

# **I**NTERNA**J**OURNAL OF **E**NGINEERING **S**CIENCES & **M**ANAGEMENT **AN OVERVIEW ON RISK MANAGEMENT PRACTICES IN BANKING SECTOR**

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## **ABSTRACT**

The Banking sector has a pivotal role in the development of an economy. It has a dynamic role to play in converting the idle capital resources for their optimum utilisation so as to attain maximum productivity. In fact, the foundation of a sound economy depends on how sound the Banking sector is and vice versa. In India, the banking sector is considerably strong at present but at the same time, banking is considered to be a very risky business. Financial institutions must take risk, but they must do so consciously. Risk Management is the importance to business strategy in order to plan, direct, organize, and control the wide variety of risks in the organizations along with the daily and long-term functioning. Risk Management accounts to the circumstances of risk management techniques in the business. To review and estimate financial risk management on-site trips to financial service firms were carried out since the past years. Like it or not, risk has circumstances in the attainment of goals and in the general success of a business. This Present paper makes an attempt to identify and analyse the risks faced by the banking industry and the process of risk management and also examine the different techniques adopted by banking industry to manage risk. To study the present paper objectives data has been collected from secondary sources i.e., from Books, journals and online publications. The information collected covers the performance of financial risk management. As a final point it can be concluded that the banks should take risk more consciously, willfully, predicts adverse changes and prevaricates accordingly, it becomes a source of competitive advantage, and efficient management of the banking industry.

***Keywords:** Risk Management, Banking Sector, Credit risk, Market risk, Operating Risk, Gab Analysis, Value at Risk (VatR), Financial risk.*

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## **I. INTRODUCTION**

A risk can be defined as an unplanned event with financial consequences resulting in loss or reduced earnings (Vasavada, Kumar, Rao & Pai, 2005). Risk is an obstacle that can generate in the way of achievement of certain objectives. It is because of either internal aspects or external aspects, depending upon the situation type that exists. Risks may be considered as uncertainties resulting in adverse outcome, adverse in relation to planned objective or expectations (Kumar, Chatterjee, Chandrasekhar & Patwardhan 2005). The best way to deal with such a condition; is to take some positive procedures to identify the undesirable outcomes. Likewise, it can be said that managing a risk in advance is far better than waiting for its occurrence. Risk Management is a assess that is used for identifying, analyzing and then responding to a particular risk. This is continuous process in nature and it is a helpful tool in decision making process. According to the Higher Education Funding Council for England (HEFCE), Risk Management is not just used for ensuring the reduction of the probability of bad happenings but it also covers the increase in likeliness of occurring good things. “Prospect Theory” states that a person is more likely to take on the risk than to suffer a sure loss. The banking businesses have a high threat of risk absorb in it. The main role of Banks' is intermediation between those who have resources and those who requires the resources. To manage risk at corporate level, various risks like credit risk, market risk or operational risk have to be converted into one compound appraise. Hence, it is required that measurement of operational risk should be in racing bike with other measurements of credit and market risk. 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.

## **II. TYPES OF RISKS IN BANKING SECTOR**

In the post LPG period, the banking sector has witnessed tremendous competition not only from the domestic banks but from foreign banks. Competition in the banking sector has emerged due to disintermediation and deregulation. The liberalised economic scenario has opened various avenues for increasing revenues of banks. In order to take hold of this opportunity, Indian commercial banks have launched several new and innovated products, introduced facilities like ATMs, Credit Cards, Mobile banking, Internet banking etc. Apart from the traditional banking products, it is seen that Mutual Funds, Insurance etc. are being designed/ upgraded and served

to attract more customers to their fold. In the backdrop of all these developments i.e., deregulation in the Indian economy and product/ technological innovation, risk exposure of banks has also increased considerably. Thus, this has forced banks to focus their attention to risk management (Sharma, 2003). The importance of risk management of banks has been elevated by technological developments, the emergence of new financial instruments, deregulation and heightened capital market volatility (Mishra, 1997).

Risk management has become very significant in growing complexity of banks business and the dynamic operating environment, especially in the financial sector. Risk at the peak level may be visualized as the chance of a banks,, financial health being damaged due to dependent factors. While, health may vary from net interest margin to market value of equity, the factors which can cause the important are also abundant. The types of risks are:

**Financial Risk** -

**Credit Risk**

- Counter Part or Borrower Risk
- Intrinsic or Industry Risk
- Portfolio or Concentration Risk

**Market Risk**

- Interest Rate Risk
- Liquidity Risk
- Currency Forex Risk
- Hedging Risk

**Non Financial Risk-**

- Operational Risk
- Strategic Risk
- Funding Risk
- Political Risk
- Legal Risk

**III. FINANCIAL RISK**

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

**Credit Risk**

Credit Risk is the potential that a bank borrower/counter party fails to meet the obligations on agreed terms. There is a scope for the borrower to evasion from his commitments for some reasons resulting in crystallization of credit risk to the bank. These losses could take the total default, losses from changes in portfolio value, arising from actual or perceived deterioration in credit quality that is short of default. Credit risk is inbuilt to the business of providing funds to the operations linked closely to market risk variables. The ultimate 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

- a) Measurement through credit rating/ scoring,
- b) Quantification through estimate of expected loan losses,
- c) Pricing on a scientific basis and
- d) Controlling through effective Loan Review Mechanism and Portfolio Management.

**Tools for Credit Risk Management.**

The instruments and tools are detailed here

- **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).

- **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.
- **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.
- **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.
- **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.
- **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, and 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.

### Market Risk

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:

- **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.
- **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 (NII) equivalent to the difference between total interest income and total interest expense.
- **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.
- **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.

#### **IV. 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. It may be defined as the risk of loss resulting from inadequate or failed internal process people and systems or because of external events.

**Strategic Risk:** Strategic risk is the risk that arises from the inability to implement appropriate business plans and strategies, decisions with regard to allocation of resources or adaptability to dynamic changes in the business/operating environment. These are a number of other risk factor through which operations risk, credit risk and market risk may manifest. It should be recognised that many of these risk factors are interrelated, one results to other.

#### **V. 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 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:

**Risk Identification:** The risk identification involves

1. The understanding the nature of various kinds of risks.
2. The circumstances which lead a situation to become a risk situation and Causes due to which the risk can arise.

**Risk Quantification:** Risk quantification is an assessment of the degree of the risk which a particular transaction or an activity is exposed to. Though the exact measurement of risk is not possible but the level of risk can be determined with the help of risk rating models.

**Risk Control:** Risk control is the stage where the bank or institutions take steps to control the risk with the help of various tools.

##### ***Tools for Risk Control***

- Diversification of the business
- Insurance and hedging
- Fixation of exposure ceiling
- Transfer the risk to another party at right time

- Securitisation and reconstruction

**Risk Monitoring:** In risk monitoring the bankers have to fix up the parameters on which the transaction is to be tested to be sure that there is no risk to viable existence of the financial unit or investment of the bank.

## VI. TECHNIQUES OF RISK MANAGEMENT

- **GAP Analysis:** Tool used on interest rate risk management 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. (Cumming and Beverly, 2001)
- **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. (Cumming and Beverly, 2001)
- **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.( Jorion, 2001)
- **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 (Crouhy and Robert, 2001)
- **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.
- **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.

- **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.

## VII. CONCLUSIONS

- 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.
- 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.
- The functions of risk management should be actually 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.
- Banks can take risk more deliberately, 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.
- Use of risk management techniques, the 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.

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