challenges to not only the banks but also to he supervisors and regulators. To respond to these challenges, emphasis of banks has changed from the simplistic ‘profit oriented’ management of risk / return management. Various supervisory initiatives have also been taken to induce better operating standards and greater transparency and sensitivity towards risk management in banks. Risk Management has become the new strategic imperative.

2.31 Shastri R.V.29 in his article entitled “Interest Rate, Liquidity and Operational Risks” has concluded that since the release of initial proposals on market risk management by the Basel Committee in 1995, development of internal models for calibrating Market Risk Capital Requirements have drawn considerable attention. The interest shown on VaR models by the supervisor has encouraged banks to bestow more efforts for further developing them. The serious challengers ahead for the banks would be to extend these models to cover a broader range of risks like credit, operational and legal risks.

At present, the banks are still in the initial stages of developing qualification methods for the various types of risks. It may take some time for the banks to evolve sophisticated methods of quantification and move towards evolving a unified capital allocation framework. All the above call for upgradation in human skills and technology and may require incurring of heavy expenditure.

The Reserve Bank of India, as a Regulator, has constantly been interacting with BCBS and has been examining the various aspects and

29 Professional Banker, ICFAI University Press, January 2004
sharing with banks through the consultation papers released by them. There is a feeling amongst banks that for those banks which have a meagre international presence, the entire recommendations of Basel may not be too relevant. Further, with the level of data availability and the absence of robust MIS, Indian banks may need more time for implementation of these recommendations.

Notwithstanding all these, many banks have put in place policies and an organizational structure to pay focused attention to risk management matters. Even though the Risk Management Architecture as envisaged by Basel may not be in place as of today, most of the banks, especially at the board and senior management level have equipped themselves with sufficient knowledge and have shown considerable enthusiasm and commitment by means of gearing up their respective set-ups to be prepared for implementing the proposals of the new Accord and also study ways and means to select the appropriate approach for calculating required capital charge.

2.32 Sabnavis Madan\(^{30}\) in his article entitled “Credit Risk: The Three Approaches” has observed that measuring credit risk is nothing new, particularly for large banks that have well-established risk management departments to keep tabs on their customers, trading practices and post-trade processing activities. But Basel II also requires that for the first time banks set aside capital against operational risk, which regulation defines as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems, or from external events.

Therefore, the concept of credit risk and its implications on calculation of risk-weighted capital would have far reaching implications on the working of the banking system with the three participants – banks, RBI and customers – being affected in a disparate manner. Banks must

\(^{30}\) Professional Banker, ICFAI University, January 2004
approach Basel II as a major project, with a number of working groups and in several distinct phases (diagnostic, design, implementation and back-testing) which may span a couple of years. This will involve significant deployment of sources over a sustained period of time, covering a wide range of functions involving not only the Board of Directors audit, treasury, mid-office, settlement, finance, information technology and human resources functions, etc. This would truly be an organisational effort.

2.33 Dr. Khandelwal Anil K.\textsuperscript{31} in his article entitled “Emerging Challenges in Credit Risk Management” has observed that since the early 1990s, Indian banks have been operating in an increasingly deregulated and competitive environment. A greater volatility in the interest rate environment has squeezed the banks’ profit margins considerably, and, in turn, reduced their capability to absorb losses related to increased credit or market risk. In recognition of these trends, the Reserve Bank of India (RBI) has highlighted the importance of improved risk management practise, and in particular, has issued guidelines for managing ALM risks, to ensure that the international best practices are adopted by the Indian banks.

At present, systems for measuring and controlling credit risk vary considerably across the banking system. Furthermore, the existing systems are relatively unsophisticated when compared with international best practise. Large-scale efforts are required to upgrade skills and revamp operating procedures, and banks which adopt a proactive approach would alone survive and prosper in the future. Despite an increasing focus on asset quality over the last decade, the processes in credit evaluation and monitoring systems are very slow, especially in the public sector banks.

\textsuperscript{31} Professional Banker, ICFAI University, January 2004
Rather than emphasizing on “borrower account behaviour”, there is still a focus on cash flow based credit analysis, as a result of which the internal credit score systems often do not reveal the potential problem loans in the asset book. This has impeded the Indian banks’ ability to assess the potential loss charges from the asset book and effectively plan the capital raising programmes. In view of this, the state of readiness of Indian banks for the Basel II regime is still far from adequate and the compliance by 2006 also appears to be difficult. But a number of banks have already been showing a keen interest in implementing the new norms with the help of joint ventures and / or consultancy services.

2.34 **Toby Adolphus J**\(^{32}\) in his article “Extent of Nigerian Banks’ compliance with Basel Sound Liquidity Management Practices” carried out empirical investigation in 21 Nigerian banks and confirmed that there has been a significant difference between actual practices and standard liquidity management practices at 5 percent level of significance. There has also been observed a significantly positive relationship between compliance level and banks’ liquidity profile. The author contended that liquidity and solvency problems interact and one could cause the other. Given monetary policy constraints, banks that comply with sound liquidity management practices anticipate and manage shortfalls intelligently through proper contingency planning.

2.35 **Srivastava R.M.**\(^{33}\) has observed that “the basic problem facing a manager to have a satisfactory trade off between liquidity and profitability – the two principal but conflicting goals of a bank. They are inimical to each other, cash has perfect liquidity but lacks yield. At the other hand are some loans and investments which yield a high return but lack liquidity. The art of commercial banking lies in the resolution of the

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\(^{32}\) The ICFAI Journal of Bank Management, February 2006

\(^{33}\) Management of Indian Financial Institutions, Himalaya Publishing (1984)
conflicts between liquidity and profitability. The author has dwelt upon different theories of liquidity management as follows:

i. The commercial loans theory – originated in England during 18th Century – put forward the doctrine that a commercial bank should provide short term self liquidating loans to business firms to enable them to meet their working capital requirements but should refrain from loaning for long term purposes.

ii. The shiftability Theory – originated in USA in 1918 – propounded that the bank need not rely upon materials it has maintained a substantial amount of such assets as can be shifted on to others to meet an unexpected heavy run on it. Liquidity is thus tantamount to shiftability.

iii. The Anticipated Income Theory
   According to this theory, loan repayment schedules have to be adapted to the anticipated income or cash flow of the borrower.

iv. The Liabilities Management Theory
   Developed during 1960s, the theory stated that an individual bank may acquire reserves from several different sources by creating additional liabilities against itself and it is not necessary to observe traditional standards in regard to self liquidating loans and liquidity reserves.

The author explored the potentiality of Liabilities Management in India and came to conclusion that: “the management of liabilities makes a limited contribution, if not to short term liquidity, at least to cyclical liquidity. The question that arises then is thus: By what method can a bank provide for this essential need for liquidity? The answer lies in the management of asset liquidity.
2.36 Gruning H.V.\textsuperscript{34} has observed that the liquidity management policies of a bank normally comprise a decision making structure, an approach to funding and liquidity operations, a set of limits to liquidity risk exposure, and a set of procedures for liquidity planning under alternative scenarios, including crisis situations. Liquidity management is related to a net funding requirement; in principle, a bank may increase its liquidity through asset management, liability management and/or a combination of both.

The author has also noted that "maturity mismatches are intrinsic feature of banking, including the short term liability financing of medium term and long term lending. The crucial question is not whether mismatching occurs – because it always does – but to what extent, and whether this situation is reasonable or potentially unsound. Put another way, one can ask how long, given its current maturity structure, a bank could survive if it met with a funding crisis, and what amount of time would be available to take action before the bank became unable to meet its commitments. These questions should be asked by banks, regulators and ultimately, policy makers.

2.37 Thistle Paul D. and McLeod Robert W.\textsuperscript{35} in their research paper entitled "Interest Rates and Bank Portfolio Adjustments" have carried out empirical test to determine how commercial banks respond to changes in economic conditions, using interest rates, particularly changes in interest rates, as the indicator of change. The common perception is to view the bank as adjusting the composition of its balance sheet / portfolio in response to changes in rates of return on assets and the costs of liabilities for both liquidity and risk management purposes. The selected econometric models have been applied to large U.S. Commercial banks for the period 1979 to 1983 and defined six

\textsuperscript{34} Analyzing and Managing Banking Risk (2nd Edition) The World Bank (pp.167-187)
\textsuperscript{35} Journal of Banking and Finance (Vol. 13,1989)
endogenous and three exogenous asset and liability categories. Finally, they have empirically found that (1) the composition of the balance sheet depends on both the level and the change in interest rates and (2) the response to changes in interest rates is different depending on whether rates are rising or falling. For the study their basic assumption has been that commercial bank management will attempt to alter the composition of its portfolio of assets and liabilities in response to changes in direction of interest rates.

### 2.38 Chaubal R.P. 

in his article “measuring Credit Risk” has observed that - credit risk is the possibility of losses associated with diminution in the credit quality of borrowers or counter parties. These losses in a bank portfolio stem from outright default due to inability or unwillingness of a customer or counter party to meet commitments in relation to lending, trading, settlement and other financial transactions. In order to manage and control the risk within the set limits (risk appetite of the bank), the risk will have to be measured and qualified.

Measurement of credit risk involves quantification of:

(1) **Expected Loss (EL)** and
(2) **Unexpected Loss (UL)**

*Expected Loss* is denoted by the formula:

\[
EL = PD \times LGD \times EAD
\]

*Unexpected Loss* is denoted by the formula

\[
UL = EAD \times \sqrt{CPD \times 6^2LGD + LGD^2 \times 6^3PD^3}
\]

Thus, for the measurement of credit risk, quantification of the following components is necessary:

a. **Probability of Default (PD)**

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36 IBA Bulletin Vol. XXV No. 6 (June 2003)
b. Expected Exposure at Default (EAD)
c. Loss Given Default (LGD)
d. Maturity or Tenor of the Exposure
e. Degree of diversification in a bank credit portfolio

2.1 **Dr. Kaveri V.S.** 37 in his article entitled “Prevention of NPAs – Suggested Strategies” has observed that annual review of borrowal account which is carried out along with renewal / enhancement in working capital limits needs to be strengthened. In particular, more qualitative analysis is called for. In this regard, the auditor’s notes, schedules to the balance sheet items and Directors’ Report should be examined carefully to understand about unhealthy developments that have taken place in the accounting systems and working of the company. With sufficient disclosure in the company balance sheet, annual review format needs to be changed to analyse both qualitative and quantitative data. Occasionally, we do get certain sensitive information from the published annual report. Unfortunately, such information is not read carefully since the review is done in a routine manner.

2.39 **B. Krishna Reddy, P. Premchand Babu, V. Mallikarjuna and P. Vishwanath** 38 in the article entitled “Non-Performing Assets in Public Sector Banks: An Investigation” concluded that the non-performing asset problem in Indian PSBs appears to have subsided as the gross and net NPA ratios are declining, but in quantity terms there is no significant progress made by the banks. The quantum of NPAs has increased notwithstanding the efforts of the banks to reduce / curtail them. The effectiveness of various measures initiated by the RBI and GoI is limited and banks are still not able to tame the problem of NPAs. The health of the banks and their financial performance improved significantly due to

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37 IBA Bulletin Vol. XXIII No. 8, August 2001
the buoyant economic growth witnessed in the past decade and rise of financial intermediation in the country.

Banks have made a windfall gain from the government bond market in the last three or four years to build reserves for writing off NPAs. With no long lasting antidote for the NPAs in sight, the banks are looking forward to asset Reconstruction Companies to sell their NPAs off at whatever price they can. This is a post hoc solution but the real problem at hand is arresting the accretion of NPAs at the first place. As the economy is poised to grow at a stupendous pace, the banks have to play a much larger role in the coming years, this requires a robust framework to deal with NPAs.

Moreover the Indian banking sector will be open for foreign participation, fully owned subsidiaries of foreign banks will operate on a par with domestic banks. This will intensify the competition and the weak PSBs may find it difficult to survive. Hence, cleaning-up of balance sheets and shoring-up of equity capital are essential in the coming days. There is another danger lurking in the dark, if the economy slows down and recession prevails, NPAs will zoom-up making the problem uncontrollable. The answer lies in changing the attitudes of bankers and borrowers and not just the processes.

2.40 **Tirumattani Munivelu**\(^{39}\) in his article entitled “Bank balance Sheet Management” has observed that there is a perceptible change in the bank balance sheet management from mere accounting consolidation to information and data based management. From the year onwards i.e. 1999-2000 after the introduction of Asset Liability Management (ALM), banks are perforce required to manage the Balance Sheet. Banks have to disclose the maturity pattern of deposits in the Balance Sheet from March 2000 onwards. One important feature that can be observed in

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\(^{39}\) IBA Bulletin, April-May 2000
bank’s Balance Sheet is that the liabilities of commercial banks are raised at fixed rate of interest. Whereas, the deployment in assets takes place at floating rate of interest linked to PLR as far as advances are concerned and at market determined rates as to investments. The situation calls for efficient management of both assets and liabilities.

2.41 Kamesam Vepa in his speech on “Challengers before the Indian Industry” has informed that the prudential standards need to be enhanced to fall in line with the international best practices. In this direction, Reserve Bank of India has introduced the 90 days delinquency norm for identification of NPAs with effect from the year ending March 2004 and reduced the time-frame for classification of a sub-standard asset as a doubtful asset from 18 months to 12 months with effect from the year ending March 2005. In some countries, doubtful assets, irrespective of their status i.e. secured or unsecured, are required to be classified as loss assets and fully provided for. However, in India, doubtful assets backed by collateral, are provided for only up to 50% of the outstanding balances, irrespective of the number of years in which the accounts remain in this category. Given the delay in recovery of dues through the legal process, the current provisioning norms followed in India do not entirely cover the latent losses inherent in such advances. The existing provisioning requirements would have to be enhanced in line with the international best practices.

In view of the diverse financial and non-financial risks confronted by banks in the wake of the financial sector deregulation, the risk management practices of banks have to be upgraded by adopting sophisticated techniques like VaR, Duration and Simulation and adopting internal model-based approaches as also credit risk modelling techniques, at least by top banks. Banks need to evolve an integrated risk management system depending on their size, complexity and the
risk appetite. As a step towards enhancing and fine-tuning the existing risk management practices in banks, RBI has recently issued the draft guidance notes on credit and market risks.

2.42 Brahmananda P.R.\textsuperscript{41} in his article entitled “Disturbing Changes in Banks’ Asset Portfolios” has observed that an analysis of the credit-GNP and deposit-GNP ratios of banks over the last ten years shows that the goal of evenly matched credit and deposit expansion remains unfulfilled. Banks, whose portfolios hold a considerable portion of government securities are becoming the chief sustainers of the Government’s fiscal and revenue deficits. But is this really their role in a developing economy?

Theoretically, it is wrong to consider banks’ purchases of government securities as “investments”. From the economy’s angle, if banks lend year by year to governments for paying their salaries and meeting their current expenditure, this would not be considered investment. In the earlier days, investments of banks in government securities were corresponded by capital expenditure by the Government, often in the form of medium-term and long-term loans to development banks. The Government now performs no such functional! And year by year, after the reforms, more and more bank loans are being used to meet current needs of Government. We have subverted every known principle of what banks are expected to do.

2.43 Sunil Kumar and Satish Verma \textsuperscript{42} in his article entitled “Technical Efficiency, Benchmarks and Targets: A Case Study of Indian Public Sector banks” has concluded that the objective of this paper is to investigate recent efficiency record of Indian Public sector banking industry. This is done by implementing data envelopment analysis on a cross-section of 27 public sector banks taken in year 2001. The overall

\textsuperscript{41} Professional Bankers, March 2002
\textsuperscript{42} Prajnan, Vol. XXXI No. 4, 2002-03
level of technical inefficiency in Indian Public Sector banking industry has been found to be around 17 percent. This implies that public sector banks had the scope of producing 1.21 times as much output from the same inputs. The banks affiliated with SBI group outperformed the nationalised banks in terms of operating efficiency. Besides this, large banks are more efficient than small and medium banks in utilizing the critical inputs in their production process. The sensitivity analysis suggests that none of the frontier banks are extreme and efficiency results are quite robust.

The State bank of Bikaner and Jaipur, State Bank of Indore, State Bank of Mysore, State Bank of Patiala, Corporation Bank and Oriental Bank of Commerce scored the technical efficiency score of unity and thus form the efficiency frontier. The worst performance on efficiency front is recorded by the Unites Bank of India, which is closely followed by Indian Bank and Indian Overseas Bank. From target setting exercise, it can be observed that on an average, approximately 52 percent of physical capital, 22 percent of labour and 21 percent of loanable funds could be theoretically reduced if all the inefficient banks operate at the same level as the best practice banks (i.e. efficient banks).

In an attempt to explore the relationship between efficiency and profitability using ‘efficiency-profitability matrix’, it has been observed that about 63 percent of the public sector banks have potentials for profitability increase through efficiency improvements. The Corporation Bank, Oriental Bank of Commerce, State Bank of Patiala, State Bank of Indore, State Bank of Bikaner and Jaipur and State bank of Hyderabad together present an example of banks with both high profitability and high efficiency. Also, Corporation bank emerged as an ideal benchmark for laggards on both efficiency and profitability dimensions of performance.
Having obtained the efficiency measures, we utilised the Tobit regression analysis to account for the impact of various operating environment factors on technical efficiency. It has been found that technical efficiency is positively related to higher profitability larger branch network and higher staff productivity.

2.44 Das Abhiman 43 in his article entitled “Efficiency of Public Sector Banks: An Application of Data Envelopment Analysis Model” has concluded that the purpose of this study was to estimate several efficiency measures of public sector banks, which are directly linked with their performance. The methodology used for this study is an application of standard data envelopment analysis (DEA) model and hence nonparametric in nature. The results indicate that banks in the State Bank group are, in general, more efficient than nationalized banks. The inefficiency that existed in public sector banks was more a result of both technical and allocative inefficiency. Most of the banks in the public sector bank group are faced with somewhat similar level of competition. Some poor performing banks have got enough scope of increasing their output by optimal deployment of resources. The problems of poor performing banks still lie in the areas of assets quality, management and congestion of labour. These banks have to develop a quick, systematic and sustainable strategy to clean up their contaminated credit portfolio for their survival and global presence in the near future. It is, therefore, expected that the latest ALM guidelines issued by the RBI will facilitate these banks to search a turnaround methodology to strengthen the bottom-line of their portfolio.

2.45 K. Satyanarayana 44 in his article entitled “Indian Banking System – Gearing up for Basel II’ has observed that an adequate capital backup, to take care of unexpected losses, has become the real license to conduct

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and expand banking business, especially in the case of asset portfolio. The Indian banking system is better prepared to adopt Basel II than it was for Basel I. Nevertheless, the task is daunting enough, requiring more rigor and improvement in risk management systems, especially credit risk measurement and related database. The past trends indicate that to maintain the present 12 percent level of Capital to Risk Weighted Assets Ratio, even in March 2007, banks in India may fall short of capital by Rs.30,000 – Rs.57,000 crore. Owing to an estimated increase of risk weighted assets by 15-30 percent, mainly on account of operational and market risk (if not credit risk) during Basel II era, nationalised banks are private sector banks seem to be more vulnerable when compared to the State Bank group and foreign banks in accomplishing such task. The size of bank being a helpful factor to improve the risk-bearing capacity, consolidation through orderly mergers and acquisition may be necessary. Asset expansion through proper risk management culture is another important strategic dimension in the Basel II context with matching supervision, audit and vigilance systems, which should encourage capturing business rather than driving it away. Degovernmentalization of public sector banks, through managerial autonomy, will ensure prompt organizational responses to the fast changing market developments. Draft guidelines issues by RBI in February 2005 on Basel II implementation clearly indicate a phased approach, without putting undue pressure on the banking system and, at the same time, aiming to reach international standards and best practices. Basel II transition should further strengthen the banks to play a crucial role in ensuring that the fruits of economic reforms, especially the financial sector reforms, are in the reach of the vast and vulnerable sections of the society.
2.46 **R. Kannan**\(^{45}\) in his article entitled “Asset-Liability Management (ALM) System in banks – Guidelines” has observed that measuring and managing liquidity needs are vital for effective operation of commercial banks. By assuring a bank’s ability to meet its liabilities as they become due, liquidity management can reduce the profitability of an adverse situation developing. The importance of liquidity transcends individual institutions, as liquidity shortfall in one institution can have repercussions on the entire system. Banks management should measure not only the liquidity positions of banks on an ongoing basis but also examine how liquidity requirements are likely to evolve under different assumptions. Experience shows that assets commonly considered as liquid like Government securities and other money market instruments could also become illiquid when the market and players are unidirectional. Therefore liquidity has to be tracked through maturity or cash flow mismatches. For measuring and managing net funding requirements, the use of a maturity ladder and calculation of cumulative surplus or deficit of funds at selected maturity dates is adopted as a standard tool.

2.47 **T. Ravi Kumar**\(^{46}\) has stated that in India, the post-liberalization period witnessed a rapid industrial growth which has further stimulated the growth in the fund raising activities. With the rise in the demand for funds, there has also been a remarkable shift in the features of the sources and uses of funds of banks. Traditionally, administered rates were used to price the assets and liabilities of banks. However, in the deregulated environment, competition has narrowed the spreads of the banks. This not only has led to the introduction of discriminate pricing policies, but has also highlighted the need to match the maturities of the assets and liabilities. The changes in the profile of the sources and uses of funds are reflected in the borrowers’ profile, the industry profile and

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\(^{45}\) Personal Website of R. Kannan  
\(^{46}\) Asset Liability Management, Vision Books publication, 2000, pp 46
the exposure limits for the same, interest rate structure for deposits and advances, etc. The developments that have taken place since liberalization have led to a remarkable transition in the risk profile of the financial intermediaries. The main reasons for the growing significance of ALM are:

- Volatility
- Product innovations
- Regulatory environment
- Enhanced awareness of top management

2.48 C. Rangarajan in his paper "Indian Financial System: Current Issues, Future Challengers" has stated that originally banks concentrated on asset management, treating themselves as deposit takers. Funds supply was treated as given and the asset management was influenced by the famous dictum that liquidity and profitability are opposing considerations. Risks and returns were two inversely related variables which influenced the composition of assets. The effort was to distribute the assets in such a way that for a given level of liquidity, the return was the maximum. The approach is now being substituted by a more comprehensive approach of asset-liability management which has been described ‘a continuous process of planning, organising and controlling asset and liability volumes, maturities, rates and yields’. The liability structure can thus be modified in tune with the asset structure that is desired. Banking is much more of a risky business today than it was a decade ago. The kind of risks and the frequency of the occurrence of such risks have increased dramatically. In terms of asset liability management, portfolio managers look at the variables and fixed components of both the liability side and the assets side and try to bring about a match between the two. The most important element in the asset

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liability management is to build into the analysis a possible future behaviour of variables, such as interest rates. In technical language they talk about sensitivity analysis to changes in the variables. Therefore, it needs to be stressed that asset liability management is a process – it is not a static concept and it must be practised in an ongoing manner. Managers must regularly forecast assumption and develop contingencies to accommodate changes expected.

2.49 Nitsure Rupa in her article entitled “Basel II Norms, - Emerging Market perspective with Indian Focus” has stated that Basel II norms be taken as necessary framework to improve the stability and resilience of rapidly evolving Indian banking sector. The article has elaborately discussed issues pertaining to emerging economies with Indian focus – and has brought out finer points of difference between Basel I and Basel II and the need for the later. The author has perceived the Indian banking system as stable and highly complaint with core principles prescribed by IMF. It has praised the rote approach of the RBI towards gradual convergence of prudential regulation with international standards. However, it has expressed apprehensions about preparedness of Indian banking sector for adopting new Basel accord by December 2006. The authors have expressed fear that too much regulation under Basel II may adversely affect the risk appetite of Indian banks and their lending to credit-starved sector. Finally, it has suggested that Indian policy markets should negotiate strongly for the interest of emerging economies.

2.50 Height Timothy G. and Kelly Joseph C. in their article “The Role of Derivatives as an Asset / Liability Management Tool” have advised that bankers should consider derivatives as a hedging device when attempting to reduce the impact of fluctuating interest rates on the net

48 Economic and Political Weekly (March 2005)
49 The Bankers Magazine (May – June 1995)
interest margins. These instruments can be effective tools in the management of a bank’s balance sheet. They can offer a quicker, more efficient way to reduce balance sheet interest rate risk without restructuring loans or deposits. For short term exposure, future contracts can serve as an interest rate risk hedge. However, interest rate swaps may be more suitable for banks with an unfavourable long term gap position. However, they have cautioned that while derivatives offer bankers many advantages, they must be used in a prudent manner. This requires banks not only to consider the hedging benefits but also the inherent risks associated with the derivatives instruments. Although both hedgers and speculators are necessary, bankers should use care to stay on the hedging side of their transactions. Improper use of derivatives could cause regulators to cite the bank for “unsafe and unsound” banking practices.

2.51 Rajeev A.S. ⁵⁰ in his article entitled “A primer on – Securitisation” has observed that asset securitisation refers to the process by which loans, receivables and other illiquid assets with similar characteristics in the balance sheet are packaged into interest bearing securities that offer attractive investment opportunities. It is the process of pooling or repackaging of homogeneous illiquid assets (primarily loans) into marketable securities.

Securitisation transforms non-traded bank assets into marketable securities. From the balance sheet angle, the illiquid assets like loans can be repackaged, securitised collateralized, yield-enhanced and then disposed off from the balance sheet into capital markets. (Caution-window-dressing). The increased use of securitisation will definitely help financial institutions for cleverly managing risk-based capital as mandated by regulatory bodies. Another important aspect is regulators are generally placing higher risk weight on loans than securities.

⁵⁰IBA Bulletin, December 2002
Therefore, to lower its regulatory capital a financial institution has to buy securitised assets rather than loans or go in for asset securitisation programme. Either way the illiquid assets can be reclassified / converted into lower risk category resulting into lower regulatory capital. In general, securitisation improves return on capital by transforming an on-balance sheet item to off-balance sheet fee income item. This means that a bank can frequently lower its regulatory capital requirements by buying securitised assets or by securitising assets.

2.52 Benton E. Gup and James W. Kolari \(^{51}\) have stated that the principal purpose of asset / liability management traditionally has been to control the size of the net interest income. This control can be achieved through defensive or aggressive asset / liability management. The goal of defensive asset / liability management is to insulate the net interest income from changes in interest rates; that is, to prevent interest rate changes from decreasing or increasing the net interest income. In contrast, aggressive asset / liability management focuses on increasing the net interest income through altering the portfolio of the institution. The success of aggressive asset / liability management depends on the ability to forecast future interest rate changes. For example, a strategy that anticipates rising interest rates and that restructures the portfolio to benefit from the anticipated rate increase would fail if interest rates remained unchanged or declined. In contrast, defensive asset / liability management does not require the ability to forecast future interest rate levels. The focus of the defensive strategy is to insulate the portfolio from interest rate changes, whether the direction of the interest rate movement is upward or downward, predictable or unpredictable.

They have also summarised that the investment securities provide alternative source of income fro commercial banks, especially when loan demand is relatively low during slowdowns in economic activity.

\(^{51}\) Commercial Banking – The Management of Risk, 2005, WILEY publication, pp.128 & 201
Bank policy should aim to maximise the return on the securities portfolio per unit of risk within regulatory and market constraints. In this regard, bank management needs to consider the tax implications of municipal securities, default risk and call risk of municipal and corporate bond securities, interest rate risk of longer-term securities, and marketability of securities. The effects of investment policy on the risk and return of the bank’s total assets should also be evaluated in a portfolio context, where diversification benefits can be gained by purchasing securities with return patterns that are not perfectly positively correlated with the return patterns of other bank assets.

Once bank policy is established, an investment strategy needs to be chosen. Passive strategies, such as the spaced-maturity, or ladder, approach and the split-maturity, or barbell, approach do not require much expertise, conserve management resources, and are inexpensive to implement. Aggressive strategies, such as playing the yield curve and bond swapping, require more management expertise, involve more trading activity, and are riskier in nature than passive strategies but offer higher earnings potential.

2.53 Timothy W. Koch and S. Scott Macdonald\textsuperscript{52} has stated that the fundamental objective of the investment portfolio is to maximise earnings while limiting risk within guidelines set by management. Earnings come in the form of periodic interest income, reinvestment income, and capital gains or losses. Managing returns involves selecting the appropriate mix of taxable and tax-exempt securities, optimal maturities / durations, and the timing of purchases and sales. Portfolio risk is evidenced by deviations in actual returns from that expected. Such deviations may result from unanticipated changes in interest rates, defaults on promised interest and principal payments, and unanticipated

\textsuperscript{52} Bank Management, 5\textsuperscript{th} Ed., 2004, Thomson Publication, Singapore, pp 705
inflation. Managing risk focuses on ensuring the safety of principal, guaranteeing access to cash to meet liquidity needs and timing security purchases relative to the business cycle. It also involves diversifying the portfolio with different types of securities, issuers, and issue maturities or durations.

2.54 P. Chidambaram53, Hon’ble Finance Minister, Government of India in his address stated that “the profitability performance of Indian Banks in recent years compares well with that of the global benchmark banks primarily because of the higher share of profit on the sale of investments, higher leverage and higher net interest margins of Indian banks. However, many of these drivers of higher profits of Indian banks may not be sustainable. To ensure long-term profitability, Indian banks need be focused on the following parameters and build systemic capability in managing of the same:

Ensure that loans are diversified across several customer segments.

Introduce robust risk scoring techniques to ensure better quality of loans, as well as to enable better risk-adjusted returns at the portfolio level.

Improve the quality of credit monitoring systems so that slippage in asset quality is minimised.

Raise the share of non-fund income by increasing product offerings wherever necessary by better use of technology.

Reduce operating expenses by upgrading banking technology.

Improve the management of market risks, and finally.

Reduce the impact of operational risk by putting in place appropriate frame works to measure risk, mitigate them or insuring them.”

53 Address at BANCON 2004
2.55 Murthy G R K\textsuperscript{54} in his article “Credit Risk Management in a Market Driven Economy: The Acid Test for Banks” has stated that in generic terms, risk management can be defined as systematic identification and analysis of the various loss exposures faced by a firm / individual and the best methods of treating the identified loss exposures consistent with the firms' / individuals' objectives. Extending the same analogy, we can define credit risk management as a process that puts in place systems and procedures enabling a bank to

- Identify and measure the risk involved in a credit proposition, both at the individual transaction and portfolio level,
- Evaluate the impact of exposure on Bank’s Balance Sheet / Profit.
- Assess the capability of risk-mitigators to hedge / insure risk.
- Design an appropriate risk management strategy to arrest 'risk-migration' leading to deterioration in the 'credit-quality' / 'default-risk'

It helps banks in discriminating loan accounts on the basis of risk-characteristics at ‘entry-level’ besides, paving way for timely ‘exit’ at the portfolio level. In short, it helps banks in minimising the losses that could emanate from counter-party default or concentration risk at portfolio level.

\textsuperscript{54} IBA Bulletin, Vol. XXIII No.3, March 2001