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"RISK MANAGEMENT PRACTICES IN INDIAN BANKING SYSTEM"

AUTHORED BY - ADV. RADHIKA DATAR

Abstract:

The purpose of this research article is to study and analyse the risk management practices in Indian Banking sector. This research paper delves into the dynamic landscape of risk management practices within the Indian banking system, aiming to provide a comprehensive understanding of the strategies employed to mitigate financial uncertainties. As India's banking sector continues to evolve in the face of globalization, technological advancements, and economic fluctuations, the need for robust risk management frameworks becomes paramount. Risk refers to 'a condition where there is a possibility of undesirable occurrence of a particular result which is known or best quantifiable and therefore insurable' and Banking risk management is the process of a bank identifying, evaluating, and taking steps to mitigate the chance of something bad happening from its operational or investment decisions. Key focus areas in the present research include credit risk, market risk, operational risk, and liquidity risk, with an emphasis on how these elements interplay within the unique socio-economic context of India. The study examines the how the process of identification and mitigation of the risks in banking and the study further deals with the practices in detail which are adopted by the banks to mitigate the various types of risks separately. Furthermore, the research explores the regulatory landscape governing risk management in the Indian banking sector, examining the role of regulatory bodies such as Reserve Bank of India in shaping and enforcing risk management practices. Present research in its concluding stance highlights the importance of continuous risk monitoring, scenario analysis, and stress testing and explains that these practices not only fortify banks against potential shocks but also enhance their adaptive capabilities in an environment characterized by rapid technological advancements and evolving regulatory landscapes.

Keywords: Risk management practices, Banking, Reserve Bank of India, risk monitoring, scenario analysis, stress testing, credit risk, market risk, operational risk.

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INTRODUCTION:

The Banking sector has a crucial role to play in the development of an economy. It is the key driver of economic growth of the country. India's banking sector has witnessed remarkable growth and transformation over the past few decades. From the liberalization of the economy to the advent of digital banking, the sector has adapted to a myriad of changes. As the financial ecosystem becomes increasingly interconnected and intricate, the risks faced by banks have also grown in complexity. Risk is defined as anything that can create hindrances in the way of achievement of certain objectives. It can be because of either internal factors or external factors, depending upon the type of risk that exists within a particular situation. Exposure to that risk can make a situation more critical. A better way to deal with such a situation; is to take certain proactive measures to identify any kind of risk that can result in undesirable outcomes.

Effective risk management is not merely a regulatory mandate; it is a strategic imperative for the sustained growth and stability of banks. The repercussions of inadequate risk management are not confined to financial losses alone but extend to eroding stakeholder confidence and compromising the integrity of the broader financial system. 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.[1]

CONCEPT OF RISK AND RISK MANAGEMENT IN BANKING:

Risk refers to ‘a condition where there is a possibility of undesirable occurrence of a particular result which is known or best quantifiable and therefore insurable’.[2] A risk can be defined as an unplanned event with financial consequences resulting in loss or reduced earnings. An activity

[1] GUIDANCE NOTE ON MANAGEMENT OF OPERATIONAL RISK by RBI available at https://rbi.org.in/upload/notification/pdfs/66813.pdf
[2] https://testbook.com/banking-awareness/risk-management-in-banking-sector

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which may give profits or result in loss may be called a risky proposition due to uncertainty or unpredictability of the activity of trade in future. In other words, it can be defined as the uncertainty of the outcome. As risk is directly proportionate to return, the more risk a bank takes, it can expect to make more money.

Banks are cornerstone institutions of national and global financial systems. So while they are allowed to have some degree of risk, they are typically afforded much less risk than other industries. This is because if they fail, it slows or halts the creation and exchange of money, which has far-reaching impacts on the rest of the economy. Therefore to avoid wasting or needlessly losing the money they need to stay in business, to avoid disruptions to their operations, to maintain confidence from investors and customers to continue doing business with them and to comply with laws and regulations to avoid paying non-compliance fines; it is necessary for the banks to manage their risks.

Banking risk management is the process of a bank identifying, evaluating, and taking steps to mitigate the chance of something bad happening from its operational or investment decisions. This is especially important in banking, as banks are responsible for creating and managing money for others. Typically, risk teams separate fraud and compliance operations, resulting in separate teams for fraud risk management, responsible for managing risk associated with fraud operations, and compliance risk management, responsible for managing risk associated with compliance operations.[3]

TYPES OF RISKS IN BANKING:

Risk may be defined as 'possibility of loss', which may be financial loss or loss to the image or reputation. Banks like any other commercial organisation also intend to take risk, which is inherent in any business. Higher the risk taken, higher the gain would be. But higher risks may also result into higher losses. However, banks are prudent enough to identify, measure and price risk, and maintain appropriate capital to take care of any eventuality. [4]The major risks in banking business or 'banking risks', as commonly referred, are listed below –

[3] Dr. Krishn A.Goyal, Risk Management in Indian Banks –Some emerging issues. Int. Eco. J. Res., 2010 1(1) 102-109
[4] https://byjusexamprep.com/regulatory-bodies/risk-management-in-indian-banking-sector-role-of-rbi

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1) Credit Risk:

Credit risk is the probable risk of loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Traditionally, it refers to the risk that a lender may not receive the owed principal and interest, which results in an interruption of cash flows and increased costs for collection. There is always scope for the borrower to default from his commitments for one or the other reason resulting in crystallization 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. [5]Default on loans, non-payment of interest, or failure to honor commitments are some of the common examples of credit risk. There are two types of credit risks:

1. **Counterparty risk:** Counterparty risk is the risk that the party with whom a financial institution engages in a financial transaction may default on its obligations. In the context of Indian banking, counterparty risk typically refers to the risk associated with borrowers, other financial institutions, or entities with which a bank has entered into financial transactions.
2. **Country Risk:** Country risk, also known as sovereign risk, is the risk associated with economic, political, and social conditions in a specific country. Indian banks with international branches or subsidiaries face country risk in the jurisdictions where they operate. Economic downturns, political instability, or changes in regulatory environments in these countries can impact the financial performance of the banks. Currency fluctuations can pose a significant country risk for Indian banks engaged in cross-border transactions. Changes in exchange rates may affect the value of foreign assets and liabilities, impacting the bank's financial position.

[5] Risks and Risk Management in the Banking Sector https://symbiosiscollege.edu.in/assets/pdf/e-learning/tybcom/TYBCom

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2) 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. There are following types of market risks:

1. **Interest rate risk:** Interest rate risk in banking refers to the potential impact of changes in interest rates on a bank's financial performance and the value of its interest-sensitive assets and liabilities. Indian banks generate a significant portion of their income from the spread between interest earned on assets (loans and investments) and interest paid on liabilities (deposits and borrowings). Fluctuations in interest rates can affect this spread, impacting the bank's net interest income.[6]
2. **Equity risk:** Equity risk refers to the exposure of banks to fluctuations in the value of their equity holdings, including investments in listed companies and other financial instruments linked to equity markets. Banks may hold equity investments as part of their investment portfolios. Changes in stock prices can affect the market value of these investments, impacting the bank's overall financial position.
3. **Currency risk:** Currency risk refers to the potential impact of exchange rate movements on a bank's financial performance, especially when dealing with foreign currency-denominated assets, liabilities, and transactions. Banks engaging in foreign currency loans or borrowings are exposed to currency risk. Changes in exchange rates can impact the cost of servicing these loans or the value of foreign currency borrowings.[7]
4. **Commodity risk:** Commodity risk refers to the exposure of banks to the price fluctuations of commodities, including both physical commodities and financial instruments linked to commodity markets. Banks may have exposure to commodities through investments in commodity-linked securities, such as commodity derivatives or commodity-focused funds. Banks engaged in financing commodity-related businesses or trade may be exposed to commodity price risk. Price changes can impact the financial health of these businesses and, consequently, the repayment capacity of borrowers.

[6] Management of Risk in Indian Banking Industry Dr. Rashmi Soni Associate Professor, K j Somaiya Institute of management Studies and Research, Mumbai India
[7] https://scholarsmepub.com/wp-content/uploads/2017/07/SJBMS-26663-671.pdf

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3) Operational Risk:

Always banks live with the risks arising out of human error, financial fraud and natural disasters. 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. 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. [8]Types of operational risks are as follows:

1. **Human risk:** Human risk refers to the potential for financial loss or operational disruption due to the actions, decisions, or behaviour of individuals within the organization. Human errors, such as data entry mistakes, processing errors, or transactional mistakes, can lead to operational disruptions and financial losses. Non-compliance with regulations and ethical standards, as well as inappropriate conduct by employees, can expose the bank to regulatory penalties, legal actions, and reputational damage. Deliberate actions by employees, such as fraud or theft, pose a risk to the bank's financial assets and reputation. Insufficient training and skill gaps among employees may result in suboptimal performance, leading to operational inefficiencies and errors.
2. **IT system risk:** IT system risk refers to the potential for financial loss or operational disruption arising from weaknesses, failures, or vulnerabilities in a bank's information technology systems. The risk of unauthorized access, data breaches, ransom ware attacks, and other cyber threats that can compromise the confidentiality, integrity, and availability of IT systems and data. The risk of disruptions in IT systems, including hardware failures, software glitches, or network outages, leading to operational downtime and potential financial losses.

[8] http://www.igidr.ac.in/conf/money/mfc-13/OPERATIONAL%20RISK%20MANAGEMENT%20IN%20INDIAN%20BANKS.pdf

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3. **Process risk:** Process risk refers to the potential for financial loss or operational disruptions resulting from weaknesses, inefficiencies, or failures in the processes and procedures followed by a bank. It involves the identification, assessment, and management of risks associated with the bank's operational workflows. Ineffective or inefficient processes may lead to delays, errors, and increased operational costs. Weaknesses in internal controls and risk management processes may expose the bank to fraud, compliance violations, and other operational failures.[9]

4) 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. [10]Liquidity risk consists of Funding Risk, Time Risk & Call Risk. Types of operational risks are as follows:

1. **Funding Risk:** Funding Liquidity Risk is defined as the inability to obtain funds to meet cash flow obligations. For banks, funding liquidity risk is crucial. This arises from the need to replace net outflows due to unanticipated withdrawal/ non-renewal of deposits (wholesale and retail).
2. **Time Risk:** Time risk arises from the need to compensate for non-receipt of expected inflows of funds i.e., performing assets turning into non-performing assets.
3. **Call Risk:** Call risk arises due to the crystallisation of contingent liabilities. It may also arise when a bank may not be able to undertake profitable business opportunities when it arises.

5) Other Risks:

Apart from the above-mentioned risks, following are the other risks confronted by Banks in course of their business operations –

1. **Strategic Risk:** Strategic Risk is the risk arising from adverse business decisions, improper implementation of decisions or lack of responsiveness to industry changes.

[9] Risk Management Systems in Banks RBI guidelines https://rbidocs.rbi.org.in/rdocs/notification/PDFs/9492.pdf
[10] R.S. Raghavan, "Risk Management in Banks" Chartered Accountant, February, 2003

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2. **Reputation Risk:** Reputation Risk is the risk arising from negative public opinion. This risk may expose the institution to litigation, financial loss or decline in customer base.
3. **Systematic Risk:** It is a risk inherent to the entire market segment and is not sector specific it is also known as undiversifiable risk.
4. **Unsystematic Risk:** It is kind of specific risk which comes with the industry you invest in also referred to diversifiable risk.[11]

RISK MANAGEMENT PRACTICES IN INDIAN BANKING SECTOR:

Banks are cornerstone institutions of national and global financial systems. So while they are allowed to have some degree of risk, they are typically afforded much less risk than other industries. This is because if they fail, it slows or halts the creation and exchange of money, which has far-reaching impacts on the rest of the economy. Therefore to avoid wasting or needlessly losing the money they need to stay in business, to avoid disruptions to their operations, to maintain confidence from investors and customers to continue doing business with them and to comply with laws and regulations to avoid paying non-compliance fines; it is necessary for the banks to manage their risks. Banking risk management is the process of a bank identifying, evaluating, and taking steps to mitigate the chance of something bad happening from its operational or investment decisions. This is especially important in banking, as banks are responsible for creating and managing money for others.[12]

The risk management process in banking typically involves six components:

1. **Identification:** Defining the nature of risks, including where they originate from and why they pose a threat to the bank.
2. **Assessment and Analysis:** Evaluating how likely a risk will pose a threat to the bank, and how grave that threat will likely be. This helps a bank prioritize which risks deserve the most attention.
3. **Mitigation:** Designing and implementing bank policies and processes that limit the chance that risks will become threats, and that minimize the damage threats may cause.
4. **Monitoring:** Gathering data on threat prevention and incident response to determine how

[11] https://byjusexamprep.com/regulatory-bodies/risk-management-in-indian-banking-sector-role-of-rbi
[12] Dr. Krishn A.Goyal, Risk Management in Indian Banks –Some emerging issues. Int. Eco. J. Res., 2010 1(1) 102-109

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well a bank risk management strategy is working. This also involves researching emerging risk trends to determine if a bank's risk management framework needs (or will need) updating.

5. **Cooperation:** Establishing relationships between risks and mitigation strategies across different areas of the bank's operations to create a more centralized and coordinated threat response system.[13]
6. **Reporting:** Documenting and reviewing information related to the bank's risk management efforts to gauge their effectiveness. This is also used to track how the bank's overall risk profile changes over time.

These components need to be carried out together and repeated regularly in order to give banks as much protection against risk as possible.

Risk Management Committee:

The primary responsibility of understanding the risks run by the bank and ensuring that the risks are appropriately managed should clearly be vested with the Board of Directors. The Board should set risk limits by assessing the bank's risk and risk bearing capacity. At organisational level, overall risk management should be assigned to an independent Risk Management Committee or Executive Committee of the top Executives that reports directly to the Board of Directors. The purpose of this top level committee is to empower one group with full responsibility of evaluating overall risks faced by the bank and determining the level of risks which will be in the best interest of the bank. At the same time, the Committee should hold the line management more accountable for the risks under their control, and the performance of the bank in that area.

The functions of Risk Management Committee should essentially be to identify, monitor and measure the risk profile of the bank. The Committee should also develop policies and procedures, verify the models that are used for pricing complex products, review the risk models as development takes place in the markets and also identify new risks. The risk policies should clearly spell out the quantitative prudential limits on various segments of banks' operations. Internationally, the trend is towards assigning risk limits in terms of portfolio standards or Credit at Risk (credit risk) and Earnings at Risk and Value at Risk (market risk). The Committee should

[13] https://www.jetir.org/papers/JETIR1809441.pdf

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design stress scenarios to measure the impact of unusual market conditions and monitor variance between the actual volatility of portfolio value and that predicted by the risk measures. The Committee should also monitor compliance of various risk parameters by operating Departments. Internationally, a committee approach to risk management is being adopted. While the Asset - Liability Management Committee (ALCO) deal with different types of market risk, the Credit Policy Committee (CPC) oversees the credit /counterparty risk and country risk. Thus, market and credit risks are managed in a parallel two-track approach in banks. Banks could also set-up a single Committee for integrated management of credit and market risks. Generally, the policies and procedures for market risk are articulated in the ALM policies and credit risk is addressed in Loan Policies and Procedures. [14]

Risk management practices followed by Indian banks are as follows:

A. Credit Risk Management: [15]

1. **Exposure Limit:** exposure limit refers to the maximum amount of financial exposure or risk that a bank can have to a particular borrower, group of connected borrowers, or a specific sector. Exposure limits are set by regulatory authorities, such as the Reserve Bank of India (RBI), to ensure that banks operate prudently and manage their risk exposure within acceptable levels. [16]These limits are established to prevent excessive concentration of risk and to enhance the overall stability of the banking system.
2. **Loan Review Process:** Banks have established multi-level loan review process and constitution wise delegation of authority. Superior delegated powers and preferential time schedule for loan review/renewal are bestowed over to the better-rated customers. Threshold for fresh exposures and periodicity for renewal are formulated. Banks employed „Credit Audit" that covered review of sanction process, compliance and risk rating. It also tapped the warning signals and recommended corrective action with the objective of improving credit quality.[17]
3. **Internal risk Rating:** The Internal Risk Rating Mechanism (IRRM) refers to an internal system or framework implemented by banks to assess and assign risk ratings to various assets

[14] CHARTER OF RISK MANAGEMENT COMMITTEE OF THE BOARD, Risk Management Committee Charter-V 3.0-20-Jul-2023 https://www.janabank.com/images/PDF/Risk-Management-Committee.pdf
[15] Reddy, C. Sivarami, (2003). A Markov Model for the Term Structure of Credit Risk Spreads. Review of Financial Studies, 10(2), 481-523.
[16]Official exposure norms by RBI https://m.rbi.org.in/scripts/BS_ViewMasterCirculars.aspx?Id=3118&Mode=0#:~:text=2.1.,also%20refer%20to%20para%202.3.
[17] Management of Risk in Indian Banking Industry Dr. Rashmi Soni Associate Professor, K j Somaiya Institute of management Studies and Research, Mumbai India

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within their loan portfolio. This mechanism helps banks evaluate the creditworthiness of borrowers, the likelihood of default, and the overall risk associated with different loans and exposures. Banks develop risk rating models that incorporate various quantitative and qualitative factors to assess the credit risk of borrowers and exposures.

4. **Risk based pricing:** Banks are found to price the loans based on the risks perceived to be associated with the borrower. Loans are typically categorized into different risk grades or classes based on their credit risk profiles. Common risk categories may include "Standard," "Substandard," "Doubtful," and "Loss," each associated with specific criteria and characteristics. High-risk category borrowers are being priced high as compared to the low-risk category borrowers. Capital is allocated to absorb the unexpected losses which are projected based on the historical data on default losses. Such banks are known to follow RAROC (Risk Adjusted Return on Capital) framework.
5. **Portfolio Management:** Appropriate credit risk rating/pricing can enable better portfolio management. Banks identifies patterns in the migration of borrowers based on the change in their credit quality. The data provides them with insights to identify the quality of their loan books and take corrective actions if necessary. Additionally, banks can also create credit ceilings based on borrower ratings to limit credit exposure, understand the rating-wise distribution of borrowers in various industries, and limit exposure to segments based on the pros, cons, and current financial state. In case the industry is going through a period of stress, banks can increase the quality standards required to borrow from them, design and undertake stress tests to identify weaknesses in their credit administration, policies, and tools to improve their credit risk management process.

B. Market Risk Management:

1. **Maturity Gap Analysis:** It is a risk management technique which focuses on the potential variability of net-interest income (NII) over specific period intervals, thus used to mitigate interest rate risk. Bank prepares schedules that categorize the assets, liabilities, and off-balance sheet positions that are highly sensitive to the interest rate fluctuations, into time bands depending on their maturity or time left for their next re-pricing. These schedules generate indicators of both earnings and economic value with respect to the interest-rate sensitivity. The maturity gap reflects the differences between the volume of rate sensitive

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asset and the volume of rate sensitive liability. Thus banks can project the impact on their net-income owing to the fluctuations in the interest rate.[18]

2. **Duration Gap Analysis:** Banks manage their net interest income (NII) by accounting for all cash flows. Duration is the weighted measure of present values of all cash flows and indicates the average time required to recover the investment. Duration gap indicates the differences in the timing of asset and liability cash flows. So when the interest rates rise, the market value of assets relative to the market value of liabilities decreases, resulting in fall of the market value of equities and expected net-interest income and vice versa.[19]
3. **Value at Risk (VaR):** The Value at Risk (VaR) indicates the potential loss or gain the bank would make over a particular time horizon with a certain probability. Value at Risk basically quantifies the financial risk inherent in banks‟ portfolios into a numeric value.
4. **Risk Adjusted Rate of Return on Capital (RAROC) Framework:** RAROC framework measures all the relevant risks consistently and aids banks‟ for making optimal risk/return trade-off. This framework is used for allocating capital for different products and businesses depending upon the various risks that they face. This framework determines the total net return on capital of a firm.[20]

C. Operational Risk Management:

1. **Scenario Analysis:** Scenario analysis helps in identifying potential problems by way of forward thinking and increases preparedness to tackle them. Outcomes are envisaged for different scenarios and so are the paths that lead to them, thus giving banks a better scope to improvise future plans. Extreme scenarios are used for stress testing of these future plans.
2. **Sensitivity Analysis:** Banks use sensitivity analysis to find the effect of change in the value of a parameter on their operations. Sensitivity analysis shows how much the input can be changed without significant change in the output. Thus banks use this approach for achieving operational efficiency thereby handling the operational risks.[21]
3. **Asset Liability Management:** In the Indian economy, mostly the interest rates have been deregulated; G-Secs are auctioned by RBI and the banks enjoy the liberty to decide the interest rates on deposits and advances. Hence the Asset Liability Management function is not only for risk management but also employed by the banks for enhancing their net worth through

[18] R.S. Raghavan, “Risk Management in Banks” Chartered Accountant, February, 2003
[19] https://symbiosiscollege.edu.in/assets/pdf/e-learning/tybcom/TYBCom
[20] Core Principles of Effective Banking Supervision, Reserve Bank of India, Department of Banking Supervision Central Office, October 1999
[21] https://scholarsmepub.com/wp-content/uploads/2017/07/SJBMS-26663-671.pdf

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opportunistic positioning of their balance sheet. The higher the degree of leverage of the bank, the more critical is the Asset Liability Management function within the organization. Securitization is adopted by the banks for reducing banks‟ risk exposures by securitizing the banks‟ assets and loans. Banks strategically bundle a group of income-earning assets and raise funds by selling securities against these in the open market. Thus the banks manage to transform illiquid assets into tradable asset backed securities. As the returns to be paid to these securities‟ holders depend on the cash flows generated by the group of the underlying assets, the risk of repayment borne by the bank initially is now transferred to the originator of these pooled assets.[22]

4. **Measurement:** Measuring operational risk requires both estimating the probability of an operational loss event and the potential size of the loss. It relies on risk factor that provides some indication of the likelihood of an operational loss event occurring. The process of operational risk assessment needs to address the likelihood (or frequency) of a particular operational risk occurring, the magnitude (or severity) of the effect of the operational risk on business objectives and the options available to manage and initiate actions to reduce/ mitigate operational risk. The set of risk factors that measure risk in each business unit such as audit ratings, operational data such as volume, turnover and complexity and data on quality of operations such as error rate or measure of business risks such as revenue volatility, could be related to historical loss experience. Banks can also use different analytical or judgmental techniques to arrive at an overall operational risk level. Some of the international banks have already developed operational risk rating matrix, similar to bond credit rating. The operational risk assessment should be bank-wide basis and it should be reviewed at regular intervals. Banks, over a period, should develop internal systems to evaluate the risk profile and assign economic capital within the RAROC framework.

   Indian banks have so far not evolved any scientific methods for quantifying operational risk. In the absence any sophisticated models, banks could evolve simple benchmark based on an aggregate measure of business activity such as gross revenue, fee income, operating costs, managed assets or total assets adjusted for off-balance sheet exposures or a combination of these variables.[23]

[22] Management of Risk in Indian Banking Industry Dr. Rashmi Soni Associate Professor, K j Somaiya Institute of management Studies and Research, Mumbai India
[23] R.S. Raghavan, “Risk Management in Banks” Chartered Accountant, February, 2003

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5. **Risk Monitoring:** The operational risk monitoring system focuses, inter alia, on operational performance measures such as volume, turnover, settlement facts, delays and errors. It could also be incumbent to monitor operational loss directly with an analysis of each occurrence and description of the nature and causes of the loss.
6. **Control of Operational Risk:** Internal controls and the internal audit are used as the primary means to mitigate operational risk. Banks could also explore setting up operational risk limits, based on the measures of operational risk. The contingent processing capabilities could also be used as a means to limit the adverse impacts of operational risk. Insurance is also an important mitigator of some forms of operational risk. Risk education for familiarising the complex operations at all levels of staff can also reduce operational risk. [24]
7. **Internal Control:** One of the major tools for managing operational risk is the well-established internal control system, which includes segregation of duties, clear management reporting lines and adequate operating procedures. Most of the operational risk events are associated with weak links in internal control systems or laxity in complying with the existing internal control procedures. The ideal method of identifying problem spots is the technique of self-assessment of internal control environment. The self-assessment could be used to evaluate operational risk along with internal/external audit reports/ratings or RBI inspection findings. Banks should endeavour for detection of operational problem spots rather than their being pointed out by supervisors/internal or external auditors. Along with activating internal audit systems, the Audit Committees should play greater role to ensure independent financial and internal control functions. The Basle Committee on Banking Supervision proposes to develop an explicit capital charge for operational risk.
8. **Training and Awareness Programs:** It includes Conducting training programs and awareness campaigns to educate employees on operational risk management best practices and Building a skilled workforce capable of identifying, assessing, and managing operational risks.[25]

D. Liquidity Risk Management:

1. The liquidity profile of banks depends on the market conditions, which influence the cash flow behaviour. Thus, banks should evaluate liquidity profile under different conditions, viz. normal situation, bank specific crisis and market crisis scenario. The banks should establish

[24] . Fujii, K. 2005. Building Scenarios, Operational Risk: Practical Approaches to Implementation.
[25] BCBS. 2003a. Sound Practices for the Management and Supervision of Operational Risk, Bank for International Settlements.

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benchmark for normal situation, cash flow profile of on / off balance sheet items and manages net funding requirements.

2. Estimating liquidity under bank specific crisis should provide a worst-case benchmark. It should be assumed that the purchased funds could not be easily rolled over; some of the core deposits could be prematurely closed; a substantial share of assets have turned into nonperforming and thus become totally illiquid. These developments would lead to rating downgrades and high cost of liquidity. The banks should evolve contingency plans to overcome such situations.
3. The market crisis scenario analyses cases of extreme tightening of liquidity conditions arising out of monetary policy stance of Reserve Bank, general perception about risk profile of the banking system, severe market disruptions, failure of one or more of major players in the market, financial crisis, contagion, etc. Under this scenario, the rollover of high value customer deposits and purchased funds could extremely be difficult besides flight of volatile deposits / liabilities. The banks could also sell their investment with huge discounts, entailing severe capital loss.

Role of RBI in Risk Management:

The Reserve Bank of India has been using CAMELS rating to evaluate the financial soundness of the Banks. The CAMELS Model consists of six components namely Capital Adequacy, Asset Quality, Management, Earnings Quality, Liquidity and Sensitivity to Market risk.

In 1988, The Basel Committee on Banking Supervision of the Bank for International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings and liquidity (CAMEL) as criteria for assessing a Financial Institution. [26]The sixth component, sensitivity to market risk (S) was added to CAMEL in 1997. The Central Banks in some of the countries like Nepal, Kenya use CAEL instead of CAMELS. CAMELS framework is a common method for evaluating the soundness of Financial Institutions.

In India, the focus of the statutory regulation of commercial banks by RBI until the early 1990s was mainly on licensing, administration of minimum capital requirements, pricing of services including administration of interest rates on deposits as well as credit, reserves and liquid asset requirements. In these circumstances, the supervision had to focus essentially on solvency issues.

[26] BASEL COMMITTEE ON BANKING SUPERVISION WORKING PAPERS, No. 4 – December 2000, by Ranjana Sahajwala Paul Van den Bergh, https://www.bis.org/publ/bcbs_wp04.pdf

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After the evolution of the BIS prudential norms in 1988, the RBI took a series of measures to realign its supervisory and regulatory standards and bring it at par with international best practices. At the same time, it also took care to keep in view the socio-economic conditions of the country, the business practices, payment systems prevalent in the country and the predominantly agrarian nature of the economy, and ensured that the prudential norms were applied over the period and across different segments of the financial sector in a phased manner.[27] Finally, it was in the year 1999 that RBI recognised the need of an appropriate risk management and issued guidelines to banks regarding assets liability management, management of credit, market and operational risks. The entire supervisory mechanism has been realigned since 1994 under the directions of a newly constituted Board for Financial Supervision (BFS), which functions under the aegis of the RBI, to suit the demanding needs of a strong and stable financial system. The supervisory jurisdiction of the BFS now extends to the entire financial system barring the capital market institutions and the insurance sector. The periodical on-site inspections, and also the targeted appraisals by the Reserve Bank, are now supplemented by off-site surveillance which particularly focuses on the risk profile of the supervised institution. A process of rating of banks on the basis of CAMELS in respect of Indian banks and CACS (Capital, Asset Quality, Compliance and Systems & Control) in respect of foreign banks has been put in place from 1999. Since then, the RBI has moved towards more stringent capital adequacy norms and adopted the CAMEL (Capital adequacy, Asset quality, Management, Earnings, Liquidity) based rating system for evaluating the soundness of Indian banks. The Reserve Bank's regulatory and supervisory responsibility has been widened to include financial institutions and non-banking financial companies. As a result, considering the changes in the Banking industry, the thrust lies upon Risk - Based Supervision (RBS). The main supervisory issues addressed by Board for Financial Supervision (BFS) relate to on-site and off-site supervision of banks.[28]

The on-site supervision system for banks is on an annual cycle and is based on the 'CAMEL' model. It focuses on core assessments in accordance with the statutory mandate, i.e., solvency, liquidity, operational soundness and management prudence. Thus, banks are rated on this basis. Moreover, in view of the recent trends towards financial integration, competition, globalisation, it has become necessary for the BFS to supplement on-site supervision with off-site surveillance so as to capture 'early warning signals' from off-site monitoring that would be helpful to avert

[27] ROLE OF RBI IN RISK MANAGEMENT IN BANKS An International Journal of Management A Refereed Research Journal Vol 10 / No 2 / Jan-Jun 2021 ISSN: 2278-1218 https://cosmosmgmtjournal.in/wp-content/uploads/2021/08/6-CM-JJ21-Dr-Sandeep-Singhal.pdf
[28] https://byjusexamprep.com/regulatory-bodies/risk-management-in-indian-banking-sector-role-of-rbi

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the likes of East Asian financial crisis. The off-site monitoring system consists of capital adequacy, asset quality, large credit and concentration, connected lending, earnings and risk exposures viz., currency, liquidity and interest rate risks. Apart from this, the fundamental and technical analysis of stock of banks in the secondary market will serve as a supplementary indicator of financial performance of banks.

Thus, on the basis of RBS, a risk profile of individual Bank will be prepared. A high-risk sensitive bank will be subjected to more intensive supervision by shorter periodicity with greater use of supervisory tools aimed on structural meetings, additional off site surveillance, regular onsite inspection etc. This will be undertaken in order to ensure the stability of the Indian Financial System.[29]

The Reserve Bank of India (RBI) have issued **various guidelines** and directives on risk management to ensure the safety and soundness of the banking and financial system in India. These guidelines cover different aspects of risk, including credit risk, market risk, operational risk, liquidity risk, and more. The Reserve Bank of India (RBI) has also implemented the **Basel III framework**, which includes guidelines on capital adequacy requirements, risk-weighted assets, and common equity tier 1 (CET1) capital ratios to enhance the resilience of banks.[30]

CONCLUSION:

In conclusion, this research article delves into the intricate landscape of risk management practices within the Indian banking sector, highlighting the pivotal role they play in ensuring the resilience and sustainability of financial institutions. The comprehensive analysis presented underscores the multifaceted nature of risks faced by banks, ranging from credit and market risks to operational and technological challenges.

The study underscores the proactive approach taken by Indian banks in aligning with global best practices and regulatory guidelines. Robust risk governance frameworks, coupled with a strong risk-aware culture, form the backbone of effective risk management strategies. Notably, the Reserve Bank of India (RBI) emerges as a central figure in shaping the risk management landscape, with its regulatory oversight and commitment to maintaining the stability of the

[29] https://symbiosiscollege.edu.in/assets/pdf/e-learning/tybcom/TYBCom
[30] Basel Committee on Banking Supervision. 2004. International Convergence of Capital Measurement and Capital Standards- A Revised Framework. (June).

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financial system. As the Indian banking sector navigates through dynamic economic conditions, the study highlights the importance of continuous risk monitoring, scenario analysis, and stress testing. These practices not only fortify banks against potential shocks but also enhance their adaptive capabilities in an environment characterized by rapid technological advancements and evolving regulatory landscapes.

It is evident that risk management is not merely a regulatory obligation but a strategic imperative for banks seeking sustained growth and the trust of stakeholders. As the banking landscape continues to evolve, the lessons drawn from this research underscore the need for an agile and forward-thinking approach to risk management. The interplay of global economic dynamics, technological disruptions, and regulatory advancements necessitates a continuous commitment to innovation, resilience, and a proactive response to emerging risks. In navigating the complex terrain of risk management practices in the Indian banking sector, this research aims to serve as a foundation for future discussions, policy enhancements, and strategic initiatives aimed at ensuring the enduring stability of India's financial ecosystem.