ADVANCED CREDIT RISK ANALYSIS AND MANAGEMENT

Salma Syeda
Venkatesh Ashokababu

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CHAPTER 1

DEVELOPMENT OF CREDIT BOOM INCREASED VOLUME OF CREDIT RISK

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ABSTRACT:

The development of a credit boom, characterized by an increased volume of credit and lending activities, has significant implications for credit risk in the financial system. This paper provides an overview of the relationship between credit booms and credit risk, highlighting the causes, consequences, and challenges associated with the expansion of credit. A credit boom refers to a period of rapid credit expansion driven by factors such as low interest rates, relaxed lending standards, and excessive risk-taking. During a credit boom, financial institutions extend credit to borrowers more liberally, leading to increased borrowing and lending activities across various sectors of the economy. While credit booms can stimulate economic growth and investment, they also pose risks, particularly in terms of credit quality and systemic stability. The increased volume of credit during a credit boom raises the exposure to credit risk, which refers to the likelihood of borrowers defaulting on their loan obligations. As lending standards may become more relaxed, there is a higher probability of loans being extended to borrowers with weaker credit profiles or inadequate repayment capacity. This can lead to a deterioration in the overall quality of loan portfolios, increasing the likelihood of loan defaults and credit losses for financial institutions. The consequences of a credit boom and the subsequent rise in credit risk can be far-reaching. Financial institutions may experience increased loan delinquencies, higher provisioning requirements, and a decline in their financial health. This can have negative implications for their profitability, liquidity, and capital adequacy. Moreover, a widespread increase in credit risk can also impact the broader economy, as it can lead to a contraction in lending, reduced investment, and a slowdown in economic activity.

KEYWORDS:

Business, Credit Risk, Corporate Governance, Financial Crisis, Mitigation,Operational Risk.

INTRODUCTION

One of the key factors contributing to the crisis was the multiple credit creation in the economy as a result of a long period of low interest rates, which encouraged people to borrow more. Other significant factors included an increase in foreign capital flow, which was partly used to pay for current account deficits, the introduction of mortgage-related financial instruments with the potential to create additional credit, and encouragement of a "shadow banking" system that served as a parallel credit provider to the traditional banking system. Financial organizations and regulators have tough obstacles when trying to manage credit risk amid a lending boom. It requires efficient risk management procedures, such as strict underwriting guidelines, consistent loan monitoring, and stress testing. Financial institutions must thoroughly evaluate the creditworthiness of borrowers, keep sufficient loan loss reserves, and take proactive steps to

reduce prospective credit losses. To reduce systemic risks brought on by credit booms, regulators are essential in guaranteeing responsible lending practices, establishing reasonable capital requirements, and carrying out supervisory control[1]–[3].

Risk of Credit Concentration and Credit Deployment

Because excess capacity in newly created assets causes a greater decline in asset values and the lack of additional income from credit used for consumption reduces the ability to service debt, credit concentration and unproductive use of credit have a greater potential to increase the likelihood of default. The massive quantity of credit that was created in the American economy between 2000 and 2006 was mostly used to finance residential real estate and consumer spending. The household debt, which included mortgage debt and consumer credit, increased from 90 percent of disposable income in 2000 to 127 percent by 2008. At the same time, the savings rate, which was around 8 percent of disposable income in 1990, fell to 2 percent during 2000 and then to almost zero percent in 2005. At the end of 2008, the mortgage debt had grown from less than US$7 trillion in 2003 to US$10.5 trillion. In addition, a significant percentage of the money earned by home sales at a time when home prices were growing and the home equity gained via refinancing properties were used to purchase new homes. The borrowers were overextended by their mortgage payments as a consequence, and they lacked a safety net to repay the debts even temporarily in the case of a job loss or other stressful circumstances. Due to the large proportion of mortgage loans on the balance sheets of financial sector players, this kind of scenario would be very problematic for mortgage lenders and may even spark a systemic catastrophe. Banks must analyze people's income, savings, and debt profiles and use the debt-income pattern when developing business strategies and making loan decisions in order to account for the additional risk brought on by credit concentration, particularly in the delicate real estate sector where asset prices are unstable.

Credit Risk Increased Due to Lax Lending Standards

The most important element to safeguard asset quality and reduce the likelihood of credit defaults is the loan assessment standard. The three main risk factors that affect credit risk are the amount of down payment and collateral, the sufficiency of the borrower's ability to repay, and the required paperwork to safeguard the bank's rights in the case of failure. The mortgage loan appraisal criteria drastically declined during the credit boom from the late 1990s to the middle of the 2000s. The "ability to repay" guiding concept was not followed, the required down payment for mortgage loans was either drastically decreased or not insisted upon, and the loan paperwork was either incorrect, lacking, or even nonexistent. For three main reasons, the loan appraisal's quality worsened. First, there were a lot of mortgage lenders. Large investment banks, U.S. government-sponsored financial institutions, as well as a sizeable number of private mortgage companies and financial firms, in addition to traditional commercial banks—some of which significantly increased in size after the Gramm-Leach-Bliley Act's passage in 1999—were participating in and competing in the mortgage finance market. Institutions reduced their business rule requirements in their haste to increase market share, oblivious to concealed risks.

Second, since they planned to sell their assets via the securitization process rather than holding onto them on their balance sheets, the lending institutions may have considered the risk exposure from mortgage funding to be temporary. Global investors' massive demand for mortgage-backed securities gave lenders an easy way to issue mortgage loans to customers without adhering to proper loan approval rules in order to earn a rapid profit. To service a long-term mortgage loan,

borrowers were often excluded from providing verification of their source of income, and lenders approved loans based on credit ratings provided only borrowers could show that they had some balance in a bank account. Many lenders used automated underwriting software to process loan applications quickly, weed out the riskiest candidates, and select the remaining candidates—many of whom would not be eligible for loans under conventional appraisal standards—thus speeding up the loan approval process and lowering handling costs to close deals. Because banks and other mortgage financiers could easily access short-term funds in the money market and buy a large number of mortgage loans without carefully examining their quality with the intention of selling them off through the securitization process, the financial market environment also helped to some extent encourage reckless lending. A credit boom and low borrowing costs are conducive to the eroding of lending standards, and ignoring lending rules might result in insolvency or bankruptcy. In times of aggressive credit expansion and fierce market rivalry, banks must raise the bar for loan evaluation criteria and conduct meticulous due diligence before sanctioning loans.

Unfair Lending Practices' Increasing Default Risk

Mortgage originators, mostly brokers, used dubious lending strategies to persuade individuals to take loans to purchase houses before to the start of the U.S. financial crisis. According to the U.S. FCIC Report, lenders often recorded high-risk mortgage loans even when they knew the borrowers lacked the resources or the will to pay back the debt. The order of the payments that the borrowers would have to pay back over time if they kept the mortgage was often not disclosed to them by mortgage brokers. Even though many of them would be eligible for less costly prime loans, the brokers persuaded customers to accept costlier loans in return for greater fees and yield spread premium from mortgage lenders. The loan structure that would increase future payback installments owing to the higher interest cost ruling on interest reset dates was often not understood by the borrowers. In addition, mortgage brokers often exerted pressure on asset value evaluators to exaggerate house prices or even ignore actual flaws or damages.

Ingenious credit products with hidden higher future costs were developed by mortgage lenders to entice consumers to purchase homes. When home values were rising and borrowing costs were low, consumers felt comfortable taking out mortgage loans because they knew they could refinance the debt later and use the equity in their homes as repayment. Mortgage loans were created by lenders with modest initial repayment installments. The adjusrate mortgage, which provided two payment options—"pay interest only" during the initial years and "pay as you like" where the monthly payment could be lower than the interest amount due and the unpaid interest is added to the principal, leaving the borrowers to owe more than the original loan amount—was the most well-liked of the innovative credit products. The Inquiry Commission noted that "a mortgage broker functioned as the first point of contact for many mortgages. The unfair lending tactics used by lenders eventually led to a wave of loan repayment failures and aggravated the financial crisis. These independent brokers, having access to a range of lenders, worked with applicants to finish the application process. Banks should bear in mind that, as long as they maintain openness in their operations, prospective borrowers who evaluate their ability to repay a loan and exercise their own discretion to accept it will indirectly contribute to lower the rate of defaults. Banks must adequately explain the credit products they provide and the conditions of approval to loan applicants so they can determine their ability to pay back the loan and exercise restraint, therefore reducing the rate of credit defaults[4].

Subprime Lending's Increasing Hidden Credit Risk Volume

Subprime loans are given to borrowers with bad credit histories, such as those who have fallen behind on payments for previous debt and whose credit scores indicate a greater degree of risk. Subprime loans have a substantially higher interest rate than prime loans since they are more likely to default than prime loans. Though there might be exceptions, it is incorrect to assume that subprime loans come from dishonest lending practices. To increase the credit accessibility of low- and middle-income borrowers who need loans to purchase their houses, subprime loans were promoted inside the American financial system. Large-scale defaults on mortgage loans, particularly subprime loans, were caused by significant increases in monthly repayment installments brought on by rising interest rates and the decline in home values beginning in 2006, which made it challenging for homeowners to refinance their mortgages to extract home equity. These loans were often more prone to default because of the unscrupulous techniques used by mortgage financiers. The majority of subprime loans were taken at adjus rates, which reset after two to three years at rates higher than the initial rates. Frequently, these loans also had an interest-only payment option and a prepayment penalty clause to prevent borrowers from renegotiating their loans with other institutions at lower rates.

A significant liquidity crisis inside the U.S. financial system, which was the catalyst for the financial crisis, was brought on by the buildup of nonperforming mortgage loans, especially subprime loans, on the balance sheets of big banking institutions. When home prices were rising and lenders with foreclosure rights were comfortable working with consumers whose bad credit records had previously stopped them from purchasing homes, subprime loans had a tremendous surge from 2004 to 2006. The role of large commercial and investment banks, thrift institutions, and independent mortgage lenders in the origination and securitization of subprime mortgage loans has significantly expanded. These institutions expanded their mortgage financing operations by opening more locations, buying existing mortgage lending businesses, or giving bigger credit lines to additional mortgage originators. Through participation in the whole mortgage finance chain, including mortgage origination, mortgage financing, gathering and securitizing subprime loans, and selling securities to investors, including international investors, several of them enlarged the scope of their activities. Banks must finance the needy and the destitute because they are obligated to do so by society and are participants in economic prosperity. Due to the drop in income, subprime loans and loans to the poorer segments of society in general degrade in quality more quickly during economic downturns. Through careful borrower selection and portfolio diversification, banks may lessen the effects of loans to the poorer segments of society and prevent loan losses from occurring simultaneously from all industries during a downturn in the economy. In order to take swift corrective action and increase loan loss reserves, they must also increase monitoring and control over nonprime loans and reduce dividend on equity dividends.

OTC Derivatives Risk Underestimation

The securitization market had amazing development in the 1990s and into the beginning of 2006, when investment banks joined commercial banks and thrift organizations. This expansion gave the mortgage financing industry a boost. As a result of the chances it offered to do more extensive business while requiring less capital and relying less on deposits thanks to the quick conversion of securities into cash, these institutions grew more competitive. By transferring resources from one market participant to another, securitization supported by the use of "over-

the-counter" derivatives considerably enhanced the flow of investor resources into the home financing market and expanded the pot. Residential mortgages, which increased daily as home prices increased and were sold to investors relying on credit default swaps, an OTC derivative that served as credit insurance and protected the investors' interests against defaults, gave rise to financial instruments such as mortgage-backed securities and collateralized debt obligations.

Banks and other financial institutions faced risks and uncertainties as a result of the mortgage finance process in the United States on three different levels: risks related to the quality of mortgage loans, risks related to the reliability and quality of credit rating agencies, and risks related to the financial stability of CDS writers, credit insurers, and underwriters. The two models that banks used were origin-to-hold and origin-to-distribute. Because they would suffer a credit loss in the event of a default, they were more cautious when providing mortgage financing under the originate-to-hold model, where the loans were kept on their books until maturity. However, they were more carefree when procuring loans under the originate-to-distribute model, where the loans were securitized and sold to investors. Even while the second scenario may not entail a direct credit loss, it nonetheless involved a reputation risk in case a significant number of the securitized loans ultimately went bad. In actuality, a significant portion of the subprime loans included in mortgages backed under the originate-to-distribute strategy were responsible for the U.S. financial crisis due to subsequently missed mortgage payments. Because of the subpar quality of the loans banks bought from mortgage originators, they were exposed to severe credit risk. Thus, it is obvious that banks will need to set up a mechanism to exercise a sample check of the quality of the underlying assets in cases where they purchase loans and receivables from other financial institutions for securitization or make investments in securities issued by special-purpose vehicles established by other institutions in order to protect themselves from excessive credit risk. In order to protect their image, they should guarantee the quality of the loans they offer to other special-purpose vehicles[5].

DISCUSSION

The credit rating agencies, who reportedly did not undertake proper due diligence when assigning ratings to MBSs and CDOs manufactured by financial institutions, are responsible for the second layer of hazards. According to the published reports, the rating agencies frequently advised clients on how to structure securities to obtain higher ratings, gave in to pressure from financial firms that were paying hefty fees for the ratings, and lacked the resources to carry out the ratings at the scale they did. The downgrading of the ratings quickly followed by the appearance of defaults signaled the commencement of the financial crisis. Banks must cross-check the ratings using their internal risk rating model and determine whether the output of the model would hold up under crisis conditions in a market where credit volumes are high in both quantity and value and rating agencies compete with one another for a larger market share. the financial crisis was brought on by a significant liquidity crunch.

Banks will need to take two safeguards in order to manage risks associated with exposure to derivatives. When selling credit default swaps, banks must first assess the integrity of the underlying assets by examining the counterparties' corporate governance standards, particularly their transparency and disclosure policies. Similarly, banks will have to evaluate counterparties' market standing and track records, the extent of their derivative exposures relative to capital and reserves, and their general financial standing when acquiring credit derivative contracts for risk reduction. In order to avoid the emergence of financial shocks in crisis conditions, banks should

set derivative-type constraints. Second, rather than handling each form of derivative separately, banks should analyze the risk from all sorts of exposures to derivatives as a whole rather than concentrating their risk on a single type of derivative contract.

Several individual financial units got systemically very big by buying other financial businesses as the U.S. financial industry developed very quickly in the 1980s and 1990s. In addition, the shadow banking sector has grown astronomically since 1990, and now comprises investment banks and other parallel financial organizations that functioned like banks but were not subject to the same regulations as depository institutions. After the Gramm-Leach-Bliley Act was passed in 1999, bank holding corporations once again expanded their business operations beyond typical commercial banking to include investment banking, insurance, and securities trading. Two massive parallel banking networks were created as a result, but regulatory supervision and supervisory control were not strengthened to track the amount and makeup of systemically big financial institutions' risks. Instead, in order to assist the home mortgage financing business, regulatory limits were relaxed to allow for more operational flexibility.

The regulatory environment changed from regulator-dictated control to self-styled regulation that gave investment banks significant latitude, first to significantly increase their leverage ratio and then to concentrate on securitization and derivatives trading that carried a high level of risk but were not adequately backed by capital. Based on internal models, the investment banks were permitted to determine their own capital needs, which were lower than those that applied to commercial and retail banks. Additionally, the 2004 easing of the broker-dealer exemption from the net capital regulation requirement allowed the investment banks to significantly raise their leverage ratio. The largest insurance company, the five largest investment banks, and the two largest government-sponsored organizations, Fannie Mae and Freddie Mac, all experienced high levels of debt against insufficient capital as a result of the regulatory relaxation. They also provided long-term mortgage financing that included significant amounts of subprime lending, exposing themselves to high liquidity risk in addition to interest rate risk. Additionally, these institutions issued a significant quantity of CDSs without providing any kind of collateral as insurance, putting aside extra cash to cover losses from high-risk activities, or hedging their risks. Due to the interdependence of counterparties, a liquidity crisis developed when home values began to fall, borrowers stopped making their mortgage payments, and claims against CDSs began to surface. As a result, the institutions were unable to repay their short-term debts, which had a ripple effect on the entire financial sector.

The lack of proper regulation, the flaws in the risk management systems of the financial institutions, and the corporate management's disregard for corporate governance rules of behavior were the main causes of the systemic crisis that emerged in the United States. First off, not all areas of the financial industry and financial markets were covered by the financial services legislation, and in those that were, the standards were lax in comparison to how big an institution was and how complicated and risky the credit products it utilized. Due to the considerable counterparty interdependence, it seems that the regulatory authorities were unaware of the systemic risk that may result from a solvency and liquidity crisis happening in one institution and fast spreading to the whole financial industry.Second, in order to finance assets and maintain daily liquidity, banks and other financial institutions relied much too heavily on repo and the short-term money market, despite the high degree of maturity mismatch between assets and liabilities. They disregarded the risk concentration in the home financing industry, which carried the danger of significant losses in the case of a decline in asset values.

Additionally, they did not take enough steps to avoid unconstrained risk exposure, excessive leverage, and a sole dependence on short-term borrowing to fulfill liquidity needs.

Third, because there was a lack of transparency and disclosure regarding the extent of the institutions' involvement in risky credit default swap derivatives and subprime mortgages, the financial sector participants were exposed to high risks from interbank dealings. In order to achieve high business growth with short-term borrowed funds, banks and financial institutions adopted the incorrect business strategy and assumed significant risks from derivatives trading without the support of adequate capital and reserves, particularly when the derivatives trading was unregulated. As a result, they failed to protect the interests of depositors, debt holders, shareholders, and regulators.

Lesson

The worldwide need for financial sector regulation and supervision reform, which must address issues both at the national and international levels, has been reinforced by the U.S. financial crisis. Since there is a close relationship between regulated commercial banks and unregulated or inadequately regulated financial entities, the U.S. experience has shown that there is a systemic risk in exempting from regulation or inadequately regulating nonbank financial institutions that raise public funds through different means to conduct their business. The plan would entail setting up a system at the national level to detect early signs of unsustainable financial risk developing in any area of the financial sector and to take prompt remedial measures to stop the transfer of concealed risk to other financial sector players. All financial institutions and markets, including the market for trading derivatives, must be covered by regulation and supervision in order to establish a minimum degree of comparability in regulatory requirements. On the one hand, giving nonbank financial entities more leeway to engage in highly risky behavior by exempting them from stricter bank-applicable capital standards and business rules and limits, and on the other, relaxing standards for government-sponsored entities will result in moral hazard[2], [6].

The American financial crisis expanded from specific institutions to other players in the financial sector, other economies, and major financial hubs, notably in Europe and Asia. Two significant topics that have received attention in the US are now more important due to the crisis's expansion. "The Global Financial Crisis: Analysis and Policy Implications," a report from the Congressional Research Service. First, the paper has emphasized the need of wide regulatory and supervisory framework compatibility across the US, Europe, and other major financial centers. However, because risks have a contagious effect, it is often required to create some degree of consistency in regulatory standards and supervisory methods throughout the nations. This will prevent financial operators from concentrating their operations in areas with lax standards. Second, the paper discusses the necessity for a systemic regulator or a single regulator who would be in charge of overseeing each sector of the financial services industry, including banking, insurance, securities, and futures. In fact, there is a strong argument in favor of having a single regulator oversee the whole financial system. This regulator would have access to consolidated data on all firms in the financial sector and financial market sectors and would be able to act in concert to reduce systemic risk[7], [8].

Response from the Basel Committee on Banking Supervision

The Basel Committee reform program aims to address the lessons learned from the financial crisis, especially the inadequacy and poor quality of capital to absorb losses during times of financial stress and economic slowdown, the vulnerability of the risk management framework, and the inadequate disclosures made under the corporate governance system. The key concerns about the banking system's excessive capital leverage, the lack of liquidity buffers, and the miscalculation of risks associated with trading, securitization, and derivatives activities that led to the U.S. financial crisis have been addressed by the Committee. In order to increase the banking system's resilience during times of economic and financial stress, especially for big financial institutions that are systemically important, it has advocated stronger capital and liquidity standards. The macro-prudential measures are intended to address the risk of systemically important global banks arising from their interconnectedness, the challenges around domestic and global resolution, and the moral hazard, as well as the micro-prudential regulations governing individual financial institutions, in order to reduce system wide shocks and the risk of spill over from the financial sector to real economy. To quantify risks from trading operations and structured credit instruments kept in the trading book that increase under stressful times, they should use a better value-at-risk model and conduct more rigorous credit analyses of externally rated securitization exposures.

The Committee has advised banks to raise their liquidity standards by implementing a liquidity coverage ratio, which requires them to hold high-quality liquid assets to meet liquidity needs in stressful situations, and by maintaining a net s funding ratio over the long term, which prevents the development of structural mismatches between assets and liabilities. As part of the need under the corporate governance regulations, it has underlined the need for increased transparency on securitization risks, sponsorship of special-purpose entities for securitization, and compensation practices. While "the Committee continues to work on a range of initiatives important to bank resilience," banks should review the composition of the trading book to align it with the varying risk sensitivity of different types of exposures, strengthen the trading book exposure risk assessment methodology with a focus on securitization activities and derivatives exposures, and develop internal counterparty rating capabilities for investment in the securitization. To prevent risk concentrations, banks should implement an appropriate leverage ratio against on- and off-balance-sheet exposures, redefine significant exposures, and establish product-wise business limitations.

CONCLUSION

In conclusion, there are significant repercussions for the financial system from the emergence of a credit boom and the accompanying rise in credit risk. Credit booms may stimulate economic development, but they also carry hazards to systemic stability and credit quality. Financial firms and regulators must both take a proactive and responsible approach to managing credit risk during a credit boom. The negative effects of credit booms may be reduced by putting in place efficient risk management procedures and maintaining strict regulatory control, so promoting financial stability and sustained economic development.

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CHAPTER 2
AN OVERVIEW ON RISK-BASED AUDIT PROCESS

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ABSTRACT:

The risk-based audit process is a strategic approach that focuses on assessing and addressing the key risks faced by an organization. This study provides an overview of the risk-based audit process, highlighting its significance and the key steps involved in conducting a risk-based audit. It also discusses the benefits of adopting a risk-based approach and the challenges faced in implementing it effectively. The risk-based audit process begins with a thorough understanding of the organization's objectives, strategies, and key risks. This involves conducting a comprehensive risk assessment, which identifies and evaluates the potential risks that could impact the achievement of organizational goals. Risks may include financial risks, operational risks, compliance risks, and strategic risks. By aligning the audit plan with the identified risks, auditors can prioritize their efforts and allocate resources effectively. Once the risks are identified, the audit process involves planning and scoping the audit engagements. This includes defining the objectives and scope of the audit, determining the audit approach, and identifying key processes and control areas to be assessed. The audit plan is tailored to focus on high-risk areas, ensuring that audit resources are directed towards areas that pose the greatest potential impact to the organization. The next step in the risk-based audit process is conducting the audit fieldwork. Auditors perform detailed testing and analysis of controls, processes, and transactions to evaluate their effectiveness in mitigating identified risks. This involves reviewing documentation, interviewing personnel, performing data analytics, and conducting sample testing. The audit procedures are designed to provide reasonable assurance regarding the effectiveness of internal controls and the management of key risks.

KEYWORDS:

Credit Risk, Mitigation,Management, Operational Risk,Risk-Based Audit Process.

INTRODUCTION

Both internal audits that are done using a risk-based approach and those that are transaction-based have different procedures and areas of focus. Finding irregularities in the manner the transactions were carried out is the main goal of a transaction-based audit. When all transactions and choices made over two following audit cycles have been examined, a list of irregularities has been established, and the post-audit rectification of negative findings has been effective, the audit report is considered complete. The audit is conducted one branch office at a time in order to target large and troublesome branch offices. The audit cycle is basically the same for all types of branch offices, and one round of auditing is normally completed in 18 to 24 months[1]–[3].The primary focuses of inspection in a risk-based audit are the transactions and operational areas with higher degrees of risk, as well as how the branch offices handle such risks. The quantity of transactions chosen for inspection depends on the importance of the activity, the nature of the

transactions, the level of risk, and the significance of the consequences of those transactions. Only a portion of the transactions between two consecutive audits are examined. For small loans and advances granted between two audit dates, transaction coverage may be 30–40%, whereas for medium and large exposures it might be 50–100%. For small to medium-sized transactions, the amount of inspection may be approximately 50%, and for large agreements and derivative transactions, it may be 100% in the Treasury division.

Since these defects are what give rise to the irregularities, the risk-based audit focuses on detecting faults in the current procedures rather than identifying abnormalities, the majority of which are shared throughout the branch offices. The objective is to decrease risks by altering the procedures and strengthening the controls. Branch offices are selected for auditing if a risk-based audit is carried out based on the volume of business they handle, the significance of their operations, and the level of risk exposure. Branch offices' audit cycles are distinctive because they have distinct risk profiles and fall into different risk categories. For high, very high, and very high-risk branch offices, audits may be conducted at intervals of more than a year. In business areas that are highly vulnerable to risk, such trading in securities, foreign currencies, and derivative items, audits could be carried out every quarter or every half-year. Along with correcting the irregularities identified in the audit reports, the findings of the audit should be utilized to improve the processes and procedures.

The audit team must be familiar with the corporate philosophy of risk management, the activity-wise risk limits, and the existing processes and procedures to manage risks since the focus will be on high-risk areas. Similar to the transaction-based audit, the branch office's risk-based internal audit team should closely analyze each activity carried out there, but should spend more time examining the transactions and activities that are more sensitive and high-risk. It should perform sample checks on the quality of the assets, the condition of the valuables, and the accuracy of the books of accounts in addition to making sure that the policies and procedures outlined in the operations manual are being followed. It should also examine a sufficient number of transactions on a selective basis in order to evaluate the degree and quality of compliance. If the audit team has material concerns after initial assessment about the methods used to handle transactions in a particular area, it should examine a larger number of transactions rather than heavily relying on the system of selective transaction testing to determine compliance with the risk-taking guidelines and ensure that the bank's exposure to risks from a given transaction or activity is accurately captured and kept within acceptable limits. The internal auditor should conduct a comprehensive transaction audit on any activity that is considered to be high risk[4]–[6].

After the audit is finished, the internal audit department, using the transaction-based audit system, issues performance ratings to various kinds of branch offices based on an evaluation of quantitative and qualitative factors in a four- or five-scale rating chart. Nevertheless, under the risk-based audit system, the methods of examination and their focus do change because of the diverse responsibilities and risk profiles, even if the coverage is not noticeably different across the branch offices. The audit department may continue to base branch office performance ratings under the risk-based audit system on the evaluation of the same quantitative and qualitative parameters; however, the performance ratings will be modified by the addition of a risk management efficiency rating, which will be based on an assessment of the branch officials' capacities for risk awareness, risk identification, risk handling, and risk mitigation. We should place more emphasis on their ability to balance business growth with managing risk exposure. To

do this, banks should provide standard performance evaluation and post-audit rating assignment forms.

When the audit system transitions from a transaction-based to a risk-based one, the audit department may have some difficulties determining which branch offices should get the correct ratings. It is important to keep in mind that the branch offices' performance ratings under the transaction-based audit system and their risk ratings under the risk-based audit system are unconnected. An office with an excellent rating might be included in any of the risk groupings. For instance, even if a branch office was previously extremely well-run and had an excellent performance rating under the transaction-based audit method, it may be classified as a high-risk branch for the risk-based audit. The risk-based internal audit recommends that if a branch office is labeled as a high-risk branch, it will be checked more often, with the focus of the audit being on important areas that offer high business risk as well as high control and compliance risk. A high-risk branch office may also obtain an outstanding grade as the risk-based audit system will evaluate branch offices based on a mix of performance rating and risk management efficiency rating. An increase in audit frequency, or rather a reduction in the audit cycle for high-risk branch offices, does not always mean that they are rated as "average" or "unsatisfactory."

Reporting on Assurance Based on Risk

The internal audit division should create standard templates for risk-based audit reports by auditors in order to preserve objectivity in report coverage and inclusion of critical information. The structure of reporting formats for different branch office types will vary due to functional differences; a full-function branch office format will be more thorough than that pertaining to restrictive-function branch offices, such as industrial finance, agricultural finance, clearing service, and overseas banking branch offices. To highlight the key results stated in the main report, the format will contain annexes that offer instances of individual branch office transactions and customer accounts. The suggested audit report's content is provided in the next section.

DISCUSSION

Branch Office Performance Assessment Overall

The audit report will be split into two portions, the first of which will provide a brief assessment of branch office operations and the second of which will include comprehensive details on each function. The purpose and size of the branch office, staffing patterns, asset-liability structure, asset quality, contribution to profit, and the operation of the computer system and network connection should all be summarized in this report. It should also contain a list of all pertinent facts and data. An assessment of the branch office's operating environment and the strategy it used to fend off competition from other banks and achieve its commercial goals without sacrificing ethical standards should come first in the report. Since this is the basis for business growth and image improvement, it should address the standard of customer service offered. However, many banks pay minimal focus on customer service since they see it as a non-priority issue. The audit team has to talk to a range of clients to understand how the bank meets their needs and to acquire their opinions on the branch office's capability to do so. Keeping customers satisfied will both secure future business growth and considerably decrease the impact of negative news that can affect the bank's reputation. Customers are a bank's best source of advertising[7]–[9].

The report should include the branch office's operations as well as any procedure violations and any possible consequences. The risk-based audit's objective is to verify that the bank's operational procedures and system are efficient in terms of risk management. How the branch office analyzes and manages operational, financial, liquidity, and credit risks must be included in the report. The auditors should compare the branch office's practices to the defined processes and procedures described in the operations manual using selective transaction testing.

Management of Branch Office Credit

The auditor must conduct a risk-mitigation study of the loan administration procedure and offer a critical assessment of the loan and advance portfolio for the branch offices in the report. The team should carefully examine whether the required procedures for authorizing, overseeing, and following up on loans and advances are being followed, since credit risk is the main risk at the branch offices. The appropriateness of credit growth, the risk-return structure of the credit portfolio, the risk-grade distribution of credit, and adverse credit concentration, whether based on customer, purpose, or activity, should all be covered. The group needs to assess the extent of credit monitoring, the state of non-performing loans and advances, and the effectiveness of recovery efforts. When they look at instances of loan penalties that have happened after the most recent audit, the caliber of loan appraisals and the use of due diligence should be reviewed.

Checking the entry point risk rating provided to the customers, the viability of credit offers, and the appropriateness of loan terms and conditions in light of the ratings provided are all part of the assessment process. If the majority of loans and advances fall into the high-risk category, or if the portfolio of the branch office has a disproportionate number of high-risk and very high-risk customers, the audit team should identify the reasons and provide recommendations for risk reduction. If there is any negative credit concentration that puts the bank at higher risk, they should provide suggestions for a better credit distribution over the next two to three years. The auditor must, however, take into account the whole business condition and not only the branch office's credit concentration. If the total position of loans and advances at the corporate level shows high credit concentration, the problem has to be thoroughly addressed to determine ways and means to diversify the bank's entire credit portfolio. Before making a determination on the prevalence of credit concentration at the branch office, the auditor should perform an assessment of the types of business opportunities that are realistic and viable within its command area. For instance, if a branch office is located in a region where customers are interested in personal and real estate loans, it will need to expand its credit portfolio in those categories to achieve the goal, even if doing so may result in loan concentration.

The audit staff should thoroughly examine the loan agreements, investigate the loan distribution procedure, and provide feedback on the branch office's alertness in thwarting borrower attempts to utilize money for inappropriate purposes. Loan penalties should also be considered by the audit staff. In order to maintain risk at a manageable level, the team should assess the frequency and thoroughness of credit monitoring and follow-up, as well as the branch office's rules and procedures. For example, if the branch office is lax in managing and monitoring credit or in keeping an eye on how borrowers are spending their money, credit risk will grow and, in the event of failure, credit loss will be more than the loss anticipated by the credit risk assessment model.

The auditors should pay close attention to the amount of off-balance-sheet exposures, carefully review the due diligence process used for the issuance of financial guarantees and other

obligations, as well as the issuance and confirmation of letters of credit, and offer comments on the legitimacy and caliber of such letters of credit. If the bank's liabilities from off-balance-sheet exposures have increased, they should investigate the situation and determine whether the branch office's lack of due diligence or lack of follow-up was to blame for the increase or whether external factors were to blame.

Evaluating the circumstances that led to the slippage in the quality of loans and advances is one of the branch office audit's most crucial components. Both the movement of present borrowers to risk grades with greater risks and the decline of standard loans into the nonperforming category are among these variables. Determine if the factors that caused substantial slippages were internal or external by looking at the contributing factors. The analysis will help the bank create efficient risk-reduction strategies. The audit team should look at the procedures and mechanisms in place at the branch office for tracking problematic accounts, spotting warning signals, generating exception reports, and initiating prompt remedial action, and should comment on how effective they were in the report.

Examining and renewing revolving credits and overdraft accounts annually or semi-annually is a crucial component of credit management. This is because the examination reveals weaknesses that are beginning to appear in certain exposures that run the danger of losing quality. The auditor should assess how diligent branch officials were in detecting problem exposures and swiftly taking corrective action in order to prevent a worsening of credit risk. The audit report should include critical remarks on the caliber and timeliness of the review and renewal of the accounts of the borrowers, particularly those with high value, as well as the suitability of the actions taken to rectify any concerns that were brought up during the review process. The team should look at the loan instances that have transitioned into the nonperforming category in order to ascertain if certain exposures are likely to result in severe credit losses for the bank. Additionally, they need to assess their prospects of recovery under these conditions. The report should also contain commentary on the procedures utilized at the branch office to identify loans and advances that have been "sticky" and initiate remedial action in time for rehabilitation or dues recovery.

Management of Liquidity at Branch Offices

Liquidity management is a corporate-level function, but it also affects branch offices. Even if it's just momentary, a scenario where the branch office can't pay its bills on time sends the wrong impression to the public and indicates that the bank may be experiencing liquidity problems. Five unpredictabilities can result in liquidity problems at the branch office: unforeseen requests for refunds from fund suppliers; unfavorable clearinghouse balances from payments and settlements; early withdrawal of sizable time deposits or institutional deposits; sudden drawdown on sanctioned credit limits and standby commitments; and devolvement of liabilities from off-balance-sheet exposures. If there is no dependable emergency borrowing strategy in place or if there are no facilities for quick physical cash transfers between branch offices, liquidity problems may occur.

Branch officials need to complete their daily tasks in order to meet deadlines for fulfilling financial needs. A comment on the branch office's efforts to frequently engage with large and wholesale depositors, fund suppliers, and borrowers regarding the timing of their funding needs and to develop advance contingency plans to address ad hoc financing requirements should be included in the audit report. To gauge the likelihood of a sudden need for funds in certain

situations, branch authorities should look at the behavioral maturity pattern of time deposits, the historical volatility of institutional deposits, and the dependability of fund providers. The branch office must develop practical processes to deal with unplanned and unusual demands for liquid cash and keep track of the seasonality of drawdowns within the allowed credit limits. The audit team should go at the method the branch officials used to figure out how much liquidity was required at different points in time, choose tactics for getting cash rapidly, and assess the effectiveness of each plan. The auditors should factor in the cost of alternative financing options and revenue losses caused by holding too much liquid cash.

Management of Revenue at Branch Offices

A bank expects each of its branch sites to generate a profit and sustain itself. However, the bank could operate a number of branch locations that make minor profits or sometimes even lose money. While the bank may try to justify the losses by citing operational constraints and a lack of commercial opportunities, sincere efforts to boost profitability are really lacking. The branch office's efforts to boost income and lower operating and setup costs should be included in the audit report. The team should evaluate the branch office's efforts to boost revenue and business in light of the potential for local business and study the patterns in rising interest and noninterest income.

Revenue leakage is one of the problems with branch office administration. Undercharging for interest on loans and advances, as well as failing to recoup fees and other expenses related to offering customers services, cause leakage. The audit team should conduct a sample check on the accuracy of lending rates set in accordance with loan ratings, purposes, and tenure; actual interest recovered on loans and advances; recovery of fees and other charges due to the bank; actual interest paid on deposits and borrowings; and comment on its findings. Cash management has an influence on branch office profitability as well since holding onto idle cash might result in revenue loss. The branch office's normal pattern of receipts and payments demonstrates that the cash holding limit must correspond to the daily average demand. A bank may have a large amount of excess cash across all of its branch locations; yet, the institution may suffer a significant income loss if it chooses to put this cash in readily accessible, risk-free sovereign securities. Additionally, if the branch office is in charge of making payments on behalf of the government, other banks, or organizations acting as agents, it should seek reimbursement for any payments made without first receiving cash. The bank would lose the money it may have made on the funds as a result of the delay. These items need thorough examination and appropriate input from the audit team. The auditor must examine how the branch office allocates its funds and provide advice on how it intends to utilize cash and low-cost deposits to lower expenses overall. The audit team should also carefully examine the branch office's efforts to manage expenditure as well as the steps it has taken to reduce transaction costs via increased operational effectiveness and productivity.

Branch Offices' Operational Risk Management

Three other important factors, in addition to internal control failure, could lead to high operational risk: staff members' unfamiliarity with the procedures and systems for handling transactions; abuse of delegated authority; and insufficient security of the computer systems and other valuables. The audit team should examine the division of duties among branch officials, secretly ascertain how well-versed they are in the laws, systems, and procedures, and provide comments on their capability to handle transactions and functional overlap. In order to determine

if there are clear lines of responsibility and whether they can be utilized to adjust accountability as required, the audit team should look at how transactions are originated, processed, and carried out together with the accompanying paperwork. The audit team should also look into any instances when workers spend an excessive amount of time at the same desk at a branch office since this might result in vested interests and frequent job rotation is crucial to lowering operational risk. To ascertain if employee exposure and training problems are to blame for transaction errors and rule and regulation breaches, the team must perform a complete investigation. Once this is done, the team must then come up with the necessary remedies.

To determine if the bank's interests are being appropriately protected, the audit team should review a few examples of loans that branch executives have authorized using their delegated power. The purpose of the examination is to find any deliberate misuse of financial power for personal gain that might ultimately result in large losses. The team should also verify the accuracy of the occurrences in which powers were used in ways that were not authorized and determine if they were reported to higher authorities with the necessary details for confirmation.

In order to prevent unauthorized access to computers, limit access to the server room, protect password confidentiality, maintain user records, and backup computer systems, the auditors should look at the branch office's policies and procedures. They should also highlight in their report any negligence or laxity in following the rules. The audit team should also look into computer-related fraud to identify the modus operandi and evaluate the sufficiency and timeliness of countermeasures put in place to prevent fraud from happening again.

Use of Internal Controls in Branch Offices

The audit team should thoroughly assess how the prescribed controls are being implemented at the branch office since lax control significantly increases risk and may cause considerable losses. In order to assess the internal control environment present there, the team will consider the branch office's accurate and timely submission of control returns and management information reports, including excess and exception reports, to the required authorities, control over the borrowers' accounts, assigning proper ratings to borrowers, controlling fraud-prone and vulnerable areas of operation, controlling books of accounts, records, and more.

An essential part of the bank's monitoring and control system is the branch offices' submission of control returns and financial reports to the controlling offices. The filing of control reports by the operational personnel to the proper authorities is, however, seen by many banks as a routine procedure, and they rarely ever utilize them as a tool to oversee and monitor branch operations. The audit team shall assess both the amount of scrutiny exercised by the controlling authority as well as the accuracy and scope of periodic reports filed to the controlling authorities, including returns on loans and advances allowed at the branch officials' discretion. In order to safeguard the interests of the bank, the audit team should also make a determination about the suitability of any remedial actions taken to rectify any problems.

Because weak management of these accounts would increase credit risk, the audit team should carefully assess how the branch office is managing the borrowers' accounts. A carefully chosen study of a few cases should be used to assess the effectiveness of the borrowers' business operations and accounts being monitored, as well as their compliance with the terms of the penalty. Any oversights in credit supervision and follow-up that might potentially lead to an

increase in loan default rates and total loan loss amounts should be highlighted in the audit report.

The decision on loan applications and the terms and conditions of loans rely on the risk rating provided to the borrowers, therefore it is sensitive area of inspection when branch employees award a credit risk rating to the borrowers in line with the internal credit risk rating model. The poorer the grade, the higher the interest rate, the higher the proportion of margin money, and the larger the quantity of collateral. The prospect that authorities may use their legal financial power to provide potential borrowers better ratings before issuing loans cannot be fully ruled out. Prior to implementing the procedure to create ratings, the audit team should thoroughly review the methodology used to assign risk ratings to both new and current borrowers. It shall evaluate the regularity with which credit risk ratings of existing borrowers are reviewed and adjusted, as well as the methodology used to track borrowers' rating changes, and it should take corrective action when appropriate. More investigation should be done if the team observes an unexpected drop in the quality of a significant number of credit exposures. The effectiveness of huge exposure monitoring, early warning signal detection systems, and the appropriateness of remedial actions applied in the relevant borrowers' accounts should also be included[10]–[12].

The audit team should thoroughly assess the branch office's control over fraud-prone areas, notably the bookkeeping reconciliation. It should investigate if those not engaged in their care and management regularly balance the books of accounts. It should sample check reconciled entries, examine the reasons for the backlog in books of accounts balancing, and provide suggestions for process improvement in order to eliminate the possibility of account manipulation. Banks with several branch locations often carry over unfinished interoffice account reconciliation because they are more likely to cover up fraudulent activity. The audit team has to verify lingering transactions under nominal categories of accounts as well as unadjusted transactions in interbranch and interbank accounts. They should pay great attention to high-value entries, particularly when the counterparty or the relevant branch offices don't react to questions regarding the details of the transaction, and they should keep an eye out for transactions that appear suspect since they could later turn out to be fraudulent.

The audit team should assess how well the branch office controls vulnerable and sensitive areas, such as the handling of cash and valuables, the storage of daily vouchers, the custody of safe deposit boxes, account books, and blank draft forms, as well as the accessibility of customer-related data and information. If fraud took place throughout the audit's time frame, they should talk about the laxness and carelessness in the exercise of control that led to the fraud's commission. They need to assess the branch office's overall security condition and provide suggestions about any vulnerabilities. The process used at the branch office to enter data and information into the computer system for transmission to the corporate office, which is used to create the management information system for the bank, should be carefully examined, and they should provide feedback on the procedure's security, accuracy, and integrity of the data.

Branch Offices' compliance with rules and guidelines

The audit team should examine the branch office to see if it conforms with all applicable laws, including banking legislation, as well as with internal bank rules and regulations and the established risk limits. It should evaluate the success of correcting the abnormalities found in previous internal audit reports, the bank supervisor's report, and the external auditor's report. The audit team should, at the absolute least, confirm that revenue recognition and asset categorization

standards and norms are adhered to, as well as anti-money laundering laws and regulations. They should regularly check on big cash transactions and transfers of money across accounts, and they should make sure branch personnel are rigorously following "Know Your Customer" requirements when opening new accounts. They should investigate how suspicious transactions are found and reported, as well as how large-value transactions are screened, and they should call attention to any errors in the audit report.

System Improvements

The risk-focused audit is expected to contribute to improving the systems and procedures used to manage the bank's operations. Throughout the examination, the audit team finds a number of procedural irregularities and weaknesses in how the branch authorities conducted the bank's operations. Additionally, they discover several flaws in the control procedures, which are often used by all of the branch offices. The audit team must identify the underlying reasons for the anomalies at the branch offices and provide recommendations for system improvement. The team could learn, for example, that branch managers often go over their scope of power financially or that they use a range of excuses for postponing taking legal action against defaulting debtors that might ultimately harm the bank's interests. They may observe that borrowers with accounts classified as problem accounts are recalcitrant in renewing loan agreements that are about to expire, denying the bank the opportunity to consider alternatives like renegotiating the debt or selling the unit to another business. As a result, the bank may be forced to file lawsuits to recover unpaid debt before the agreements expire. The audit team should provide suggestions on how standard guidelines may be developed to manage this kind of problem while staying within the bounds of existing legislation. Additionally, it should include recommendations on how to strengthen the control system, halt anomalies at the branch offices, and alter the practices and procedures of the bank.

Evaluation of the Internal Audit Function

An impartial analysis of the internal audit function is essential given its distinctive location and significant importance. A committee of experts or senior, qualified employees who are not engaged in risk management and risk control activities should regularly evaluate the audit function for banks. The evaluation should take into account the organizational structure of the audit department, the method used to compile the risk profile, the coverage and applicability of the audit plan, and the quality and content of the audit reports. The review team should assess the role that the audit department has played in identifying undiscovered risks, offering suggestions for risk mitigation, and keeping track of how effectively branch offices and other operational units follow the established policies and procedures. It's important to assess the audit department's contribution to improving the bank's checks and balances system as well as its processes and procedures. The impartiality and effectiveness of the audit function should sometimes be evaluated by outside experts, according to banks.

Steps to Take in a Transition

The transition to a risk-based internal audit system would only be meaningful if the bank had a proper risk management architecture in place. The transition must be gradual because banks will need to develop templates for compiling risk profiles of various branch office types, standards for scoring risk factors, formats for documenting risk-focused audit reports, and training for audit staff in risk management and risk control methods, including new auditing techniques. Building

the appropriate strategies, tools, and processes is crucial for a seamless transition, as is making a transition map. In the identified risk categories, auditors test and analyze controls, processes, and transactions while conducting audit fieldwork. Analyzing the data, conducting interviews, examining the accompanying documentation, and testing sample samples are all included in this. The primary goals are to evaluate the effectiveness and adequacy of controls in lowering known risks and to identify any possible control weaknesses or gaps. Effective communication between auditors and management and other stakeholders is maintained throughout the audit process. Along with regular updates on the audit's status, they discuss the findings and provide ideas for improvement. Together, management is better able to comprehend and respond to audit findings, which promotes a proactive approach to risk management and control enhancement.

Utilizing a risk-based audit technique may help organizations in a variety of ways. By focusing on essential risks, auditors may provide targeted and relevant assurance, enabling management to make informed decisions and put the appropriate risk-mitigation measures in place. Additionally, it helps organizations allocate their limited audit resources more wisely toward the areas with the most risk exposure. The risk-based auditing process promotes proactive risk management and a culture of risk awareness inside the organization. Because it involves acquiring accurate and reliable risk information, managing resource constraints, and adapting to shifting risks and business settings, implementing a risk-based audit process might be challenging. To overcome these challenges, organizations must establish robust risk assessment procedures, ensure that high-quality data is available, and often update their risk profiles.

CONCLUSION

In conclusion, the risk-based audit process is a strategic technique that aligns audit activities with an organization's key risks. This method enables auditors to provide precise assurance, perceptive advice, and support for effective risk management. Overcoming challenges and continuously improving the risk assessment technique are essential to successfully implementing a risk-based audit process and maximizing the benefits for the firm. The methods used in internal auditing and risk-based bank supervision are generally interchangeable. The risk profiles of banks have an impact on the former, while branch offices, portfolios, and other functional units have an impact on the latter. The risk-based audit focuses on dangerous and delicate operational and control areas in order to gradually improve systems and procedures. To allocate audit resources in accordance with the risk-based audit system, the internal audit division of the bank should carry out a separate risk assessment of field offices and portfolios. It should set norms and criteria for rating assignment and offer a number of templates for risk profiling of different types of field offices.

The audit department should classify branch offices into risk categories such as low, moderate, high, very high, and very high based on risk profiles, frequency of risk occurrences, and possible impact of such events. The audit department should unify the audit's scope and breadth in order to avoid differences in audit coverage across branch offices. Additionally, they need to compile lists of general issues and worries based on the risk level of the branch offices that the audit will investigate. The audit cycles and transaction coverage of internal audit systems that are transaction-based or risk-based vary. While transaction coverage is restricted and selective and the audit cycle is shorter for high-risk branch offices, the latter technique concentrates on finding weaknesses in systems and processes that cause abnormalities and increase risk. Priority is placed on vulnerable locations, high-risk activities, high-risk branch offices, and high-frequency

and high-magnitude risk occurrences during the risk-based audit. Under the risk-based audit technique, branch offices get post-audit performance ratings based on a combination of business performance rating and risk management efficiency rating. The transition to a risk-based internal audit system should be done gradually to avoid limiting audit scope and frequency during the transition phase.

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CHAPTER 3
MANAGEMENT OF CREDIT RISK IN COMMERCIAL BANKS

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ABSTRACT:

It is essential for commercial banks to detect, evaluate, and mitigate the risks related to lending operations via credit risk management. This paper gives a general review of credit risk management in commercial banks, emphasizing its essential elements, tactics, and significance for preserving banks' financial health and stability. Credit risk, often known as the potential loss brought on by borrowers' incapacity or reluctance to repay loans or fulfill other credit obligations, is a concern for commercial banks. For banks to reduce possible losses, maintain proper capital levels, and guarantee the general stability of their loan portfolios, effective credit risk management is crucial. In order to enable predictive management of the amount of risk presented by prospective customers in commercial banks involved in consumer lending, the research presents a model of credit risk assessment based on factor analysis of retail clients/borrowers. The study's goal is to identify the amount of risk that various categories of retail customers represent in order to lower and avoid credit risk in the future as well as enhance banking risk management. The study's primary outputs include the development of a model for internal credit ratings of borrowers and strategies for enhancing credit risk management in commercial banks.

KEYWORDS:

Credit Risk, Mitigation,Management, Operational Risk,Risk-Based Audit Process.

INTRODUCTION

For all banks engaged in lending to people and businesses, the issue of managing credit risk is important, as is doing a quantitative evaluation and analysis of the credit risk and rating of borrowers. The following quantitative factors typically define the credit risk associated with loans that commercial banks make to individuals and legal entities: risk as the probability of the borrower's failure to repay the loan; acceptable risk; average risk; possible losses given loan default; the average value of losses; the maximum allowable losses; number of loans made by the bank; number of possible loans the bank can make; number of proba Theoretical Framework of Credit Risk Management Given the increased sensitivity of banks to credit risks and shifts in the development of financial instrument prices, managing credit risk in credit portfolios is one of the most crucial tasks for the financial liquidity and stability of the banking sector. Financial risk is the only factor that has a substantial influence on the success of the company. Unsystematic risks affect an organization's performance more than systematic risks do. The management and mitigation of credit risk is largely dependent on how each individual loan, or borrower, is assessed for risk. One can only start managing the loan portfolio as a whole if they have established the risk each individual borrower and credit service represents. The analysis and appraisal of the qualitative and quantitative indicators of the borrower's economic status constitute the credit risk assessment of the borrower. The bank is able to take these factors into

account in credit risk management and to prevent their recurrent and negative impact on the outcomes of the bank's future activities thanks to the assessment of the risk factors associated with the granting of a specific loan and their thorough and systematic analysis. The techniques used to calculate credit risk are subject to a unique need for openness, which includes a quantitative evaluation of the methods' correctness and a statistical method characteristic called robustness. The openness of the credit risk technique offers the chance to examine a specific event both broadly and in depth. Due to the need for the most full identification of both credit risk and the credit risk model itself, transparency has emerged as the most crucial quality of credit risk assessment methodologies[1]–[3].

In terms of risk assessment and analysis, methodological transparency refers to the accuracy of the used mathematical techniques, the reduction of subjectivity in expert judgments, the clarity of the results, the depth to which bank employees comprehend these results, and the accessibility of the provided techniques to regulatory bodies and borrowers. Each bank must be able to identify pertinent credit risk variables, understand the risk involved, and continuously monitor credit risk components in order to analyze, predict, and manage credit risk. The accuracy of risk identification and assessment will determine the bank's choices about loan approval or denial, interest rate, and the amount of loan default provisions. The number of mistakes in classifying loans as "good" or "bad" and their average number are used to gauge how accurate risk factor evaluations are. When loans are divided into more than two groups, the accuracy of risk factor evaluations is assessed in a similar way. Additionally, the robustness of statistical techniques, a characteristic of statistical methods, serves to describe the stability of risk assessment procedures. Different risk assessment techniques, or the same technique used with different algorithms, produce loans that are classified differently as "good" and "bad" loans.

When several approaches are used, the same loan may be labeled as "good" or "bad" depending on how they were applied. Such uncertainty in loan categorization may have an impact on 20% of all loans being assessed. Banks must modify their crediting-related operations to reflect the changing economic and societal circumstances of the country as it develops. The techniques used to calculate and evaluate credit risk are crucial for the efficient operation of a bank. In order to measure and evaluate credit risk, each bank creates its own risk probability assessment model, taking into consideration the Basel Committee on Banking Supervision's overarching guidelines. The high accuracy of credit risk assessment aids in lowering interest rates, minimizing losses for the bank, and improving the bank's competitiveness. Only via constant quantitative analysis of statistical data on credit performance is it able to develop an efficient risk assessment model and manage credit risk effectively. The subjective appraisal of bank specialists and automated risk assessment systems are two examples of the several methods used to determine the credit risk presented by a certain borrower. However, empirical evidence from throughout the world demonstrates that mathematical model-based credit risk assessment methods are the most effective and trustworthy available. First, those customers of the credit institution are chosen who have previously shown that they are either excellent or poor borrowers in order to develop a credit risk assessment model.

DISCUSSION

Model for Credit Risk Assessment

It is vital to provide the sorts of terms and conditions for bank customers who accept loans that would both entice prospective borrowers and assure loan payback in order to achieve successful

credit risk management in commercial banks. However, creating a unique set of terms and conditions for each and every borrower would not be practical. Instead, groups of current and future bank customers should be created based on their shared characteristics. Following that, a unique set of terms and conditions must be developed for each group based on the distinctive traits of the group members. The technique of classification that unifies dissimilar system components into homogenous groups based on the commonalities of the parts in question should be used to classify bank customers into various categories. For the best possible grouping of the data into categories, this classification technique must mirror the structure of the source data. Clustering and networking have traditionally been used to accomplish these ends. Both of these strategies give comparable classifications of items for multidimensional data. In this tutorial, we'll use clustering to determine how much credit risk there is. Statistics showing how often bank customers break the terms of their contracts and the harm that is done to the bank as a result of each violation must be considered when evaluating the risk associated with a bank's lending activity. It is possible to think of the risk as having a regressive dependency on a number of variables, including the average loan size (1 x), the loan's term (2 x), and a number of other variables. On the basis of knowledge about the harm each client does and the credit traits of each customer class, such regressions should be specifically defined and identified. A model like this would make it possible to predict the danger that each prospective customer poses[4]–[6].

Credit Risk Management Based on Results Attained

A system of interrelated and interdependent intentional action approaches targeted at reducing risk and uncertainty in credit-related activities must be put in place in order to manage credit risk. It is feasible to approach credit risk management in a distinct manner by using the suggested model of credit risk assessment. Credit risk management can be described as a process with the following steps: 1) risk factor identification; 2) assessment of the potential consequences of an identified risk factor; 3) selection of managerial strategies intended to mitigate the effects of a given risk factor; and 4) oversight of the implementation of the selected strategies. During the identification of credit risk, the prospective risk is evaluated in terms of its quantitative and qualitative criteria within the context of the risk factor analysis used by the bank to ascertain the level of the severity presented by the risk in question. One is able to compare and contrast different sets of risk management methods in order to be able to choose the best set of methods to be used in the future based on the criteria listed above at the stage of the identification of a potential credit risk. One can also predict the outcomes of the management of the identified risk in consequence of the various sets of management methods employed. Additionally, it's important to evaluate the prospective credit risk's effects in terms of their severity and likelihood of happening. Prior data, current data, and anticipated future data must be used to evaluate the credit risks identified at the first stage of credit risk management. The third step of credit risk management involves selecting a set of credit risk management methods as a consequence of the discovery and evaluation of a possible credit risk. In order for the bank management to respond quickly to an increase in the degree of the credit risk relative to the expected credit risk value, it is critical that these changes be monitored since credit risk variables have a tendency to vary over time. The last step of credit risk management's primary goal and focus is credit risk control. The organizational and functional cohesion at each step of credit risk management has to be stressed. The primary idea of credit risk management is that all of its phases are interdependent on one another intricately.

Credit origination, credit evaluation, credit monitoring, and credit mitigation are the main elements of credit risk management. Setting proper lending criteria, doing careful due investigation, and ensuring regulatory compliance are all part of the credit origination process. Assessing a borrower's creditworthiness, examining their financial situation, and choosing the best loan terms and conditions are all parts of the credit evaluation process. Credit monitoring entails constant observation of borrowers' financial performance, prompt detection of possible dangers, and proactive problem-solving. Implementing risk-reduction techniques including collateral requirements, loan diversification, credit risk transfer systems, and loan loss provisions is known as credit mitigation.

Commercial banks use a variety of tactics and instruments to control credit risk successfully. These include spreading out the loan portfolio to lessen the risk of concentration, putting in place strong rules and processes for handling credit risk, doing frequent credit assessments and stress tests, and setting up sufficient loan loss reserves. To improve their ability to analyze risk and make wise lending choices, banks also utilize sophisticated credit risk management tools, risk rating systems, and credit scoring models. It is impossible to exaggerate the significance of credit risk management in commercial banks. By reducing loan losses and maintaining a healthy loan portfolio, effective credit risk management maintains the bank's profitability and financial stability. It enables banks to manage possible risks while maintaining the appropriate level of reward, ensuring that lending operations complement the bank's growth goals. Furthermore, effective credit risk management techniques boost regulatory compliance, investor trust, and bank reputation.

However, managing credit risk in commercial banks is not without its difficulties. These include properly determining a borrower's creditworthiness, managing risks related to economic downturns or weaknesses in certain industries, and adjusting to changing regulatory requirements. Furthermore, banks must balance enabling borrowers' access to credit with upholding responsible risk management procedures.

CONCLUSION

The average income of the borrower, the loan amount, and the loan duration are the three main variables that have the greatest impact on a bank's assessment of its credit risk when lending to people. It has been discovered that the key element with the greatest values of loadings for the variables is connected to the economic aspects of the consumers, such as the loan amount and earnings. The client's credit history is the primary source of data used to estimate the amount of credit risk for the lending institutions. We have created the following recommendations based on these results for improving credit risk management in commercial banks when lending to retail consumers. Using the approach of factor analysis used in the present paper, it is required to create a predictive assessment of credit risk in commercial banks. This technique considers loan amounts and conditions and is based on the analysis of credit histories of potential borrowers. The suggested technique should be based on the examination of key components, the application of clustering methods, and the method of dispersion analysis. The following goals should be achieved by credit risk management based on the proposed methodology: to identify common patterns of bank customers' economic behavior; to develop a set of differentiated requirements for borrowers in particular groups in accordance with their specificity; to ascertain the risk tolerance of the person making decisions about the amount, term, and interest on a given loan. Due to the Basel Committee's international standards and requirements, different approaches to

managing credit risk are used for different categories of borrowers. This differentiation will help banks transition to using an internal ratings approach to managing credit risk. It should be highlighted that the present study's scope is constrained since it only looked at loans made to retail customers. The study of credit risk management in situations when loans are issued to other groups of borrowers, such as small and medium-sized firms and major industrial businesses, will be one of the future directions of the research as a result of this constraint[7]–[9]. In conclusion, credit risk management is a vital task performed by commercial banks with the objective of identifying, evaluating, and reducing the risks connected to lending operations. Banks may protect their financial wellbeing, preserve the stability of their loan portfolios, and adhere to regulatory obligations by practicing good credit risk management. Commercial banks may strike a balance between risk and reward by using effective risk management procedures, which will support both their long-term prosperity and the broader stability of the financial system.

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CHAPTER 4
RISK MANAGEMENT PROCESS IN BANKING INDUSTRY

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ABSTRACT:

In order to control banking risks via the risk management process, this paper discusses the most recent changes that the Basel Committee has suggested. This document explains each phase in the procedure and explains why banks must have the BIS application to cover any damages resulting from their operations. In conclusion, the Basel Committee has created a new model for addressing the lack of liquidity at the bank level in order to improve their condition to well-performing levels as a consequence of the most recent crises. The main conclusions of this paper are that, as a monetary authority, supporting and developing Basel applications in the banking sector is the most practical course of action and a crucial requirement for globally serving banks to continue their operations in a healthy way.

KEYWORDS:

Banking Industry, Credit Risk, Mitigation, Operational Risk,Risk Management.

INTRODUCTION

The banking sector is exposed to a variety of hazards since it works in a dynamic and complex environment. For banks to be stable, profitable, and successful over the long term, it is essential that these risks are well managed. This summary gives a general overview of the banking industry's risk management process, emphasizing its essential elements, methodology, and the significance of risk management in preserving banks' financial stability. Identification, assessment, monitoring, and mitigation of risks in a variety of banking activities are all part of the risk management process. Credit risk, market risk, liquidity risk, operational risk, and strategy risk are only a few of these dangers.

Effective risk management helps banks to identify possible dangers and take proactive measures to counter them, protecting depositor money and upholding stakeholder trust. Risk identification, risk assessment, risk monitoring, and risk mitigation are the main steps in the risk management process. The process of identifying and classifying risks unique to the banking sector entails taking into account both internal and external variables. Evaluation of the possibility and possible consequences of identified risks is part of the risk assessment process, which enables banks to focus their risk management efforts. Continuous risk surveillance and assessment ensures early discovery of new dangers and deviations from established risk tolerance thresholds. Implementing procedures and controls to minimize or transfer risks, such as operational risk controls, hedging strategies, and credit risk reduction approaches, is known as risk mitigation[1]–[3].

Theoretically, "the logical development and execution of a plan to deal with potential losses" is how risk management in banking is described. In the banking business, managing an institution's

exposure to losses or risk and preserving the value of its assets are often the main goals of risk management strategies. Banking is often thought of as a dangerous industry. According to economic theory, there are two economic units: the surplus unit and the deficit unit, and these two economic units prefer to employ financial institutions (intermediaries) to transfer the required cash among themselves. Undoubtedly, this trend makes financial intermediaries more significant in the economy, but it also puts these institutions at danger. Due to the issues with asymmetric information, economic entities often choose to utilize intermediaries. Institutions are hiring qualified workers and technologies to address the issues with asymmetric information, which has led to a more efficient use of the economy's limited financial resources. As a result, money is allocated to the most worthwhile initiatives that boost the economy. However, there are hazards involved in the process of moving money from one unit to another via natural means. Usually, controlling such risks is a regular part of what banks do.

Numerous issues are brought up by the banking risk management procedure. These problems underline how crucial it is for banks to use risk management procedures. These issues include:What kind of incidents and how much harm may they do to the banking industry?"This inquiry emphasizes the significance of looking into bank actions that are causing risk or losses and also evaluating the possible harm that such risks might create. So, it is possible to say that the risk management process begins with the identification of potential losses or risks and continues with the assessment or measurement of such concerns.What steps need to be made by the institutions to control such risks?"

Determine what kind of steps or activities the banks may undertake to address these possible risks after recognizing and analyzing the risk. Otherwise, if banks do not handle the risks, the institution might suffer large losses. Therefore, new methods for managing these losses have been established in the contemporary banking sector in order to maintain a strong and healthy organization. In earlier decades, there have been several financial crises all across the globe. In order to cope with these crises, several nations have now adopted risk management procedures. Following a decision that has been taken and put into operation by an institution, monitoring and reporting are often conducted. This is the last stage of risk management processes, when actions for bank risk management are checked and reported.The following three phases may be used to summarize the risk management process:

1. Recognizing and evaluating possible risks in the banking industry,
2. Creating and carrying out a strategy to deal with and control these potentially loss-causing activities,
3. After the risk management procedures have been implemented or put into use, they should be continually reviewed and reported.

The overarching goal of the risk management process is to assess future losses that might occur for the banks and to take preventative measures in case they do.

Perspective on Risk Management over Time

In the 1990s, the idea of risk management in banking first emerged. Prior to the 1990s, however, insurance-related strategies and dangers were explained using the concept of risk management. This kind of risk management refers to the acquisition of conventional insurance policies that are appropriate for any occurrences to safeguard against potential risks. Derivatives have also lately been marketed on the financial markets as risk management instruments to use for hedging

activities. Derivatives are a tool used to manage the risks related to financial activity. This kind of risk management is sometimes referred to as "financial risk management". In addition to being used for hedging, derivatives may also be utilized for arbitrage and speculation. Derivatives undoubtedly form a component of risk management strategies used in the financial markets. Additionally, banks use derivatives in their regular operations and report such activities on or off the balance sheet, even though the definition of risk management in the banking industry differs somewhat from that of financial risk management. When the Basel Committee on Banking Supervision (BCBS) released the "core principles" for efficient banking supervision in 1997, risk management in banking became essential. This paradigm offers a crucial connection between capital and hazards. In order to ensure their risk-adjusted return on investment in their company, banks in particular need to embrace risk measurement and risk management methods and processes. Therefore, ensuring the banking industry's profitability and safety is the fundamental idea of banking risk management[4]–[6].

DISCUSSION

What kinds of hazards are taken into account in banking? An first analysis of banking risk.Some dangers associated with the banking sector might be considered before moving on to the risks that inevitably result from banking activity. Although the banking industry theoretically encompasses a variety of activity types, the conventional banking and trade operations are used for basic categorization. Overall, the dangers associated with banking operations are somewhat distinct, however in this instance, the introduction may be made easier by using a variety of examples. These dangers concern the credit, liquidity, trading, income and expenses, profits, and solvency problems of a bank.

Credit Danger

Lending is one of the key tasks carried out by a bank. Credit risk for the banks is partly created when some of its credits are not repaid to the bank when a client has financial difficulties. This kind of financial loss happens when credit clients don't pay back the banks.

Availability Risk

Banks are also quite concerned about the issue of not having enough liquid assets to cover cash requirements, depositor withdrawals, and loan requests. Maintaining the banks' liquidity balances is often one of their most important duties since having low levels of liquidity has negative effects on the banks in terms of banking bankruptcy. Solvency is associated with the commitments that banks typically make to their clients. When faced with liquidity issues, banks must instantly and at additional expense borrow money to cover their cash demands. The lender of last resort or interbank markets are often responsible for this kind of financing. The central banks or other sources may provide short-term funding requirements, but doing so increases expenses for the banks and lowers their profits.

Systematic risk or market risk

The assets of the bank are subject to systematic risk when those assets' values are affected by such variables. Banks often participate in market activities, which is another name for market risk. Any price that is regularly exchanged on the financial markets might be tied to market risk. According to the principle of diversification, certain investment risks may be reduced via diversity, but not all of them. The ability to hedge risk is undoubtedly given to market players by

new options like hedging, but this does not totally diversify away from market-related hazards. Derivative goods are one of the greatest methods available to deal with price fluctuations conceptually. Portfolio management is a key idea that may be covered in this discussion. Another crucial strategy for addressing risk reduction in connection with investing activities is portfolio management.

Rate of Interest Risk

Most interest rate caps and limitations were lifted by authorities and regulators after deregulation. The dynamics of the market influence market interest rates. In the modern world, interest rates fluctuate in response to supply and demand. Under these conditions, changes in the interest rates that banks use to conduct their business also have an impact on both revenues and costs. Loans and security investments are two examples of assets that the banks have that generate interest income. On the other hand, deposits are an example of a liability that has expenditures. As a result, the earnings of the banks have been significantly impacted by shifting interest rates. As a result, this is referred to as interest rate risk.

Earnings Peril

The last line item on the income statement, a bank's net income, is linked to earning risk. This might result in a decline in the bank's net income due to changes in the legislation and regulations, as well as the amount of competition in the banking industry. The difference between the return on bank assets and the cost of financing in bank liabilities may be closing due to recent advances in banking competitiveness. To increase competition within the banking industry, banking authorities are encouraging new banks to join the local banking market. The purpose of boosting competition within acceptable bounds is to raise local services and lower service costs. These advancements are lowering the abnormal returns in banking, which raises the likelihood of earning danger.

Risk of Default or Solvency

The long-term viability of the industry, which is tied to the solvency or failure of banks, should be banks' primary concern about their institutions. When a bank's portfolio investments significantly fall in value and result in a major capital loss, or when bank management has a large number of subprime loans in their credit account, are two crucial circumstances that might lead to solvency issues. A bank's capital account, which is intended to cover such losses, may eventually run out. The regulators could be forced to declare the bank bankrupt if the counterparties of the bank start responding to this issue and begin to withdraw their deposits, for instance. Bank runs are often used to make large withdrawals, and this has a direct influence on the banks' ability to resolve issues and fulfill their responsibilities[7]–[9].

Banks operate in the risk industry

Banks operate as a "middleman" in transactions while simultaneously offering financial services, however this position exposes the banks to a variety of dangers. Furthermore, banks use their own financial statements, such as their balance sheet, to execute transactions and take on the related risks. The majority of the risks that banks face in their operations often relate to their balance sheet activities. Therefore, this topic is at the center of the conversation and the steps that must be taken for risk management. As a result, the risk associated with the bank's conventional and trading operations is included in the balance sheet. The rationale for managing these risks is

the first step in the risk management paradigm. Economic theory holds that basic management principles are intended to maximize shareholder wealth and should also maximize the anticipated return from their company. The profitability and soundness of the bank may be directly impacted if losses result from actions that compromise the organization's basic values and if business risks are improperly handled.

Financial System

Finance both directly and indirectly

Banks are one of the most important financial intermediaries and depository institutions that take deposits and earn profits by channeling money, along with other kinds of financial enterprises including investment banks, insurance companies, and others. Between depositors who provide money (supplier of money - surplus units) and borrowers who seek money (demander of money - deficit units), banks act as a middleman or intermediary. Banks are often controlled by the government because they are highly leveraged businesses that make money using the money or deposits of others. For the stability of the financial system, these institutions' safety and soundness are essential. A functional financial system is usually seen as a prerequisite for attaining economic development, and cutting-edge studies in the field have confirmed this.

In their capacity as depository institutions, banks take deposits from their clients while simultaneously raising money from other lenders and lending it to other parties as credits. Banks provide a variety of services in addition to lending loans. Additionally, they are investing the available money in securities. Banks are one kind of entity that distributes funds to the economy's most lucrative initiatives. As a result, both consumers and corporations utilize these credits for investments. These loans are undoubtedly paid back to the banks as further deposits whenever the businesses generate profits from their investments. The differential in interest rates between deposits and credits is the banks' main source of income. One of the most significant sources of revenue for the banks is this disparity, which is referred to as "spread" in the banking industry. The ratio of credits to deposits is one of the most important indicators for the banking industry. The fundamental and oldest functions of the banking sector are receiving deposits and lending credits, therefore when the rate is high, the banking system is seen as being in good condition. Due to the asymmetric information issues, banks may decide to only provide minimal levels of loans to consumers during times of crisis. Credit rationing occurs while determining if the customer may be correct or wrong.

What can we buy with the extra cash?

The excess units have a theoretical option between investing and sitting idle. There is a loss of opportunity cost when opting for the alternative, which is to not finance the extra funds into the system. The time value of money is a notion that states that giving the excess funds to investors in the form of investing activities gives them an income. The resources in finance that are not utilized to meet demands should be immediately assigned to the greatest options for generating money. If not, investors will forfeit the return on their investments and will not be compensated for their extra income. Individuals, businesses, organizations, governments, etc. may channel their surplus cash to deficit units directly or indirectly, while the deficit units that demand money for their needs get it via financial intermediaries or directly from the financial markets. For an economy to function, this procedure is essential so that the most valued and lucrative enterprises may get the necessary funding. Therefore, excess units are eligible to participate in such schemes

either directly (as a shareholder) or indirectly (by earning interest). It is the chance to engage in any profitable economic activity. If not, the value of money continues to decline in situations where there is inflation. The prudent course of action is to use the extra cash into obtaining and securing capital gains. Since consumers expect banks to protect their riches, the initial aim of the banks was to offer security for money in the vault. This role is still essential today. Although banks do provide the choice for investment and security, as the aforementioned arguments show, doing so not only gives clients the greatest option, but also enhances the likelihood of earning money through interest. Additionally, banks act as payment intermediaries in a nation's financial system. Typically, they work with other financial institutions to organize the transactions. In their capacity as payment intermediaries, banks provide services for more practical money transfers, not only for small-scale transactions but also for everyday purchases of products and services. Banks provide services for global commerce by leveraging their trust and reputation in the business[10], [11].

CONCLUSION

The strategies and technologies used by banks to assist their risk management process vary. These include quantitative models for analyzing market and credit risks, stress testing to see how well bank balance sheets withstand difficult conditions, and scenario analysis to determine the possible effects of certain occurrences or developments. In order to provide a structured and integrated approach to risk management throughout the company, banks also construct risk management frameworks, rules, and committees. It is impossible to exaggerate the significance of risk management in the banking sector. Effective risk management procedures allow banks to effectively balance risk and reward, decide on lending, and allocate money. It makes banks better able to endure market volatility, economic downturns, and unanticipated catastrophes, which lowers the danger of financial hardship and systemic hazards. Furthermore, effective risk management procedures support banks' adherence to legal requirements and promote confidence among all parties, including regulators, investors, and depositors. Effective risk management is difficult to achieve in the banking sector, however. Managing the complexity and interconnection of risks, taking into account new threats like cybersecurity and climate change, and finding a balance between risk mitigation and corporate development goals are some of these problems. In addition, banks must constantly modify their risk management procedures to account for changing regulatory requirements and technology improvements. In conclusion, the risk management process is a crucial part of the banking sector, allowing banks to recognize, evaluate, track, and reduce the risks they encounter. Banks may increase their resilience, protect depositor money, and uphold the stability of the financial system by putting effective risk management frameworks, processes, and controls in place. To handle new threats and maintain the efficacy of risk management in the constantly shifting banking environment, continuous review, improvement, and adaption of risk management procedures are crucial.

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CHAPTER 5
A STUDY ON ECONOMIC CONCEPTS IN BANKING

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ABSTRACT:

Economic concepts play a fundamental role in the functioning and decision-making processes of the banking industry. This paper provides an overview of the key economic concepts that are relevant to banking, highlighting their significance in shaping banking operations, policies, and strategies. The banking industry operates within the broader economic environment, and an understanding of economic concepts is crucial for banks to navigate market conditions, manage risks, and achieve their financial objectives. Economic concepts such as supply and demand, inflation, interest rates, monetary policy, and macroeconomic indicators influence the profitability, asset quality, and overall performance of banks. Supply and demand dynamics impact the availability and cost of funds for banks, as well as the demand for loans and financial services from borrowers. Banks must evaluate market conditions, assess the creditworthiness of borrowers, and determine the optimal pricing and terms for loans and other financial products. Inflation and interest rates have direct implications for banking operations. Inflation erodes the value of money over time, affecting the purchasing power of customers and the profitability of banks. Interest rates, set by central banks through monetary policy, determine the cost of borrowing and the returns on deposits and investments. Banks must closely monitor interest rate movements to manage their net interest margin, balance sheet risks, and asset-liability management.

KEYWORDS:

Banking Industry, Economic, Inflation, Management,Risk Management.

INTRODUCTION

Money production and maturity transformation are the foundational ideas of commercial banks. The significance of the bank's presence in the economy is driven by these two concepts. It was previously mentioned that banks serve as financial middlemen for the transfer of money between economic entities. However, there is another element of this process that has to be discussed, and that is maturity transition. The surplus unit and the deficit unit often favor distinct maturity structures. Due to their urgent need for cash, surplus units like depositors often choose short-term maturities over holding accounts. Being liquid is preferable for addressing a shortfall in monetary requirements. In conventional bank accounts, the matching interest income must be received once the maturity period has passed. The danger of withdrawing savings without receiving interest income rises when depositors leave their funds or deposits for longer periods of time. Whether they have technical understanding or not, depositors with or without income often choose shorter periods of time due to their need for cash in an emergency. Finance theories undoubtedly show that increasing compounding increases revenue since accounts may earn more money through interest. In order to entice depositors to make investments over longer time

periods, banks provide greater interest rates for the longer durations. Deficit units, on the other hand, often choose long-term periods when receiving bank credits since it gives them the chance to repay the loan and is preferable for them to make the investment and collect the profit over the long-term. The idea of maturity transformation states that banks convert short-term deposits into long-term credits and benefit from the difference in interest rates. The production of money is another crucial function of banks. The practice of "fractional reserve banking" by banks fulfills this purpose. In this idea, banks often hold a fixed percentage of the deposits while lending the remaining sum to consumers as credit. This idea entails banks producing more money and expanding the available supply. Otherwise, there wouldn't be as much money available for lending if all the deposits were kept in the vault[1]–[3].

According to what was just said, banks normally make money by lending at an interest rate that is greater than the cost of getting money from depositors. The "spread," also known as net interest income, is the difference between the two interest rates. Obviously, the spread is not the banks' sole source of revenue. Investigating the commercial banks' revenue statements reveals that interest income is the first account shown. The fundamental activity of banks is lending and deposits, which is often referred to as "traditional banking activities." However, traditional banking activities are not the only activities carried out by banks; they are now also involved in trading operations. The investment operations on the asset side may be broadly categorized as trading and conventional activities when looking at the on-balance-sheet items. All of those commercial banks' business poles are bringing in money for them. Additionally, banks will engage in additional operations that are disclosed in the off-balance-sheet. These include warranties, contingencies, and even derivatives market activities. The spread, in theory, is the difference between the cost of the source of the money and the return from the usage of the funds. The source and usage of finances are examined in the next subsection.

Bank Liabilities and Equity: Source of Funds

Deposits, which are the client holdings retained with the bank for protection, future transactions, or to generate interest, make up a significant component of the banks' liabilities. As a result, many individuals throughout the globe presently have bank accounts in which they save their money. Of course, these account kinds differ everywhere. They are often categorized as checking or savings accounts, however. The depositors often choose short-term maturities. The bank's primary duty is to fulfill the demands of its clients, whether they be for full or partial payment. Depositors choose the investments with the least maturity since they are always thinking about their future financial demands. An abrupt withdrawal from these accounts will result in revenue losses before it reaches maturity. Depositors pick shorter terms for bank accounts as a result, in order to cover their immediate financial demands in the future. The majority of banks now provide interest on savings accounts, but offer little or no interest on checking accounts[4]–[6].

Debt and equity accounts make up the balance sheet's remaining portion for the bank. Deposits are without a doubt the main source of loanable cash in the banking industry. However, the capital of banks also plays a significant role in the banking industry. The capital account became a crucial safeguard against potential losses in their operations when the Basel Committee recommendations were adopted by numerous nations worldwide. The minimum capital needed to cover potential future losses is linked to the recommended essential procedures to assess the risks of all bank operations and the efforts to obliterate these potential failures. Therefore, the minimum capital required to cover losses resulting from bank operations is a crucial component

in the risk management approach. The bank's capital also serves as a secondary source of funding in the meantime. Shares may be issued by banks to generate money for unique situations. Equity share may be costly to obtain for loanable cash. Debt is the last source of funding. Debt is another way that banks obtain capital for their operations. Sadly, debt appears on the balance sheets of all banks, but it represents a far lower portion of total deposits. Debt is also not a crucial source of resources that may be borrowed.

Utilization of Funds (Bank Assets)

Lending is the primary source of revenue for the banking industry. Banks often lend out the available cash. The main and conventional banking operation is accepting deposits and extending credit. Loan accounts serve as the main conduit for the banks' funding. The loan-deposit ratio, which shows how deposits are used to fund interest-bearing loans, is one of the important metrics for the banking industry. A high rate indicates that all of the bank's deposits are being used as credits. Similar to the other activities that are shown. The trading operations bring in money for the banks as well. In addition to the usual banking operations that provide the banks the required revenue, the buying and selling of securities also brings in money. The legal requirements for purchasing securities like stocks and bonds might vary by nation. The universal banking activity in Europe permits all forms of securities and activities, but the 1933 regulations still in effect in the U.S. enable banks to benefit from stock purchases and sales via trading activity. However, as trading in Treasury bills and bonds is often permitted for all banks across the majority of the globe, doing so offers investors the chance to make money while simultaneously enabling the Treasury to raise the funds required for public investments. As a result, both endeavors often provide banks the required money. Without them, banks wouldn't carry out investing operations; instead, they would provide services to their customers. These services are also a source of revenue for financial institutions since they charge fees for them. Banks provide contingencies to support international commerce even when the on-balance sheet shows all the major activity. The off-balance sheet activities category includes all of such activities. Banks use derivatives in their off-balance sheet operations to protect themselves from risk. The derivatives market is crucial for hedging, as well as for speculation and arbitrage to manage the essential risks brought on by trading operations. Even though trading involves investments in marketable securities, banks face risks due to these assets' fluctuating values[7]–[9].

DISCUSSION

Special Topic in the Banking Industry

Uneven Information

The issue of asymmetric information is the most important notion in banking. Moral hazard and adverse selection difficulties are brought on by informational imbalances between counterparties during the funding process. Both of these issues arise before to and after the institution's approval of the transaction. Asymmetric information refers to information that is unequally shared between two parties and is often held by one party in a transaction. The units with the most surplus prefer indirect finance to solve the issue and ascertain crucial details about the deal, especially those with savings and extra cash who rely on financial intermediaries to ensure that their investment/savings will be returned with the necessary reward. Otherwise, picking the "bad" option rather than the "good" one would probably include the possible danger of relying only on their capacity to discover the vital facts about the other side of the bargain. The financial

system's most crucial activity is to direct money toward the most lucrative investment options in order to provide the necessary returns and maintain the system's soundness and health in order to keep it operating properly. Naturally, indirect financing is not the only method that aids economic entities that need funds for their operations. Additionally, direct investment supports the channeling of cash. The main reason why financial intermediaries and indirect finance are given attention in this context is because such institutions are competent and have the requisite internal resources to acquire the knowledge needed to address the issues that arise from a lack of information. Financial institutions often assign monitors to gather and provide the data necessary to make informed investment choices on the borrowing businesses. Finding the best place to invest one's wealth is just as important for the institution as it is for the surplus units, which can include people, businesses, institutions, and even governments. The institution must find the best alternative for the scarce resources to ensure the return on profitable projects. The counterparty may engage in actions that are unacceptable from the viewpoint of the other side after the transaction has been completed since the problem does not merely involve choosing the "bad" one. In order to have a functional and well-functioning system to channel the money to the appropriate areas for maximum development, all those issues with adverse selection and moral hazards must be resolved through institutions and markets.

It may be difficult for institutions to distinguish between good and bad consumers during times of crisis when they are unable to complete basic tasks like payments, credit intermediation, and transactions. Every consumer has the potential to be a negative customer for the institutions during a serious crisis. As a result, research has shown that institutions may be hesitant to provide credit to certain parts of the economy. Loan rationing is a theory that explains why banks limit loan availability during crises. The crises that have affected both industrialized and emerging nations demonstrate the need of having strong financial institutions. An economy's state is directly impacted by financial crises. Therefore, the goal of risk management in the banking industry is to concentrate on changes that might enhance the prerequisites for a sound system. Of fact, not every nation in the world has a financial system centered on banks; there are other capital-based financial systems. This difference, however, could not matter if a country is going through a banking sector bankruptcy-related financial crisis. It is clear that having a strong and healthy banking system is crucial for a nation to go on with its regular commercial operations, regardless of whether the financial system is capital-based or bank-based.

Agency Issue

The agency issue looks at how the principle and agent are related. The company's owner is the principle, and the management is the agent. The disagreement between the principal and the agent is the focus of this issue. The CEO is chosen by a general election and is entrusted with communicating the company's vision to the whole organization, while the owner chooses the company's path. The conflict of the primary-agency issue arises, however, if the agent originates its own interest in the firm and passes the main interest. In the framework of the idea of asymmetric information, it may also happen in the banking sector between the bank and its customers. Adverse selection and moral hazards are only a few of the issues that might arise when altering the reason for which money is being used. Of course, the shareholders choose the senior management, and the management always aims to meet the demands of the stakeholders. If not, the owners' interests are represented by another team, and the management is replaced by a general meeting.

The crucial tasks of signaling and screening are carried out by banks to offer the information required to stop issues from arising while providing the services. There is a chance that the firm will suffer if it chooses unprofitable chances since it won't generate the necessary revenue from interest-bearing operations. However, the banks make an effort to avoid the situations that come with some degree of doubt about whether the income may thereafter be recovered by the bank via the aforementioned actions. Risk is created for the banking operations by the uncertainty around the result of the future. While keeping an eye on the client's behavior also reduces certain risks, screening is another way for banks to get the data they need to make educated judgments about their customers. A vital role carried out by banks is choosing the finest possibilities for lucrative investment projects since it enhances the economic environment for investment. All of this highlights how crucial it is to have a system that works properly so that banks, as well as the principal and agent, can get the information they need to stop unwanted activity. The most important and often discussed problem in the financial markets with regard to making informed judgments is information efficiency.

The Issue of the Free-Rider

The information that is required to make judgments on the idea of an efficient market is separated into two categories: the first category is information that is accessible to the general public, and the second category is private information. While some investors spend money on information when deciding what to invest in, others do not. In this instance. While some investors just follow others' judgments, others base their decisions on facts. In the financial markets, this is known as the "free-rider problem," when some market players follow others when choosing whether to purchase or sell stocks. Regulations prohibit speculation and manipulation, but these sorts of actions that do not make use of the essential data (public or private) to produce returns are seen as problematic. The cheapest source of information is news from newspapers, magazines, and television channels, which is categorized as publicly accessible information and, in certain situations, prevents investors from earning abnormal profits. Naturally, anomalous returns cannot exist with private and public knowledge since strong-form efficiency, as defined by Eugene Fama, has the best efficiency in the financial markets[10], [11].

CONCLUSION

Macroeconomic indicators, such as GDP growth, unemployment rates, and consumer spending trends, shed light on the state of the economy as a whole and have an impact on banks' lending and risk management policies. Banks analyze economic data to spot possible credit risks, decide wisely how to diversify their loan portfolios, and modify their business plans in response to market developments. Furthermore, the regulatory schemes and guidelines that control the banking sector are likewise based on economic principles. Economic principles are used by governments and regulatory bodies to define capital adequacy standards, execute prudential laws, and guarantee the stability and integrity of the financial system. Economic theories like systemic risk, adverse selection, and moral hazard serve as the foundation for creating regulatory frameworks that reduce risks and support just and efficient financial markets.

Banks may make educated judgments about asset allocation, risk management, capital planning, and market entrance strategies by comprehending and using economic ideas. It enables banks to prepare for and react to changes in the economy, modify their business models, and seize new possibilities. However, using economic principles in banking is not without its difficulties. Banks

have difficulties in effectively comprehending and implementing economic principles due to the unpredictability of economic forecasting, the complexity of interdependencies within the global financial system, and the quick speed of technology improvements.

In conclusion, economic ideas are fundamental to the banking sector and influence banks' strategy and decision-making. Banks may evaluate market circumstances, manage risks, and coordinate their operations with prevailing economic trends by using these ideas. For banks to succeed in a continuously shifting economic environment, regular monitoring and analysis of economic data as well as the capacity to adjust to changing economic dynamics are necessary.

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CHAPTER 6
BANKING INSOLVENCY AND CRISES

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ABSTRACT:

Financial system stability and efficiency are significantly impacted by banking bankruptcy and crises. This paper gives a broad review of financial crises and bankruptcy, stressing its origins, effects, and important preventative and remedial steps. When a bank's liabilities exceed its assets, it enters into banking bankruptcy because it is unable to fulfill its commitments to depositors and creditors. Numerous causes, such as ineffective risk management, insufficient capital levels, excessive risk-taking, economic downturns, or external shocks, may contribute to insolvency. When a bank fails, it may have far-reaching effects, such as the possibility of bank runs, a decline in depositor trust, credit crunches, and systemic concerns that may affect the whole financial system.On the other hand, times of general hardship and unrest inside the financial industry are referred to as banking crises. Multiple bank failures, a lack of liquidity, falling asset prices, and a deterioration in public confidence in the financial system are often characteristics of crises. They may be brought on by speculative bubbles, lax regulatory monitoring, cascading consequences, or macroeconomic imbalances, among other things. Bankruptcies and crises have serious repercussions that might have a lasting impact on the economy. They may result in severe economic downturns, elevated unemployment, wealth loss, and a drop in consumer and company confidence. Governments often step in to handle troubled assets and provide liquidity assistance, capital injections, deposit guarantees, and other steps to save the banking system from collapsing.

KEYWORDS:

Banking Industry, Economic, Inflation, Management,Risk Management.

INTRODUCTION

With the efforts to implement financial liberalization, the banking crises became an increasingly heated subject throughout the globe in the early 1980s. The objective behind financial liberalization is to open up markets in all nations to improve the interconnection of the financial markets. However, efforts at economic integration are being made by several global areas, such as the European Union, NAFTA, etc., in addition to financial integration. The financial markets should be integrated for two reasons: first, it makes it easier for nations to acquire money for national development, and second, it gives surplus-funds nations better investment prospects. Of course, providing loans or credits to countries that struggle to get the cash needed for their public and private projects also encourages such nations to make investments overseas in order to increase the revenue from their riches. These factors provide supranational entities the incentive to strengthen global integration in order to enhance the circumstances for obtaining capital. These efforts are undoubtedly linked to the topic of financial crises in the literature. The literature is replete with research on the topics of globalization and economic crises. The major

conclusions show that a nation may encounter difficulties in the early phases of liberalization if it is maybe not equipped for it. Although some nations went through financial, economic, banking, and currency crises in the 1980s and 1990s, the majority of governments were able to get the capital they needed to build their nations based on their wealth. For nations with a current account deficit to make up for it with a surplus in their capital account, they must be able to access capital. Here, portfolio investments and foreign direct investment are the two forms of capital that are of interest. The capital markets are often used for portfolio investments, and FDI is a kind of greenfield investment. Because it takes time to create a business strategy for Greenfield investment, portfolio investment is, of course, the most expedient kind. Stocks and bonds often comprise a portfolio investment[1]–[3].

The central bank's Balance of Payment system keeps track of all international commerce, financial movements, and domestic problems. The topic that generates the greatest discussion nowadays is trade and business streams, which have a direct impact on the nation's economic climate. The discounting process, where the principle and agent decide on the performance of a project based on investment assessment criteria, is the most important idea in finance theory. The needed rate of return, commonly referred to as the opportunity cost and cost of capital, is specifically the factor that has the greatest impact on the present value of streams when using the DCF technique. Because firms currently primarily engage in international trade operations, it is probably not viable to only receive the streams in the same currency, therefore focusing on the RRR component alone to determine how much the streams are worth is not totally accurate in the context of globalization. They therefore get streams of other currencies as well. As a result, the value of the firms' streams is likewise impacted by the exchange rate. Therefore, it is believed that the exchange rate works in tandem with the interest rate to affect both the firm's worth and the value of the streams.

Paul Krugman examined the pegged exchange rate regime, which created the basis for the first generation of currency crises, to introduce the topic of crises. In this situation, nations that use a pegged or fixed exchange rate system utilize their government reserves to make up for exchange rate fluctuations and maintain the fixed exchange rate. Governmental authorities are forced to use the promised exchange rate after the official reserves have been used up, whether purposefully or accidentally. As a result, it is decided that they must adhere to the floating exchange rate system. Currency crises, such as this one, have happened before the 1980s. In nations like the Asian Tigers, Argentina, Russia, and Turkey, banking institutions began to endure twin crises as a result of efforts to embrace financial liberalization. These are all related to financial liberalization, which was formerly practiced in these nations. Of course, the issues that arose in these nations were resolved by all of these supranational agencies. The financial integration that links the financial markets with one another is another important idea.

Of course, nations have issues other than banking and currency crises. After 2008, financial and debt difficulties have surfaced more lately. The first generation of the literature on crises, which Krugman launched, was followed by a second and third generation, and it is thought that self-fulfilling prophecies and speculative drives are what cause crises. Of fact, all of these crises arose after currency assaults. The fact that money and exchange rates are crucial indicators for economic units is therefore clearly recognized. The central banks control all pertinent indicators, such as the interest rate, currency rate, and inflation. It is well known that central banks employ these three elements to regulate monetary problems. They are sometimes referred to as the "impossible trinity" (trilemma) since authorities are unable to manage them all at once. In order

to execute the floating exchange rate system, central banks chose two factors for the immediate inflation rate, namely price stability and interest rate. Of course, exchange rates exhibit volatility just as other prices do dependent on market factors. The market players' top worry is the volatility problem since it might be risky[4]–[6].

Prior to Bretton Woods, the majority of nations opted for a pegged or fixed exchange rate system and adhered to its stringent monetary policy implications. The interest rate changed as a result of these considerations. With the use of monetary policy, authorities now aim to regulate the inflation and interest rates by using floating exchange rate regimes. The idea offers an explanation for the trilemma that it is not feasible to manage them all at the same time, even if market players expect to have control over all monetary instruments to reduce the risk resulting from price volatility. As a result, the company level deals with the issue of pricing management. As a result, businesses must manage risk at the management level, just like banks. For the purpose of hedging the risk that businesses, organizations, and even governments face in their operations, the derivatives market in particular has been formed. Banks use derivatives instruments as part of their off-balance sheet operations to control the risks that their companies are exposed to. Financial risk management, which examines and discusses derivatives products, is based on this idea. Forward, futures, options, and swaps are examples of derivatives that are used for hedging, speculation, and arbitrage.

Stability and Solvency in Banking

One of the most significant economic sectors is the banking sector. The efficient operation of banks is a critical duty for authorities even though they provide services including payment systems, credit intermediation, liquidity and settlements, asset transformation, and money creation. The body of research offers convincing proof that an efficient financial system is essential to the health of the economy. None of the transactions can be completed without the payment system. Because credits are often the only source of funding in nations with a banking-based financial system, credit intermediation is also crucial. Everybody's life is impacted by the money in circulation, which is also crucial for meeting our everyday necessities. Of course, transformation is another crucial service offered by banks. No direct or indirect economic unit has faith in the other party to transfer payments to one another. In these transactions, financial institutions and markets are playing a key role in directing money to the appropriate locations. Many surplus units decide to use financial intermediaries who act as special agents to transfer their riches to the deficit units as middlemen under the indirect finance concept. Banks, in their capacity as designated monitors, have a unique ability to gather the data required to award money to the most lucrative investment projects.

Although intermediation alone is not the most important role here, surplus units also favor using indirect investment due to their maturity preference. Companies or businesses often aim to accumulate money over a lengthy period of time to invest in their business. Deficit units, on the other hand, desire to lend their money quickly in exchange for a return. Of course, excess units lend their wealth for recurring income, and it's possible that they seek to gather their riches in exchange for immediate benefits. Institutions may then assume the appropriate maturity-related risk and mature to the desires of both parties. Of course, leaving their riches for a long time has consequences for the economy since they could need the money in the meantime. Therefore, the intermediaries gather shorter-term deposits in a pool and distribute the credits to the other units that choose the longer term. This causes them to favor shorter term investments in their deposit

accounts at the banks. In the banking industry, this procedure, which entails altering the chosen maturity for their customer, is known as asset/maturity transformation. Despite the fact that banks are specialized organizations entrusted with addressing the essential circumstances brought on by intermediation, all of these processes are introducing associated risk via the application of banking operations. The preferred maturity requested by depositors, who want to borrow for a shorter amount of time, and the other side, which is credit consumers, who want to borrow for a longer amount of time, cannot be matched. In order to provide their customers the necessary amount of time by the banks, intermediaries who are represented by indirect financing in financial markets resolve this mismatch. Risk management must be used to address all of these activities that entail short-term borrowing and long-term lending since they provide hazards to the organization. Some risks can be eliminated, some risks can be transferred via derivatives, and other risks need to be managed using risk management techniques. Although there are still certain hazards in the banking industry, they must be offset by procedures. Risk categories are categorized as risk forms, and each of these risks has to be sorted into the appropriate group. Traditional and trading operations, which were formerly divided into two groups, provide banks with significant market, credit, and foreign currency risks.

DISCUSSION

In a previous explanation, it was said that prices, including interest rates, currency rates, and stock prices, move in response to market dynamics and are influenced by supply and demand. As a result, such costs are a factor in the aforementioned operations that the banks are involved in, which is problematic for their company. Because these prices fluctuate throughout the course of the period, there is sometimes some drift associated with volatility. The basics of investment theory link the idea of uncertainty with asset risk, and volatile prices are tied to this relationship. According to the notion, risk is the lack of assurance about predicted future results and investment activity. A fundamental idea in finance is the reward from assets or investments, but it's also crucial to evaluate the risks in order to make the right choices. The portfolio theory states that investors, including private persons, governmental entities, and organizations, base their choices on two factors. In terms of individual assets, they use statistical techniques like mean and variance, but in portfolio theory, Harry Markowitz established two widely recognized modified risk and return formulae to identify the critical factors for deciding on the ideal portfolio. These formulae are used to find efficient frontiers, which are then shown on a graph. Investors may locate the ideal portfolio on the efficient frontiers using their convex utility function.

These justifications demonstrate that in a straightforward investing activity, every market participant makes a decision based on risk and reward. The market index model's definition and classification of risk is based on the overall model risk, which is further separated into systematic and unsystematic hazards. Market participants who maintain portfolios are vulnerable to market risk (systematic risk), which is often eliminated by sufficient diversification. Overall market risk is subsequently influenced by market price volatility. Banks are organizations that carry out investment-related activity. As a result, even the investment activities represented by the asset side, which uses the source of money, are vulnerable to price volatility. Since banks utilize their balance sheets to transform deposits into credits, conventional banking operations may also be categorized as investment activities. In addition to being influenced by market pricing like interest rates and currency rates, lending and borrowing are also impacted by liquidity. Market pricing and trading activity are connected.

The ALM on a bank's balance sheet is linked to its solvency. When the return from investments covers the bank's expenditures, its operations are profitable, which is connected to solvency. Return-generating assets (Credit and Portfolio), also known as return-generating activities, are assets that are represented on the asset side and must have a larger return than the cost of funding in liabilities. When a bank is insolvent, it cannot carry out its business responsibilities, which implies that the cost of money exceeds the profit. This occurs when the asset side's undeniable credits rise, which causes a loss in profit and causes the cost to fall short of the investments. As a result, the banks are placed in an insolvency scenario, and the government should take action to encourage the provision of the circumstances required to put the bank back in a stable position and attempt to address the issue of credit loss by providing the necessary money. When a bank goes insolvent, the regulatory body turns the case over to the Deposit Insurance Fund, who may either buy the bank outright or close it down. In this case of bank collapse, authorities are worried about the sector's health and are putting in place good policies. Otherwise, if regulators do not address the issues of one bank, this might have a Herstatt risk to other banks that cannot be controlled. Similar to how risk management procedures are put in place before a bank goes bankrupt, interventions are made to the essential bank to cover poor losses on the asset side in order to give good procedures in their operation. But having a strong and stable system to provide the essential services to the economy is the main goal of bank administration. If not, leaving the bank with issues like being unable to satisfy its responsibility responsibilities may result in them being unable to pay their bills, which might pose a systemic danger to the whole nation. Therefore, by controlling the relevant risks at the bank level and even in the sector as a whole, the application of required criteria such risk management procedures assures the health of the banks[7]–[9].

In certain situations, such as the Turkish crisis that began in early 2001, several businesses and banks fail. The high level of investments in public securities and the many defaulted company loans were the causes of the twin crises (liquidity and banking crises). With the Istanbul Approach, sometimes referred to as the London Approach, certain banks were routed via the Fund, and the government gave the banks additional monies in addition to the problematic loans so they could invest in treasury securities. Of course, rescheduling by the banks resolves many firms' problematic debts. The effect of crises on a nation may be expensive, and they can have a negative influence on the economy, which is why it is crucial to maintain a healthy financial sector. The damage that bankruptcy does to all economic operations during a crisis, including payment systems and the potential for a complete halt to all transactions, demonstrates the significance of the banking sector's soundness. All of these elements are discussed when it comes to bank soundness. A financial crisis occurs when the nation's solvency is at its worst.

Capital Sufficient

In order to prevent bank bankruptcy, the Basel Committee released significant revisions to the Basel standards under the risk management processes for managing banks in 1988. The first application to manage exposure with the computation of the ratio for minimum capital requirements by banks was supplied by the amendment that the committee suggested. This ratio, sometimes referred to as the Cooke Ratio, establishes the minimal capital requirements that serve as a safety net against probable asset activity losses. After the initial application, the Basel Committee continued to offer new amendments, including BASEL I and BASEL II, and is currently working to improve the existing BASEL II based on the liquidity issue in order to release BASEL III. After the global crises, the liquidity issue became the most important issue in

the efforts to end the banking crises throughout the world. Although interbank markets also provide the necessary buffers for the banks, the crises demonstrated that having enough liquidity in the bank is the most compelling option for the banks to cover the unforeseen cash needs from their clients. Of course, the lenders of last resort, which are the central banks or monetary authorities, provide the necessary buffers to the banks. The Herstatt case demonstrates that banks sometimes struggle to get the liquid money they need to meet their regular business objectives. The lender of last resort may be expensive for banks, thus although the central bank channel can be used to offset the demand for liquidity, it is not a smart choice in emergency situations. Additionally, utilizing the interbank market the market between banks to borrow money during a crisis is not a wise move. A condition of financial bankruptcy occurs when a bank has trouble meeting its obligations, making it impossible for them to borrow. Selling the company's assets at a fire sale is one option, however doing so results in a loss. It is challenging for businesses to cover the essential expenditures if the operations do not generate enough returns. The central bank or other authorities are in charge of consistently ensuring that the banks have the liquidity and cash on hand needed to satisfy their obligations. If not, they will need to borrow the money they need at a higher interest rate from the central bank or the interbank market. As a result, the return that was greater than the cost is eliminated, and banks begin to fail. All of these difficulties are formed with the Basel application to address bank issues in order to create a system that functions properly and for daily living to go on inside a sound economy.

Amendment of 1988 and Basel I

The many hazards connected to a bank's original aims of service provision are present in all of its operations. This article has already discussed these actions, and it goes without saying that the banking industry entails risk. Before 1988, all of these dangers were of concern, and steps were taken to guarantee banks survived in the industry within a working system. Even while market prices began to fluctuate, they really started to do so once the main industrialized nations worldwide embraced the floating exchange rate system in 1974. Participants in the market, such as people, institutions, and even governmental authorities, are often at risk as a result of these changes in price values. The Bank for International Settlements (BIS) and its committee thus made an effort to develop new incentives with the central banks of the member countries. The goal was to provide a structure for banks to have adequate capital to handle any unforeseen losses resulting from their operations. The buffer against losses in prospective future exposures is the minimum capital required for banks to manage capital correctly. The minimum capital adequacy ratio, which is calculated by dividing capital by the two risks and must be larger than 8%, was first amended to include market and credit risks.

ASE II

Following the Basel I application, the Basel committee, which is part of the BIS, refined the credit risk calculation by adding weight classes for the different types of instruments and also incorporated operational risk as a third form of risk to the calculation of the minimum capital adequacy ratio. It is similar to the earlier way in that capital must be over 8% to cover the requirements' capital demands. A three-pillar structure for the risk management process was established by the Basel II amendment, sometimes known as the new agreement. Basel I established the basis for determining the amount of capital that banks need have in reserve to cover possible losses in the future, and the agreement replaced the previous version by considering new risks in addition to pillar concerns. The three pillars minimum capital

requirements, monitoring, and market discipline were part of the new agreement. Credit risk, market risk, and operational risk are used to construct the first pillar of the minimum capital requirement. Despite the fact that these dangers seem to be the same as before, the measuring techniques were really enhanced. There are several ways to calculate the risks that are relevant to the first pillar, and the committee suggested the essential ways to calculate the risks.

For market risk, for instance, the banks are given the Value at Risk (VaR) approach to assess the market risk of their portfolio. The method is split into two phases for a different risk, a credit risk: before credit lending and after credit is started. In the past, banks often employed credit checks, rating, and maybe the outdated 5Cs to identify credit-worthy consumers. All of these procedures provide banks a foundation to gather the data they want for loan applications in order to identify prospective customers who qualify. Additionally, this procedure is known as delegated monitors, in which organizations who are adept at gathering the required data give limited resources to the most lucrative initiatives. This step is the first in the process of controlling credit risk and comes before lending. The management of the credit portfolio, which helps prevent possible losses from lending operations, is the other component. Amounts that would cover prospective losses in the credit portfolio are provided by a number of approaches, including VaR for credit portfolio. The minimum capital requirement for banks must be computed based on the risks that are included in Pillar I.

The second Basel II component, which deals with the oversight of the risk management process by the regulatory authorities, is connected to Pillar II. The regulatory oversight pillar is in charge of looking at the risk-taking practices of the banks. This pillar is within the purview of regulatory agencies, who often examine any remaining hazards that weren't covered by the previous pillar. For instance, when banks engage in credit intermediation operations, the interest rate applied to both the credit and the borrowing is crucial. Another danger for the banks is the spread, which is the difference between the two interest rates. For instance, market variables such as supply and demand affect interest rates, which fluctuate dependent on those dynamics. For instance, the bank's interest rates on deposits and loans are significantly impacted by changes in the benchmark interest rates in the financial markets. Interest rates, like other market prices, generate a variety of risks, including interest rate risk and market risk. In order to cope with market price swings, banks also manage this risk.

Although not all risk is managed by the banks (this was covered in earlier chapters), institutions may employ instruments from the derivatives market to shift price risk to the other participant. Traditional strategies like GAP, Duration, and Simulation are ways used by the banks to control the interest rate risk. Derivatives may also be used to manage the interest rate risk. Foreign currency risk is another concern that the authorities look at. The authorities do not permit an open position under the floating exchange rate system, and this risk is associated with the FX position. Countries began switching from the pegged exchange rate system to the floating exchange rate system in the 1970s. Following that, the bank's present condition suffered from holding an FX position as a result of the modifications to both sides of the B/S. Banks may reduce differences in FX situations by using the same number of foreign exchange-related assets and liabilities on both sides. In 2001, banks in Turkey had unfilled FX positions, and in a single day, the government switched from a pegged to a floating exchange system.

Following that, banks began to fail as a result of accumulating foreign resources for liabilities and using them as local currency credits. In only a few days after the government quit the fixed

currency system, the exchange rate quadrupled, making banks bankrupt since they were unable to pay their debts. Additionally, a run on the banks occurred as some clients tried to retrieve their money. One of the basic causes of bank failures is bank runs. The liquidity problem is the cause of this. Liquidity is the second pillar's other danger, which has the potential to harm the bank's image. If a bank is healthy, it indicates that it has a positive reputation among its clients and that bank runs are uncommon. These hazards collectively go by the name of residual risks, which are not a part of Pillar 1 but are instead seen as belonging to Pillar 2 by the regulatory authorities. To guarantee knowledge of the bank's problems, regulatory agencies and banks are often linked. This is BASEL II's second pillar.

Last but not least, pillar III of the new agreement guarantees the market discipline of the banking sector in order to have a flourishing banking sector. The disclosure of market participants for the health of the banks is a key component of this pillar. Market disclosure is the tool that gives market players the knowledge they need to dispel any speculative misconceptions about banks. Disclosure gives customers and even market players who own bank stock the required information regarding the stability and solvency of the banks. For the authorities to guarantee the soundness of the sector, accurate information on the industry is helpful. This last pillar symbolizes the BASEL II notion as a fresh agreement.

ASELS III

The regulatory body offers the Basel modifications so that they have enough capital to cover any possible future losses from banking activity. The Basel application historically shown modifications in the idea of modifying the amendments depending on daily demands. Unfortunately, the new agreement that was previously proposed was insufficient for the banking sector to survive when confronted with significant hazards in light of the most recent worldwide crises. As a result, the liquidity problem caused the failure of some of the biggest banks on the international market. In order to address the lack of liquidity at the bank level and guarantee the soundness of the banks, the committee attempted to design a new idea with the BASEL III. Basel III thoroughly examines the procedure used to determine the US's net stable funding ratio (NSFR) and liquidity coverage ratio (LCR).

Important research that use a model that distinguishes between idiosyncratic and systemic liquidity risks have looked at the possible connections between Basel III liquidity risk metrics and bank failures. According to the research, the NSFR and LCR have only a little impact on bank failures, and systemic liquidity risk was a major factor in bank failures in 2009 and 2010. The newly created Basel application's fundamental ideas are the coverage ratio and liquidity requirement. Basel III is the new capital requirement measurement system that the Basel Committee on Banking Supervision has established as a reaction to the financial crisis of 2007–2009. Basel III is an international agreement by the nation's authorities to determine the standards. The objective is to improve bank regulation, oversight, and risk management[10]–[12].

CONCLUSION

Nations are attempting to integrate the new Basel III amendments' components into the current version by 2027. The mechanism for the banks to control the risk that happened in their operations was defined by this application, which in its earlier iteration had three pillars. With the new version, authorities began to take the liquidity issue into account in an effort to solve the

liquidity issues at the bank level. All market players have seen significant banks fail in industrialized nations since the global crisis began in 2007. With the new Basel III application, BIS began to take liquidity and other concerns into account in order to improve the health of the nations' banking industries. The significance of having a functional financial system with Basel applications is shown by this research. In order to resolve cross-border financial crises and insolvencies, international collaboration and coordination are also crucial. Information sharing, crisis management plans, and unified regulatory standards are some of the mechanisms that support the efficient resolution of banking crises and stop contagion effects from crossing international boundaries. Despite attempts, there are still difficulties in preventing financial crises and bankruptcy. These difficulties include managing the tension between the need for financial innovation and risk-taking and prudential precautions, guaranteeing the efficacy of regulatory frameworks in a financial environment that is continually changing, and resolving the possible moral hazard brought on by government interventions. In conclusion, financial system stability and the health of the whole economy are significantly at risk from banks bankruptcy and crises. For policymakers, regulators, and market players, an understanding of these issues' sources, effects, and solutions is essential. The frequency and severity of banks bankruptcy and crises may be reduced by putting in place strong regulatory frameworks, efficient supervision, and integrated crisis management systems, which will help create a more resilient and stable financial sector.

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CHAPTER 7
RISK MANAGEMENT ANALYSIS OF MODERN COMMERCIAL BANKS

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ABSTRACT:

With the trend of economic globalization advancing, China's pace of promoting interest rate marketization is accelerating gradually, and the volatility of the financial markets is rising daily. Commercial banks are facing an all-time high in credit risk. Credit risk is the biggest danger that banks are exposed to. With the quickening pace of financial globalization, commercial bank risk management techniques and technology have advanced, but the rationality of risk managers who carry out daily management is constrained and will be swayed by emotion and will. They won't be able to implement entirely impartial risk management as a consequence, which means they won't be able to apply risk management goals to everyday risk management in the best way possible. Commercial bank credit risk is becoming more significant and more difficult to evaluate as the financial industry becomes more complicated. The needs of the current financial risk management system cannot be satisfied by the conventional credit risk assessment methodology. Both theoretically and practically, the study of the credit risk assessment model is crucial.

KEYWORDS:

Banking Industry, Commercial Banks, Inflation, Management,Risk Management.

INTRODUCTION

The risk of economic losses coming from customers' failure to uphold their contractual responsibilities, or the potential for borrowers not to return bank loans in whole and on time for a number of reasons, is referred to as commercial banks' credit risk. According to international standards, the financial sector is one of the global businesses that is the backbone of the contemporary economy, a significant sector of national economies, and even the lifeblood of such countries. In Western industrialized nations, commercial bank credit risk assessment has reached a reasonable level of maturity and has a corresponding framework in both practice and theory. While classical proportional analysis, which falls short of addressing the objectives of commercial banks in terms of credit risk prevention and management, is still in its infancy in China, credit risk assessment research has just recently started there. However, risk management is ultimately about people, not systems or machines, which results in a slight divergence between the implementation and impact of daily risk management and the original assumption. The connotation of risk management in commercial banks has been continuously enriched, and management methods and technologies have been continuously improved.

We can only better support commercial banks' loan decision-making and make it easier for them to manage credit risk by the scientific and accurate appraisal of the credit risk of their business clients. Commercial banks are now the backbone of the global economic and financial system as a result of China's commercial institutions' ongoing transformation. The development of a

methodology for evaluating business credit that is appropriate for China's national circumstances and the scientific assessment of business credit rating will be seen as essential tasks by the banking sector in China in order to inform loan decision-making and improve the capacity for risk early warning and management. Commercial banks must dedicate themselves to creating a strong and dynamic internal control system operation mechanism in light of the constantly shifting financial landscape and the proliferation of increasingly innovative financial instruments in order to meet the demands for stable, safe, and healthy development. This objectively calls for commercial banks to continuously improve the internal control mechanism and fundamentally establish a long-term and efficient risk management system[1]–[3].

Artificial intelligence has gained popularity and is widely known to the general public as a result of the advancement of computational intelligence. Although big data is often connected to the Internet sector, it has really been around for a while. Commercial banks in China should seek the maximum development of bank value based on managing the bank's risk level in order to meet the challenge of international banking by using rational and scientific risk management tools and techniques. The management of credit risk has a unique position since it is the primary risk for commercial banks. Commercial banks use cutting-edge financial tools and technologies to identify, assess, monitor, report, and control credit risks in order to predict, supervise, and control the possibility and uncertainty of debtor default during the credit-granting process and minimize potential credit losses or maximize additional credit gains. Academic study on the application of data mining technologies in credit risk assessment has increased as the technology has gained popularity in the financial industry. The support vector machine has been widely investigated, but the neural network algorithm is one of the most promising approaches in data mining technology. Researchers have achieved a key advancement that not only reduces our credit risk but also safeguards the public by using vector machines to assess banks' internal credit. As a consequence of the creation of Internet platforms such online social networking platforms, Internet platforms, and e-commerce platforms, internet businesses have accumulated valuable big data. Massive web data may be made useful and usable by cleaning it up. The development of product innovation cues via digitization may potentially take advantage of the enormous benefits generated by data mobility for online businesses. This paradigm also has a significant effect on conventional financial businesses.

Commercial banks may increase their profitability and lower the percentage of non-performing loans by making full use of the publicly available information on businesses and developing a model for credit risk assessment. In the course of doing business, banks are constantly exposed to a variety of financial hazards, with credit risk holding a unique and significant position. Credit assets cannot now be priced or traded quantitatively in China since the country has not yet developed its own credit risk measurement methodology, which is dependent on the supervisor's discretion and incapable of making an impartial assessment. China now has a large variety of commercial bank locations spread out over the whole nation. Many commercial banks are now based on the Internet, e-commerce, and online banking due to the changes in the times, but the hazards of the market are undoubtedly rising. An key step in enhancing commercial banks' risk identification, early warning, and control skills as well as the cornerstone for fundamentally eliminating the effect of nonperforming loans is the scientific and precise credit risk assessment of corporate clients.

DISCUSSION

A crucial component of contemporary commercial banking operations is risk management. This paper gives a summary of the risk management analysis performed by commercial banks, emphasizing the major risk factors, methodology used, and the importance of risk management in preserving the stability and profitability of banks. Credit risk, market risk, liquidity risk, operational risk, legal and regulatory risk are just a few of the hazards that modern commercial banks must deal with. The stability, reputation, and general financial health of a bank may all suffer significantly as a result of these threats. Identification, assessment, monitoring, and mitigation of these risks are all part of risk management analysis, which is done to safeguard the bank's assets, uphold legal compliance, and satisfy stakeholder and customer expectations. One of the main hazards that commercial banks confront is credit risk, and risk management analysis includes assessing borrower creditworthiness, establishing suitable lending criteria, and putting in place effective credit risk assessment procedures. The main goal of market risk analysis is to identify and control risks brought on by changes in interest rates, currency exchange rates, and asset values. Making sure the bank has enough liquidity to satisfy its commitments and survive financial shocks is part of the liquidity risk analysis process. Finding possible flaws in internal procedures, systems, and human resources that can result in losses in money or harm to one's reputation is the goal of operational risk analysis. Monitoring and guaranteeing compliance with the rules and regulations regulating banking activities is part of legal and regulatory risk analysis[4]–[6].

Credit Risk Assessment Overview

Credit Risk Consequences

The financial market's oldest kind of risk is credit risk. In the course of societal advancement and ongoing financial market development, the notion of credit risk has consistently improved. Finding the risk's focal point is the first step in putting risk management into practice on a daily basis. After that, utilizing quantitative and qualitative analytical techniques, it is possible to gauge the risk's severity via research, measurement, computation, analysis, and prediction, which can then be used to direct company operations. The actual revenue of bank credit funds deviates from the predicted income during company operation and management as a result of the effect of many unexpected uncertain events, increasing the likelihood that the bank would experience losses. It is predicated on trust. The security of the trust relationship, the trustee's credit standing, and the credit grantor's sound judgment all play a role in the credit grantor's confidence in the trustee. This kind of credit stresses the moral force that binds people together, according to social psychology.

The everyday implementation behavior of risk management may differ from the most effective, rational, and scientific behavior due to personnel-related issues, which might cause the implementation outcome to deviate from the ideal state. There are two categories of credit risk: wide sense and narrow sense. The term "credit risk" in its broadest sense refers to the volatility or uncertainty of the influence of various uncertain factors on commercial banks in the future, primarily the volatility or uncertainty of future earnings or asset values, which causes the actual earnings of banks to differ from the expected earnings, suffer losses, or obtain additional earnings. In a broad sense, credit risk includes not only the risk of default but also the possibility that the commercial banks' off-balance-sheet contingent liabilities will become on-balance-sheet liabilities as a result of a change in the debtor's capacity for repayment and credit rating status,

which will alter the value of their credit assets. However, there are several factors that contribute to bank losses in the strict sense of credit risk. Figure 1 categorizes the elements that influence lenders.

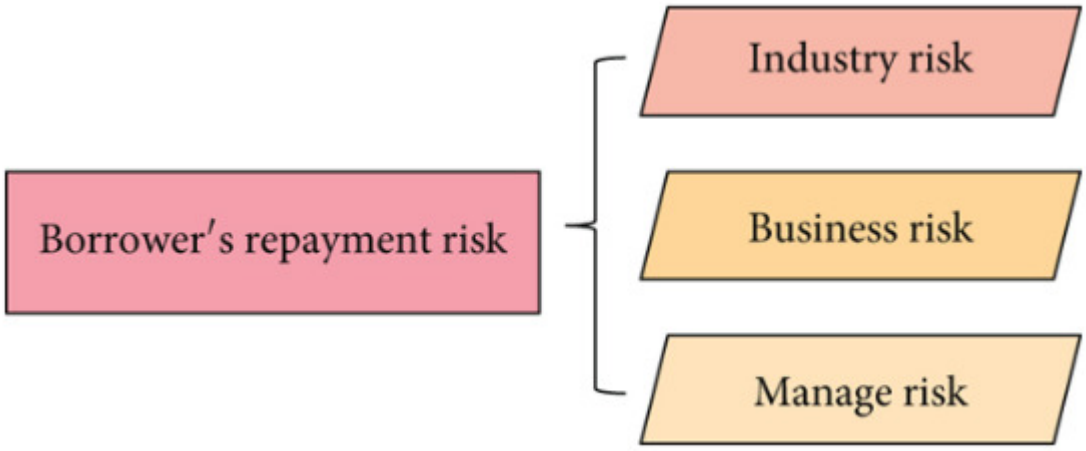

Figure 1: Illustrate the Classification of Lender Influencing Factors.

Commercial banks make use of a range of approaches and instruments to undertake risk management assessments. To evaluate and quantify risks, they include quantitative models, stress testing, scenario analysis, and risk metrics. In order to supervise risk management operations and guarantee the use of best practices, banks also construct risk management frameworks, rules, and committees. Additionally, the introduction of cutting-edge technology and data analytics has improved banks' capacity to recognize and control risks more successfully. It is impossible to exaggerate the importance of risk management in contemporary commercial banks. Banks can make educated judgments, deploy money effectively, and maximize risk-return tradeoffs through effective risk management. The trust of stakeholders, including as depositors, investors, and regulatory authorities, is maintained by helping banks recognize emerging risks, put effective risk mitigation procedures into place, and detect developing hazards. By lowering the possibility of financial crises and its ripple effects, good risk management procedures also help to the financial system's general stability[7]–[9]. However, doing risk management analysis for contemporary commercial banks is not without its difficulties. These difficulties include managing the complexity and interconnection of risks, keeping up with changing hazards and regulatory requirements, and integrating new threats like cybersecurity and climate change into risk management frameworks.

CONCLUSION

In order to identify, analyze, monitor, and reduce the different risks that contemporary commercial banks confront, risk management analysis is a crucial role. Banks may efficiently manage risks and assure the stability and profitability of their operations by using reliable processes, frameworks, and technologies. To handle growing risks and sustain resilience in a banking environment that is always changing, continuous examination and improvement of risk management strategies are important.

Businesses confront fiercer competition as economic globalization continues to advance, making it more difficult to appropriately calculate credit risk. A realistic and scientific credit risk

assessment model is something that commercial banks are getting more and more interested in creating. According to theoretical analysis, commercial banks' risk management significantly affects their capacity to generate value, particularly in five areas: nonperforming loan ratio, provision coverage ratio, loan-to-deposit ratio, asset-liability ratio, asset-liability ratio, and capital adequacy ratio. On the other hand, owing to growth and internal control management constraints, China's commercial banks have not yet completely achieved standardized and compliant internal control management. Most study results are utilized to analyze the mechanism of commercial bank credit risk creation in China from the viewpoint of macropolicy management or to analyze the process of commercial bank risk formation from the perspective of system and institutional development.

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CHAPTER 8

RISK MANAGEMENT IN BANKS: CAUSES, CONSEQUENCES AND REMEDIES

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ABSTRACT:

Risk management plays a critical role in the stability and profitability of banks. This paper explores the causes, consequences, and potential remedies associated with risk management in the banking sector. The identification, assessment, and mitigation of risks are fundamental aspects of effective risk management practices. However, banks face a wide range of risks, including credit risk, market risk, operational risk, and liquidity risk, among others. Failure to adequately manage these risks can result in severe consequences, such as financial losses, reputation damage, regulatory penalties, and even systemic instability. The causes of inadequate risk management in banks can stem from various factors, including deficiencies in risk assessment methodologies, insufficient internal controls, inadequate corporate governance, and a lack of awareness or prioritization of risk management at the organizational level. Moreover, external factors such as economic downturns, regulatory changes, and technological advancements can also pose challenges to effective risk management**.**

KEYWORDS:

Credit Risk, Economic, Market Risk, Operational Risk, Risk Management.

INTRODUCTION

Banks are faced with a variety of financial and non-financial risks throughout the financial intermediation process, including credit, interest, foreign currency, liquidity, stock price, commodity price, legal, regulatory, reputational, operational, etc. Since the hazards are so intertwined, actions that influence one risk category may also have an impact on a number of others. Therefore, enhancing the capacity to recognize, assess, monitor, and control the total degree of risks taken should be of high priority to bank top management. The following should be included in the risk management function's broad parameters:

1. Organizational design;
2. A thorough approach to risk assessment;
3. Policies for risk management that have been adopted by the board should be in line with overall company strategy, capital capacity, management skills, and risk tolerance;
4. Rules and other constraints for managing risks, such as a thorough set of prudential restrictions;
5. MIS that is strong for risk reporting, monitoring, and control;
6. A framework for thorough risk reporting, robust controls, and well-established processes;
7. A distinct risk management framework that is separate from operational divisions and has a defined hierarchy of risk management responsibilities; and

8. Periodic examination and assessment.

In general, credit, operational, market, and liquidity risk are the key risks for banks. Since banks are subject to a variety of hazards, they must have a strong risk management infrastructure and adhere to legal requirements. To lower risk and safeguard depositors, government organizations like the Office of the Superintendent of Financial Institutions (OSFI) have enacted rules[1]–[3].

The failure of a bank may have an impact on millions of individuals because of the scale of certain institutions. Governments may improve their policies to encourage cautious management and decision-making by better understanding the dangers they represent to banks. Investor choice is also influenced by a bank's capacity to manage risk. Although a bank might earn high returns, poor risk management can cause earnings to decline as a result of loan losses. Value investors, on the other hand, invest in banks that can generate profits while not being too vulnerable to financial loss.

Credit Danger

The biggest threat to banks is credit risk. It occurs when counterparties or debtors breach their contractual obligations. An instance of this is when the borrower stops making principal or interest payments on the loan. Mortgages, credit cards, and fixed income assets are all subject to default. Failure may also occur in areas such as derivatives and provided guarantees. Banks may decrease their exposure in a number of ways, even if their business model prevents them from being completely insulated against credit risk. Because the decline of a company or issuer is sometimes unanticipated, banks diversify to lessen their exposure. By doing this, the probability that banks would be overexposed to the huge loss class during a credit crisis is reduced. They will lend money to borrowers with great credit records, trade with counterparties, or keep collateral to cover loans in order to reduce their exposure to risk[4]–[6].

How do banks manage this risk?

1. To modify the credit score risk, top control approval or interest must be obtained.
2. Credit risk management practices include:
3. Bank mortgage policies need to clearly define their risk management procedures.
4. It is possible to gauge the level of risk using a credit score or scoring system.
5. It might be measured by evaluating anticipated and unexpected financial losses, and even threat pricing can be accomplished on a medical basis.

DISCUSSION

In order to manage the credit risk of a financial institution on a broad scale, each bank should establish a credit policy Committee to oversee the credit score standards, methodologies, and agreements. Credit score hazard management uses a variety of control strategies to help the financial institution lessen the impact of credit risk. A few examples of techniques include the risk score, prudential limitations, mortgage assessment mechanism, threat pricing, portfolio control, and credit score approval authority.

Risk Operational

Operational risk is the possibility of financial loss brought on by errors, disruptions, or damage brought on by people, buildings, or processes. For straightforward company operations like retail banking and asset management, the operational kind of risk is minimal, and it is better for

activities like income and trading. Internal fraud and transactional mistakes are two examples of losses brought on by human error. An example would be if a cashier offered a customer an extra $50 by luck. Fraud on a larger scale may result from a cyber security compromise at a financial institution. Hackers may steal customer information and money from banks and use that information to threaten organizations with financial penalties. In each such situation, banks incur losses and accept the truth from their customers. Damage to a financial institution's reputation might make it more challenging to obtain deposits or do business there.

There is no standard method for calculating the operational risk of banks. Simple and experimental procedures have been used up to this point, but international banks have provided some supportive measures to control operational risk. Estimating the likelihood of an operational loss and, in addition, the potential duration of the loss are necessary for quantifying operational risk. To gauge the level of operational risk, banks might use analytical and discretionary procedures. Operations risks include things like audit results, quality data, past loss experience, turnover or volume data, and more. A few international banks have developed score matrices similar to those used to rate bond credit. Operational risk has to be evaluated and addressed on a regular basis. Indian banks use an uncomplicated benchmark technique to gauge business interest instead of any clinically complex methods for measuring operational peril.

Market Danger

The bank's actions in the capital markets pose the greatest danger to the market. This is because to the volatility of the stock market, pricing for commodities, hobby prices, and credit spreads. If banks are actively engaged in investing, trading, or other forms of capital market activity, they are more exposed. As the financial institution may invest in businesses that generate commodities, commodity costs also play a role. The cost of the organization and the return on the investment both change as the price of the commodity does. Changes in supply and demand, which may sometimes be difficult to foresee, are what drive adjustments in commodity prices. Investment diversification is thus essential to reduce market risk. Hedging bank investments with additional, indirectly connected ventures is another approach to decrease bank investments.

Manipulating market chance is the main predicament facing bank top management. The top management of banks should undoubtedly articulate the market risk guidelines, agreements, evaluation mechanisms, auditing & reporting structures, etc. These guidelines should specifically highlight the risk dimension structures that capture the resources of substances from banks and have an impact on banks as a result. Banks must establish an asset-liability management committee, whose main goal is to maintain & manage the balance sheet within the risk or performance boundaries. Banks must set up a neutral central office as a smart approach to monitor market risk on a real-time basis. In order to analyze market opportunity, the middle office should be made up of individuals that are market specialists. The specialists may be eminent bankers, statisticians, or economists. The contributors of the center office must not participate in the daily operations of the treasury department or its divisions.

Availability Risk

The capacity of a bank to access coins to satisfy financial obligations is referred to as liquidity risk. Allowing customers to withdraw their deposits is one of your duties. A snowball effect may result from failing to provide clients their cash in a timely manner. Other depositors would hurry to withdraw their accounts if a financial institution delay giving coins to some of its customers in

the future since it will make them lose faith in the company. As a consequence, the financial institution's ability to provide a pricing range is further diminished, which makes it vulnerable to attacks. Banks' excessive dependence on short-term funding sources, the concentration of illiquid assets on their balance sheets, and declining client confidence in the institution are some of the reasons why they have liquidity problems. Problems with investments may also be caused by poor management of assets and legal responsibility periods. This happens when a bank has a lot of short-term obligations but few short-term assets[7]–[9].

Liabilities in the modern era include customer deposits or short-term GICs (guaranteed investment contracts), which the bank must pay out to clients. The bank may also have a mismatch in the duration of assets and liabilities if all or most of the financial institution's assets are linked to long-term loans or investments. There are rules that help with liquidity issues. They include the need for banks to have enough liquid assets to last for a while even without an injection of foreign resources.

The Prospects of Bank Risk Control

The mechanism used by a company to create a strategy to identify, prevent, reduce, or respond to capability losses is known as risk management in the banking industry. Before, the focus was on the dangers posed by highly leveraged financial firms like banks and hedge funds. And since the financial crisis of 2008, this has taken the form of regulation to prevent the creation of unethical and illegal financial products, with nations becoming increasingly concerned with compliance from domestic and international financial institutions as well as with measures to safeguard depositor interests. Governments concentrated on the aforementioned issues, while banks concentrated on internal governance mechanisms for identifying and controlling their two key risk factors: prison compliance and cyber security. The future of risk management in banking is a great subject for discussion as the location becomes more and more important for financial offers. Things are changing and may continue to change significantly over the next ten years as a result of COVID-19's disruption and the maturing of revolutionary technologies like block chain and distributed ledger technology (DLT). We argue that bank executives need to be acutely aware of the technology upheavals that pose strategic risks to their very existence.

The rise of fintech, which banks haven't fully embraced, and other new disruptors like DLT may be the focal point of the future of risk management in banking. Customer expectations and a continually changing regulatory environment are changing the sector's risk drivers. By definition, banks are financial intermediaries, thus these concerns go beyond good portfolio management and the need to safeguard depositor stability, which have historically been the focus of internal risk control programs and media attention. However, unlike anything that has ever been in the past, DLT is a whole new way to fund. DLT provides a way to conduct secure transactions on a shared ledger without using an intermediary. Everyone and nobody simultaneously owns and sends the ledger. In a DLT fee chain, banks may also need to completely reinvent themselves. As DLT becomes more widely used, some of the risk factors present in conventional banking business models will lessen, if not completely eliminate. In order to stay ahead of growing risks and disruptions, risk management in banking will need to make use of new technologies.

Devices like AMPLYFI's Deep Insight analyze unstructured deep-web data sources using device learning and data science, helping to uncover signs that could otherwise remain buried. Banks may use the tool to test the horizon and quickly convert research into profits thanks to its access to more than 2 million papers, patents, and company records. With the ability to provide

improved insights and foresight, CEOs may make wise decisions about how to prepare for disruptions before such advances became commonplace. According to a McKinsey study, client-facing operations such as lending, investing, and transactions all of which depend on developing strong customer relationships are the main source of revenue for banks. Fintech startups, on the other hand, have expanded significantly over the last five years and are slowly but surely eroding the clientele of traditional banks by focusing on their buyer-facing activities. The buyer expectation threat driver is closely related to the disruption caused by fintech.

Customers transfer these expectations on the banks as they enjoy the benefits of virtual financial transactions. Banks are under pressure to lower transaction costs, enhance customer satisfaction, or risk having fintech companies take over their customer base. In order to shape the future of risk management in banking, institutions should improve their risk control procedures to reduce risks and prepare for any disruptions. To keep up with growing fintech, this approach could use new technologies. The regulatory environment is the last major risk factor affecting banks. Banks need to build a system for not just learning about legislative changes as they occur but also understanding the likely impact such changes may have on the company. With tons of new papers being added every day, banks may use Deep Insight to monitor areas of interest for emerging issues without constantly switching between different information carriers. It integrates structured and unstructured data at scale to unearth previously unknown relationships, patterns, and opportunities that might aid users in making more informed credit choices. Our technology may be used to provide crystal-clear, market-converting insights that can help businesses make better decisions.

Positive Effects of Risk Management

Benefits of Risk Assessment

Identification of risks aids in promoting attentiveness in sensitive situations and composure in crisis situations. It suggests that all of the risks from before are planned to occur and are being taken with no running assumptions. These amazing risks often arise in most situations. It assists in potential hazards so that it is informed of the impending issues.

Advantages of Chance Analysis:

It specializes in duties that support the effect of initiatives or company. This section focuses on the ideas that may be mentioned by several stakeholders. The benefit of treating the finished elements with more potential solutions is its best advantage. It has firsthand knowledge of every viewpoint that will influence every aspect of social life. Participating in such exams will assist one in overcoming their hazards. It encourages corporate tradition.

Solution for Risks:

It makes it possible to manage personal risks, which might be a subset of implementing a strategy. It has internal compliance that is developed and lessened as the abandoned motions approach. Its likelihood is in the absence of knowledge and much more so in the successful facts that are relieved by internal controls.

Elimination of Risks:

The risks that are addressed in the provided test plans are anticipated in the operations of the business. It permits one to expedite the records to new rules and contingencies that can be

successfully implemented in the mapped business operations. In this case, the ownership of risks requires a revision to the fee-useful analysis. It specializes in the replacement of rules in the designated structural behavior.

Understanding the Risks:

Here, the words that are observed will raise awareness of the planned terms of hazards, which may be a successful analysis and evaluation of exercising the modules of dangers. It permits one to focus on the hazard remedies in the learned instructions that are planned into guidance loss. Each module within the detected data has further levels.

Successful Corporate Tactics:

Risk management plan is not a one-time pastime, and grades are decided in accordance with current standards. It has exceptional gradations that vary according to planning, preparation, and effective execution of all plans. It has the operational effectiveness that is discovered via the reduction of negative risks. The preparation of commercial company inside the treatment measures is governed by contingent regulations.

Cost and Time Savings:

Threats exist to the completed job over the tasks and other business strategies. The prices that are aggregated in the used devices are often saved as a consequence. It reduces waste and gives firefighters more time to put out fires.

Risk Management's Drawbacks

Complicated computations:

When it comes to addressing risks, hazard management requires intricate calculations. Without the automated gadget, it becomes difficult to calculate risks at every step.

Uncontrolled Losses

If the commercial entity incurs a loss, that pay might be added to the company's pay loss. Here, the loss that resulted from an incorrect timetable for risk management is the employer's fault.

Ambiguity:

Even while uncertainty is a loss, people should cover it up with calculated scales of losses and reductions, and even take into account meaningless insurance discounts.

Depends on other sources:

Dealing with risks often rely on external entities that may be modified inside the employer and external realities. It includes all of the verified information regarding the dangers posed by various reliable sources. The transferrable sources are dependent on external bodies that often possess knowledge.

Mitigation:

In general, mitigation ensures losses from hidden cash impairment, which may also result in poor risk management. This leads to risky acceptance of the truth in the context of uncommon employer losses.

Problems with Implementation:

It takes a while to compile data on strategic strategies for hazard management. It has normal needs that are reasonable and ordinary when compared to monetary values. It is compatible with a challenging knowledge without recent experience and without payment of the necessary amount of data.

Generally Speaking:

Since subjectivity can process chance management the greatest, it holds at the control of prospects within any issue. It may be identified with the strict use of controls. It oversees the price-benefit analysis that isn't put into practice. This procedure focuses more on putting controls in place.

Potential Dangers

These capacity risks must be carefully managed in order to organize and vanish from the market. This strategy lowers the risk while increasing control over it in proportion. Any method may have its own restrictions and task chance control benefits. Therefore, to create a strong chance control, one must be aware of the strategic approaches for risk mitigation that are effective at hazard-takers. To avoid impending threats, one must perceive as much of the available control as possible. When the commercial enterprise enters impacts other than capability threats, damages, and vulnerabilities, hazard management will become the main case.

The consequences of poor risk management can be far-reaching. Banks may experience financial losses due to unexpected events or misjudgments, which can erode capital and impair their ability to meet obligations. Furthermore, reputational damage resulting from risk mismanagement can lead to customer attrition, loss of investor confidence, and increased regulatory scrutiny. In extreme cases, inadequate risk management practices can contribute to systemic risks, endangering the stability of the entire financial system. To address these challenges, banks can implement various remedial measures. These include enhancing risk assessment frameworks, strengthening internal controls and risk monitoring systems, fostering a risk-aware culture, and ensuring compliance with regulatory requirements. Additionally, the adoption of advanced risk management techniques, such as stress testing, scenario analysis, and the use of sophisticated risk models, can provide banks with a more comprehensive understanding of their risk exposures[10].

CONCLUSION

In conclusion, effective risk management in banks is essential for safeguarding financial stability and profitability. Identifying the causes of risk mismanagement, understanding the potential consequences, and implementing appropriate remedies are crucial steps in mitigating risks and improving overall risk management practices within the banking industry. By adopting proactive and comprehensive risk management strategies, banks can enhance their resilience, protect their stakeholders, and contribute to a more robust and secure financial system.The investigation, resolution, proportionality, and complexity of the specific dangers are all part of the risk management system. It plays a unique function and poses risks that fall within the corporate umbrella.

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CHAPTER 9

RISKS AND RISK CONTROL IN THE BANKING INDUSTRY

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ABSTRACT:

The banking industry plays a crucial role in economic development by facilitating financial intermediation and providing essential services to individuals, businesses, and governments. However, with its inherent complexity and exposure to various risks, the banking sector faces numerous challenges that can impact its stability and overall functioning. This paper aims to examine the risks prevalent in the banking industry and explore risk control measures adopted by banks to mitigate these risks. The risks faced by banks can be broadly categorized into credit risk, market risk, liquidity risk, operational risk, and regulatory and compliance risk. Credit risk arises from the possibility of borrowers defaulting on their obligations, while market risk encompasses the potential losses due to adverse changes in market conditions. Liquidity risk refers to the inability of a bank to meet its financial obligations, while operational risk relates to internal failures, including fraud, system breakdowns, and human errors. Furthermore, banks also face risks associated with regulatory compliance, as non-compliance can lead to penalties and reputational damage. To effectively manage these risks, banks employ various risk control measures. Credit risk control includes thorough credit assessment processes, diversification of lending portfolios, and establishing adequate loan loss provisions. Market risk control involves the use of sophisticated risk management techniques, such as value-at-risk models and stress testing, to assess and manage potential market fluctuations. Liquidity risk control entails maintaining sufficient liquid assets and establishing robust liquidity risk management frameworks.

KEYWORDS:

Credit Risk, Mitigate, Liquidity Risk, Operational Risk, Risk Management.

INTRODUCTION

In the growth of an economy, the banking sector is crucial. It is the main force behind the nation's economic expansion and has a pivotal role to play in turning underutilized capital resources into the most productive uses possible. In reality, the health of the banking industry affects the stability of the economy, and vice versa. Although the Indian banking industry is now highly robust, many people believe that banking is a very dangerous industry. Risk-taking by financial institutions is necessary, but it must be done deliberately. However, it is important to keep in mind that banks are very brittle establishments that rely on consumer confidence, brand image, and, above all, risky leverage. Banks may fail if anything goes wrong, and the failure of just one bank is enough to disrupt the whole economy. Therefore, bank management must use the greatest caution in determining the kind and extent of its risk exposure and dealing with such issues. Additionally, risk management must be seen by bankers as a continuous and important effort, with the board serving as an example. Since risk and return are inversely correlated, a

bank might anticipate increasing its profits by taking on greater risk. But higher risk also raises the possibility that the bank could suffer significant losses and have to close its doors. Actually, in order to remain in business and make a profit, a bank must operate its operations with these two objectives in mind. Therefore, banks make an effort to guarantee that the risks they take are calculated and responsible. Therefore, the goal of risk management is to maintain a trade-off between risk and return. Additionally, a crucial problem related to the stability of the financial system is risk management in the banking industry. Financial instability often has a major contributing factor from poor risk management procedures guiding bank lending, as was most prominently shown during the Asian financial crisis of 1997–98[1]–[3].

Risk Definition

A risk is an unforeseen circumstance that has financial repercussions that result in loss or decreased profits. Due to the uncertainty or unpredictability of future trade activity, an endeavor that might generate profits or cause losses may be referred to as a hazardous venture. In other terms, it might be characterized as the unpredictable nature of the result. Risk is defined as "a condition where there is a likelihood of unfavorable occurrence of a specific result that is known or, at the very least, quantifiable and, thus, insurable." Risk may be defined as the prospect of harm or loss, which may or may not occur. Risks may be characterized as uncertainties that lead to unfavorable outcomes that are contrary to expectations or intended goals. Risk may be simply defined as the potential for loss. It could result in monetary loss or loss to one's reputation or image. Despite the fact that risk and uncertainty are often used interchangeably, they are not the same thing. Uncertainty occurs when a decision-maker is aware of every eventuality that might result from a certain action, but is unaware of the probability of those events. Contrarily, risk is associated with a circumstance where the decision-maker is aware of the likelihood of multiple outcomes. Risk may be summed up as a quantified uncertainty.

DISCUSSION

Risk in the Banking Industry

The banking industry has seen intense rivalry in the post-LPG era from both local and international institutions. In actuality, deregulation and disintermediation have generated competitiveness in the banking industry. The country's liberalized economic environment has created a number of fresh opportunities for growing bank profits. Indian commercial banks have created a number of fresh, innovative goods as well as services including ATMs, credit cards, mobile banking, and internet banking in an effort to seize this chance. Along with the typical banking products, it is evident that Mutual Funds, Insurance, and other services are being improved and geared to draw in more clients. The risk exposure of banks has also significantly expanded in light of all these changes, including the liberalization of the Indian economy and product/technological innovation. As a result, banks are now compelled to concentrate on risk management. In reality, increased capital market volatility, deregulation, new financial instruments, and technology advancements have all increased the necessity of risk management for banks. The two most significant events that have forced Indian commercial banks to prioritize risk management are briefly mentioned here.

Deregulation: Early 1990s changes in the financial industry led to gradual deregulation, which was its conclusion. Banks now have greater discretion in areas like lending, investing, setting interest rates, etc. thanks to deregulation. These changes have made it necessary for banks to run

their own operations while also preserving liquidity and profitability. Banks must now prioritize risk management more than ever because of this.

Technology innovation: Banks now have a platform to build new products and to set up an atmosphere for effective customer service thanks to technological advancements. In reality, technology advancement has made it possible for banks to manage assets and liabilities more effectively by offering a variety of delivery channels, speeding up transaction processing, minimizing human involvement in back office tasks, etc. To ensure that the potential offered by technology are not lost, expert risk management is required. However, all of these innovations have also increased the range and complexity of hazards[4]–[6].

Different Risks

Risk may be described as the "possibility of loss," which can be either a monetary loss or a loss to one's reputation or image. Like any other commercial organization, banks plan to assume the inherent risks that come with doing business. The benefit would be greater the bigger the risk taken. However, greater risks might also mean greater losses. Banks are sensible enough to recognize, quantify, and value risk, and they have enough cash on hand to cover all contingencies. The following is a list of the main dangers associated with the banking industry, or "banking risks," as they are generally known: Market Risk, Credit or Default Risk, Liquidity Risk, Interest Rate Risk, Market Risk, Operational Risk

Availability Risk

The funding of long-term assets by short-term liabilities exposes the obligations to refinancing or rollover risk, which increases the banks' liquidity risk. It may also mean that an organization might not be able to fulfill its obligations when they come due or might only be able to do so by borrowing money at a high rate or selling off assets for pennies on the dollar. Banks are subject to many manifestations of liquidity risk. The inability to receive money to satisfy requirements for cash flow is referred to as funding risk, also known as funding liquidity risk. Funding liquidity risk is essential for banks. This results from the need to offset net outflows brought on either unexpected withdrawals or non-renewals of deposits.

Time Risk: Time risk results from the requirement to make up for planned cash inflows that are not received, or from performing assets degenerating into non-performing assets.

Call Risk: Call risk develops when contingent obligations crystallize. It might also happen when a bank is unable to seize lucrative business possibilities when they present itself.

Interest Rate Risk

Interest rate risk develops when changes in interest rates have an impact on an institution's Net Interest Margin or Market Value of Equity. In other words, interest rate risk is the possibility that interest rate changes may have a negative effect on net interest income. It occurs when a bank's financial situation is exposed to unfavorable changes in interest rates. IRR has two effects that may be considered: either it affects the bank's profits or the economic value of the asset, liability, and off-balance sheet positions of the bank. Different types of interest rate risk exist. Interest rate risk may take the following forms: (a) Gap or Mismatch Risk: Holding assets and liabilities as well as Off-Balance Sheet items with differing principal amounts, maturity dates, or re-pricing

dates exposes a company to unanticipated changes in the level of market interest rates. This is known as a gap or mismatch risk.

Yield Curve Risk: In a situation where interest rates are floating, banks may price their assets and liabilities using a variety of benchmarks, such as the yields on Treasury Bills, fixed deposit rates, call market rates, MIBOR, etc. If the banks price their assets and liabilities using two distinct instruments with different maturities, then any non-parallel changes in the yield curves, which are common, would alter the NII. Banks should thus assess the effect of yield curve fluctuation on portfolio values and revenue.

Market Risk is the possibility that the mark-to-market value of the trading portfolio may deviate negatively owing to market fluctuations while the transactions are being liquidated. This risk is brought on by unfavorable changes in the level or volatility of market prices for interest rate instruments, stocks, commodities, and currencies. It's also known as Price Risk. When assets are sold before their declared maturities, price risk develops. Bond yields and prices have an antagonistic relationship in the financial market. The trading book, which is designed to benefit from short-term changes in interest rates, is strongly related to the price risk. Market risk refers to the portion of IRR that influences interest rate instrument prices, pricing risk for all other assets and portfolios maintained in the bank's trading book, and foreign exchange risk.

Credit or Default Risk

The possibility that a bank borrower or counterparty may not fulfill its commitments in line with the agreed-upon conditions is more often known as credit risk. To put it another way, credit risk is the possibility that the interest, principal, or both, as the case may be, won't be paid as promised. This risk is measured by looking at the percentage of assets that fall short of the mark. All lenders take on credit risk, which may become quite problematic if it becomes too high. The main and most visible source of credit risk for the majority of banks is lending. It is the biggest concern, especially in the case of India where the banking system's NPA level is quite high. The Asian Financial Crisis, which was brought on by an increase in non-performing assets to over 30% of the financial systems' total assets in Indonesia, Malaysia, South Korea, and Thailand, emphasizes the significance of managing credit risk.

Indian Risk Management Practices

According to knowledge theorists, risk management truly consists of managing uncertainty, risk, equivocality, and mistake. Lack of knowledge leads to uncertainty, which cannot be predicted even by chance, and when more information is gathered, this uncertainty turns into risk. Risk management offers a way to limit risk as market knowledge and understanding of potential outcomes grow. Conflicting interpretations and the ensuing lack of judgment cause ambiguity. Despite having sufficient awareness of the circumstances, this occurs. In order to handle agency issues within the risk-reward framework, banking institutions as well as other organizations establish control systems to decrease mistakes, information systems to reduce uncertainty, incentive systems to manage agency issues, and culture systems to cope with ambiguity. At first, Indian banks used risk management techniques that were in step with the country's laws and accounting norms. However, banks are subject to mark-to-market accounting because to the

escalating rate of deregulation and related changes in consumer behavior. Indian banks' task is to create a framework for monitoring and managing risk that is compatible with corporate objectives and responsive to market changes. Due to the dynamic nature of the industry, banks must keep an eye on changes in worldwide accounting standards, regulatory frameworks in the nation, and most crucially, client business practices. Therefore, it is essential that you adhere to the risk management guidelines that the RBI and BIS have provided[7]–[9].

Market Restraint

By increasing the level of openness in banks' public reporting, Pillar 3 makes use of the market discipline's capacity to encourage cautious management. It specifies the open disclosures that banks must provide, which provide more information on the sufficiency of their capitalization. The Committee thinks that market participants are better able to distinguish between banking organizations so they can reward those who manage their risks prudently and penalize those who do not when they have a sufficient understanding of a bank's operations and the controls it has in place to manage its exposures. Therefore, appropriate public disclosure of information fosters market discipline and, as a result, enhances the stability and safety of the financial system. The Committee suggests Core and Supplementary disclosures as its two disclosure kinds. Core disclosures provide important information to all institutions, while supplemental disclosures are only necessary for certain institutions. The Committee advises that all sophisticated, globally engaged banks provide all relevant core and supplemental information to the public. The Committee has also stressed the need of timely information. For this reason, it has advised semi-annual disclosure and quarterly disclosure for banks with foreign operations.

The Global Financial Crisis and the Indian Banking Sector

The three primary channels via which the consequences of the global crisis have been passed on to the Indian economy are the banking sector, exports, and currency rates. India, like the majority of developing nations, was lucky to avoid the first wave of bad consequences due to its banks' limited exposure to subprime lending. The ICICI Bank, one of the larger private sector banks, was the only one that was partly vulnerable; yet, it was able to weather the crisis thanks to a strong balance sheet and rapid government involvement. The RBI's stringent regulations and the decision to prohibit investment banking based on the US model were the two main elements that made it possible to deal with the difficult situation. The RBI has also carried out the prudential and capital adequacy rules without fear or favor. All Indian banks, whether public and private, are required to follow RBI rules. Indian commercial banks are skillfully managed, and appropriate risk management practices are put in place. In summation, it can be said that Indian banks are largely shielded from the troubles of their western counterparts because to the Reserve Bank of India's strict rules and conservative policies.

Unlike India, the United States permitted several exceptions for large banks that were considered "too big to fail," and this relaxation ultimately contributed to the calamity. It was finally shown that size is not as crucial as care and efficient risk management strategies. It's noteworthy to note that although the developed world, including the US, the Eurozone, and Japan, has experienced a recession, the Indian economy has just seen the spillover effects of the global financial crisis. The truth is that the financial sector has rebounded with minimal damage, which was made possible by our strict regulatory framework and in part because the government owns the vast bulk of the banking business. In addition to risk assessment and suitable risk management

procedures, the global financial crisis and its aftermath compelled banks to consider the sort of financial sector architecture India should have in the years to come. Even while Indian banks were subject to strict domestic regulation and had little exposure to the dangers associated with the trillions of dollars in worthless financial instruments, they were nonetheless able to prevent the contagion.

Significant progress has not yet been shown, despite research being done to develop risk management models that can be used internationally for the evaluation and management of risk. It was shown that private sector banks exhibit more irrational loan advances and investment practices than do public sector banks. Therefore, private sector banks need reliable and effective risk control systems. However, both public sector banks and banks operating in international markets can effectively manage internal risks today. Strong internal controls, frequent audits, and financial investments in technological infrastructure are the main components of operational risk management. Banks also place a high priority on regulatory compliance via the implementation of risk-based compliance programs, the creation of compliance frameworks, and the employment of compliance officers. This study also emphasizes the necessity of good risk governance, which calls for the creation of precise risk management guidelines, the identification of an organization's risk tolerance, and the establishment of reliable risk monitoring and reporting systems. The research also highlights the necessity for banks to keep up with new risks, such cybersecurity dangers and risks associated to climate change, and integrate them into their risk management frameworks[10], [11].

CONCLUSION

As a consequence, a bank's risk management system must include a detailed assessment of risk since risk is crucial to the banking business. Banks are carefully considering how much risk they are exposed to and creating strategies to cope with it. A significant step that promises to promote trustworthy risk management methods is the creation of Basel II guidelines and the RBI's subsequent adoption of them. It attempts to raise the risk sensitivity of capital requirements, promote total risk coverage, and provide a more flexible approach via a menu of possibilities. It is intended to be applied to banks across the world. By establishing risk management cells and conducting internal analyses of each bank's risk exposure, the RBI has also taken a number of steps to ensure that each one of them effectively manages risks. The RBI has also adopted on-site and off-site monitoring techniques in order to efficiently manage risk in the Indian banking sector and avoid systemic risk and financial instability in the country. In conclusion, the banking sector is exposed to a variety of hazards that might jeopardize its general health and stability. However, banks may improve their resilience and reduce possible risks by putting into place strict risk control methods, such as credit risk assessment, market risk management, liquidity risk management, and operational risk mitigation. Banks may work to retain the confidence of their stakeholders while fostering a stable and sustainable financial system by implementing efficient risk governance systems and addressing emerging risks.

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CHAPTER 10
UNDERSTANDING RISK MANAGEMENT PRACTICES IN COMMERCIAL BANKS

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ABSTRACT:

Understanding and effectively managing risks is of paramount importance for commercial banks operating in the dynamic and complex financial industry. This study provides an overview of risk management practices employed by commercial banks and highlights the key components involved in identifying, assessing, controlling, and mitigating risks. The risk management process in commercial banks begins with the identification of potential risks, both internal and external, that could impact the bank's operations and financial stability. These risks may include credit risk, market risk, liquidity risk, operational risk, and compliance risk. Once identified, banks assess the likelihood and potential impact of each risk, utilizing quantitative analysis, stress testing, scenario analysis, and risk rating systems. To control and mitigate risks, commercial banks employ various strategies tailored to address specific risk types. Credit risk control measures involve rigorous credit assessment processes, diversification of lending portfolios, and the establishment of loan loss provisions. Market risk control entails the use of risk management techniques such as value-at-risk models and diversification of investment portfolios. Liquidity risk control involves maintaining adequate liquid assets and implementing asset-liability management techniques. Operational risk control focuses on internal controls, audits, technology infrastructure, and cybersecurity measures. Compliance risk control is achieved through regulatory compliance frameworks, appointment of compliance officers, and risk-based compliance programs.

KEYWORDS:

Credit Risk, Mitigate Risks, Operational Risk, Liquidity Risk, and Risk Management.

INTRODUCTION

Risk might make it more difficult to succeed in reaching certain goals. Depending on the kind of risk present in a given situation, risk may be impacted by both internal and external variables. Risk exposure may have detrimental effects. The best method to manage risk in these situations is to take proactive steps to identify any risk that might have unintended consequences. Without a question, managing risks is simpler than dealing with potential outcomes. The banking industry is often associated with dangers because of how much it is exposed to unlikely events. Because of their business model and extensive exposure to capital, banks have a significant correlation to risk. The most important technique, known as risk management, is utilized mostly in banks. Banks have used risk management to reduce hazards there. All banks are susceptible to many types of risk in today's dynamic environment, including liquidity risk, credit risk, market risk, interest rate risk, and foreign currency risk. These risks might result in negative outcomes that could potentially have an impact on the survival and success of banks. 2007's Al-Tamimi and Al-

Mazrooei. Since there are so many distinct hazards involved, effective risk management is required. One of the most important duties is managing risks after recognizing them and understanding their characteristics. Risks and returns are inversely correlated, which implies that if one increases, the other correspondingly increases. Additionally, efficient risk management may provide a better-balanced trade-off between reward and risk, which might result in a favorable future position. From an economic standpoint, the primary goal of financial institutions, particularly commercial banks, is to maximize profits and provide the best values to the shareholders by giving them access to a range of financial services via risk management[1]–[3].

Higher debt capacity, ensuring internal finance, and knowledge asymmetries were among the reasons given for corporate risk management based on unimportant factors. If a hedge is beneficial to the company, the crucial outcome must be high value—a hedging premium. A few flaws in the financial systems were revealed by the most recent global financial catastrophe. They are responsible for regulating financial institutions and overseeing banks' risk management programs. Offering succinct descriptions of the Pakistani economy will need a better grasp of the conditions in which commercial banks operate. Risk still exists as a component of the working environment for a range of businesses. Due to its extensive exposure to uncertainty and numerous types of risk, banking is usually linked to risk. More scholars have been interested in risk management in banks over the last several years, and more studies have produced the legislation to control risks inside banks. Earlier research aims to categorize the most significant types of risks faced by Pakistan's traditional banks. Previous research, such as that conducted by Abulhassan in 2009, shown the beneficial relationship between customer trust and risk management strategies. Risk management techniques may be seen in this study as risk management, risk identification, risk monitoring, credit risk analysis, and risk assessment and analysis in traditional banks. This research will look at Pakistani commercial banks' risk management procedures.

The History of Pakistani Banks

The State Bank of Pakistan was established in 1948, had been incorporated, and operated under the Central Bank of Pakistan Act of 1956, which gave the bank the power and right to act in the capacity of Pakistan's central bank. One of the biggest and most well-known banks in both Asia and the whole globe is the SBP. Some major and secondary functions of the SBP exist. The main duties include currency issuance, maintaining reserves, regulating credit, formulating monetary and fiscal policy, regulating and overseeing the financial sector, acting as lender of last resort, and ensuring economic stability. Establishing new financial institutions, creating credit instruments, fixing interest rates, managing the public debt, managing foreign exchange, and performing other duties like advising the government on policy issues and maintaining close ties with international financial institutions, offering subsidized credit, and developing the capital market are examples of secondary functions. The main goals of SBP are to encourage Pakistan's economic development and maintain monetary stability, which would eventually result in stable domestic pricing. The SBP's other goals include monitoring and regulating the financial system to ensure its soundness and stability as well as to protect the interests of bankers and depositors, developing a financial framework, institutionalizing savings and investments, giving bankers access to training facilities, providing credit to priority sectors, and monitoring and regulating commercial banks. In 1974, the Pakistani government nationalized all domestic commercial banks. The Pakistan Banking Council, which served as a holding corporation for banks but had

very little regulatory authority, was founded. But once the PBC was abolished in 1997, SBP was left as the country's only authority to authorize banks and other financial institutions. Nationalizing the banking industry resulted in significant government interference and resulted in financing being steered towards preferred projects. The National Corporative Bank's branch network expanded as well in an endeavor to provide banking services to every region of the nation, sometimes disregarding the feasibility or aptitude of such development. The non-banking financial institutions, which include development finance institutions, investment banks, modarabas, leasing companies, and housing finance companies, make up Pakistan's financial sector. Listed commercial banks, which include nationalized, private, and foreign banks, make up the country's financial sector. The SBP's Prudential Regulations govern scheduled banks and NBFIs via numerous divisions, and both are obligated to adhere to certain regulatory requirements such wealth and liquidity reserve responsibilities. While NBFIs must meet long- and medium-term financing requirements, commercial banks are primarily concerned with short-term working capital requirements. NBFIs are thus prohibited from engaging in commercial banking activity. However, the SBP permitted a commercial bank to carry out long-term project loans in September 1997. Only Pakistani commercial banks are scheduled among the listed banks[4]–[6].

DISCUSSION

A crucial component of the banking sector is risk management, especially in commercial banks that participate in a variety of financial operations and serve a wide spectrum of clients. This thorough explanation attempts to examine the risk management procedures used by commercial banks, emphasizing important elements and tactics that banks use to recognize, evaluate, manage, and reduce risks.

Risk Identification: Commercial banks assess possible hazards before beginning the risk management process. This entails a thorough evaluation of all internal and external variables that can affect the operations and financial stability of the bank. While external risks include macroeconomic causes, regulatory changes, geopolitical events, and technology breakthroughs, internal risks might include credit risk, market risk, liquidity risk, operational risk, and compliance risk.

Commercial banks evaluate each risk's possibility and possible effect when it has been recognized. Banks use this evaluation to rank risks and distribute resources appropriately. Risk rating systems, stress testing, scenario analysis, and quantitative analysis are all typical risk assessment approaches. With the use of these tools, banks are better able to comprehend the possible losses that might arise from certain risk situations.

Commercial banks use a number of different ways to efficiently regulate and minimize risks. The particular characteristics of each danger are addressed by these solutions. Typical risk management techniques include: The borrower's financial situation, any available collateral, and credit history are all taken into account during the rigorous credit assessment procedures used by banks to control credit risk. To lessen the danger of concentration, they also diversify their loan portfolios across industries and clients. By establishing loan loss provisions, effective protection against possible credit losses is ensured.

Market Risk Control: To assess and control market risks, banks use risk management tools including value-at-risk models and stress testing. To lessen the danger of concentration, they may

diversify their investment portfolios or use derivatives to hedge their risks. Potential losses are reduced with the use of proactive risk management practices and regular market trend monitoring.

Liquidity Risk Control: Banks create frameworks for managing liquidity risks, which include establishing liquidity risk thresholds and keeping enough liquid assets on hand. The maturity and cash flow of assets and liabilities are matched using asset-liability management approaches. Additional precautions include the availability of emergency liquidity facilities and contingency finance strategies.

d. Operational Risk Control: To reduce operational risks, banks use strong internal controls, task segregation, and process automation. Weaknesses are found and fixed with the use of frequent audits and thorough risk assessments. Cybersecurity measures and infrastructure investments guard against fraud and data breaches.

e. Compliance Risk Control: Banks create compliance frameworks and give regulatory compliance first priority. They designate compliance officers in charge of keeping track of regulatory alterations and guaranteeing conformity to pertinent laws and regulations. Programs for risk-based compliance are used to proactively identify and control compliance concerns.

Risk Governance

To promote efficient risk management throughout the company, commercial banks set up risk governance frameworks. As part of this, risk appetite, risk limitations, and risk management rules are defined. Additionally, banks form risk committees and designate top executives to supervise risk management operations. The early identification and escalation of risks to senior management and the board of directors is made possible by clear risk reporting processes.

New Risks

To remain ahead in a constantly changing environment, commercial banks continually monitor and handle new risks. Examples of rising risks include challenges to cybersecurity, disruptions in technology, risks associated with climate change, and shifting regulatory landscapes. These risks are taken into account by banks in their risk management frameworks, and they invest in countermeasures including improving cybersecurity and implementing sustainable financing methods.

Effective risk management methods rely heavily on risk governance. Commercial banks provide frameworks for risk governance that include risk management procedures, risk tolerance, and risk limitations. The operations of risk management are supervised by risk committees and senior executives, and effective reporting procedures guarantee the prompt identification and escalation of concerns to senior management and the board of directors.

Commercial banks also take proactive measures to manage new risks in order to keep up with a dynamic environment. Threats to cybersecurity, disruptions in technology, hazards associated with climate change, and changing regulatory frameworks are some of these rising concerns. These risks are taken into account by banks in their risk management frameworks, and they invest in countermeasures including improving cybersecurity and implementing sustainable financing methods[7]–[9].

CONCLUSION

For commercial banks to preserve financial stability, safeguard the interests of stakeholders, and assure long-term sustainability, effective risk management methods are essential. Banks may better manage a wide variety of risks by implementing comprehensive risk identification, assessment, control, and mitigation techniques. Commercial banks may traverse the difficulties by implementing strong risk governance and taking proactive measures to mitigate developing risks. To preserve stability, safeguard the interests of stakeholders, and guarantee long-term sustainability, commercial banks must comprehend and put into practice appropriate risk management techniques. Commercial banks can traverse the complicated financial environment and adjust to developing risks by implementing comprehensive risk identification, assessment, control, and mitigation procedures. Commercial banks may seek to achieve sustainable development and maintain the confidence of their stakeholders by developing strong risk governance frameworks and tackling changing issues.

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CHAPTER 11

MANAGING RISK IN COMMERCIAL BANKS

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ABSTRACT:

Risk management is a critical function in commercial banks to ensure the stability and resilience of their operations in the face of various risks inherent in the banking industry. This paper provides an overview of risk management in commercial banks, highlighting the key elements involved in identifying, assessing, controlling, and mitigating risks. Commercial banks face multiple risks, including credit risk, market risk, liquidity risk, operational risk, and compliance risk. These risks arise from the bank's lending activities, exposure to market fluctuations, potential funding shortages, internal failures, and non-compliance with regulatory requirements, respectively. The effective management of these risks is crucial for safeguarding the bank's financial health and maintaining the trust of customers, shareholders, and regulators. To manage risks, commercial banks employ a systematic approach that begins with risk identification. This involves a thorough assessment of both internal and external factors that may pose risks to the bank's operations and financial position. Risk assessment follows, where the likelihood and potential impact of identified risks are evaluated using various quantitative and qualitative methodologies. This evaluation provides insights into the magnitude of risks and aids in prioritizing risk mitigation efforts.

KEYWORDS:

Commercial Banks, Credit Risk, Mitigation, Managing Risk, Risk Assessment.

INTRODUCTION

The primary force behind financial behavior is risk. The financial system would be much more straightforward without risk. However, in the actual world, danger is always present. For financial institutions to thrive in this environment of extreme uncertainty, risk management must be done effectively. Risk management dynamics will surely be crucial to the future of banking. Only banks with effective risk management systems will survive in the market over time. For a financial organization to be successful over the long term, good credit risk management is a vital part of comprehensive risk management. Due to the nature of its operation, banks inherit the oldest and most significant risk. However, for a number of reasons, this has recently become more significant. The wind of economic liberalization, which is blowing all throughout the world, is foremost among them. India is a country that has adopted this shift to a market-driven economy. The clear correlation between the concentration credit risk profile and the NPAs of public sector banks provides empirical support for the idea that better credit portfolio diversification increases the chances of lower concentration credit risk[1]–[3].

Risk Management

The dynamics of risk management will surely determine the direction of banking. Only banks with effective risk management systems will survive in the market over time. For a financial organization to be successful over the long term, good credit risk management is a vital part of comprehensive risk management. Due to the nature of its operation, banks inherit the oldest and most significant risk. However, for a number of reasons, this has recently become more significant. The wind of economic liberalization, which is blowing all throughout the world, is foremost among them. India is a country that has adopted this shift to a market-driven economy. The level of competition has increased both domestically and abroad. This has led to a variety of dangers, both in terms of quantity and number, resulting in erratic markets. A thorough awareness of the risks involved in lending, quantifications of the hazards within each item of the portfolio, and coming to a determination as to the most probable composite credit risk profile of a bank are prerequisites for effective credit risk management. The construction of a framework that specifies business goals, the loan approval procedure, the credit risk rating system, the risk-adjusted pricing system, the loan-review mechanism, and a thorough reporting system is the cornerstone of credit risk management.

The primary activity of lending has caused issues for both individual banks and the overall banking system, which is the significance of the research. Therefore, it is crucial that banks have proper mechanisms for assessing the creditworthiness of specific projects and assessing the risk involved, as well as for the sector as a whole. In general, Indian banks examine proposals using the conventional methods of project financing, including calculating maximum allowable limits, evaluating management skills, and imposing a bar on industry exposure. The demand for more complex and adaptable tools for risk assessment, monitoring, and exposure management is felt as banks enter a new, high-powered world of financial operations and trading with new dangers. It is time for bank management to properly prepare themselves to deal with the challenges of developing instruments and systems capable of evaluating, tracking, and managing risk exposures in a more methodical way.

Credit Risk, or the borrower's failure to repay a loan, continues to be the most crucial risk to manage. Even the makeup of the economic capital, which banks are obligated to reserve for protection against different hazards, shows the dominance of credit risk. According to one estimate, the proportion of credit risk is at 70%, with the remaining 30% being split between the other two major risks, namely operational risk and market risk changes in market price. Tier-I debtors who met certain criteria were permitted to bypass the debt channel and directly reach the capital market. As a result, Tier-II borrowers now have easier access to finance. Banks are unable to sustain the amount of loan losses when margin levels decline. There hasn't been much work done to create a mechanism that would allow hazards to be quantified and detected. Although the majority of banks have created internal rating systems for their customers, there hasn't been any research to compare these ratings to the final asset categorization and to improve the rating system itself. Additionally, industry-specific hazards are rarely explicitly defined and assessed. The gathering of data is routine-driven. Data on lending by industry, by area, and by industry for restored loans might provide insight into the direction to be taken in the future. It is preferable to manage portfolio credit risk via more efficient strategic credit risk management procedures. The procedure offers a structure to make sure that plan and execution are consistent, minimizing the possibility of profits volatility and maximizing shareholder value. The challenge in achieving better credit risk management lies in addressing banks' readiness and openness to accept change

to a more transparent system, to quickly evolving markets, to more effective and efficient ways of operating and to meet market requirements, over and above the specifics of risk modeling issues [4]–[6].

DISCUSSION

Dynamics of Credit Risk Management (CRM)

Credit risk has been shown to be the most serious risk a financial organization faces on a global scale. In 58 out of the 62 banks that existed before to 1984 and broke between 1989 and 1992, according to a study of bank failures in New England, loans and advances were not being returned on schedule. This emphasizes the importance of credit risk management and serves as the foundation for the examination of the current study. The art and science of credit risk assessment and management have made significant advancements in recent years because to the tireless efforts of researchers and risk management practitioners to improve on existing methods. The constraints of conventional methods to credit risk management and the existing regulatory framework of the Bank for International Settlement (BIS) have contributed significantly to the advancement of this sector. It is a significant challenge for credit risk managers to accurately identify pockets of risk concentration, quantify the extent of risk carried, identify opportunities for diversification, and balance the risk-return trade-off in their credit portfolio, even in banks that routinely tweak credit policies and streamline credit processes. Preventive and curative methods may be easily recognized as the two separate aspects of credit risk management. Risk assessment, risk measurement, and risk pricing, early warning systems to detect early signs of impending defaults, and improved credit portfolio diversification are all examples of preventive measures. On the other side, the curative measures work to reduce post-sanction loan losses by using techniques including securitization, derivative trading, risk sharing, legal enforcement, etc. The saying "an ounce of prevention is worth a pound of cure" is a popular one. Therefore, the study's main emphasis is on preventative measures that adhere to the standards established by the New Basel Capital Accord. The New Basel Capital Accord and Risk Based Supervision, two innovations that have had a substantial influence on the foundations of credit risk management techniques in the banking sector, are also discussed in the paper. In addition to emphasizing the key components of the New Basel agreement's prescriptions for credit risk management, efforts are made to codify the reactions of Indian banking experts to the different agreement suggestions. Similar to this, RBI's planned Risk Based Supervision (RBS) is investigated to identify its implementation and direction issues.

Non-Performing Assets: A Problem

The government's introduction of liberalization and globalization in the early 1990s presented the Indian financial industry with a number of issues. Banks were put on a road to align their accounting standards with international norms and by major players, among other things. They needed to take a new look at their balance sheet and critically evaluate it in light of the prudential standards for income recognition and provisioning that the regulator had established based on the recommendations of the Narasimhan Committee. The assets of the bank, loans and advances, are crucial to the gross revenue and net profit of banks. Advances are the foundation of the banking system since they account for more than 60%7 of all bank assets. The ability to finance the nation's commercial, industrial, and agricultural operations is made possible by bank lending, which is of utmost importance. The health of the advances is the main factor determining the stability and strength of the financial system. In other words, boosting the operation of banks and

enhancing their financial sustainability depend critically on improvements in asset quality. Between 2006 and 2008, the majority of domestic public sector banks in the nation are anticipated to entirely wipe up their outstanding NPAs.

Credit Risk Management: A Proactive Approach

Risk is the possibility that both anticipated and unanticipated events might negatively affect the bank's capital or profits. Since the predicted loss is the borrower's responsibility, the products are appropriately priced to account for the risk premium in credit quality that might result in default. While the unexpected loss due to a specific exposure or the whole portfolio must be fully borne by the bank itself and thus covered by capital. Banks must deal with a variety of financial and non-financial risks, such as those relating to credit, the market, interest rates, foreign currency, liquidity, stock prices, legal and regulatory issues, reputational risks, operational risks, and more. These hazards are much interconnected, and situations that have an impact on one risk category may also have effects on a number of other risk categories. Therefore, improving the capacity to recognize, assess, monitor, and control the total degree of risks taken should be of high priority to bank top management.

Credit Risk

Credit risk is the main threat to banks, As a result, credit or default risk is the main risk that banks need to analyze, manage, and accept. It's the ambiguity around the borrower's debt repayment. Lending is, for the majority of individuals in commercial banking, the industry's beating heart. Most banks maintain the majority of their assets as loans, which also account for the majority of their operational revenue. Most banks' portfolios are dominated by loans, which make up between 50 and 70 percent of all assets. Credit analysis uses both quantitative and qualitative elements to provide a probability to the possibility of default. Financial data from the past and the future may be used to assess certain risks. Other risks, such as those related to the character and ability of the borrower to repay a loan, are not readily quantifiable. In the end, the bank weighs these risks and possible rewards before choosing whether or not to issue a loan[7]–[9].

Components of credit risk

The credit risk in a bank’s loan portfolio consists of three components18;

(1) Transaction Risk
(2) Intrinsic Risk
(3) Concentration Risk

(1) **Transaction Risk:** Transaction risk focuses on the volatility in credit quality and earnings resulting from how the bank underwrites individual loan transactions. Transaction risk has three dimensions: selection, underwriting and operations.
(2) **Intrinsic Risk:** It focuses on the risk inherent in certain lines of business and loans to certain industries. Commercial real estate construction loans are inherently more risky than consumer loans. Intrinsic risk addresses the susceptibility to historic, predictive, and lending risk factors that characterize an industry or line of business. Historic elements address prior performance and stability of the industry or line of business. Predictive elements focus on characteristics that are subject to change and could positively or negatively affect future

performance. Lending elements focus on how the collateral and terms offered in the industry or line of business affect the intrinsic risk.

(3) **Concentration Risk:** Concentration risk is the aggregation of transaction and intrinsic risk within the portfolio and may result from loans to one borrower or one industry, geographic area, or lines of business. Bank must define acceptable portfolio concentrations for each of these aggregations. Portfolio diversify achieves an important objective. It allows a bank to avoid disaster. Concentrations within a portfolio will determine the magnitude of problems a bank will experience under adverse conditions.

Strategic Credit Risk Management

The post liberalization years have seen significant pressure on banks in India, some of them repeatedly showing signs of distress. One of the primary reasons for this has been the lack of effective and strategic credit risk management system. Risk selection, as part of a comprehensive risk strategy that grows and supports from corporate priorities, is the foundation for future risk management. This is the underlying premise of an integrated proactive approach to risk management and entails a four step process:

Step 1: Establishing corporate priorities

Step 2: Choosing the credit culture.

Step 3: Determining credit risk strategy

Step 4: Implementing risk controls

These steps (strategies) focus on reducing the volatility in portfolio credit quality and bank earning's performance. Strategic CRM will provide all bank personnel a clear understanding of the bank's credit culture and of the risk acceptable in the loan portfolio. Senior management then manages the process and the portfolio to align them with corporate priorities.Risk control and mitigation strategies are then implemented to reduce the potential adverse effects of identified risks. Commercial banks employ a range of measures specific to each risk type. For instance, credit risk control involves robust credit assessment processes, diversification of loan portfolios, and the establishment of appropriate loan loss provisions. Market risk control entails the use of risk management techniques such as hedging, diversification of investment portfolios, and the implementation of sophisticated risk models. Liquidity risk control focuses on maintaining adequate liquid assets, developing contingency plans, and actively managing funding sources. Operational risk control includes the implementation of strong internal controls, staff training, and technology infrastructure to mitigate operational vulnerabilities. Compliance risk control requires adherence to regulatory standards through comprehensive compliance frameworks, regular monitoring, and ongoing training programs.

Risk governance plays a crucial role in ensuring the effectiveness of risk management in commercial banks. Banks establish risk management frameworks, define risk appetite, and allocate responsibilities for risk oversight. Risk committees and senior management are responsible for monitoring and reviewing risks, while clear reporting channels facilitate effective communication and decision-making. Furthermore, commercial banks are increasingly recognizing the importance of addressing emerging risks such as cybersecurity threats, climate change, and evolving regulatory landscapes. Banks adapt their risk management frameworks to

incorporate these emerging risks, invest in advanced technology systems, and adopt sustainable practices to mitigate potential future risks [10], [11].

CONCLUSION

Credit Risk Management in today's deregulated market is a big challenge. Increased market volatility has brought with it the need for smart analysis and specialized applications in managing credit risk. A well-defined policy framework is needed to help the operating staff identify the risk-event, assign a probability to each, quantify the likely loss, assess the acceptability of the exposure, price the risk and monitor them right to the point where they are paid off. The management of banks should strive to embrace the notion of ' uncertainty and risk' in their balance sheet and instill the need for approaching credit administration from a 'risk-perspective' across the system by placing well drafted strategies in the hands of the operating staff with due material support for its successful implementation. The principal difficulties with CRM models are obtaining sufficient hard data for estimating the model parameters such as ratings, default probabilities and loss given default and identifying the risk factors that influence the parameter, as well as the correlation between risk factors. Because of these difficulties one should be aware that credit systems are only as good as the quality of the data behind them.In conclusion, risk management is an essential function in commercial banks to navigate the complexities of the banking industry. Through comprehensive risk identification, assessment, control, and mitigation strategies, commercial banks can enhance their resilience, protect stakeholders' interests, and ensure sustainable growth. By implementing effective risk governance practices and staying vigilant to emerging risks, banks can adapt to evolving challenges and maintain a strong position in the market.

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