Review Of Research
Vol.2, Issue. 9, June. 2013
ISSN:-2249-894X
Available online at www.reviewofresearch.net

ORIGINAL ARTICLE

RISK MANAGEMENT IN BANKING SECTOR -- AN EMPIRICAL STUDY

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Abstract:

Banking is the lifetime of an economy. They are the catalytic agent and in the driver's seat of the financial system banking is a risky business, due to liberalization policies in India. "Risk management is not a destination, but a journey". It is not a onetime exercise but a life time exercise, which needs to be undertaken repeatedly. Risk management is the application of practices stability to plan, lead, organize and control the wide variety of risks that are rushed into the fabric of an organizations daily and long term functioning. Like it or not, risk has a say in the achievement of our goals and in overall success of an organization.

Present paper is an make to attempt to identify the risks faced by the banking industry and the process of risk management. The paper also examines the different techniques adopted by the banking sector for risk management. The feature of banking will undoubtedly rest on risk management dynamics. Only those banks that have effective management system will survive in the market and the long run success in banking industry.

KEYWORDS-

Risk Management, banking Sector, Credit Risk, Market Risk, Operational risk, gap Analysis, Value at Risk.

INTRODUCTION

Commercial banks are in the risk business. In the "process of providing financial services, they assume various kinds of financial risks. The risks contained in the bank's principal activities, i.e., those involving its own balance sheet and its basic business of lending and borrowing, are not all borne by the bank itself. In many instances the institution will eliminate or mitigate the financial risk associated with a transaction by proper business practices; in others, it will shift the risk to other parties through a combination of pricing and product design. The banking industry recognizes that an institution need not engage in business in a manner that unnecessarily imposes risk upon it; nor should it absorb risk that can be efficiently transferred to other participants. Rather, it should only manage risks at the firm level that are more efficiently managed there than by the market itself or by their owners in their own portfolios. In short, it should accept only those risks that are uniquely a part of the bank's array of services

Since the introduction of economic reforms in the country in 1991 the financial sector in general, and the banking sector in particular, has made rapid progress and is growing at an accelerated pace. Sensing the opportunities an open market offers, both public sector and private sector banks have adopted a "forward-looking approach" and adjusted with the changed environment in a positive manner.

However, along with liberalisation, the financial and operational risks faced by the financial intermediaries, that is, commercial banks, term-lending institutions, and finance companies, have increased manifold. Earlier, these institutions were familiar only with credit risks relating to non-payment, but now they are confronted with multi-dimensional multivariate risks in the form of credit risk, interest rate risk, exchange risk etc. Managing risk, therefore, has become an important strategic consideration for fostering financial well-being of these organisations.

It necessitates understanding and analysis of various kinds of risk elements and adoption of appropriate strategies and techniques for minimizing the impact of these risks on the bottomline of the entity.

RISK DEFINED

Risk can be defined as the possibility of loss arising because of uncertainty of outcome of a particular transaction. Banks have always dealt with risks and uncertainties, and the objective of risk management is to minimise losses arising from such risk exposures. A bank acts as an intermediary between providers of capital and those needing it. People who have money are unwilling to bear the risk of default on the part of borrowers. Hanks, as financial intermediaries, undertake such risks and, as reward, earn a "spread" or "net interest margin", i.e., the inference between interest earned from borrowers and interest paid to depositors.

STATEMENT OF THE PROBLEM

Risk Analysis and Risk Management has got much importance in the Indian Economy during this liberalization period. The foremost among the challenges faced by the banking sector today is the challenge of understanding and managing the risk. The very nature of the banking business is having the threat of risk imbibed in it. Banks' main role is intermediation between those having resources and those requiring resources. For management of risk at corporate level, various risks like credit risk, market risk or operational risk have to be converted into one composite measure. Therefore, it is necessary that measurement of operational risk should be in tandem with other measurements of credit and market risk so that the requisite composite estimate can be worked out. So, regarding to international banking rule (Basel Committee Accords) and RBI guidelines the investigation of risk analysis and risk management in banking sector is being most important.

A) Literature Review - National Perspective

Charls Schwab: revealed very practical, authoritative and easy-to-follow tips and suggestions for good investment in the stock market. According to him growth is the heart of successful investment He suggested that before investing, one should be clear about the goal. He opined that the biggest risk is not in investing but in doing nothing and watching inflation eating away the savings. A very useful suggestion of the author is not to draw upon the income from investment but to reinvest it. A low risk approach will yield low return. So the author urged the investor to be aggressive, subject to his personal limits.

CRISIL Report on Risk Management: stated that the loss potential from market risk will increase in the absence of strong risk management tools. The banks which adopt a proactive approach to upgrading risk management skills which are currently unsophisticated as compared to internationally best practices, would have a competitive edge in future. The report commented that in the increasingly deregulated and competitive environment, the risk management strategies of banks would hold the key to differentiation in their credit worthiness.

Raghavan R.S.: reviewed the need for a risk management system, which should be a daily practice in banks. He opined that bank management should take upon in serious terms, risk management systems, which should be a daily practice in their operations. He is very much sure that the task is of very high magnitude, the commitment to the exercise should be visible, failure may be suicidal as we are exposed to market risks at international level, which is not under our control as it was in the insulated economy till sometime back.

Amran: explored the availability of risk disclosures in the annual reports of Malaysian companies. The study was aimed to empirically test the characteristics of the sampled companies. The level of risk faced by these companies with the disclosure made was also assessed and compared. The findings of the research revealed that the strategic risk came on the top, followed by the operations and empowerment risks being disclosed by the selected companies. The regression analysis proved significantly that size of the companies did matter. The stakeholder theory explains well this finding by stating that "As company grows bigger, it will have a large pool of stakeholders, who Would be interested in knowing the affairs of the company." The extent of risk disclosure was also found to be influenced by the nature of the industry. As explored within this study, infrastructure and technology industries influenced the companies to have more risk information disclosed.

B LITERATURE REVIEW - INTERNATIONAL PERSPECTIVE

Crouhy, Gala, Marick: Summarised the core principles of Enterprise wide Risk Management. As per the authors Risk Management culture should percolate from the Board Level to the lowest level employee. Firms will be required to make significant investment necessary to comply with the latest best practices in the new generation of Risk Regulation and Management. Corporate Governance regulation with the advent of Sarbanes-Oxley Act in US and several other legislations in various countries also provide the framework for sound Risk Management structures. Hitherto, Enterprise wide Risk Management existed only for name sake. Generally firms did not institute a truly integrated set of Risk measures, methodologies or Risk Management Architecture. The ensuing decades will usher in a new set of Risk Management tools encompassing all the activities of a Corporation. The integrated Risk Management infrastructure would cover areas like Corporate Compliance, Corporate Governance, Capital Management etc. Areas like business risk, reputation risk and strategic risk also will be incorporated in the overall Risk Architecture more formally. As always it will be the Banks and the Financial Services firms which will lead the way in this evolutionary process. The compliance requirements of Basel II and III accords will also oblige Banks and Financial institutions to put in place robust Risk Management methodologies.

The authors felt that it is generally felt that Risk Management concerns largely with activities within the firm. However, during the next decade Governments in different countries would desire to have innovatively drawn Risk Management system for the whole country. The authors draw reference to the suggestions of Nobel Laureate Robert Merton who suggested that a country with exposure to a few concentrated industries should be obliged to diversify its excessive exposures by arranging appropriate swaps with other countries with similar problems. Risk Management offers many other potential macro applications to improve the management of their social security measures etc. They draw references to the spread of Risk Management Education worldwide.

Carl Felsenfeld outlined the patterns of international Banking regulation and the sources of governing law. He reviewed the present practices and evolving changes in the field of control systems and regulatory environment. The book dealt a wide area of regulatory aspects of Banking in the United States, regulation of international Banking, international Bank services and international monetary exchange. The work attempted in depth analysis of all aspects of Bank Regulation and Supervision.

Money Laundering has been of serious concern worldwide. Its risk has wide ramifications. Money Laundering has lead to the fall of Banks like BCCI in the past. In this context the book on Anti-Money Laundering: International Practice and Policies by John Broome

Published by Sweet and Maxwell (August 2005) reviews the developments in the area of Money Laundering. The author explains with reference to case studies the possible effects of Money Laundering. The book gives a comprehensive account of the existing rules and practices and suggests several improvements to make the control systems and oversight more failsafe.

Hannan and Hanweck: felt that the insolvency for Banks become true when current losses exhaust capital completely. It also occurs when the return on assets (ROA) is less than the negative capital-asset ratio. The probability of insolvency is explained in terms of an equation p, 1/(2(Z2). The help of Z-statistics is commonly employed by Academicians in computing probabilities.

Daniele Nouy elaborates the Basel Core Principles for effective Banking Supervision, its innovativeness, content and the challenges of quality implementation. Core Principles are a set of supervisory guidelines aimed at providing a general framework for effective Banking supervision in all countries. They are innovative in the way that they were developed by a mixed drafting group and they were comprehensive in coverage, providing a checklist of the principal features of a well designed supervisory system.

OBJECTIVES THE STUDY

The following are the objectives of the study.

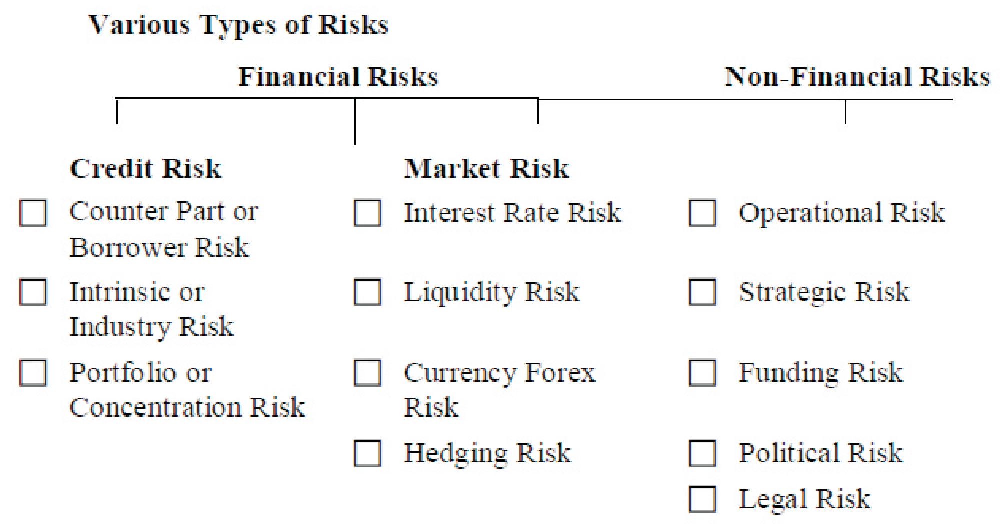
1.To identify the risks faced by the banking industry.
2.To trace out the process and system of risk management.
3.To examine the techniques adopted by banking industry for risk management.

RESEARCH METHODOLOGY

This paper is theoretical modal based on the extensive research for which the secondary source of information has gathered. The sources include online publications, Books and journals

TYPES OF RISKS IN BANKING SECTOR

Risk is an exposure to a transaction with loss, which occurs with some probability and which can be expected, measured and minimized. In financial institutions risk result from variations and fluctuations in assets or liability or both in incomes from assets or payments and on liabilities or in outflows and inflows of cash. Today, banks face different types of risks that financial intermediaries are exposed to in the course of their business. Which Can be understood through following chart.



FINANCIAL RISK

Financial risk arises from any business transaction undertaken by a bank, which is exposed to potential loss. This risk can be further classified into Credit risk and Market risk.

i) Credit Risk

Credit Risk is the potential that a bank borrower/counter party fails to meet the obligations on agreed terms. There is always scope for the borrower to default from his commitments for one or the other reason resulting in crystalisation of credit risk to the bank. These losses could take the form outright default or alternatively, losses from changes in portfolio value arising from actual or perceived deterioration in credit quality that is short of default. Credit risk is inherent to the business of lending funds to the operations linked closely to market risk variables. The objective of credit risk management is to minimize the risk and maximize bank's risk adjusted rate of return by assuming and maintaining credit exposure within the acceptable parameters. The management of credit risk includes

1.Measurement through credit rating/ scoring,
2.Quantification through estimate of expected loan losses,

3.Pricing on a scientific basis and
4.Controlling through effective Loan Review Mechanism and Portfolio Management.

TOOLS OF CREDIT RISK MANAGEMENT

The instruments and tools, through which credit risk management is carried out, are detailed below:

a)Exposure Ceilings: Prudential Limit is linked to Capital Funds - say 15% for individual borrower entity, 40% for a group with additional 10% for infrastructure projects undertaken by the group, Threshold limit is fixed at a level lower than Prudential Exposure; Substantial Exposure, which is the sum total of the exposures beyond threshold limit should not exceed 600% to 800% of the Capital Funds of the bank (i.e. six to eight times).
b)Review/Renewal: Multi-tier Credit Approving Authority, constitution wise delegation of powers, Higher delegated powers for better-rated customers; discriminatory time schedule for review/renewal, Hurdle rates and Bench marks for fresh exposures and periodicity for renewal based on risk rating, etc are formulated.
c)Risk Rating Model: Set up comprehensive risk scoring system on a six to nine point scale. Clearly define rating thresholds and review the ratings periodically preferably at half yearly intervals. Rating migration is to be mapped to estimate the expected loss
d)Risk based scientific pricing: Link loan pricing to expected loss. High-risk category borrowers are to be priced high. Build historical data on default losses. Allocate capital to absorb the unexpected loss. Adopt the RAROC framework.
e)Portfolio Management The need for credit portfolio management emanates from the necessity to optimize the benefits associated with diversification and to reduce the potential adverse impact of concentration of exposures to a particular borrower, sector or industry. Stipulate quantitative ceiling on aggregate exposure on specific rating categories, distribution of borrowers in various industry, business group and conduct rapid portfolio reviews.
f)Loan Review Mechanism This should be done independent of credit operations. It is also referred as Credit Audit covering review of sanction process, compliance status, review of risk rating, pickup of warning signals and recommendation of corrective action with the objective of improving credit quality. It should target all loans above certain cut-off limit ensuring that at least 30% to 40% of the portfolio is subjected to LRM in a year so as to ensure that all major credit risks embedded in the balance sheet have been tracked.

ii) Market Risk

Market Risk may be defined as the possibility of loss to bank caused by the changes in the market variables. It is the risk that the value of on-/off-balance sheet positions will be adversely affected by movements in equity and interest rate markets, currency exchange rates and commodity prices. Market risk is the risk to the bank's earnings and capital due to changes in the market level of interest rates or prices of securities, foreign exchange and equities, as well as the volatilities, of those prices. The following are types of market risks;

a)Liquidity Risk: Bank Deposits generally have a much shorter contractual maturity than loans and liquidity management needs to provide a cushion to cover anticipated deposit withdrawals. Liquidity is the ability to efficiently accommodate deposit as also reduction in liabilities and to fund the loan growth and possible funding of the off-balance sheet claims. The cash flows are placed in different time buckets based on future likely behaviour of assets, liabilities and off-balance sheet items. Liquidity risk consists of Funding Risk, Time Risk & Call Risk.
b)Interest Rate Risk: Interest Rate Risk is the potential negative impact on the Net Interest Income and it refers to the vulnerability of an institution's financial condition to the movement in interest rates. Changes in interest rate affect earnings, value of assets, liability off-balance sheet items and cash flow. Earnings perspective involves analyzing the impact of changes in interest rates on accrual or reported earnings in the near term. This is measured by measuring the changes in the Net Interest Income (Nil) equivalent to the difference between total interest income and total interest expense.
c)Forex Risk: Foreign exchange risk is the risk that a bank may suffer loss as a result of adverse exchange rate movement during a period in which it has an open position, either spot or forward or both in same foreign currency. Even in case where spot or forward positions in individual currencies are balanced the maturity pattern of forward transactions may produce mismatches. There is also a settlement risk arising

out of default of the counter party and out of time lag in settlement of one currency in one center and the settlement of another currency in another time zone. Banks are also exposed to interest rate risk, which arises from the maturity mismatch of foreign currency position.

d)Country Risk: This is the risk that arises due to cross border transactions that are growing dramatically in the recent years owing to economic liberalization and globalization. It is the possibility that a country will be unable to service or repay debts to foreign lenders in time. It comprises of Transfer Risk arising on account of possibility of losses due to restrictions on external remittances; Sovereign Risk associated with lending to government of a sovereign nation or taking government guarantees; Political Risk when political environment or legislative process of country leads to government taking over the assets of the financial entity (like nationalization, etc) and preventing discharge of liabilities in a manner that had been agreed to earlier; Cross border risk arising on account of the borrower being a resident of a country other than the country where the cross border asset is booked; Currency Risk, a possibility that exchange rate change, will alter the expected amount of principal and return on the lending or investment.

Non - Financial Risk

Non- financial risk refers to those risks that may affect a bank's business growth, marketability of its product and services, likely failure of its strategies aimed at business growth etc. These risks may arise on account of management failures, competition, non- availability of suitable products/services, external factors etc. In these risk operational and strategic risk have a great need of consideration.

Operational Risk

Always banks live with the risks arising out of human error, financial fraud and natural disasters. The recent happenings such as WTC tragedy, Barings debacle etc. has highlighted the potential losses on account of operational risk. Exponential growth in the use of technology and increase in global financial inter-linkages are the two primary changes that contributed to such risks. Operational risk, though defined as any risk that is not categorized as market or credit risk, is the risk of loss arising from inadequate or failed internal processes, people and systems or from external events. In order to mitigate this, internal control and internal audit systems are used as the primary means.

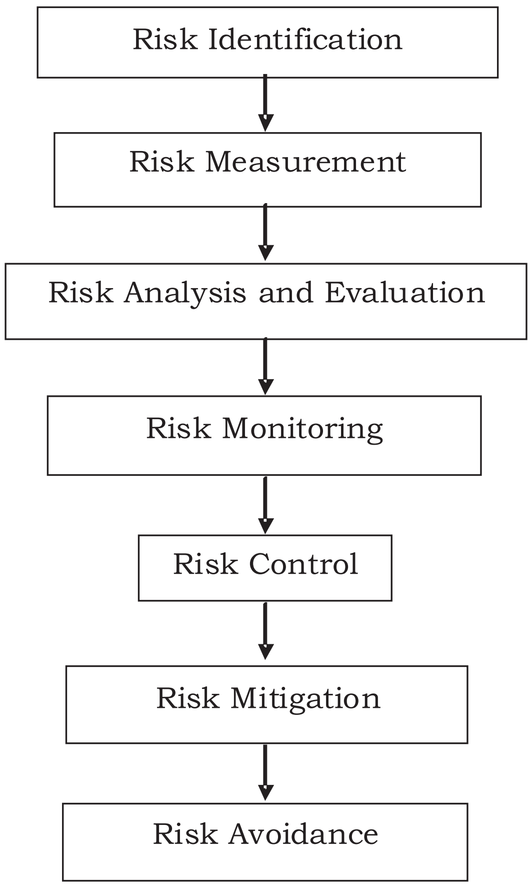
Risk education for familiarizing the complex operations at all levels of staff can also reduce operational risk. Insurance cover is one of the important mitigators of operational risk. Operational risk events are associated with weak links in internal control procedures. The key to management of operational risk lies in the bank's ability to assess its process for vulnerability and establish controls as well as safeguards while providing for unanticipated worst-case scenarios.

Operational risk involves breakdown in internal controls and corporate governance leading to error, fraud, performance failure, compromise on the interest of the bank resulting in financial loss. Putting in place proper corporate governance practices by itself would serve as an effective risk management tool. Bank should strive to promote a shared understanding of operational risk within the organization, especially since operational risk is often intertwined with market or credit risk and it is difficult to isolate.

6. PROCESS OF RISK MANAGEMENT

To overcome the risk and to make banking function well, there is a need to manage all kinds of risks associated with the banking. Risk management becomes one of the main functions of any banking services risk management consists of identifying the risk and controlling them, means keeping the risk at acceptable level. These levels differ from institution to institution and country to country. The basic objective of risk management is to stakeholders; value by maximising the profit and optimizing the capital funds for ensuring long term solvency of the banking organisation. In the process of risk management following functions comprises:

PROCESS OF RISK MANAGEMENT



TECHNIQUES OF RISK MANAGEMENT

A) Gap Analysis

It is an interest rate risk management tool based on the balance sheet which focuses on the potential variability of net-interest income over specific time intervals. In this method a maturity/ re-pricing schedule that distributes interest-sensitive assets, liabilities, and off-balance sheet positions into time bands according to their maturity (if fixed rate) or time remaining to their next re-pricing (if floating rate), is prepared. These schedules are then used to generate indicators of interest-rate sensitivity of both earnings and economic value to changing interest rates. After choosing the time intervals, assets and liabilities are grouped into these time buckets according to maturity (for fixed rates) or first possible re-pricing time (for flexible rate s). The assets and liabilities that can be re-priced are called rate sensitive assets (RSAs) and rate sensitive liabilities (RSLs) respectively. Interest sensitive gap (DGAP) reflects the differences between the volume of rate sensitive asset and the volume of rate sensitive liability and given by, GAP = RSAs – RSLs.

The information on GAP gives the management an idea about the effects on net-income due to changes in the interest rate. Positive GAP indicates that an increase in future interest rate would increase the net interest income as the change in interest income is greater than the change in interest expenses and vice versa.

Duration-GAP Analysis

It is another measure of interest rate risk and managing net interest income derived by taking into consideration all individual cash inflows and outflows. Duration is value and time weighted measure of maturity of all cash flows and represents the average time needed to recover the invested funds. Duration analysis can be viewed as the elasticity of the market value of an instrument with respect to interest rate.

Duration gap (DGAP) reflects the differences in the timing of asset and liability cash flows and given by, DGAP = DA - u DL. Where DA is the average duration of the assets, DL is the average duration of liabilities, and u is the liabilities/assets ratio. When interest rate increases by comparable amounts, the market value of assets decrease more than that of liabilities resulting in the decrease in the market value of equities and expected net-interest income and vice versa.

c) Value at Risk (VaR)

It is one of the newer risk management tools. The Value at Risk (VaR) indicates how much a firm can lose or make with a certain probability in a given time horizon. VaR summarizes financial risk inherent in portfolios into a simple number. Though VaR is used to measure market risk in general, it incorporates many other risks like foreign currency, commodities, and equities.

d) Risk Adjusted Rate of Return on Capital (RAROC)

It gives an economic basis to measure all the relevant risks consistently and gives managers tools to make the efficient decisions regarding risk/return tradeoff in different assets. As economic capital protects financial institutions against unexpected losses, it is vital to allocate capital for various risks that these institutions face. Risk Adjusted Rate of Return on Capital (RAROC) analysis shows how much economic capital different products and businesses need and determines the total return on capital of a firm. Though Risk Adjusted Rate of Return can be used to estimate the capital requirements for market, credit and operational risks, it is used as an integrated risk management tool.

a)Securitization

It is a procedure studied under the systems of structured finance or credit linked notes. Securitization of a bank's assets and loans is a device for raising new funds and reducing bank's risk exposures. The bank pools a group of income-earning assets (like mortgages) and sells securities against these in the open market, thereby transforming illiquid assets into tradable asset backed securities. As the returns from these securities depend on the cash flows of the underlying assets, the burden of repayment is transferred from the originator to these pooled assets.

b) Sensitivity Analysis

It is very useful when attempting to determine the impact, the actual outcome of a particular variable will have if it differs from what was previously assumed. By creating a given set of scenarios, the analyst can determine how changes in one variable(s) will impact the target variable.

c)Internal Rating System

An internal rating system helps financial institutions manage and control credit risks they face through lending and other operations by grouping and managing the credit-worthiness of borrowers and the quality of credit transactions.

CONCLUSIONS

The following are the conclusions of the study.

Risk management underscores the fact that the survival of an organization depends heavily on its capabilities to anticipate and prepare for the change rather than just waiting for the change and react to it.
The objective of risk management is not to prohibit or prevent risk taking activity, but to ensure that the risks are consciously taken with full knowledge, clear purpose and understanding so that it can be measured and mitigated.
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.
Risk Management Committee, Credit Policy Committee, Asset Liability Committee, etc are such committees that handle the risk management aspects.
The banks can take risk more consciously, anticipates adverse changes and hedges accordingly; it

becomes a source of competitive advantage, as it can offer its products at a better price than its competitors. Regarding use of risk management techniques, it is found that internal rating system and risk adjusted rate of return on capital are important.
The effectiveness of risk measurement in banks depends on efficient Management Information System, computerization and net working of the branch activities.

Improved-risk management practices by "banks are the key to success in a competitive environment where new instruments such as derivatives are introduced in a gradual and progressive manner. To reduce the risks, there is need for forecasting the risks at an early stage. In case of indispensable risks such as rural lending as per the guidelines, there is need to compensate an equal amount with value added services in cities with high reward schemes. Further, it is essential to assess the value of the assets at the long run, before lending. A systematic risk assessment from all securities, events and policies should be made well in advance, so that the risks can be identified at an early stage and should be avoided with no or meager loss.

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