



## **The Role of Credit Risk Management in Performance of Commercial Banks: Analysis of Commercial banks' Performance in Erbil**

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**ABSTRACT**

The current study aims to analyze the role of credit risk management in performance of commercial banks in Erbil. There is a high danger of insolvency and financial troubles for banks because of this method of loan origination. As shown by high levels of nonperforming loans, the KRG banking system's Commercial Bank Supervision Report found that most banks failed due to poor credit risk management. Due to the high level of non-performing loans, the profitability of the bank was damaged. The study developed five research hypotheses to measure the role of credit risk management in performance of commercial banks in Erbil. It was decided to use a quantitative approach to investigate the effect credit risk management has on the financial performance of commercial banks. 88 people from the Credit Risk Management departments of several commercial banks around the nation were selected as a convenience sample. These respondents included senior, intermediate, and practical level personnel. The study found that commercial banks with lower levels of nonperforming loans and capital adequacy ratios had higher returns on assets, indicating more effective methods of credit risk management. Total loans divided by the loan loss reserve ratio is the amount set aside for losses. The quality of a loan portfolio degrades as the ratio rises. The study recommended to improve credit risk identification, measurement, monitoring and controlling at selected commercial banks in Erbil.

**1. Introduction**

In commercial banking, there are three main types of risk: financial operational, and strategic (Oudat & Ali, 2020). These dangers have various implications on the



performance of commercial lenders. Due to the amount and intensity of damage caused by credit risk, bank crises might be triggered (Teshome et al. 2018). The number of serious bank failures has risen steadily over time in both developed and developing nations. Scholars who studied bank failures have discovered a variety of factors that contribute to their occurrence (Hallunovi & Berdo, 2018). One of the main reasons of banking problems has been recognized as a lack in credit risk management (CRM). All of the financial systems in the world operate in a constantly changing environment. The banking sector is exposed to enormous risks as a result of these developments, which must be properly handled. A number of commercial banks throughout the world have collapsed or experienced financial issues due to poor credit risk management practices. Credit risk management and bank profitability are the focus of the study. Formal, documented risk management frameworks have been emphasized to the KRG banking business (Disemadi & Shaleh, 2020). How specialized, narrowly targeted and tightly controlled a risk type should be is determined by how complicated it is (Haabazoka, 2018). Risk management is the practice of limiting a bank's exposure to financial risk. Risk identification, risk analysis and assessment, risk audit monitoring, and risk treatment or control are the basic phases in risk management (Oudat & Ali, 2021). Commercial banks use risk management as both a defensive and an aggressive tool. Banks must manage four types of risks in order to generate profits and enhance shareholder value. The four forms of risk are credit risk, interest rate risk, liquidity risk, and operational risk (Umar & Dikko, 2018). In addition to managing credit risk in individual loans or transactions, banks must also manage credit risk across the board. The long-term success of any financial institution depends on an effective approach to managing credit risk (Banerjee et al. 2018). When a lender is concerned about a borrower's capacity to make good on a loan, they're talking about credit risk (Boussemart et al. 2019). As a result of failing to properly manage risk, particularly credit risk, a company may become insolvent. More than half of all bank revenue now comes from interest and other fees placed on loans, making this the most important revenue stream for financial institutions (Chelangat et al. 2022). Credit policy goals should encompass regulatory environment, funding, risk selection, loan portfolio balance and obligation term structure for a bank. As a result All aspects



of lending from finding new customers to recovering loan monies are included in credit risk management in the banking business. Credit risk management in the banking business includes loan application, loan assessment, loan approval, monitoring, and the recovery of non-performing loans (Islam, 2018). The importance of credit risk management is highlighted by Abdullai & Micheni, (2018), since giving credit is viewed as an investment in a consumer. Settlement should not be deferred for a lengthy period of time since late payments and bad debts are costly to the company. Because of this, the efficacy and efficiency of loan processing as measured by many metrics is critical to the overall success of credit risk management. Credit risk refers to the likelihood that an investment or a loan's actual return may differ from its projected return. (Oganda et al. 2018). Credit risk is described by Gupta & Sikarwar (2020) as losses caused by a customer's unwillingness or inability to pay his or her obligations on time and in full. The main sources of credit risk are a lack of institutional capacity, ineffective credit policies, fluctuating , lax credit assessment, poor lending practices, and government interference. Banks need to be well-capitalized, have a varied client base, share information about their customers, maintain stable interest rates, lower the amount of non-performing loans, boost bank deposits, and raise the amount of credit available to customers in order to mitigate these risks. It is imperative that the number of loan defaults and non-performing loans be kept to a minimum. This study consists of four main sections, including introduction, literature review, research methodology, and findings. Introduction section includes research problem, research aim, conceptual framework and research hypotheses. literature review section includes, the concept of credit, credit risk, credit risk management, and financial performance. Research methodology section, includes research design, sample size, and population. Finally, data analysis section consists of several statistical analysis including demographic analysis, reliability, correlation, and regression analysis.

## **1.1 Research problem**

A variety of credit risk management strategies are used by commercial banks based on their ownership (privately owned, government influenced or regionally owned), as well as their credit rules, credit scoring systems, regulatory environment and

management styles. Banks are very vulnerable since depositors account for more than 71 percent of their liability (Musau et al. 2018). Deposits are used by banks to lend money to its customers. There is a high danger of insolvency and financial troubles for banks because of this method of loan origination. As shown by high levels of nonperforming loans, the KRG banking system's Commercial Bank Supervision Report found that most banks failed due to poor credit risk management. Due to the high level of non-performing loans, the profitability of the bank was damaged.

**1.2 Research Aim**

All five credit risk management aspects (risk identification, measurement, monitoring, control and mitigation) were examined in this study in an effort to determine how these factors affected the performance of commercial banks in Iraq's Kurdistan area.

**1.3 Conceptual Framework**

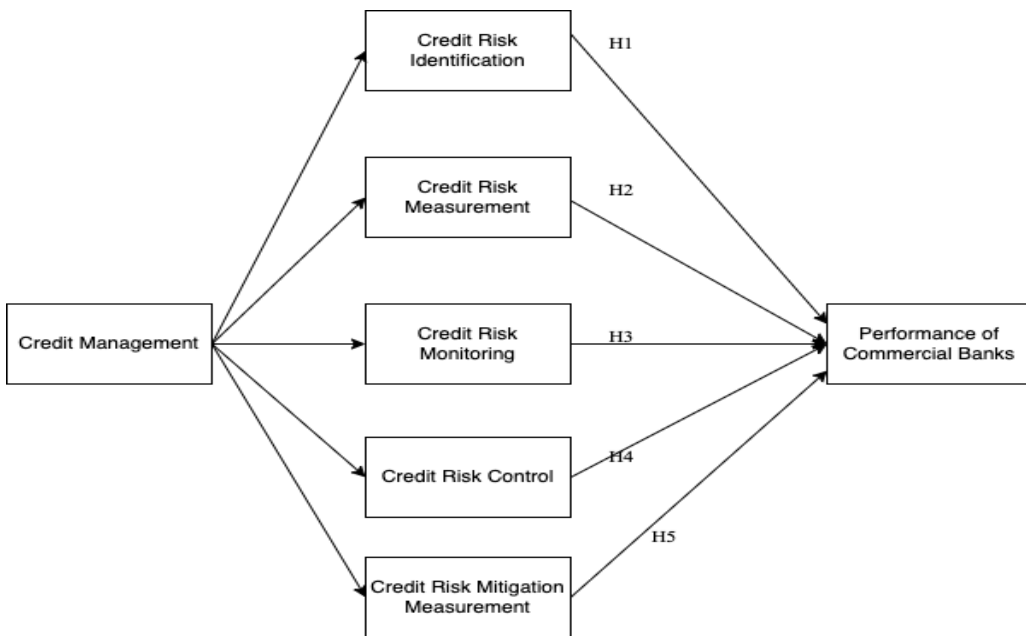


Figure (1): Conceptual Framework

## **1.6 Research Hypotheses**

Research hypothesis -1-: There is a positive relationship between credit risk identification as credit risk management component with performance of commercial banks.

Research hypothesis -2-: There is a positive relationship between credit risk measurement as credit risk management component with performance of commercial banks.

Research hypothesis -3-: There is a positive relationship between credit risk monitoring as credit risk management component with performance of commercial banks.

Research hypothesis -4-: There is a positive relationship between credit risk control as credit risk management component with performance of commercial banks.

Research hypothesis -5-: There is a positive relationship between credit risk mitigation measurement as credit risk management component with performance of commercial banks.

## **2. Literature Review**

### **2.1 Concept of Credit**

Banking sector exist to give credit as well as collect deposits, which makes them particularly exposed to the risks associated with credit risk management. Lenders give money to those who they believe will pay them back in the future, and this is known as "credit" (Banerjee et al. 2018). So the lender gives a borrower something in exchange for something else at a later date, usually on the day of payment in full. The ability of banks to accurately evaluate and efficiently manage credit risk is more important than any other hazard to the profitability of their business. In the financial sector, credit may refer to both the giving of loans and the taking on of debt. According to Boussemart et al. (2019), sound credit-giving is one of the most essential factors that boost financial institutions' financial position. Credit limits and mechanisms for sanctioning new credits are created by sound credit provision, according to this researcher. The rise and fall of a country's economy may be attributed in large part to its level of debt. As a means of facilitating the movement

of funds, credit also reduces the volume of currency or coin money in use since debt has a magnifying effect on the amount of currency or coin money in circulation (Chelangat et al. 2022).

## **2.2 Credit Risk**

As a financial middleman, banks help distribute monies deposited by diverse deficit unit to deficit units. In this position, they are constantly confronted with danger, which is one of the most hotly debated subjects in current financial studies. It is critical for a bank's success to have sound credit risk management. There is a possibility of losing an existing debt partially or fully due to credit events, according to Islam, (2018). Credit events include bankruptcy, failure to pay a debt, repudiation/moratorium, or a credit rating change and reorganization. Lending is fraught with peril. This is because loans are the most significant asset class for bankers, representing for anything from half to almost three-quarters of all bank assets. Due to a certain counterparty's failure to follow the credit agreement's terms and conditions, a credit risk exists (Abdullai & Micheni, 2018). A counterparty's capacity or motivation to execute contractual commitments is what is meant by "credit risk." With this definition, credit risk may be defined as the possibility for a decrease in total income as a result of a non-payment or late payments of a credit facility that is granted to customers. It has been said that credit risk is like a disease that spreads quickly and causes serious financial problems if it is not properly managed (Gupta & Sikarwar, 2020).

## **2.3 Credit Risk Management**

The commercial bank If an obligor fails to satisfy the terms of any agreement with the bank, or if a lienholder else fails to perform as promised, credit risk exists or may arise. Many factors contribute to credit risk, including inadequate institutional capacity and weak credit policies. A lack of cash and liquidity, as well as a poor evaluation of a borrower's ability to repay loans, are all variables that influence interest rates. Credit risk management (Königstorfer & Thalmann, 2020) includes all aspects of identifying, measuring, monitoring, and controlling credit risk. Credit losses can be minimized by having bank management construct a diverse range of investments (lending and



investments) (Musau et al. 2018). Risk aversion varies substantially among organizations, even though it is commonly understood that all banks will experience some loan losses. It is imperative that a strong credit culture and standard written lending policies support and explain each bank's unique credit philosophy. Loan performance is constantly watched, and any problem loans are spotted as soon as possible. The bank is therefore able to get back on its feet as quickly as possible (Ombaka & Jagongo, 2018). There have been a number of studies looking at the link between management of credit risk and nonperforming loans all around the world. According to Guan and colleagues (2019), an effective credit risk management system includes criteria that clearly specify the scope and distribution of bank lines of credit, and also how to maintain the credit portfolio. This study examined how loans are made, rated, supervised, and collected. According to Marjanovi et al. (2018), a rapid spike in NPLs provides long-term tailwinds that stifle macroeconomic performance on numerous levels in industrialized nations. In the Kurdistan Regional Government (KRG), Al-Homaidi et al. (2020) studied how banks handle risk. To reach their aims and objectives at KRG, the study found that risk management is essential. Credit risk management practices have been linked to loan losses among commercial banks in the KRG by Kimaru & Kinyua, (2018), Lopatin, (2019), Oduro et al. (2019), and Oduro et al. (2020). Liu et al. (2020) investigated the effects of management of credit risk management practices on financial performance of payment microfinance banks. Credit risk and danger monitoring in banks have been the subject of numerous studies by government agencies, academics, and others. In terms of the topic, there is a lot of material out there. A difficult task was ahead of us before we could even begin the investigation: selecting relevant data to include in our analysis. We've gone over all of the relevant material to make sure it's up to date. An attempt was made to present an overview of the bank's risk management and to provide a pricing technique based on the evaluation of the borrowers' credit risks. He came to the idea that sound financial management is the key to a company's long-term viability. An organization's long-term interests will be protected if it employs an effective risk management approach (Jacob, 2020).



## **2.4 Financial Performance of Commercial Banks**

The profitability of commercial banks has a substantial influence on the bank's long-term viability. It is impossible to assess a company's financial health without first looking at its financial accounts. Performance is judged on the basis of net earnings and operating cash flows. Other organizations' economic results may be evaluated using various ratio analysis methods such as benchmarking and comparisons to budgets, as well as other methods. Profitability ratios are commonly used in banks as indicators of credit analysis since they are connected to the success of result management. Maina and Mungai, a.k.a (2019). ROE and ROA are the most often used ratios. It has been suggested that banks' efficiency may be assessed by their return on equity (ROE), which demonstrates how much money is reinvested in order to produce future profits. The purpose of ROE, according to Gardi et al. (2021), is to determine how much profit a company's equity generates. A company's ability to earn a profit using its own equity may be gauged by looking at its return on equity (ROE). Compelling use of assets to create profits is also a part of this competency. As a result of its credit policies, the company's capacity to effectively invest in its creditors and make money from increased revenue is directly related to the managerial ability to manage debtors (Qader et al. 2021).

## **2.5 Effects of Credit Risk Management on Financial Performance**

The elements that determine a quality of financial reporting have attracted the interest of academics, as well as bank management, financial markets, and bank regulators. According to Hamza et al. (2021), there is a substantial correlation between bank performance and credit risk management. Improved credit risk management leads to higher bank performance. As a result, bank executives must practice prudent credit risk management, preserve the bank's assets, and secure the interests of shareholders. The requirement of having a loan portfolio for bank assets to spread risks is stressed by loan portfolio diversification and contemporary portfolio theory, since a portfolio of loans may have less hazards than a single loan. Credit influences a business's performance, according to Hamad et al. (2021), which implies



that if a corporation adopts an optimum credit strategy, it will be able to optimize its management revenue in creditors, which will strengthen and increase its financial position and performance. As a result, a successful credit policy choice is connected to high profitability (Maina & Mungai, 2019).

## **2.6 Determinants of Banks Financial Performance**

The financial conduct of commercial banks can be influenced by both internal and external factors. Macroeconomic impacts and industry-specific determinants are examples of external variables, whereas bank-specific determinants are examples of internal factors. Bank-specific variables include asset growth, capital sufficiency, operational efficiency, and liquidity. Industry-specific factors include ownership, bank size, and the bank concentration index. GDP growth and GDP per capita, inflation expectations, interest rates and their dispersion are the most important macroeconomic factors. Analysis of commercial bank performance in KRG is conducted by Hamad et al. (2021) utilizing data from the country's eight biggest banks. Firm-level factors such as cost management and risk management capabilities were shown to have the greatest impact on the performance of commercial banks in the Kurdistan Regional Government (KRG). An major factor in the KRG's strong bank profitability, according to Gardi et al. (2021), is effective management. According to Qader et al. (2021), the size of a bank has a significant impact on its profitability. Allen and Hamza et al. proved the significance of macroeconomic factors in affecting bank profitability (2021). As Hamad et al. (2021) claim, board and management decisions have the greatest impact on commercial banks in the KRG's financial performance.

## **3. Research Methodology**

### **3.1 Research Design**

In order to collect and evaluate information relevant to a study's goal while also using the least amount of resources possible, researchers devise study designs. It's a framework for thinking about research. Methods for analyzing the influence of credit risk management on commercial banks' financial performance were conducted using quantitative techniques. In order to gather and analyze the extent to which a business

employs adequate risk management procedures and tools, a quantitative approach was used.

**3.2 Sample Size and Target Population**

The number of people employed that participated in this survey is 230. Commercial banks are chosen because of their wide reach and capacity to satisfy the study's unique requirements. This pool of possible applicants was narrowed down to a sample of 88 respondents. The skills and knowledge of the respondent population will be examined in connection to the factors under consideration. The population of the current study is approximately 500 respondents. Credit inspectors, sub-Supervisors, and members of the credit committee will be included in the researcher's responder pool, which will be chosen at random. 88 people from the Credit Risk Management departments of several commercial banks around the nation were selected as a convenience sample. These respondents included senior, intermediate, and practical level personnel. The researcher employed a technique known as 'targeted sampling' in order to engage with departments with relevant knowledge.

**4. Data Analysis**

Table 1: Demographic analysis

Items		Frequency	Percent
Gender	Male	66	75
	Female	22	25
Age	20-25	13	15
	26-30	19	22
	31-35	21	24
	36-40	13	15
	41-45	12	14
	46-50	4	4
	51-55	4	4
	56 and above	2	2
Marital status	Single	38	43
	Married	50	57

According to the

Level of education	Bachelor	56	63
	Master	19	22
	PhD	13	15

to Table 1,

demographics of people who participated in the study were examined. Descriptive analysis was utilized by the researcher in order to have a better understanding of the respondents' backgrounds. 66 men from a total of 88 individuals participated in this study, while 22 women from the same pool were also included in similar experiments (66 males, 22 females). According to this study, there are 13, 19, 19, 21, and 21 individuals in each age group who are between 20 and 25 years old, respectively, in total. Between 41 and 45 and 46 and 50 and 56 and above, 13 of 88 participants were in this age range. 4 out of the 88 participants were between the ages of 46 and 50. According to the findings of this study, there were 50 married individuals and 38 single participants, showing a mixed marital status. It was found that 56 of the 88 participants had attained a college education, 19 had a post-graduate diploma, and just 13 had a doctoral degree.

**Table 2: Reliability Analysis**

Variables	Item N.	Cronbach's Alpha
Credit Risk Identification	8	.739
Credit Risk Measurement	6	.761
Credit Risk Monitoring	7	.756
Credit Risk Control	6	.719
Credit Risk Mitigation Measurement	8	.722
Performance Of Commercial Banks	7	.744

Cronbach's Alpha values were used as an independent element in the reliability evaluation for credit risk detection, as shown in Table 2. The reliability coefficient of 739  $>.6$  indicates that the items used to assess credit risk were reliable in the current study. For Credit Risk Measurement, Cronbach's Alpha was found to be a major independent component. In the current analysis, the items used to measure the Credit Risk Measurement factor had a 761  $>.6$  reliability coefficient, indicating their trustworthiness. Cronbach's Alpha for Credit Risk Monitoring was shown to be a significant independent variable. This indicates that the items used to measure the Credit Risk Monitoring factor were reliable, with a reliability coefficient of 756  $>.6$  in

the current analysis. Using Cronbach's Alpha for Credit Risk Control as an independent factor, which was found to be a significant one. Credit Risk Control Factor measurements were reliable, with a reliability coefficient of 719 >.6 in this experiment. Cronbach's Alpha for Credit Risk Mitigation Measurement was shown to be a significant independent variable. Credit Risk Mitigation Measurement items were found to have a reliability coefficient of 722 >.6, indicating their trustworthiness in the current research. Performance of commercial banks as a dependent factor, which was found to be significant by using Cronbach's Alpha values. A 744 >.6 reliability coefficient indicates that the items used to measure the Performance of Commercial Banks factor were reliable in this inquiry.

Table 3: Correlation Analysis

	Pearson	CR Identification	CR Measurement	CR Monitoring	CR Control	CR Mitigation Measurement
	Correlation	1				
	Sig. (2-tailed)					
	N	88				
Credit risk identification	Pearson	.525**	1			
	Correlation					
	Sig. (2-tailed)	.000				
	N	88	88			
Credit risk measurement	Pearson	.531**	.599**	1		
	Correlation					
	Sig. (2-tailed)	.000	.000			
	N	88	88	88		
Credit risk monitoring	Pearson	.601**	.581**	.632**	1	
	Correlation					
	Sig. (2-tailed)	.000	.000	.000		
	N	88	88	88	88	
Credit risk control	Pearson	.609**	.641**	.611**	.619**	1
	Correlation					
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	88	88	88	88	88
credit risk mitigation	Pearson Correlation	.552**	.591**	.605**	.701**	.599**

measureme nt	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	88	88	88	88	88
Performanc e of Commercial banks	Pearson Correlation	.617**	.593**	.649**	.631**	.603**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	88	88	88	88	88
**. Correlation is significant at the 0.01 level (2-tailed).						

There were five independent factors and a dependent factor being studied, hence Pearson correlation was employed (table-3). The Pearson correlation coefficient for Credit risk identification =.617\*\* >.0.01 indicates that there is a positive and substantial link between the performance of commercial banks and the use of Credit risk identification. In terms of efficacy, it was shown that credit risk identification and the performance of commercial banks had a modest positive correlation. There is a positive and statistically significant link between the Pearson correlation coefficient for Credit risk measurement and the performance of commercial banks, as shown by the Pearson correlation coefficient =.593\*\* >.0.01. Credit risk measurement and commercial bank performance have been found to have a moderately good association in terms of efficacy. There was also a positive and statistically significant link found between credit risk monitoring and commercial bank performance, with a Pearson correlation coefficient of.649\*\* >.0.01. There is a moderate positive correlation between Credit risk monitoring and the performance of commercial banks, and the Pearson correlation coefficient for Credit risk control =.631\*\* >.0.01, which indicates that there is a positive and significant association between Credit risk control and the performance of commercial banks. There is a moderate positive correlation between credit risk control and the performance of commercial banks, and the Pearson correlation coefficient for credit risk mitigation measurement =.603\*\* >.0.01, which indicates a positive and significant association between credit risk mitigation measurement and commercial bank performance. Credit risk mitigation assessment has a moderately good influence on the performance of commercial banks, according to this study.

Table.4: Model Summary  
 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.701	.619	.611	.21991

a. Predictors: (Constant), credit risk identification, credit risk measurement, credit risk monitoring, credit risk control, credit risk mitigation measurement  
 To put it another way, R square = .619, which means that +3 percent of the variables are explained by this technique.

Table 5: ANOVA

Model	ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	101.739	12	11.331	125.165	.000b
	Residual	38.764	247	.089		
	Total	140.530	259			

a. Dependent Variable: Performance of commercial banks  
 b. Predictors: (Constant), credit risk identification, credit risk measurement, credit risk monitoring, credit risk control, credit risk mitigation measurement  
 F = 125.165 was found, and because the input is more than .001, this indicates that the variables used to test research hypotheses have a positive correlation.

Table.6: Coefficients

Model		Unstandardized Coefficients			Standardized t	Sig.
		B	Std. Error	Beta	Coefficients	
1	(Constant)	.511	.076		3.251	.000

Credit Risk Identification	.539	.031	.531	14.253	.000
Credit Risk Measurement	.603	.029	.593	6.521	.000
Credit Risk Monitoring	.631	.032	.626	5.233	.000
Credit Risk Control	.599	.021	.589	3.237	.000
Credit Risk Mitigation Measurement	.641	.082	.633	4.252	.000

The study employed multiple regression analysis to identify the most critical and relevant variables that contribute to the improved performance of Kurdistan's commercial banks. A substantial link was found between credit risk identification and the performance of commercial banks, with B for credit risk identification equaling .539 > .001 and P-value equal to .0001. After all was said and done, it was discovered to be true that "There is a positive association with commercial bank performance between credit risk identification as a credit risk management component." There is a strong correlation between commercial bank performance and the level of B for credit risk measurement, which is defined as .603 > 0.001 and the P-value is equal to .000. There is a favorable correlation between credit risk measurement as a credit risk management component and the performance of commercial banks, according to the first hypothesis of this study. Furthermore, it was found that the level of B for credit risk monitoring = .631 > .001 and the P-value = .000, which indicates that there is a substantial association between credit risk monitoring and the performance of commercial banks. It was revealed that the "There is a favorable association between credit risk monitoring as part of credit risk management and the performance of commercial banks" hypothesis was supported.



Commercial banks' performance was also shown to be linked to their ability to manage credit risk, with the level of B for credit risk control being  $599 > .001$  and the P-value being 0.000. As a consequence, the initial hypothesis that "Credit risk control as a credit risk management component is associated with commercial banks' performance" was shown to be true. It was also discovered that the B-value for credit risk mitigation measurement =  $.641 > .001$  and the P-value =  $.000$  showed that credit risk mitigation measurement and commercial bank performance had a significant association. There is a favorable correlation between credit risk mitigation measurement and the performance of commercial banks, according to the first study hypothesis.

## **Conclusions**

- Bank profitability (ROA) and credit risk management have a strong correlation, according to the research. Improved credit risk management improves bank profitability. As a result, bank executives must conduct cautionary credit risk management, protect the bank's assets, and protect shareholders' interests.
- The study found that commercial banks with lower levels of nonperforming loans and capital adequacy ratios had higher returns on assets, indicating more effective methods of credit risk management.
- Total loans divided by the loan loss reserve ratio is the amount set aside for losses. The quality of a loan portfolio degrades as the ratio rises, according to the findings of the study. A higher loan-to-value ratio indicates greater risk, and vice versa. As a result, bank executives must maintain a wide portfolio of assets in order to minimize risk.
- There has been a longstanding worry among banking financial institutions about default clients, and financial institutions have been working to lessen the default problem at all times. Regulators have been put in place by the KRG Bank to help financial firms overcome their default risk issues. KRG Bank has continued this practice by issuing instructions when and where they are thought to be necessary.
- The KRG's largest financial institution, Bank Limited, maintains a seamless functioning. Although the bank has had various difficulties, its business

experience and excellent lending strategy have made it exceedingly cautious of the danger.

- There is a highly trained and technologically advanced department that is always working hard to analyze the risk of its products and services. In terms of risk assessment and management, it has so far shown to be a successful company.
- Commercial banks in Iraq's Kurdistan region performed significantly and positively when all five hypotheses were tested using multiple regression analysis. All five hypotheses had significant and positive influences on the performance of commercial banks in Iraq's Kurdistan region, while all five hypotheses had significant and positive influences on commercial banks in Iraq.

## **Recommendations**

- According to the research, bank profitability (ROA) and credit risk management should create and build a positive and effective association.
- Commercial banks should improve credit risk management increases the profitability of banks. So, bank executives must be smart about how they manage credit risk, protect the bank's assets, and look out for the interests of shareholders.

The KRG Bank should appointed regulators to assist financial institutions in overcoming default risk challenges. KRG Bank should maintain this approach by providing directives whenever and wherever they are deemed essential

## **References**

- Abdullai, H. M., & Micheni, E. M. (2018). Effect of internet banking on operational performance of commercial banks in Nakuru County, Kenya. *International Journal of Economics, Finance and Management Sciences*, 6(2), 60-65.
- Al-Homaidi, E. A., Almaqtari, F. A., Yahya, A. T., & Khaled, A. S. (2020). Internal and external determinants of listed commercial banks' profitability in India: dynamic GMM approach. *International Journal of Monetary Economics and Finance*, 13(1), 34-67
- Banerjee, R., Verma, D., & Jaiswal, B. (2018). Non-performing assets: A comparative study of the Indian commercial banks. *International Journal of Social Relevance & Concern*, 2, 6-21.



- Boussemart, J. P., Leleu, H., Shen, Z., Vardanyan, M., & Zhu, N. (2019). Decomposing banking performance into economic and credit risk efficiencies. *European Journal of Operational Research*, 277(2), 719-726.
- Chelangat, M. N., Kiprop, S., & Mutai, J. K. (2022). Effects of Payment Cards on Financial Performance of Commercial Banks in Kenya. *Journal of Finance and Accounting*, 6(1), 46-56.
- Disemadi, H. S., & Shaleh, A. I. (2020). Banking credit restructuring policy amid COVID-19 pandemic in Indonesia. *Jurnal Inovasi Ekonomi*, 5(02).
- Gardi, B., Hamza, P. A., Qader, K. S., Anwar, H., Hamad, D., & Anwar, G. (2021). Factors affecting the quality of financial statements on investment decision making.
- Guan, F., Liu, C., Xie, F., & Chen, H. (2019). Evaluation of the competitiveness of China's commercial banks based on the G-CAMELS evaluation system. *Sustainability*, 11(6), 1791.
- Gupta, M., & Sikarwar, T. S. (2020). Modelling credit risk management and bank's profitability. *International Journal of Electronic Banking*, 2(2), 170-183.
- Haabazoka, L. (2018, April). A Study of the Effects of Technological Innovations on the Performance of Commercial Banks in Developing Countries-A Case of the Zambian Banking Industry. In *International Conference Project "The future of the Global Financial System: Downfall of Harmony"* (pp. 1246-1260). Springer, Cham.
- Hallunovi, A., & Berdo, M. (2018). The relationship between risk management and profitability of commercial banks in Albania. *Asian Themes in Social Sciences Research*, 1(2), 44-49.
- Hamad, H. A., Hamza, P. A., Gardi, B., Saeed, K., Qader, D., & Anwar, G. (2021). The influence of accounting software in minimizing business costs.
- Hamad, H. A., Qader, K. S., Gardi, B., Abdalla, P., Hamza, D., & Anwar, G. (2021). The essential variables to consider before investing in financial markets during Covid-19.
- Hamza, P. A., Hamad, H. A., Qader, K. S., Gardi, B., & Anwar, G. (2021). Management of outsourcing and its relationship with hotels' performance: An empirical analysis of selected hotels in Erbil. *International Journal of Advanced Engineering Research and Science*, 8, 10.



- Hamza, P. A., Qader, K. S., Gardi, B., Hamad, H. A., & Anwar, G. (2021). Analysis the impact of Information technology on Efficient tax Management. *International Journal of Advanced Engineering, Management and Science*, 7(9), 31-41.
- Islam, M. Z. R. M. S. (2018). Use of CAMEL rating framework: A comparative performance evaluation of selected Bangladeshi private commercial banks. *International Journal of Economics and Finance*, 10(1).
- Jacob, C. E. (2020). Capital Structure and Productivity of Listed Commercial Banks in Canada. *Journal of Finance and Accounting*, 4(6), 65-78.
- Kimaru, I. W., & Kinyua, G. (2018). Relationship between Financial Resources and Performance of Credit Only Microfinance Institutions in Kenya. *International Journal of Innovative Research and Advanced Studies*, 5(11), 1-6.
- Königstorfer, F., & Thalmann, S. (2020). Applications of Artificial Intelligence in commercial banks—A research agenda for behavioral finance. *Journal of behavioral and experimental finance*, 27, 100352.
- Liu, X., Sun, J., Yang, F., & Wu, J. (2020). How ownership structure affects bank deposits and loan efficiencies: an empirical analysis of Chinese commercial banks. *Annals of Operations Research*, 290(1), 983-1008.
- Lopatin, E. (2019). Assessment of Russian banking system performance and sustainability. *Banks and Bank Systems*, 14(3), 202.
- Maina, D. W., & Mungai, J. (2019). Mobile banking services and financial performance of tier one commercial banks in Kenya. *International Academic Journal of Economics and Finance*, 3(4), 232-254.
- Marjanović, I., Stanković, J. J., & Popović, Ž. (2018). Efficiency estimation of commercial banks based on financial performance: Input oriented DEA CRS/VRS models. *Economic Themes*, 56(2), 239-252.
- Musau, S., Muathe, S., & Mwangi, L. (2018). Financial inclusion, bank competitiveness and credit risk of commercial banks in Kenya. *International Journal of Financial Research*, 9(1), 203-218.
- Nataraja, N. S., Chilale, N. R., & Ganesh, L. (2018). Financial performance of private commercial banks in India: multiple regression analysis. *Academy of Accounting and Financial Studies Journal*, 22(2), 1-12.

- Oduro, R., Asiedu, M. A., & Gadzo, S. G. (2019). Impact of credit risk on corporate financial performance: Evidence from listed banks on the Ghana stock exchange. *Journal of Economics and International Finance*, 11(1), 1-14.
- Oganda, A. J., Mogwambo, V. A., & Otieno, S. (2018). Effect of cash reserves on performance of commercial banks in Kenya: A comparative study between national bank and equity bank Kenya limited. *International Journal of Academic Research in Business and Social Sciences*, 8(9), 685-704.
- Ombaka, C., & Jagongo, A. (2018). Mergers and acquisitions on financial performance among selected commercial banks, Kenya. *International Academic Journal of Economics and Finance*, 3(1), 1-23.
- Oudat, M. S., & Ali, B. J. (2020). Effect of Bad Debt, Market Capitalization, Operation Cost Capital Adequacy, Cash Reserves on Financial Performance of Commercial Banks in Bahrain. *International Journal of Psychosocial Rehabilitation*, 24(1), 5979-5986.
- Oudat, M. S., & Ali, B. J. (2021). The Underlying Effect of Risk Management On Banks' Financial Performance: An Analytical Study On Commercial and Investment Banking in Bahrain. *Ilkogretim Online*, 20(5).
- Qader, K. S., Hamad, H. A., Gardi, B., Abdalla, P., Hamza, D., & Anwar, G. (2021). The role of sophisticated accounting system in organizational planning.
- Teshome, E., Debela, K., & Sultan, M. (2018). Determinant of financial performance of commercial banks in Ethiopia: Special emphasis on private commercial banks. *African Journal of Business Management*, 12(1), 1-10.
- Umar, H., & Dikko, M. U. (2018). The effect of internal control on performance of commercial banks in Nigeria. *International Journal of Management Research*, 8(6), 13-32.
- Wang, F., Yang, S., Reiser, A., & Liu, N. (2019). Does green credit policy work in China? The correlation between green credit and corporate environmental information disclosure quality. *Sustainability*, 11(3), 733.

## پوخته

سیستمی دارای جیهان هم‌مویی له چوارچینیه‌کی داینامیکیدا کار ده‌کات. ئەم گۆرانکاریبانه مه‌ترسی یان دەرڤه‌ت دروست ده‌کەن، که‌رتی بانکەکان بخه‌نەرۆو بۆ مه‌ترسییه‌ گرنه‌گەکان که ده‌بیت به‌ شیوه‌یه‌کی گونجاو به‌ریوه‌بیرین. توپژینه‌وه‌که‌ی ئیستا به‌ئامانجی دۆزینه‌وه‌ی کاریگه‌ری

رہہ ہندہ کانی بہرپوہ بردنی متمانہ لہ سہر ئہ دای بانکہ بازرگانیبہ کانی ہہریمی کوردستانی عیراق بہ مہ بہستی ئہ نجامدانی شیکردنہ وہیہ کی سیستماتیک بؤ کاریگری بہرپوہ بردنی مہ ترسیی متمانہ لہ سہر ئہ دای دارایی بانکہ بازرگانیبہ کان، تہ کنیکی چہ ندایہ تی دامہ زرا. لہ پیناؤ ئاسوودہ بی، نمونہ یہ ک لہ 88 وہ لآمدہر لہ نیوان فہرمانبہرہ پلہ بہرز و مامناوہ ندہ کان و کرداریہ کان ہہ لبرڈردان کہ لہ بہرپوہ بردنی مہ ترسیی متمانہ لہ بانکہ بازرگانیبہ جؤراو جؤرہ کان لہ سہرانسہری ولات کار دہ کەن. نمونہ یہ کی پوختہ لہ لایہن توپژہرہ وہ بہ کارہاتوہ بؤ ھاوکاری کردن لہ گہ ل ئہ و بہ شانہ ی کہ شارہ زایی پھیوہ ندیداریان ہہ یہ. دوا ی بہ کارہینانی شیکردنہ وہی فرہی گہ رانہ وہ بؤ پیوانہ کردنی ہہر پینج گریمانہ گہ شہ سہ ندوہ کہ ئہ نجامہ کان دہر بانخست کہ ہہ موو رہ ہہ ندہ کانی بہرپوہ بردنی متمانہ' (دیاریکردنی مہ ترسیی متمانہ، پیوانہ ی مہ ترسیی متمانہ، چاودیریکردنی مہ ترسیی متمانہ، کؤنترپؤلی مہ ترسیی متمانہ و پیوانہ ی کہ مکردنہ وہی مہ ترسیی متمانہ) بہ شپوہ یہ کی بہرچا و ئہرینی پھیوہ ندیان بہ ئہ دای بانکہ بازرگانی

### خلاصة

تعمل جميع الأنظمة المالية في العالم في سياق ديناميكي. وتخلق هذه التغييرات أخطارا أو فرصا، مما يعرض القطاع المصرفي لمخاطر كبيرة يجب إدارتها بشكل مناسب. هدفت الدراسة الحالية إلى إيجاد تأثير أبعاد إدارة الائتمان على أداء المصارف التجارية في إقليم كردستان العراق. لغرض إجراء تحليل منهجي لتأثير إدارة مخاطر الائتمان على الأداء المالي للمصارف التجارية، تم استخدام تقنية كمية. ومن أجل الراحة، تم اختيار عينة من 88 مشاركا من بين الموظفين الكبار والمتوسطين والعاملين الذين يعملون في إدارة مخاطر الائتمان في مختلف البنوك التجارية في جميع أنحاء البلاد. وقد استخدم الباحث العينات الهادفة من أجل التعاون مع الإدارات التي تمتلك الخبرة ذات الصلة. بعد تطبيق تحليل الانحدار المتعدد لقياس جميع الفرضيات الخمس المتطورة، أظهرت النتائج أن جميع أبعاد إدارة الائتمان (تحديد مخاطر الائتمان، وقياس مخاطر الائتمان، ومراقبة مخاطر الائتمان، ومراقبة مخاطر الائتمان، وقياس تخفيف مخاطر الائتمان) قد ارتبطت بشكل كبير وإيجابي بأداء المصارف التجارية في إقليم كردستان العراق، وفي الوقت نفسه فإن جميع الأبعاد لها تأثير كبير وإيجابي على المصارف التجارية في كردستان منطقة العراق