International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
Volume 3, Issue 2, Mar-Apr-2025, PP: 357-369

An Effect of Credit Risk Management on the Bank's Financial Performance

Athraa Yousif[1], Safar Haji[2],
Assistant Professor Mr. Manoj Sangisetti[3]
Department of Accounting, Catholic University in Erbil, Iraq[1,2]
Department of Accounting & Business Management,
Catholic University in Erbil, Kurdistan Region of Iraq[3]

Abstract **– This study examines the impact of credit risk management on the financial performance of the Bank of Baghdad over the period 2019–2024. The findings reveal a strong positive correlation between effective credit risk strategies and key performance indicators, including Return on Assets (ROA) and Return on Equity (ROE), which increased significantly—ROA from 0.65% to 9.75%, and ROE from 2.67% to 42.18%. These improvements occurred alongside sustained earnings growth and enhanced asset utilization, even as total assets nearly tripled. The bank's consistently high Capital Adequacy Ratio (CAR), remaining well above Basel III requirements, reflects a prudent capital strategy that has helped absorb risks associated with aggressive lending and asset expansion. However, persistently high leverage, evidenced by a peak debt-to-equity (D/E) ratio of 480.19%, raises concerns about financial vulnerability during adverse conditions. Credit risk indicators such as EBIT margin and interest coverage ratio also improved markedly, enhancing the bank's debt-servicing capacity and reducing default risk. Conversely, the deterioration in the efficiency ratio, rising from 62.51% to 88.74%, signals growing operational costs and potential strain on future profitability. Overall, while the Bank of Baghdad demonstrates robust financial performance driven by strategic credit risk management, ongoing monitoring of leverage, cost efficiency, and capital sustainability remains essential for maintaining long-term financial resilience.**

Keywords **– ROA, ROE, CAR, Leverage, Performance, Bank.**

I. INTRODUCTION

The technique of comparing data from one financial report to data from other reports is known as comparative financial analysis. This gives the analyst some context, which increases the significance of the raw data. Comparative financial analysis is the process of looking for trends by comparing financial reports from the same organization from several time periods. Comparing the financial reports of many businesses that compete with one another in the same industry is another approach to perform this type of analysis.

Assume you're a bank, and lending money is a major component of your daily operations. Lending money is, however, a risky business; there is no guarantee that you will get your money back in full. If the borrower defaults, your portfolio will suffer losses. In a less extreme scenario, the loan will grow riskier if your counterparty's credit quality deteriorates according to some rating system. These are some of the most common scenarios in which credit risk expresses itself.

Credit risk creates economic downturns by causing banks to collapse due to client default risk, which has harmed the economic development of many countries across the world. The danger of a borrower failing to return the money borrowed is referred to as credit risk.

Credit risk is one of the three fundamental risks that a bank or other regulated financial institution must confront when functioning in the markets, according to the Basel Accord, a global regulatory framework for financial institutions (the two other risks being market risk and operational risk). In today's environment, as the 2008 financial crisis demonstrated, a proper awareness of credit risk and the ability to manage it are critical.

Banks' credit risks have a significant impact on their performance because even a few large clients defaulting on loans might cause them significant problems. The goal of the Credit Risk Management (CRM) procedure is to maximize a bank's cost-adjusted rate of return while maintaining credit risk levels that are acceptable to its shareholders. Banks must manage credit risk throughout their whole portfolio as well as external risks posed by macroeconomic factors in the economy.

Credit risk relationships must also be compared to other risks by banks. Another example of credit risk is the process of attempting to settle banking transactions. Bank suffers from opportunity loss until and unless both parties settle their payments in a timely way. Corporate governance may have a significant impact on the bank's risk management techniques for minimizing credit risks. According to research, banks must engage in proactive planning in order to avert future issues. The goal of this study was to look into the impact of credit risk management on commercial bank performance, as well as how banks are applying their methods to deal with defaulters' problems and losses.

The majority of commercial banks offer a variety of services that can assist clients in reducing or managing risk. Hedging, for example, has been used to lower transaction risk by maintaining certain circumstances that allow different parties to exchange products or services at a flexible date and time. Many experts and practitioners

have emphasized the importance of effective risk management strategies to assist banks and other financial organizations over time.

According to the findings, capital risk, credit risk, liquidity risk, interest rate risk, and operational risk all have statistically significant influence on financial performance. The only risk variable that does not provide this result is country risk. Furthermore, among the variables that represent external causes, only GDP Growth has a statistically insignificant impact on financial outcomes.

Country The only risk variable that does not provide this result is risk. Furthermore, among the variables that represent external pressures, only GDP Growth has a statistically insignificant impact on financial performance. Credit risk has a negative impact on a bank's financial performance; as a result, institutions must take appropriate steps to mitigate the risk's impact. Higher capital levels aided the banking sector's profitability. Banks, on the other hand, must focus on liquidity management and consider alternate operational risk management measures. They must also pay special attention to how macroeconomic conditions affect their bottom line.

Hedging is the process of protecting a bank's investments by reducing risk, such as by purchasing an insurance policy. Diversification is defined as the distribution of financial resources among a variety of investments, and it has long been recognized as a risk-reduction strategy. A bank's ability to absorb outlying risks with its capital is measured by the capital adequacy ratio. Various innovations in banking services have emerged as a result of the fierce competition among banks to acquire clients (Aruwa & Musa, 2014).

2. Problem of the Statement:

Through their financial services, they provide Banks are essential to economic expansion. One could argue that economic development is driven by the intermediary's position. Effective and efficient banking system performance over time is one of the financial stability metrics. Bank credit given to individuals' productive endeavors accelerates a country's economic progress and ensures its long-term viability (Jadah et al., 2021). Alalade et al. (2014) define credit risk as the possibility of default resulting from a borrower's or obligor's incapacity to make payments. Thus, the bank's susceptibility to a default in the fulfillment of a maturing contract due to borrowing might be considered the credit risk.

For the economies of developing nations, the number of banks and the diversity of their depositors, borrowers, and stockholders are crucial. The stability of the banking industry is essential to the health of any domestic economy (Abbas et al., 2019). Risk in banking includes goals that can be achieved with unexpected outcomes and involves ambiguity or opportunity with danger (Adeusi et al., 2014).

A robust banking system is essential to ensuring economic growth and stability. Because it depends on the loan industry, which has a larger percentage than owner's capital, the banking environment is extremely risky (Owojoriet al., 2011).

3. Significance of the Study

Credit risk is one of the biggest risks commercial banks face because lending is one of their main revenue streams. Therefore, bank profitability is impacted by credit-related risk management. The significance of this study on bank credit risk management lies in its ability to shed light on how banks and other financial institutions might lessen their losses from poor loans. Additionally, this study provides some information on the tactics used by commercial banks when lending money to the public and setting up trouble-free withdrawals. Both individual and institutional investors can increase their productive investments with the aid of their lending facilities.

Because it can affect a bank's financial performance, existence, and expansion, credit risk management is crucial in banks. By acting as intermediaries and offering financial services to both local communities and nations, commercial banks contribute significantly to economic development and advance the economic growth of any nation. Both individual and institutional investors can increase their productive investments with the aid of their lending facilities.

4. Objectives of the Study

- To evaluate the relationship between credit risk management and profitability performance, focusing on the growth of Return on Assets (ROA) and Return on Equity (ROE) from 2019 to 2024.
- To assess the impact of capital adequacy on financial stability, by analyzing trends in the Capital Adequacy Ratio (CAR) and its role in absorbing risk associated with aggressive lending and asset expansion.
- To examine the effect of high financial leverage on the bank’s credit risk profile, using indicators such as the debt-to-assets ratio and debt-to-equity ratio, with an emphasis on solvency and risk exposure.
- To analyze how improved operational metrics like EBIT margin and interest coverage ratio contribute to reduced credit risk, highlighting the bank’s ability to meet debt obligations and withstand financial stress.
- To investigate the implications of declining operational efficiency on creditworthiness, by studying the rise in the efficiency ratio and its effect on the bank’s ability to manage costs and sustain profitability.

5. Hypothesis of the Study

Hypothesis

- (H_0): There is no significant relationship between credit risk management and the bank’s profitability performance (as measured by ROA and ROE).

- (H_1): There is a significant relationship between credit risk management and the bank's profitability performance (as measured by ROA and ROE).

Hypothesis
- (H_0): Capital Adequacy Ratio (CAR) has no significant impact on the bank's financial stability during periods of aggressive lending and asset expansion.
- (H_1): Capital Adequacy Ratio (CAR) has a significant impact on the bank's financial stability during periods of aggressive lending and asset expansion.

Hypothesis
- (H_0): High financial leverage (measured by debt-to-assets and debt-to-equity ratios) has no significant effect on the bank's credit risk profile.
- (H_1): High financial leverage (measured by debt-to-assets and debt-to-equity ratios) has a significant effect on the bank's credit risk profile.

Hypothesis
- (H_0): Operational metrics such as EBIT margin and interest coverage ratio have no significant impact on reducing the bank's credit risk.
- (H_1): Operational metrics such as EBIT margin and interest coverage ratio have a significant impact on reducing the bank's credit risk.

Hypothesis
- (H_0): Changes in the bank's efficiency ratio have no significant effect on its creditworthiness.
- (H_1): Changes in the bank's efficiency ratio have a significant effect on its creditworthiness.

6. Limitations of the Study

Research in developing nations like Iraq is limited, despite the fact that most studies are carried out in Western economies. There are methodological and coverage discrepancies in some of the research on Iraqi banks.

Furthermore, the researcher had very little time to complete the investigation. Although the researcher intended to visit several branches in Erbil, the hectic schedules of the majority of the banks' branches and the risk department staff caused a delay in data collecting. However, as several precautions were taken to ensure that crucial information was gathered, these limitations had little effect on the conclusions' overall accuracy. A number of statistical techniques have been applied, including increasing the sample size of data collected over time.

II. REVIEW OF LITERATURE

Weber, O. (2012) Canadian banks are leading the way in integrating environmental risks into corporate lending. Through a mixed method analysis, it is found that all Canadian commercial banks, credit unions, and Export Development Canada are managing environmental risks in credit management to avoid financial risks. Compared to global peers, Canadian banks are considered best in class, systematically examining environmental risks for credits, loans, and mortgages. Further research is needed to calculate the costs and benefits of environmental risk management.

Njanike, K. (2009). Ineffective credit risk management systems were the cause of the failure of several financial organizations. A study looks at how Zimbabwe's financial crisis in 2003–2004 was exacerbated by inadequate credit risk management. Inadequate risk management, problems with liquidity, The study recommends enhancing corporate governance, modernizing lending regulations, and putting credit rating techniques into practice. and distraction from the main bank were further concerns.

According Kodithuwakku (2015) Credit risk management is becoming more and more crucial. The purpose of this study is to Kodithuwakku, S. For commercial banks worldwide, including those in Sri Lanka, evaluate the impact of credit risk management on Sri Lankan commercial banks' performance. Interviews with officials from eight of the nation's twenty-four commercial banks were used to gather primary data. Additionally, secondary data from publications and yearly reports was examined. Credit risk was measured using a variety of measures, and return on assets (ROA) was employed as a performance indicator. Non-performing loans and provisions have a detrimental effect on Sri Lankan commercial banks' profitability, according to a regression model in the E-views program

Musyoki, D., & Kadubo, A. S(2012). The study examined the effects of credit risk metrics on the financial performance of ten banks between 2000 and 2006, including default rate, bad debt charges, and cost per loan asset. The default rate was shown to be the most predictive of these characteristics, which had an inverse effect on financial performance. Creating plans to reduce exposure to credit risk and improve banks' profitability and competitiveness is one of the recommendations.

Boffey, R., & Robson, G. N(1995). From the standpoint of finance theory, it is widely accepted that bank management entails managing the four main risks associated with the balance sheet: credit, interest rate, capital, and liquidity risk (Hempel et al., 1989). Regarding its impact on bank performance (Sinkey, 1992, p. 279) and bank collapse (Spadaford, 1988), credit risk has frequently been recognized as the most significant risk among them.

Abiola, I., & Olausi, A. S(2014). In the current financial crisis, banks' ability to manage credit risk is essential to their survival, expansion, and profitability. Seven commercial banks' financial records from 2005 to 2011 were examined in a Nigerian study. The profitability of these institutions is greatly impacted by credit risk

management, according to the results, with ROE and ROA being important indications.

Ali, A., & Ghauri, S. P(2013). Global banking institutions now face greater risks as a result of the global financial crisis that began in August 2007. Although Pakistani Islamic banks also deal with credit risk, they are comparatively strong because of their openness, adherence to ethical standards, and effective management. Even if they were affected, Islamic banks could come out of the crisis stronger than traditional banks.

Eveline, N. (2010). Like other businesses, Swedish banks seek to add value through risk management and increased output. They take on default risk when they extend loans to clients by utilizing savings and money from shareholders. Giving credit is essential to a bank's profitability despite this risk. Banks must use efficient credit risk management procedures if they want to prosper. Approaches to risk management and credit assessment differ amongst banks. The significance of credit risk management in lending decisions was emphasized by a study conducted in Umeå, Sweden. It was discovered that banks give varying weights to various pieces of information when evaluating credit and that collateral plays a significant role in their choices to extend credit. Any information that is overlooked could result in issues or defaults, underscoring the necessity of careful customer assessment in credit risk management procedures.

Afriyie, S. O.,(2018) Yusheng, K., Kaodui, L.The possibility of financial institutions suffering losses as a result of loan default is known as credit risk. This study looks at ways to help less developed nations deal with issues associated with delinquent loans. Credit risk can be efficiently managed with strong strategic methods, according to the information gathered from commercial bank documents and interviews. Ghana is used as an example to learn about how credit risk is managed in these kinds of economies.

Addy, W. A.(2024) Ugochukwu, C. E.This review explores the use of predictive analytics in banking credit risk management. In order to demonstrate the function of predictive analytics in banking, it synthesizes case studies and literature, emphasizing themes such as emphasis on ethics, democratization of tools, integration across operations, and sophisticated machine learning algorithms. It illustrates how risk assessment, decision-making, and overall performance are enhanced by predictive analytics. Data quality, interpretability, talent, ethics, and expenses are among the difficulties. According to the analysis, predictive analytics will remain essential for reducing credit risk in the banking industry.

Weber, O., Fenchel, M.Weber, O.(2008) Fenchel, M.Banks started incorporating environmental hazards into credit risk management practices about 15 years ago. Different degrees of environmental risk integration in credit management procedures are found in a survey of the European banking industry. Although there are discrepancies in other phases, banks typically incorporate these risks during the rating step. The UNEP statement's signatories exhibit greater integration than its non-signatories.

Fatemi, A., & Fooladi, I.(2006) Due to the growing complexity of counterparties and responsibilities, the goal of this study is to investigate the credit risk management strategies of significant US financial organizations. The top 100 US banking companies were sent a questionnaire consisting of seven questions. The results show that the primary goal of credit risk models is to identify counterparty default risk, however some institutions also take counterparty migration risk into account. Few organizations manage credit risk using vendor-marketed or proprietary models. The study is helpful for treasurers and credit risk management researchers since it adds to our understanding of current business practices.

Alzeaideen, K. (2019). In Jordan, the banking industry is essential to economic development since it provides financial services and manages a range of risks. Jordanian banks frequently rely on credit officer intuition or conventional scoring models when making loan decisions, which is important in preventing credit risk. Banks' client data stored in data warehouses is a useful resource for data mining tool analysis. In data processing, artificial neural networks, or ANNs, are new statistical tools. When compared to more conventional approaches, the study's goal is to develop an artificial neural network (ANN) model that will help Jordanian banks make credit approval choices based on applicant attributes.

According to Poudel, R. P. S. (2012), this study examines credit risk management parameters affecting banks' financial performance, including default rate, cost per loan assets, and capital adequacy ratio. Results show that these parameters have inverse impacts on banks' performance, with default rate being the most predictive. Recommendations include designing strategies to minimize credit risk exposure and enhance profitability.

Mbah, R. E. (2023), chapter explores the impact of an efficient credit risk management system on the survival of microfinance. A study of 200 credit clients and 80 employees of a leading microfinance institution in Cameroon revealed several lapses in the system, including unmonitored provisions, poor recovery procedures, and lack of education in credit officers. The survival of financial institutions relies on effective loan portfolio management, and a tight control system is crucial for avoiding potential loopholes and ensuring a competitive sector.

Mwangi, G. N. (2012), This study examines the impact of credit risk management on the financial performance of commercial banks. The research used a descriptive design

and analyzed data from 26 Kenyan banks' annual reports. The results showed a significant relationship between financial performance and credit risk management, with both non-performing loans ratio (NPLR) and capital adequacy ratio (CAR) having a negative and relatively significant effect on return on equity (ROE). NPLR had a higher significant effect on ROE than CAR, indicating that NPLR and CAR reliably predict ROE.

Nwude, E. C., & Okeke, C. (2018), The study examined the impact of credit risk management on the performance of Nigerian deposit money banks, using data from 2000-2014. Results showed that credit risk management positively impacted total loans, advances, asset and equity returns. The study recommends increased efforts by bank managers and regulators to control non-performing loans.
Catherine, N. (2019), The study examines the relationship between credit risk management and the financial performance of Bank of Africa (U) Ltd. It uses both quantitative and qualitative methods. The bank diversifies geographically, with over 35 branches. Strong credit appraisal is crucial for effective risk management and competitiveness. The study found a 97.8% variation in performance due to changes in client appraisal, credit risk control, and risk diversification. The study recommends continuous risk management assessment and product adaptation to local languages. The findings are useful for academic understanding and policy formulation.

Ugoani, J. (2012), The study assessed the impact of poor credit risk management on Nigerian bank failures and suggested remedial measures. Credit risk management is crucial for bank survival, as it generates significant profits from interest on risk exposures. The study found poor risk management significantly influences bank failures.

Ali, L., & Dhiman, S. (2019), The banking industry has faced numerous financial crises, including the 2007-08 US subprime lending crisis. Credit risk management is crucial for survival, growth, and profitability. This study examines the relationship between credit risk management indicators and the profitability of public sector commercial banks from 2010-2017. The research focuses on top ten banks and uses panel regression analysis. Results show that credit risk management indicators significantly influence the financial performance of selected banks in India. Profitability is positively related to capital adequacy, management quality, and earnings ability, while negatively related to AQ and liquidity.

Afriyie, H. O., & Akotey, J. O. (2013), This study examines the impact of credit risk management on the profitability of rural and community banks in the Brong Ahafo Region of Ghana. The analysis used annual financial statements of ten rural banks from 2006 to 2010. The results showed a significant positive relationship between non-performing loans and profitability, indicating that rural banks lack effective credit risk management practices. This suggests that rural banks are shifting the cost of loan default to other customers, resulting in higher interest rates on loans.

Adeusi, S. O., & Dada, O. (2017), The study analyzed the impact of credit risk management on Nigerian deposit money banks' performance from 2001-2015. The results showed a negative relationship between NPLR, LLPR, INTR, and PAT, while LTAR and INFR showed a positive relationship. Despite government and monetary authority initiatives, high credit risk due to poor management persists in Nigerian banks. The study recommends banks pay attention to credit risk management policies, ensure compliance with bank philosophy, and establish effective internal control systems.

Rufai, A. S. (2013), The study examines the impact of credit risk management on Union Bank's performance and profitability. It uses secondary data, time series, trend analysis, correlation coefficient, and regression analysis. The findings suggest that credit risk management is crucial for Union Bank's survival and growth, particularly in maintaining high interest income. The study recommends regular loan reviews and collateral security for loans.

Rehman, Z. U., Muhammad, N., Sarwar, B., & Raz, M. A. (2019), The study examines the risk management strategies used by commercial banks in Balochistan, Pakistan, to reduce credit risk. It reveals four key areas: corporate governance, diversification, hedging, and the bank's Capital Adequacy Ratio. The findings are crucial for commercial banks to understand and apply these strategies effectively to minimize credit risk.

Jackson, E. A., & Tamuke, E. (2022), The study examines the relationship between credit risks and the performance of commercial banks in Sierra Leone, using data from the Bank of Sierra Leone. It found that high non-performing loans (NPLs) and a low domestic economy contribute to the fragility of the banking system. The study suggests collaboration between monetary policy and financial stability departments to monitor risk and improve efficiency. It recommends adopting ROA and ROE as independent indicators for monitoring banking industry performance.

III. METHODOLOGY

Overview: This study adopts a quantitative research approach, grounded in the analysis of secondary financial data, to examine the relationship between credit risk management and the financial performance of the Bank of Baghdad from 2019 to 2024. The aim is to empirically assess how various credit risk indicators have influenced key performance metrics such as Return on Assets (ROA) and Return on Equity (ROE), providing insights into the bank’s financial resilience and creditworthiness.

This methodology is designed to answer the central research question: To what extent has credit risk

management contributed to the financial performance of the Bank of Baghdad over the observed period? The approach involves structured data gathering, variable definition, and statistical analysis to support or refute hypotheses related to the effects of credit risk.

1. Data Collection

The study relies on secondary data, specifically extracted from the Bank of Baghdad's audited annual financial statements, including:

- Balance Sheets
- Income Statements
- Notes to Financial Statements
- Capital Adequacy Reports

These financial documents are obtained from official sources such as the Iraq Stock Exchange (ISX) website, the Bank of Baghdad's investor relations portal, and publicly available annual reports. Data for each fiscal year (2019–2024) are recorded in a structured database for analysis.

The reason for using secondary data is the availability of verified financial figures, which provide consistency, comparability, and reliability for time-series analysis. The period selected allows for observing both normal and stress financial periods, including recovery phases post-COVID-19 and changes in monetary policy environments.

2. Variables and Financial Indicators

To analyze the relationship between credit risk management and performance, the following key variables and indicators are examined:

Profitability Metrics

Return on Assets (ROA): Net income divided by total assets. Measures the bank's ability to generate profits from its asset base.

Return on Equity (ROE): Net income divided by shareholder's equity. Indicates the effectiveness of the bank's equity usage in generating profits.

Capital Adequacy

Capital Adequacy Ratio (CAR): Regulatory capital divided by risk-weighted assets. Serves as a measure of the bank's buffer against potential losses, aligned with Basel III standards.

Leverage Indicators

Debt-to-Equity Ratio (D/E): Total liabilities divided by total equity. Measures financial leverage and indicates potential solvency risk.

Debt-to-Assets Ratio: Total debt divided by total assets. Offers insight into the portion of assets financed through debt.

Operational and Credit Risk Indicators

EBIT Margin: EBIT as a percentage of total revenue. Shows operational efficiency and profitability from core business.

Interest Coverage Ratio: EBIT divided by interest expense. Indicates the bank's capacity to service debt from operational earnings.

Efficiency Ratio: Operating (non-interest) expenses divided by total revenue. Evaluates cost efficiency and management performance.

These variables are selected to reflect both credit risk exposure and financial health, enabling a multifaceted evaluation of how risk management impacts performance.

3. Analytical Techniques

To ensure comprehensive analysis, the following statistical methods are employed:

Descriptive Statistics

Used to summarize data patterns, central tendencies (mean, median), and dispersion (standard deviation) over the six-year period. This helps understand baseline performance and volatility.

Trend Analysis

Graphical and numerical techniques are used to visualize and interpret the evolution of each financial indicator, identifying critical shifts or patterns over time.

Correlation Analysis

Pearson's correlation coefficient is used to assess the strength and direction of relationships between credit risk indicators (e.g., CAR, D/E ratio) and performance metrics (ROA, ROE).

Regression Analysis

Multiple linear regression models are applied to evaluate the predictive power of credit risk variables on ROA and ROE. This helps establish causality and control for confounding variables like asset growth or market changes.

Comparative Analysis

Performance is compared across years and benchmarked against regulatory minimums (e.g., Basel III's 8% CAR threshold), and internal bank targets where available.

IV. THEORETHICAL FRAMEWORK

Core Constructs and Theoretical Linkages

1. Profitability Indicators

Return on Assets (ROA)

- Definition: Measures net income relative to total assets.
- Theoretical Link: From the resource-based view (RBV), efficient use of resources (assets) enhances

profitability. A higher ROA indicates effective credit deployment and low asset risk.
- Role in Framework: Dependent variable indicating operational performance and asset utilization.

Return on Equity (ROE)
- **Definition:** Measures net income against shareholder's equity.
- **Theoretical Link:** Stemming from agency theory, higher ROE reflects better management of owners' capital, but excessively high ROE may imply risk-taking.
- **Role in Framework:** Reflects the return to shareholders and financial effectiveness.

2. Risk and Capital Adequacy
Capital Adequacy Ratio (CAR)
- **Definition:** Measures the proportion of a bank's capital to its risk-weighted assets.
- **Theoretical Link:** Linked to Basel III framework, this ratio shows the bank's ability to absorb losses and indicates sound risk management.
- **Role in Framework:** Independent variable representing the bank's solvency buffer and regulatory compliance.

3. Leverage and Solvency Metrics
Debt to Total Assets Ratio
- Definition: Measures the proportion of assets financed by debt.
- Theoretical Link: Based on capital structure theory (Modigliani and Miller), higher leverage increases potential return but also financial risk.
- Role in Framework: Indicator of solvency and risk exposure.

4. Debt to Equity Ratio
- Definition: Measures the bank's financial leverage in terms of debt compared to shareholders' equity.
- Theoretical Link: From pecking order theory, firms prefer internal financing; higher D/E may signal dependency on debt and increased credit risk.
- Role in Framework: Predictor of vulnerability to credit shocks.

4. Operational and Credit Risk Efficiency Metrics
EBIT to Gross Revenue Ratio (EBIT Margin)
- Definition: Operating income as a percentage of total revenue.
- Theoretical Link: Relates to operational efficiency theory, where strong margins indicate better cost control and pricing strategies.
- Role in Framework: Measures profitability and operational strength—high margins reduce reliance on external funding.

Interest Coverage Ratio
- Definition: EBIT divided by interest expense.
- Theoretical Link: Tied to liquidity and coverage theories, it gauges the bank's ability to meet debt obligations.
- Role in Framework: A key credit risk metric—higher values indicate better financial health and lower default risk.

Efficiency Ratio
- Definition: Non-interest expenses divided by total revenue.
- Theoretical Link: Drawn from efficiency wage theory, where high expenses may imply inefficiency unless offset by productivity.
- Role in Framework: High efficiency ratios signal poor cost management, reducing the ability to absorb risk.

5. Application of the Framework
This framework allows financial institutions, regulators, and researchers to:
- Evaluate the interplay between credit risk and profitability.
- Identify financial stress indicators early (e.g., falling coverage ratios or rising expenses).
- Test the effectiveness of capital and cost strategies.
- Recommend policy or managerial actions (e.g., reducing leverage or improving efficiency).

V. DATA ANALYSIS AND INTERPRETATION

This data analyzed by using some key financial ratios in order to evaluate credit risk of banks by taking into consideration of two banks with the period of 6 years.

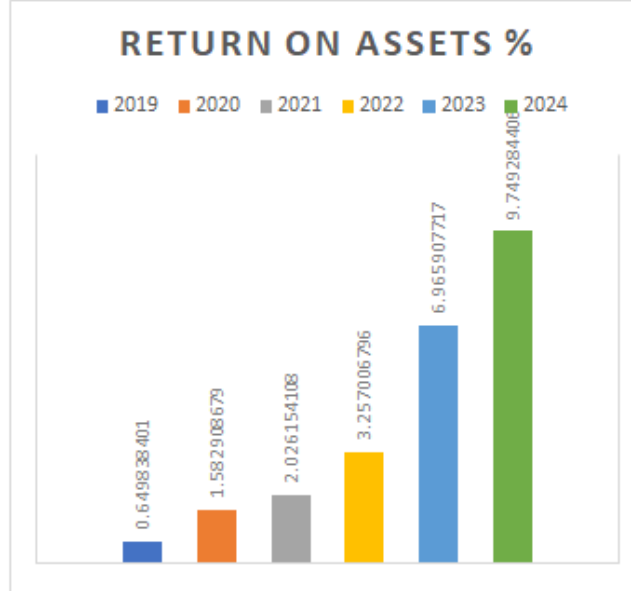
Bank of Baghdad
Return on Assets
ROA = net income / average total assets
Net Income: which is found at the bottom of the income statement, is used as the numerator.
Average Total Assets: (Total assets of Current year + Total assets of Previous year) / 2

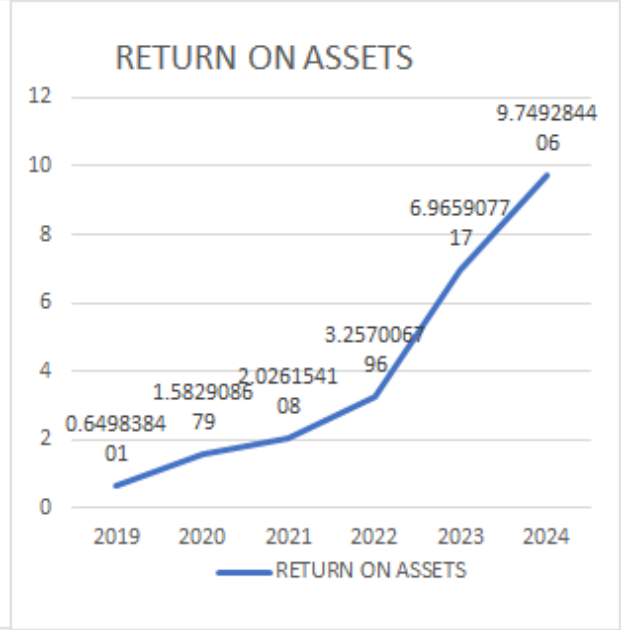
Table 1

RETURN ON ASSETS			
Years	Net Income (IQD ,000)	Average Total Assets (IQD ,000)	ROA %
2019	7,298,604	1,123,141,382	0.649838
2020	20,200,071	1,276,136,221	1.582909
2021	29,980,363	1,479,668,446	2.026154
2022	53,154,485	1,632,004,117	3.257007
2023	155,781,991	2,236,348,762	6.965908
2024	306,832,365	3,147,229,604	9.749284

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
Volume 3, Issue 2, Mar-Apr-2025, PP: 357-369

Chart Representation: 1





Interpretation: 1

Consistent Growth: Over the course of the last six years, the bank's ROA has improved significantly and steadily. This points to a significant and ongoing improvement in operational effectiveness.

ROA increased by about 15 times, from 0.65% in 2019 to 9.75% in 2024. This shows that the firm is now making a lot more money from each IQD of assets than it did previously.

Enhancing Asset Utilization: The bank was able to expand earnings more quickly in spite of a growing asset base (from about 1.1 trillion to approximately 3.1 trillion IQD), demonstrating efficient asset management and business expansion.

Sharp Increases in 2023 and 2024: The 2023 spike, in which ROA nearly doubles from the year before, and the 2024 increase are especially notable. This points to a performance breakthrough, perhaps as a result of: Operational optimization, Strategic investments beginning to yield returns, Favorable market conditions, Cost controls or new revenue streams.

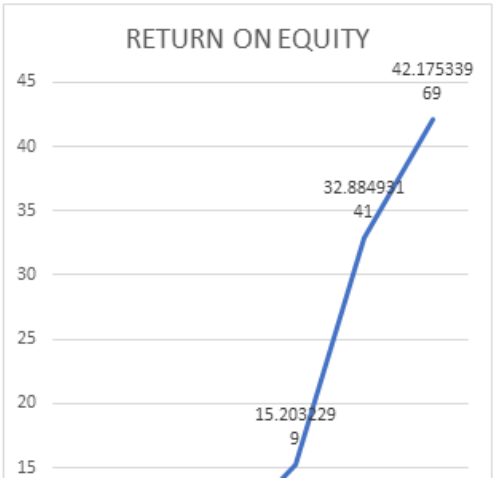
Return On Equity

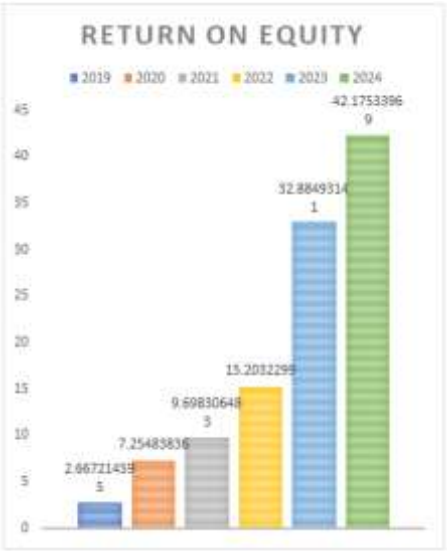
Mathematically, Return on Equity = Net Income or Profits/Shareholder's Equity.

Table: 2

Return on Equity			
Years	Net Income (IQD ,000)	Total Shareholder's Equity (IQD ,000)	ROE %
2019	7,298,604	273,641,424	2.667215
2020	20,200,071	278,435,852	7.254838
2021	29,980,363	309,129,878	9.698306
2022	53,154,485	349,626,266	15.20323
2023	155,781,991	473,718,461	32.88493
2024	306,832,365	727,516,049	42.17534

Chart Representation: 2





International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
Volume 3, Issue 2, Mar-Apr-2025, PP: 357-369

Interpretation: 2

Over the six-year period from 2019 to 2024, the bank's Return on Equity (ROE) has shown a remarkable and steady upward trend, increasing nearly 16-fold from 2.67% to 42.18%. This sharp improvement signals a substantial enhancement in the bank's ability to generate profits from its equity base, reflecting strong financial performance and effective management strategies. The significant rise in ROE, particularly in 2023 and 2024 when the metric more than doubled and continued to climb, suggests that the bank is executing well on key initiatives such as margin expansion, strategic capital allocation, and growth strategies. This exceptional profitability is a strong indicator of shareholder value creation and financial resilience, which are critical from both an investor and operational perspective

.

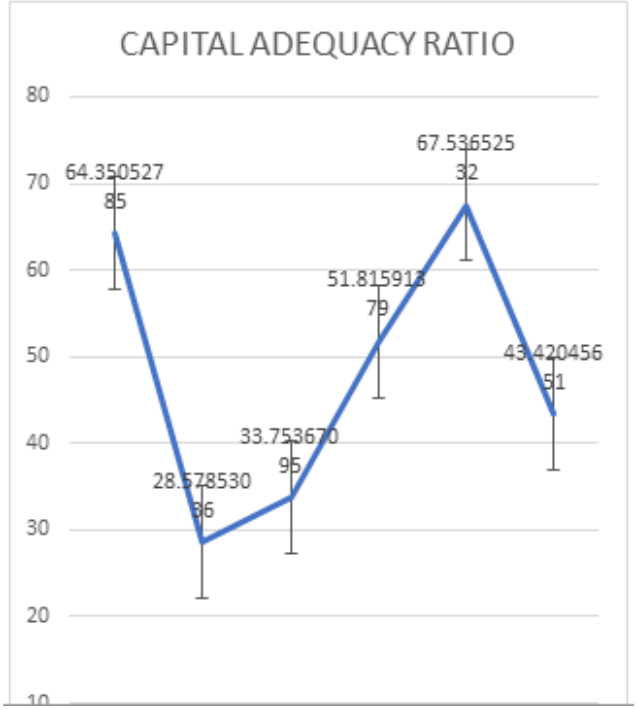
From a credit risk management standpoint, the rising ROE has important implications. While high profitability typically suggests strong financial health, it must be assessed alongside leverage and capital structure to fully understand credit risk. In this case, the growth in ROE is not the result of excessive leverage but rather the outcome of net income rising faster than shareholders' equity—signifying sustainable financial progress. This dynamic can positively influence credit evaluations, as it indicates efficient use of capital without overburdening the balance sheet. However, credit risk analysts would still need to monitor whether this profitability is being maintained alongside prudent debt levels, since a high ROE can sometimes mask rising financial risk if driven by increased borrowing. Overall, the upward trend in ROE enhances the bank's credit profile, provided it is supported by a balanced and responsible capital structure.

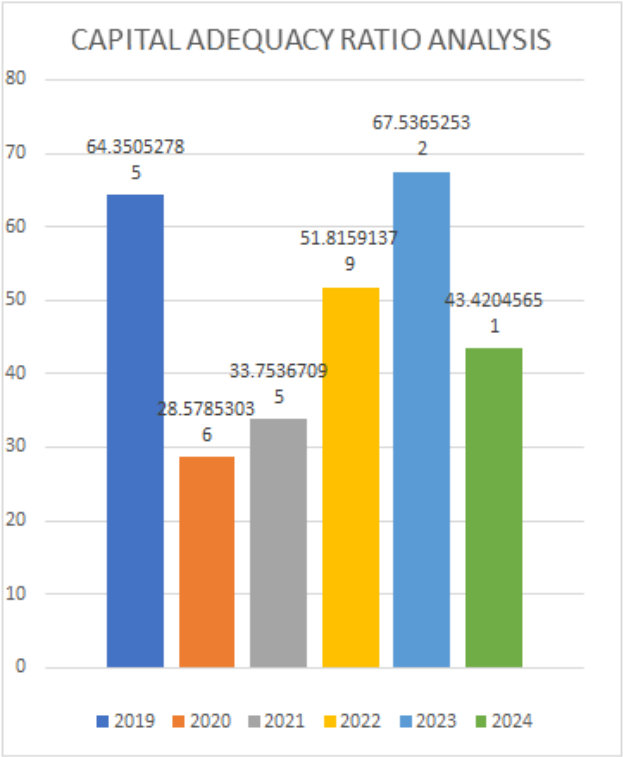
3. Capital Adequacy Ratio Analysis

Table:3

Capital Adequacy Ratio			
Years	Total Capital (Tire 1 + Tire 2) (IQD ,000)	Risk Weighted Assets (IQD ,000)	CAR %
2019	270,677,976	420,630,545	64.3505
2020	225,491,119	789,022,795	28.5785
2021	264,734,732	784,313,897	33.7537
2022	331,806,316	640,356,006	51.8159
2023	448,280,585	663,760,214	67.5365
2024	724,188,439	1,667,850,818	43.4205

Chart Representation:3





Interpretation: 3

- In 2019, exceptionally strong capital base. Very conservative lending or high retained earnings.
- In 2020, significant drop in CAR — possibly due to a large increase in risk-weighted assets. Indicates aggressive lending or asset growth.
- In 2021, slight recovery — capital increased while RWA remained stable. Indicates improved capital planning.

- In 2022, CAR rose sharply — likely due to reduction in RWA and increase in capital. Shows a more cautious lending approach.
- In 2023, highest CAR in the period. Very strong capitalization — possibly holding excess capital or slow loan growth.
- In 2024, CAR declined due to a massive rise in RWA, though capital also increased. Suggests expansion in risk assets but still well-capitalized.

- Overall Strong CAR: All values are well above regulatory minimums (Basel III requires at least 8% total CAR). This suggests the institution is very conservative in its capital structure.
- Fluctuations in RWA: Large swings in risk-weighted assets imply changes in lending strategies or asset risk profiles. For example, 2024 saw a jump in RWA, which diluted CAR despite high capital.
- Growth with Stability in 2024: Despite a lower CAR than 2023, the bank still maintains a healthy 43.42% — signaling it's growing but remains well-buffered.
- Conservative Posture: With such high CAR levels (even the lowest at ~28.6%), the bank is likely over-capitalized, possibly indicating untapped potential for lending or expansion.

Debt to Total Assets

Debt to Total Assets Ratio = (Total debt funded / Total Assets) * 100

Table: 4

Debt to Assets Ratio			
Years	Total Debt (IQD ,000)	Total Assets (IQD ,000)	Debt/Assets %
2019	859,102,781	1,132,744,205	75.842611
2020	1,141,092,385	1,419,528,237	80.38532487
2021	1,230,678,778	1,539,808,656	79.92413689
2022	1,374,573,312	1,724,199,578	79.7224016
2023	2,274,779,484	2,748,497,945	82.76446006
2024	2,818,445,215	3,545,961,264	79.48324883

Chart Representation: 4

Interpretation: 4

The Debt to Assets Ratio, which measures the proportion of a bank's assets financed through debt, has shown a generally high and fluctuating trend from 2019 to 2024, signaling elevated financial risk. Between 2019 and 2021, the ratio rose from 75.84% to a peak of 80.39% in 2020, reflecting increased reliance on debt financing and heightened vulnerability to interest rate shifts and economic downturns—factors that could raise red flags for lenders and investors. In 2022 and 2023, the ratio remained high and reached its peak at 82.76%, indicating that over 80% of the bank's assets were debt-funded, further intensifying credit risk due to reduced financial flexibility. In 2024, a slight decrease to 79.48% suggests marginal improvement, possibly from better debt management or capital inflows, yet the sustained high ratio implies the bank may still be perceived as a high-risk borrower.

5. Debt to Shareholder's Equity Ratio

Table:5

Debt to Shareholder's Equity Ratio			
Years	Total Debt (IQD ,000)	Total Shareholder's Equity (IQD ,000)	Debt/Equity %
2019	859,102,781	273,641,424	313.952021
2020	1,141,092,385	278,435,852	409.8223619
2021	1,230,678,778	309,129,878	398.110589
2022	1,374,573,312	349,626,266	393.1550475
2023	2,274,779,484	473,718,461	480.196503
2024	2,818,445,215	727,516,049	387.4066035

Chart Representation: 5

Interpretation: 5

The bank has maintained a consistently high Debt-to-Equity (D/E) ratio, remaining above 300% throughout the period and peaking at 480.19% in 2023, signaling heavy reliance on debt financing. Although there was a slight improvement in 2024 due to a sharp increase in equity—more than doubling from 2022 levels—the bank's capital structure still reflects significant financial leverage. This equity growth, possibly driven by retained earnings, asset revaluation, or new share issuance, is a positive development but not yet enough to offset the elevated risk profile.

From a credit risk management perspective, a D/E ratio above 300% represents high financial risk. In such highly leveraged scenarios, the bank is more vulnerable to economic shocks, interest rate hikes, and refinancing difficulties. Lenders may respond by imposing tighter credit conditions, such as higher interest rates, stricter covenants, or additional collateral requirements. Given the volatility in the risk profile and the 2024 equity improvement, it is essential for risk managers to assess

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
Volume 3, Issue 2, Mar-Apr-2025, PP: 357-369

whether this trend toward a stronger capital base is sustainable.

To manage this elevated risk, credit risk teams should implement regular monitoring, including stress testing against adverse economic scenarios. High leverage amplifies the impact of any earnings decline on the bank's debt-servicing ability, raising the importance of evaluating debt capacity and credit limits. Future financing should be approached cautiously, with possible recommendations including equity strengthening, debt restructuring, and covenant controls (e.g., maintaining a D/E ratio below 400%) to ensure long-term creditworthiness and financial resilience.

6. EBIT to Gross Revenue Ratio

Table: 6

Ebit Margin Ratio			
Years	Total EBIT (IQD ,000)	Total Revenue (IQD ,000)	Ebit/Revenue %
2019	10,837,194	45,743,462	23.69124138
2020	25,755,190	66,179,087	38.9174151
2021	37,148,542	90,636,243	40.98640982
2022	63,789,805	121,491,055	52.50576267
2023	181,830,811	243,999,218	74.52106301
2024	363,729,087	479,093,827	75.9202199

Chart Representation: 6

Interpretation: 6

The bank's EBIT margin has shown a consistent and significant upward trend from 2019 to 2024, rising from 23.69% to an impressive 75.92%. This indicates a strong and growing ability to convert revenue into operating profit, reflecting improved cost management, pricing strategies, and operational efficiency. Such a substantial increase—more than tripling over six years—suggests the bank is strengthening its core profitability.

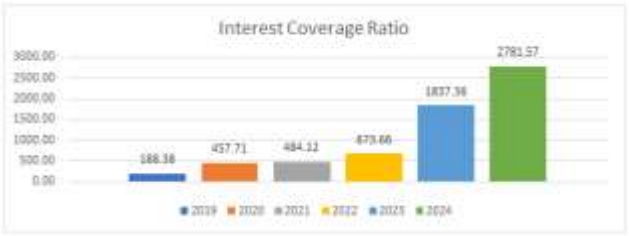
From a credit risk management perspective, this rising EBIT margin is a positive indicator of the bank's financial health and resilience. Higher operating margins enhance the firm's capacity to cover fixed obligations, including interest payments, which lowers default risk. This improved profitability also provides a greater cushion during economic downturns or revenue disruptions. Credit analysts would view this trend favorably, as it reduces the firm's credit risk profile and supports stronger debt-servicing ability, even if leverage levels are high. However, it remains important to assess whether these margins are sustainable in the long term, especially in changing market conditions.

7. Interest Coverage Ratio

Table: 7

Interest Coverage Ratio			
Years	Total EBIT (IQD ,000)	Interest Expenses (IQD ,000)	EBIT/Interest Exp. %
2019	10,837,194	5,752,922	188.3772107
2020	25,755,190	5,627,023	457.7054332
2021	37,148,542	7,673,454	484.1176086
2022	63,789,805	9,469,103	673.6625951
2023	181,830,811	9,896,291	1837.36322
2024	363,729,087	13,076,391	2781.570901

Chart Representation: 7



Interpretation: 7

The bank's interest coverage ratio has shown a remarkable upward trend from 2019 to 2024, increasing from 188.38% to an exceptionally high 2,781.57%. This reflects a significant improvement in the bank's ability to meet its interest obligations through earnings before interest and taxes (EBIT). The growing gap between EBIT and interest expenses indicates that the bank is generating much more operating income relative to its debt servicing costs, showcasing strong financial health and robust profitability.

From a credit risk management perspective, this trend is highly favorable. A high and rising interest coverage ratio reduces the likelihood of default, as the bank is more than capable of covering its interest payments—even in periods of financial stress. This enhances lender confidence and may support more favorable borrowing terms. However, credit analysts should still consider the sustainability of EBIT growth and monitor any changes in debt levels or interest expense that could impact this ratio in the future.

International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
Volume 3, Issue 2, Mar-Apr-2025, PP: 357-369

8. Efficiency Ratio

Table: 8

Efficiency Ratio			
Years	Expenses (Excluding Interest) (IQD ,000)	Total Revenue (IQD ,000)	Ebit/Revenue %
2019	28,596,426	45,743,462	62.51478299
2020	26,786,028	66,179,087	40.47506428
2021	25,983,328	90,636,243	28.66770195
2022	31,068,416	121,491,055	25.57259545
2023	33,051,005	243,999,218	13.54553726
2024	53,931,896	479,093,827	11.25706343

Chart Representation: 8

Interpretation: 8

The bank's efficiency ratio, calculated as non-interest expenses relative to total revenue, has worsened over time—rising from 62.51% in 2019 to 88.74% in 2024 (i.e., only 11.26% of revenue remains as EBIT in 2024). This trend indicates declining operational efficiency, with expenses growing faster than revenue. The sharp drop in efficiency, especially from 2021 onward, suggests cost management challenges or possibly higher spending to support revenue growth that hasn't translated proportionally into profits.

From a credit risk management perspective, a rising efficiency ratio is a red flag. It implies tighter operating margins, which can weaken the bank's ability to absorb shocks or meet debt obligations. As operating costs consume a larger share of revenue, the cushion for interest payments and other fixed expenses shrinks, increasing credit risk. Credit analysts should closely monitor this trend, evaluate the drivers behind rising expenses, and assess whether the current cost structure is sustainable in the context of the bank's overall financial strategy.

VI. FINDINGS AND CONCLUSION

Over the past six years, the bank's Return on Assets (ROA) has shown consistent and significant growth, rising from 0.65% in 2019 to 9.75% in 2024—a nearly 15-fold increase. This indicates substantial improvement in operational efficiency and profitability relative to total assets.

Despite a nearly threefold increase in asset size, the bank managed to grow earnings at an even faster pace, reflecting strong asset utilization. The sharp spikes in ROA during 2023 and 2024 suggest a breakthrough in performance, likely driven by strategic investments, operational improvements, and favorable market dynamics.

From 2019 to 2024, the bank's ROE jumped from 2.67% to 42.18, indicating strong profitability and effective management. The surge, especially in 2023–2024, likely stems from margin gains and strategic growth. From a credit risk view, the rise reflects financial strength driven by sustainable earnings growth—not excessive leverage—but ongoing monitoring of debt levels remains essential.

From a credit risk management perspective, the bank's consistently high Capital Adequacy Ratio (CAR)—well above Basel III's 8% minimum—reflects a conservative capital posture and strong loss-absorbing capacity. While fluctuations in CAR over 2019–2024 were driven by shifts in risk-weighted assets (RWAs), including aggressive lending in 2020 and 2024, the bank remained well-capitalized throughout. Even with a CAR dip in 2024 due to asset growth, the 43.42% level signals stability and room for expansion, suggesting the institution can take on more credit risk without compromising financial resilience.

The debt to total assets analysis reveals a bank operating with consistently high financial leverage, which significantly impacts its credit risk profile. Although there was a slight improvement in 2024, the overall trend calls for heightened scrutiny from credit risk professionals to ensure proper risk mitigation and to assess the bank's long-term solvency.

The bank's consistently high D/E ratio—peaking at 480.19% in 2023—signals heavy reliance on debt, posing elevated financial risk. A rise in equity in 2024 slightly improved the capital structure, but leverage remains a concern. From a credit risk perspective, such high debt levels increase vulnerability to economic shocks and may prompt lenders to tighten terms. Risk managers should closely monitor leverage, conduct stress testing, and encourage capital strengthening strategies to maintain credit stability.

The bank's EBIT margin rose steadily from 23.69% in 2019 to 75.92% in 2024, signaling strong growth in operating efficiency and profitability. From a credit risk perspective, this trend enhances the bank's ability to meet fixed obligations and reduces default risk. While the improvement supports a stronger credit profile, its sustainability amid market changes should be closely monitored.

The bank's interest coverage ratio rose sharply from 188.38% in 2019 to 2,781.57% in 2024, highlighting a strong improvement in its ability to cover interest

obligations through operating earnings. This trend signals robust financial health and significantly lowers default risk, which is favorable from a credit risk management perspective. While this supports lender confidence, ongoing monitoring of EBIT sustainability and debt levels remains important.

The bank's efficiency ratio has deteriorated from 62.51% in 2019 to 88.74% in 2024, indicating rising costs outpacing revenue growth and weakening operational efficiency. From a credit risk perspective, this trend reduces the bank's ability to cover fixed obligations, increasing default risk. Credit analysts should monitor cost drivers and assess whether the current expense structure is sustainable.

REFERENCES

1. Addy, W. A., Ugochukwu, C. E., Oyewole, A. T., Ofodile, O. C., Adeoye, O. B., & Okoye, C. C. (2024). Predictive analytics in credit risk management for banks: A comprehensive review. GSC Advanced Research and Reviews, 18(2), 434–449.
2. Mbah, R. E. (2023). The impact of effective credit risk management systems on the survival of microfinance institutions. ResearchGate, 37–51.
3. Jackson, E. A., & Tamuke, E. (2022). Credit risk management and the financial performance of domiciled banks in Sierra Leone: An empirical analysis. Journal of Economic Policy Researches, 9(1), 139–164.
4. Ali, L., & Dhiman, S. (2019). The impact of credit risk management on profitability of public sector commercial banks in India. Journal of Commerce & Accounting Research, 8(2), 86–92.
5. Alzeaideen, K. (2019). Credit risk management and business intelligence approach of the banking sector in Jordan. Cogent Business & Management, 6(1), 1675455. https://doi.org/10.1080/23311975.2019.1675455
6. Catherine, N. (2019). Credit risk management and financial performance: A case of Bank of Africa (U) Limited. Open Journal of Business and Management, 8(1), 30–38.
7. Rehman, Z. U., Muhammad, N., Sarwar, B., & Raz, M. A. (2019). Impact of risk management strategies on the credit risk faced by commercial banks of Balochistan. Financial Innovation, 5, Article 1–13. https://doi.org/10.1186/s40854-019-0140-7
8. Afriyie, S. O., Yusheng, K., Kaodui, L., Caesar, A. E., & Owusu-Akomeah, M. (2018). Credit risk management system of commercial banks: An analysis of the process. (Publisher/Journal info needed)
9. Nwude, E. C., & Okeke, C. (2018). Impact of credit risk management on the performance of selected Nigerian banks. International Journal of Economics and Financial Issues, 8(2), 287–297.
10. Adeusi, S. O., & Dada, O. (2017). Impact of credit risk management on deposit money banks performance in Nigeria. Journal of Association of Professional Bankers in Education (JAPBE), 1(1), 163–178.
11. Kodithuwakku, S. (2015). Impact of credit risk management on the performance of commercial banks in Sri Lanka. (Further publication info needed)
12. Abiola, I., & Olausi, A. S. (2014). The impact of credit risk management on the commercial banks performance in Nigeria. International Journal of Management and Sustainability, 3(5), 295–306.
13. Afriyie, H. O., & Akotey, J. O. (2013). Credit risk management and profitability of rural banks in the Brong Ahafo region of Ghana. Management, 5, 24.
14. Ali, A., & Ghauri, S. P. (2013). Global crisis and credit risk management by banks: A comparative study of banks in Pakistan. International Journal of Business and Economics Research, 2(6), 158–168.
15. Rufai, A. S. (2013). Efficacy of credit risk management on the performance of banks in Nigeria: A study of Union Bank Plc (2006–2010). Global Journal of Management and Business Research: Administration and Management, 13(4), 1–13.
16. Musyoki, D., & Kadubo, A. S. (2012). The impact of credit risk management on the financial performance of banks in Kenya for the period. International Journal of Business and Public Management, 2(2), 72–80.
17. Mwangi, G. N. (2012). The effect of credit risk management on the financial performance of commercial banks in Kenya (Doctoral dissertation). University of Nairobi.
18. Poudel, R. P. S. (2012). The impact of credit risk management on financial performance of commercial banks in Nepal. International Journal of Arts and Commerce, 1(5), 9–15.
19. Ugoani, J. (2012). Poor credit risk management and bank failures in Nigeria. SSRN. https://doi.org/10.2139/ssrn.2185013
20. Weber, O. (2012). Environmental credit risk management in banks and financial service institutions. Business Strategy and the Environment, 21(4), 248–263.
21. Eveline, N. (2010). Credit risk management in banks as participants in financial markets. Umea School of Business, 10–55.
22. Cornjanike, K. (2009). The impact of effective credit risk management on bank survival. Annals of the University of Petroşani, Economics, 9(2), 173–184.
23. Weber, O., Fenchel, M., & Scholz, R. W. (2008). Empirical analysis of the integration of environmental risks into the credit risk management process of European banks. Business Strategy and the Environment, 17(3), 149–159.
24. Fatemi, A., & Fooladi, I. (2006). Credit risk management: A survey of practices. Managerial Finance, 32(3), 227–233.
25. Boffey, R., & Robson, G. N. (1995). Bank credit risk management. Managerial Finance, 21(1), 66–78.