RISK MANAGEMENT PRACTICES OF COMMERCIAL BANKS IN BANGLADESH: SOME OBSERVATIONS

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ABSTRACT

The current research focuses on the risk management procedures utilized by commercial banks in Bangladesh and the effect those procedures have on the banks' overall levels of financial performance. This research investigated the risks that commercial banks face and also looked into the connection between risk management and the financial performance of ten commercial banks in Bangladesh. The data for this study came from secondary sources. Non-performing loans, capital adequacy ratio, and net interest income are the variables whose estimated coefficients show a significant relationship with the performance of commercial banks. On the other hand, the advance deposit ratio, cost of funds, and cost income ratio do not have a significant effect on the financial performance of banks in Bangladesh. The return on assets and the return on equity are inversely related to the advance deposit ratio (ADR) and the non-performing loan ratio (NPLR), respectively. On the other hand, return on assets (ROA) has a positive relationship with cost income ratio (CIR), whereas return on equity (ROE) has a negative relationship with CIR.

Key Words: Commercial Banks, Risk Management Practices, Risk Analysis, Bangladesh Bank, Risk, Credit Risk, Market risk, Operational Risk.

1. INTRODUCTION

Risk is an inherent component of business. However, the banking industry is not exempted from danger. Risk is an important part of financial intermediation and banking operations, so risk assessment and management are important for making sure that each financial institution is sound and that the financial system as a whole is stable. Risk is the element of uncertainty or potential loss that exists in any business transaction, whether financial or not (Block and Hirt, 2004). The long-term success of commercial banks is predicated on their risk management practices. Every bank's risk management practices cover the major risk areas, such as operational risk, interest rate risk, credit risk, liquidity risk, market and technology-related risk, foreign exchange rate risk, etc. (Saunders, Cornnet 2009).

Effective management of risk in the working environment is important for the soundness and survival of every business. For banks and financial institutions, risk management has an additional important systemic dimension. Illiquidity and spreading contagion to other banks or financial institutions in chained links of exposure. Since the financial sector transfers money to the real economy, uncertainty

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insolvency from poor risk management practices in a bank or financial institution imperil not only its own survival but also the stability of the entire financial system by and crises spread rapidly. Risk management techniques are viewed as a three-pronged approach in the banking sector. These are as follows: i) identifying the primary sources of risk and assessing their severity; ii) monitoring and analyzing risk and forecasting the impacts and risks; and iii) minimizing risk by avoiding it or transferring it to someone else through a variety of methods (Rahman et al., 2015). Consequently, it is evident that risk identification, assessing risk, and risk mitigation are the primary aspects of risk management. Coordination between the three is crucial for sound risk management. In this regard, commercial banks in Bangladesh fall short. They require an efficient and effective risk management strategy in order to prevent the occurrence of risks. Due to the impossibility of eradicating risk entirely, they must employ effective risk management practices to lower it to an acceptable level. As the financial sector's regulator, Bangladesh Bank issued guidelines in accordance with the Basel-I, II, and III accords to address credit risk, market risk, liquidity risk, and operational risk. In accordance with these rules, capital adequacy is a crucial tool for combating risk. However, the researcher believes that the adequacy of capital is insufficient to address the dynamic nature of banking sector threats. Because of this, it is important to look into how banks handle risks to see how well they can find, measure, and deal with hazards.

2. STATEMENT OF THE PROBLEM

Risk management approaches have received a lot of attention in Bangladesh during this period of economic liberalization. Banking businesses confront risks as part of their daily operations. Taking risks is part of the banking business. These risks, however, if not adequately understood and handled, can result in massive losses and potentially threaten the bank's survival. This is a common theme in virtually all bank failures and crises. For enterprise-level risk management, credit risk, market risk, and operational risk must be combined into a single composite measure. To obtain the requisite composite assessment, operational risk must be quantified with credit risk and market risk. So, it is important to look into the risk management approach in the banking sector, based on international banking rules (the Basel Accords) and Bangladesh bank guidelines.

3. OBJECTIVES OF THE STUDY

i) To analyze the major characteristics of risk management practices of the commercial banks in Bangladesh.
ii) To focus the impact of the same on operational efficiency of the banks.

iii) To provide suggestions for better risk management of the sample banks.

4. REVIEW OF RELEVANT LITERATURE

A lot of studies have been written about risk management in general. But it was found that there were not that many empirical studies on how financial institutions manage risk. The researcher attempts to summarize the key findings of a few different studies in this article.

Risk management in financial institutions was investigated by Oldfield and Santomero (1997). They proposed four phases for active risk management approaches in this study: (i) the formulation of standards and reporting; (ii) the implementation of position restrictions and rules (e.g., contemporary exposures, credit limits, and position concentration); (iii) the development of self-investment guidelines and strategies; and (iv) the alignment of incentive contracts and remuneration (performance-based compensation contracts).

Ahmed, Pandit, and Hossain conducted a comprehensive study on operational risk management in banks during 2013, investigating multiple facets of operational risk. They discovered that operational risk management in Bangladeshi financial institutions was primarily focused on capital preservation as opposed to insurance, disaster recovery systems, or business continuity strategies. In addition, they emphasize the importance of a robust database while transitioning from a basic risk management strategy to an advanced one.

Alam and Massukuzzaman conducted research in 2011 on the types of risks faced by banks, as well as the procedures and techniques used to minimize those risks. They investigated how successfully banks followed the Bangladesh Bank's risk management guidelines. According to their findings, banks place a high value on the internal rating system and the risk-adjusted rate of return on capital. According to their research, the Board of Directors is in charge of primary risk oversight, the Executive Committee is in charge of risk monitoring, and the audit committee is in charge of overseeing all banking activities. It was a survey-based research study.

Rahman(2011) emphasized the significance of a strong database in order to properly implement much-needed credit risk management policies and an effective risk grading system in Bangladesh's financial institutions. He found problems in the credit rating and monitoring processes, as well as the credit assessment and collateral valuation procedures. He advocated an effective credit inspection department and independent collateral appraisals as credit risk mitigation methods. He largely examined credit risk management technologies and techniques in depth. He relied solely on

secondary sources, including Bangladesh Bank credit risk management guidelines.

Goyal and Agrawal (2010) performed study to analyze the importance of risk management processes and to provide light on the problems and opportunities associated with Basel-II implementation in the Indian banking industry. According to the findings of the study, the banking industry is exposed to a variety of risks, including foreign exchange volatility risk, variable interest rate risk, marketrisk, operational risks, credit risk, and so on, all of which can have a negative impact on its profitability and financial health.

Ahmed (2016) examined in depth the many components of corporate risk management. According to him, as the corporate environment has become less stable in recent years, risk awareness must be raised. Since the implications of risk management failure can be severe, it is essential to design and implement a robust, consistent, effective, and comprehensive risk management program into strategic planning and control in order to mitigate and manage risk. He stressed risk identification, risk evaluation, and identifying solutions to prevent and mitigate hazards. He said that strategic planning and control should have enterprise risk management as a core part.

Muhammad, Khan, and Xu(2018) investigate how risk management practices can be influenced by factors such as recognizing risk management, risk assessment and analysis, risk identification, risk monitoring, and credit risk analysis in Pakistani commercial banks. They discovered that understanding risk and risk management (URM), risk assessment and analysis (RAA), risk identification (RI), risk monitoring (RM), and credit risk analysis (CRA) have a significant, beneficial effect on risk management practices (RMP). They advised that commercial banks in Pakistan should focus on URM, RAA, RI, RM, and RA. RM and RAA are also significant elements that influence RMP. Hence, commercial banks in Pakistan should focus on RM and RAA.

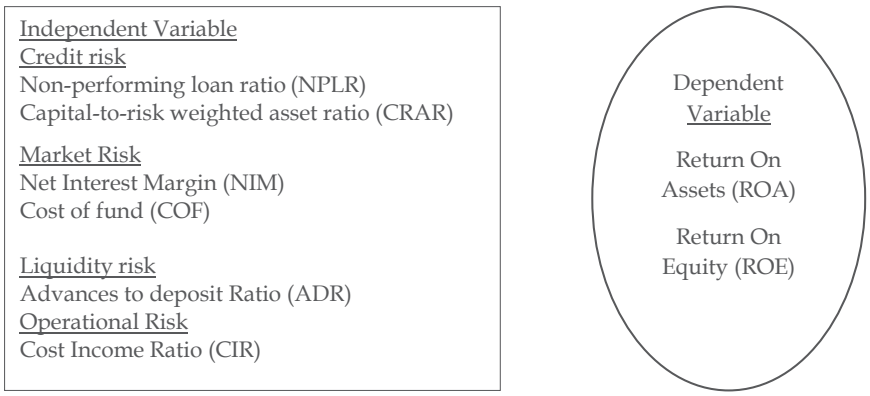
The aforementioned literature of all previous studies determined the risk management strategies used by financial institutions around the world in various types of banks. Different types of banks are exposed to different sorts of risk. The purpose of this study is to investigate the risk management methods used by commercial banks in Bangladesh and to determine the impact of risk management strategies on bank operational efficiency.

5. CONCEPTUAL FRAMEWORK

The objective of the study is to analyze the major characteristics of risk man

agement practices of the commercial banks in Bangladesh and determine the impact of the same on the operational efficiency of the banks. The frame work of the study is as follows:

Figure 1: Conceptual Framework



Source: Author.

6.0 METHODOLOGY OF THE STUDY

6.1 SAMPLE AND DATA COLLECTION PROCEDURE

Bangladesh has 61 scheduled banks that operate entirely under the jurisdiction and supervision of Bangladesh Bank, which constitute the population. The current study is conducted on two state-owned commercial banks and eight private conventional commercial banks listed on the Dhaka stock exchange, thus the sample size is ten. The annual reports of certain banks are evaluated after obtaining them from their respective website.

6.2 TECHNICAL ANALYSIS

Descriptive statistics of major financial measures are computed using percentage averages. Multiple regression models, along with ANOVA, regression coefficients, and multicollinearity statistics, are used to show how dependent and independent variables are related to each other.

6.3 MULTIPLE REGRESSION MODEL

For examining the relationship between risk management and bank profitability the following model is used:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \varepsilon$$

where:

Y= dependent variable.

$X_1, \ldots\ldots\ldots\ldots\ldots, X_k$: variables that are independent (explanatory).

$\beta_1, \ldots\ldots\ldots\ldots\ldots, \beta_k$: regression model coefficients (parameters).

ε: random error.

(i) Banks' profitability (BP) is the dependent variable and is measured by the following two ratios:

- Return on assets (ROA). It is calculated by the net profit of the bank divided by the total assets.
- Return on equity (ROE). It is calculated by the net profit of the bank divided by the shareholder's total equity.

(ii) The independent variables that are considered to measure the risks are:Capital-to-risk weighted asset ratio(CRAR), Advances deposit Ratio (ADR), Cost of fund(COF),Non-performing Loan Ratio(NPLR), Cost Income Ratio(CIR), and Net Interest Margin(NIM).

Multiple correlation coefficient (R) and coefficient of determination (R2) were also used to show the extent of correlation and variation, respectively. Collinearity statistics are also shown to detect the existence of multicollinearity.

7.00 MAJOR FINDINGS AND OBSERVATIONS

7.1 Credit risk management: In accordance with Bangladesh banks' directives and guidelines, commercial banks have implemented the following significant risk management methods and techniques:

- Every bank has developed its own credit risk management policy in accordance with Bangladesh Bank policy guidelines, Basel-III implementation, and to keep up with the changing environment of the money market, credit cultures, risk variety, and dimension. It defines comprehensive methods and procedures to ensure the quality of its asset portfolio. Also, the Credit Policy explains how detailed lending procedures and risk classification systems for borrowers are put into place based on general rules.
- Review and update all risks on an as-needed basis, at least once a year, to ensure

that effective control exists and that the associated returns reflect these risks and the resources allocated to support them.

- The management of Bangladesh's commercial banks always pays attention to sector-wise exposure, division-wise exposure (geographical concentration), Group-wise exposure, single borrower exposure, and top borrower exposure. The bank's Board of Directors determines risk appetite, tolerance, and restrictions for sectors, divisions, locations, top borrowers, etc.
- Most commercial banks have created an international risk rating system that clearly defines their acceptable rating criteria and examines the ratings on a regular basis, allowing them to forecast expected profit or loss for a given time period.
- Commercial banks in Bangladesh take primary and collateral securities to mitigate potential credit risks. Other risk-mitigation strategies include netting agreements and other assurances. The legal clarity and enforceability of the mitigation strategy are verified by professionals in respected disciplines. Cash, residential, commercial, industrial, plant and machinery, marketable securities, and other collateral kinds are all suitable for risk mitigation. This is in accordance with the company's credit policies and procedures.
- The credit committee has monitored credit risk and set up a strategy for credit policy and procedures.
- Sample banks have a credit approval system, a disbursement mechanism, and comprehensive administration and supervision. Risks are detected by marketing and sales staff at branch level, the credit team, and the business team at head office through physical visits across disbursement phases.

7.2 Market Risk Management: For the purposes of mitigating and monitoring market risk, the following methods are employed:

- Sample banks' boards of directors approve all market risk policies, set limits, and check compliance regularly for their banks. The goal is to find the best balance between risk and return while also meeting customer needs.
- From an earnings perspective, the bank uses maturity gap analysis, duration gap analysis, and sensitivity analysis. The standardized (rule-based) method is used for calculating capital charges against market risks for the minimum capital requirement of the bank under Basel-III. For each risk category, the minimum capital requirement is measured in terms of two separately calculated capital charges for "specific risk" and "general market risk."
- The Asset-Liability Management Committee (ALCO), which is made up of top bank executives, oversees the treasury's market risk management, which includes liquidity, interest rate, and foreign exchange risks. The Managing Director is the Chairman of ALCO. ALCO meets at least once in a month.
- Market risk-related instruments have permitted restrictions for both on-balance

sheet and off-balance sheet items. To protect against market risks, the limitations are regularly checked and enforced. The Bank's exchange rate committee meets daily to assess market circumstances, exchange rates, foreign exchange positions, and transactions in order to manage foreign exchange risks.

- The Risk Adjusted Rate of Return on Capital (RAROC) approach systematically measures all relevant risks and supports banks in achieving an optimal risk/return trade-off.

7.1.3 Operational Risk Management:

Every bank has an Internal Control and compliance Department to address operational risk and to frame and implement policies to combat such risk. Those are:

- The boards of directors of commercial banks have established a policy for operational risks, including internal control and compliance risks, based on Bangladesh Bank recommendations. The Audit Committee of the Board oversees the activities of the Internal Control & Compliance Division to protect against all operational risk.
- To get and keep the best employees, banks offer competitive pay and the best possible place to work.
- Banks reduce this risk by documenting processes, separating authorization, and reconciling and monitoring transactions.
- Banks adopt globally recognized operational risk assessment tools, e.g., Risk Control Self-Assessment for assessment of all possible operational risk and the adoption of the Key Risk Indicator (KRI) to help the bank set operational risk trigger parameters.
- Basic Indicator Approach (BIA) is used to determine capital charges for operational risk in accordance with Bangladesh Bank's guidelines.

7.1.4 Liquidity Risk Management:

- The strict maintenance of the cash reserve ratio (CRR) and statutory liquidity reserve (SLR) is also emphasized to reduce liquidity risk. Banks also maintain a liquidity coverage ratio (LCR) and a net stable funding ratio (NSFR) as part of the Basel-III requirement. They also follow DOS Circular No. 1 on the Basel III Liquidity Ratio, issued on January 1, 2015.
- If a bank's annual average of any Regulatory Liquidity Indicators (RLIs) falls below the Bangladesh Bank's requirement, the bank will be forced to hold additional capital for that RLI (or those RLIs).

7.2 Descriptive Statistic:

Table 1: Descriptive statistics of variables

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	120	-28.60	6.05	.8624	2.88710
ROE	120	-62.36	53.75	13.5008	11.67743
ADR	120	37.28	109.97	79.9749	14.81810
CRAR	120	-6.00	17.93	11.8768	2.87249
NPLR	120	1.56	35.28	7.9984	7.66944
COF	120	3.87	12.31	7.5624	1.77704
CIR	120	24.30	94.01	50.9658	14.46967
NIM	120	.98	9.00	2.9630	1.37521
Valid N (listwise)	120				

Source: Authors Computation (SPSS output).

Table 1, the ROA has a minimum value of -28.60 percent and a maximum value of 6.05 percent, respectively.The average value of ROA is 0.86 percent.And ROE has a minimum of -62.36 percent and a maximum of 53.75 percent, with a mean of 13.50 percent. The fact that the performance measures all came in with negative values indicating that commercial banks were hit with significant losses over the time period under consideration.

The ADR has a mean of 79.99 percent, a standard deviation of 14.82percent, and minimum and maximum values of 37.28percent and 109.97percent. The banks turned some of their deposits into loans so that they could get interest from the borrowers and still have enough cash on hand to meet their daily withdrawal obligations.

The NIM has a value that ranges from 0.387 percent to 9.00 percent as its minimum and maximum values, respectively. The NIM has a mean value of 2.96 percent. The Net Interest Margin (NIM) represents the profit that banks make on interest-earning transactions and serves as a proxy for market risk. Since the mean value was found to be 2.96 percent, it can be assumed that the sampled banks made a small profit on the loan activities they did during the time period that was studied.

The CIR measures the percentage of operating income left after catering for theoperating expenses. Generally, bank CIR should not be more than percent. The average CIR value is 50.97 percent, which shows that banks can handle operational costs with their efforts. CRAR stood at 11.88percent, with a maximum value of

17.93percent and a minimum value of -6percent. The implication of this is that the sampled banks are able to manage their credit risk with the utmost simplicity.

The cost of the fund has a mean value of 7.56percent with a minimum value of 3.87percent and a maximum value of 12.31percent. The COF is a proxy for market risk and shows how much money banks made from transactions that earned them interest.

7.2 Correlation Analysis

It is found in the correlation matrix (**Table-2**) that almost all the variables have significant correlation (negative or positive) with one another. This indicates that correct variables are identified for assessing risk management performance of the sample banks.

Table-2: Correlation Matrix.

Variables	ROA	ROE	ADR	COF	CRAR	NPLR	NIM	CIR
ROA	1							
ROE	.763**	1						
ADR	.230*	.307**	1					
COF	-.011	.065	-.043	1				
CRAR	.496**	.239**	.298**	-.181*	1			
NPL_Ratio	-.447**	-.479**	-.779**	-.075	-.484**	1		
NIM	.084	.225*	.247**	-.073	-.157	-.138	1	
CIR	-.195*	-.367**	-.707**	-.225*	-.217*	.648**	-.427**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: Authors Computation, (SPSS output).

7.3 Multicollinearity Test

Before making a judgment, the multicolinearity test is also performed. Multicollinearity refers to a situation when two or more independent variables are highly correlated with each other. A more precise test to detect multicollinearity is to use the Variance Inflation Factor (VIF). A VIF greater than 10 is considered unsatisfactory as regards multicollinearity (Gujarati, 2003, p. 362). The variance inflation factor (VIF) and tolerance value are presented to check for multicollinearity among the study variables. The regression results presented in Tables 3 and 4 show that the highest VIF is 3.523 of the variable advance deposit ratio (ADR) and the tolerance is 0.732 of the variable cost of fund (COF). The results found that none of the variables' VIF values exceed the rules of thumb 10 or the tolerance values of each of the

variables are less than 0.10. So, the results of the tests show that the variables do not have a problem with multicollinearity.

7.4 Multiple Regression analysis:

In this part of the study, multiple linear regression analysis was used to figure out how variables like ROA, ROE, ADR, COF, NPLR, CIR, and NIM relate to each other and depend on each other. In tables 3 and 4, the results of the multiple regression analysis of the study are shown.

7.3.1 Inter-relation between ROA and selected independent variables.

Table-3: Inter-relation between ROA and selected independent variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.583	4.522		-.792	.430		
	ADR	-.036	.028	-.185	-1.304	.195	.284	3.523
	COF	.117	.144	.072	.817	.416	.732	1.366
	CRAR	.406	.096	.404	4.256	.000	.634	1.576
	NPLR	-.179	.053	-.474	-3.385	.001	.292	3.427
	CIR	.035	.026	.173	1.322	.189	.333	3.001
	NIM	.433	.192	.206	2.257	.026	.685	1.459

R=.594[a]; R Square =.353; Adjusted R Square=.318; F (6, 113) =10.26, p=000.
a. Dependent Variable: ROA

Source: The authors obtained the results (SPSS output).

Interpretation: In **Table 3**, in the regression analysis, the dependent variable in the regression is ROA. The regression results indicate that the model's explanatory variables explain the dependent variable with R-square and adjusted R-square values of 59.4 percent and 35.3 percent, respectively. The value indicates that 59 percent of the variation of ROA is accounted for by the set of independent variables chosen for the model. From the ANOVA output, it is observed that the significance of F value is 0, which is less than 0.05. So, at a 5percent level of significance, it is concluded that all the independent variables as a whole have an effect on ROA.

From the coefficients part of the output, it is observed that ROA has a positive but insignificant relationship with cost of fund and cost income ratio (CIR)

(p-value greater than 0.05). Non-performing loans (NPLR) and advance deposit ratio (ADR), on the other hand, have inverse relationships with ROA. The impact of nonperforming loan ratio (NPLR) on ROA is negative and significant with a probability value of 0.001.So, we conclude that ROA has a negative correlation with NPLR, e.g., if non-performing loans increase, bank performance will decrease. On the other hand, the beta coefficient of capital to risk-weighted assets (CRAR) and net interest margin (NIM) are positive and the probability value is below.05, which is significant at a 5percent level of significance. So, we conclude that ROA has a significant positive correlation with CRAR and NIM.

7.3.2 Inter-relation between ROE and selected independent variables

Table-4: Inter-relation between ROE and selected independent variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	33.380	19.276		1.732	.086		
	ADR	-.209	.118	-.265	-1.772	.079	.284	3.523
	COF	.082	.613	.012	.134	.894	.732	1.366
	CRAR	.203	.407	.050	.498	.619	.634	1.576
	NPLR	-.878	.225	-.577	-3.906	.000	.292	3.427
	CIR	-.073	.112	-.090	-.652	.516	.333	3.001
	NIM	1.533	.818	.181	1.874	.044	.685	1.459

R=.530[a]; R Square =.281; Adjusted R Square=.243; F (6, 113) =7.36, p=000.
a. Dependent Variable: ROE

Source: The authors obtained the results (SPSS output).

Table 4 shows that the multiple correlation coefficient, R, is 0.530. It indicates that the correlation between ROE and the selected independent variables is strongly positive. The coefficient of determination, R, is 0.281, indicating that the set of independent variables chosen for the model accounts for 28.1 percent of the variation in ROE. From the ANOVA output, it is observed that the F value is 7.36, with a 5% level of significance, the p value is 0.000. So, at a 5% level of significance, it is concluded that all the independent variables as a whole have an effect on ROE. From the coefficients part of the output, it is observed that ROE has a negative insignificant relationship with advance deposit ratio and cost income ratio (p value more than 0.05). On the other hand, the NPL ratio has a negative significant relationship with ROE. The p-value for non-performing loans is less than 0.05, which is significant at the 0.05 level of significance. So we conclude that ROE has a significant nega

tive correlation with non-performing loans. Rather, the beta coefficient of net interest margin (NIM) is positive and, at the 5% level of significance, the p value is less than.05. So, it may be concluded that ROE has a significant relationship with NIM. However, the beta coefficient of COF and CRAR are positive, but at the 5% level of significance, the p value is greater than.05. So, it may be concluded that ROE has an insignificant relationship with COF and CRAR.

8. CONCLUSION

The preceding result demonstrates that risk management has a substantial impact on performance. The Capital-to-Risk-Weighted Asset Ratio (CRAR), Non-performing Loans, and Net Interest Income (NIM) have a substantial impact on determining the profitability of Bangladesh's commercial banks. Therefore, the banking industry must focus on the quality of loans and the loan application process. To mitigate the negative effects of interest rate risk, banks should hold a specific number of assets that are sensitive to interest rate swings. Credit risk, market risk, operational risk, interest rate risk, foreign exchange risk, equity risk, liquidity risk, money laundering risk, IT risk, marketing risk, and human resource risk must be addressed by Bangladeshi bank authorities for successful risk management. Before approving the advances, we need good project approval, an evaluation of the parties' creditworthiness, good corporate governance, and the use of Basel I, II, and III, as well as the rules of the Bangladesh Bank (BB) and Bangladesh Securities Exchange Commission (BSEC).

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