



**Faculty of Technology Management and Technopreneurship**

**THE MEDIATING ROLE OF RISK MANAGEMENT PRACTICES ON  
THE RELATIONSHIP BETWEEN BANKING RISKS AND IRAQI  
BANKS FINANCIAL PERFORMANCE**

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**Doctor of Philosophy**

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**THE MEDIATING ROLE OF RISK MANAGEMENT PRACTICES ON THE  
RELATIONSHIP BETWEEN BANKING RISKS AND IRAQI BANKS FINANCIAL  
PERFORMANCE**

**AYAD ZUHAIR KHUDAIR**

**A thesis submitted  
in fulfillment of the requirements for the degree of  
Doctor of Philosophy**

**Faculty of Technology Management and Technopreneurship**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**2024**

## DECLARATION

I declare that this thesis entitled “The Mediating Role of Risk Management Practices on the Relationship Between Banking Risks and Iraqi Banks Financial Performance” is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



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Date : 23/03/2024.....

## APPROVAL

I hereby declare that I have read this thesis and in my opinion, this thesis is sufficient in terms of scope and quality for the award of the degree of Doctor of Philosophy.

Signature

: .....



Supervisor Name :

TS. DR. MOHD FAZLI BIN MOHD SAM

Date

: 24/03/2024.....

## **DEDICATION**

This work is dedicated to the person who inspires my life and my first teacher. My dear father Zuhair and my dear mother who instilled in me righteous virtues and guided me to the importance of knowledge since my childhood, who always wanted me to have the best, for their love, and the prayers they offered me.

My brothers, my sisters and my good friends

Special appreciation to my dear friend for standing with me during this trip. Your unparalleled love, encouragement and support greatly contributed to the achievement of this feat. Your endurance is highly recognized.

... To my great guide ...

Dear supervisor Ts. Dr. Mohd Fazli bin Mohd Sam, for his valuable guidance, support and encouragement throughout the time of my PhD study. I would also like to thank him for his kindness and openness to introduce me to so many top-class academics. This was a great and invaluable experience.

## ABSTRACT

Iraqi private banks' approach to risk management profoundly influences their success and growth trajectory. Leveraging modern technology enables them to efficiently navigate intricate services and processes, optimizing their operations. However, the banking landscape is increasingly being challenged by heightened financial risks, including stringent governmental and legal constraints, coupled with global and domestic economic upheavals. These challenges can lead to a dip in profitability. Hence, for sustained financial performance, it's imperative for Iraqi banks to adopt risk management strategies tailored to the specific financial challenges posed by the evolving business environment. This research aims to investigate the influence of banking risk management practices on the financial performance of Iraqi banks. This study follows the cross-sectional time horizon. The data obtained from 99 individuals working in Iraqi private banks. Utilizing Partial Least Squares-Structural Equation Modelling (PLS-SEM), this study analyzed the relationships between banking risks, risk management practices, and financial performance. Bootstrapping was employed to assess the significance of path coefficients, ensuring the robustness of findings. The study found a significant relationship between banking risks and financial performance. Banking risks displayed a profound impact on risk management practices, which in turn significantly influenced financial performance. Moreover, risk management practices played a mediating role between banking risks and financial performance, showcasing the criticality of adopting comprehensive risk management strategies for improved financial outcomes. The findings reinforced various theories, notably the financial economic theory, stakeholders theory, and enterprise risk management theory. It illustrated how rational financial decision-making, a commitment to a broader stakeholder base, and a holistic approach to risk management converge to influence financial outcomes in banks. The research underscores the importance of sound risk management practices for maximizing bank returns, elevating financial performance, and evading potential financial downturns. By providing a model that evaluates the influence of various risk facets, from credit to liquidity challenges, the study offers a roadmap for Iraqi banks to navigate the intricate world of financial risks, ensuring stability and growth. Effective risk management practices are paramount for enhancing the financial performance of Iraqi banks. A proactive approach to identifying, monitoring, and mitigating risks, combined with a commitment to stakeholders and strategic decision-making, can lead to robust financial growth and stability in the banking sector.

**PERANAN PENGANTARA AMALAN PENGURUSAN RISIKO TERHADAP  
HUBUNGAN ANTARA RISIKO PERBANKAN DENGAN PRESTASI KEWANGAN  
BANK IRAQ**

**ABSTRAK**

*Pendekatan bank swasta Iraq dalam pengurusan risiko mempengaruhi kejayaan dan trajektori pertumbuhan mereka dengan mendalam. Dengan memanfaatkan teknologi moden, mereka dapat menavigasi perkhidmatan dan proses yang rumit dengan cekap, mengoptimumkan operasi mereka. Namun, perbankan semakin dicabar oleh risiko kewangan yang meningkat, termasuk sekatan kerajaan, undang-undang yang ketat, serta pergolakan ekonomi dunia dan domestik yang boleh mengakibatkan penurunan keuntungan. Oleh itu, untuk prestasi kewangan yang berterusan, adalah penting bagi bank di Iraq untuk mengadaptasi strategi pengurusan risiko yang disesuaikan dengan cabaran kewangan khusus yang ditimbulkan oleh persekitaran perniagaan yang berkembang. Kajian ini bertujuan untuk menyiasat pengaruh amalan pengurusan risiko perbankan terhadap prestasi kewangan bank di Iraq. Kajian ini mengikuti keratan rentas masa. Data diperolehi daripada 99 individu yang bekerja di bank swasta Iraq. Dengan menggunakan Partial Least Squares-Structural Equation Modelling (PLS-SEM), kajian ini menganalisis hubungan antara risiko perbankan, amalan pengurusan risiko, dan prestasi kewangan. Bootstrapping digunakan untuk menilai kepentingan pekali laluan, memastikan keteguhan penemuan. Kajian ini mendapati hubungan yang ketara antara risiko perbankan dan prestasi kewangan. Risiko perbankan menunjukkan kesan mendalam terhadap amalan pengurusan risiko, yang mempengaruhi prestasi kewangan dengan ketara. Selain itu, amalan pengurusan risiko memainkan peranan perantaraan antara risiko perbankan dan prestasi kewangan, menunjukkan kritikal dalam mengadaptasi strategi pengurusan risiko yang komprehensif untuk hasil kewangan yang lebih baik. Penemuan ini menguatkan pelbagai teori, terutamanya teori ekonomi kewangan, teori pemegang saham, dan teori pengurusan risiko perusahaan. Ia menggambarkan bagaimana membuat keputusan kewangan yang rasional, komitmen kepada pangkalan pemegang saham yang lebih luas, dan pendekatan holistik untuk pengurusan risiko bersatu untuk mempengaruhi hasil kewangan di bank. Kajian ini menekankan kepentingan amalan pengurusan risiko yang kukuh untuk memaksimumkan pulangan bank, meningkatkan prestasi kewangan, dan mengelakkan kemerosotan kewangan yang berpotensi. Dengan menyediakan model yang menilai pengaruh pelbagai aspek risiko, dari cabaran kredit hingga likuiditi, kajian ini menawarkan jalan untuk mengemudi dunia risiko kewangan yang rumit, memastikan kestabilan dan pertumbuhan. Amalan pengurusan risiko yang berkesan adalah sangat penting bagi meningkatkan prestasi kewangan bank Iraq. Pendekatan proaktif untuk mengenal pasti, memantau, dan mengurangkan risiko, digabungkan dengan komitmen kepada pemegang saham dan membuat keputusan strategik, boleh membawa kepada pertumbuhan kewangan yang kukuh dan kestabilan dalam sektor perbankan.*

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## LIST OF ABBREVIATIONS

AVE	-Average Variance Extraction
B.R	-Banking Risk
C.R	-Credit Risk
CBI	-Central Bank of Iraq
CPA	-Coalition Provisional Authority
CRM	-Credit risk management
EL	-Expected Losses
F.P	-Financial performance
HCM	-hierarchical component models
I.R.R	-Interest rate risk
IFRS	-International Financial Reporting Standards
IMF	-International Monetary Fund
L.R	-Liquidity risk
LC	-Letter of Credit
LGD	-Loss Given Default
LP	-Loan Provision
LQ1	-Liquid assets to total assets
LQ2	-Total assets to total deposits
MENA	-Middle East and North Africa region
MENA	-Middle East and North Africa
NIM	-net interest margin
NPL	-Non-Performing Loans
O.R	-Operational risk
PII	-personally identifiable information
R.M	-Risk management practices
ROA	-Return on Assets
ROE	-Was returned on equity
TL	-Total Loans
UL	-Unexpected Losses
VIF	-Variance inflation factor



## LIST OF PUBLICATIONS

Khudhair, A.Z. and Mohd Sam, M.F., 2020. The Effect of TQM In Building Customer Loyalty In Digital Banking: A Review, *Religación. Journal of Social Sciences and Humanities*, 4(17), pp.119 -1201

Mohd Sam, M.F. and Khudhair, A.Z., 2020. Effect of Risk Management Practices On The Financial Performance of Commercial Banks In Iraqi, *Universidad Del Zulia*, 35(89), pp.349-362.

Sam, M.F.M. and Khudhair, A.Z., 2019. Effect of Risk Management Practices On The Financial Performance Of Commercial Banks In Iraqi. *Opción*, (89), pp. 2899-2908.

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

A comprehensive view of the current research is present in the first chapter. It begins with every necessary information and continues to identify the problem statement, research objectives, and research questions to achieve the goals and discuss the importance of this study in terms of its contribution to banking theory and practice and academia. This follows the study's scope and the definition and clarification of the basic terms used in the study. This chapter ends with an explanation of the remaining chapters' layout.

### 1.2 Background of the study

Inadequate risk management systems yield minimal benefit on investment and are hardly useful. It is more concerned with recording risk than the actual treatment as a negative cost or obligation. According to Ekwueme (2021) the 1980s economic crisis compelled G10 central banks to take necessary steps to limit financial risks. The capital Commission stabilized Basel Capital Cord's capital requirements systems influenced by credit risk and market risk exposure. As the new Capital Adequacy Framework, the Basel Accord with the Asian Crisis of 1997 was amended. The 1988 Basel I Accord focuses on capital requirements for credit risk management. The Basel II Agreement, signed in 1999, is built on three pillars. The following are the minimum capital requirements, supervisory assessment, and market discipline which are composed of :

1. The three forms of risk given are credit risk, market risk, and operational risk. Its capital requirements must be met with a standard regulatory norm. The focus was the substratum component (Ahmed et al., 2021).
2. Financial institutions should identify interest rate risks where they appear on a national scale. Managers must examine banks' risk exposure to assess if they have sufficient capital to cover interest rate risk (Glerum and Judge, 2021). Pillar 2 introduces unpredictability to the extent that the supervisor permits shifting capital requirements.

The 2007/2008 financial crisis was triggered by the downfall of reputable financial institutions which resulted in a considerable recession from 2008 to 2012. The European debt crisis was partly precipitated by the recession (McGann et al., 2020). The crisis was caused by organizations like easy access to subprime mortgage borrowers and high-value subprime mortgages. It was the crisis's active phase. Banks follow rigorous management frameworks, yet the instruments were ineffective in preventing the financial collapse. It is critical for banks to evaluate the success of financial risk management in reaching their financial resources comprehensively.

Bank managers seek to maximize the bank's profitability, which raises the financial risks faced by the banks. According to Markowitz's portfolio theory, riskier investments produce a higher profit, as there is a positive association between return and risk. When offering financial services that contain financial risks, such strategies are connected with significant risks (Tiwari, 2021). In an atmosphere of volatility, Credit risk, liquidity risk, interest rate risk, foreign exchange, market risk, operational risk, in addition to other business risks are all financial concerns that any financial institution encounters (Dewi and Ferdian, 2021). Liquidity risk comes because of the bank's ability to satisfy its outstanding liquidity commitments, such as, the risk of not being capable of liquidating a part at an acceptable price (Crawley, 2020).

Competitive financial intermediation is part of the activity of providing services, providing loans to clients, and comprehensive risk management. It appears that for the financial system, business and economic research have been evaluated from a useful non-enterprise perspective (Jahangir, 2018). Financial risk management assists banking firms in establishing financial risk management programmes that assist financial institutions in their capacity to decrease possible losses resulting from reservations in the banking sector (Cepiku, 2021).

Risk management is currently a strategic instrument for assessing investment and business risks. Risk management is now a policy tool for assessing risks associated with any investment or commercial activity. The Markowitz era's financial risk was undertaken to rectify the estimated financial risk, deemed a correction for the potential return to the pre-Markowitz period. Markowitz demonstrated how to calculate the uncertainty linked with every return; this study could employ the standard deviation investment (Banik and Company, 2021). These simple procedures are not simplified procedures necessary to allow for an immediately fixed investment arrangement. To build in order to allow for continuous immediate investment. To understand and reduce risk and the use of financing (Petrosyan, 2020).

### **1.2.1 Iraqi banks' performance**

The Iraqi banks' contributions to the economy were significant, at around 4.2% (Said and Al, 2021). The Iraqi banks represent the main determinant factor of the money circulation within the financial system. Hence, the default of the Iraqi performance will affect the stability of the whole financial system, which will have an extent on the overall economic development. Figure 1.1 provides a comprehensive overview of the liquid reserves to bank assets ratio in the Iraqi banking sector from 2004 to 2022, based on data sourced from the World Bank. The trends encapsulated in this data reveal several crucial phases in

the Iraqi banking sector's liquidity management. Initially, from 2004 to 2007, the banking sector appeared robust in terms of liquidity, with the ratio peaking at 188.95% in 2007. However, the period from 2008 to 2012 saw fluctuations and a consistent decline in this metric, ultimately dropping below the 100% mark to 99.68% by 2012.

The years following 2012, particularly up to 2018, represent a period of sustained decline, as the ratio hit a low of 78.65% in 2018. After 2018, the ratio seems to exhibit a mild stabilization but continues to remain at a reduced level, hovering around the mid-70s till 2022. The highest ratio was recorded in 2007 at 188.95%, while the lowest occurred recently in 2021, standing at 70.04%. This temporal progression raises questions about the liquidity risk profile of the Iraqi banking sector. The decline in the ratio post-2007 suggests that the sector is increasingly susceptible to liquidity risks. These low liquid reserves could make banks vulnerable to sudden large withdrawals or financial market shocks. The data may also be a reflection of the broader economic and geopolitical challenges affecting financial stability in Iraq. The dwindling ratios, particularly when compared to global or regional benchmarks, signify potential systemic risks requiring immediate policy intervention.

Hence, the trends portrayed in Figure 1.1 are not merely numbers but represent a critical area of concern for liquidity risk management in Iraqi banks. They offer foundational elements for research endeavors aimed at understanding the connection between liquidity risk and the overall financial performance of these banks. By analyzing the underlying factors that contribute to this declining trend, we can develop more effective risk management strategies, both for individual banks and the sector at large, thereby enhancing our understanding of the broader financial performance issues the industry faces.

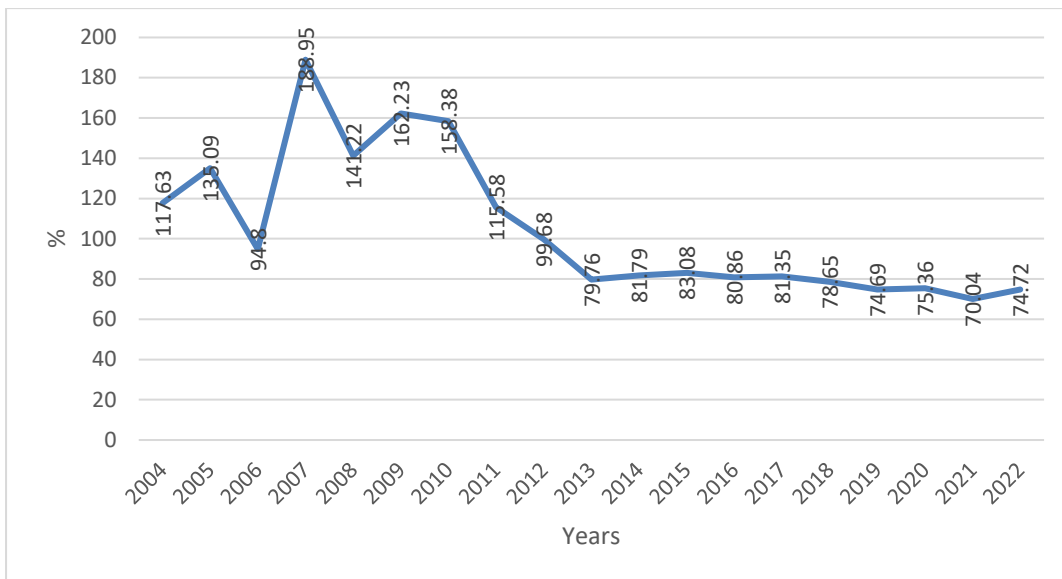


Figure 1.1: Iraqi Bank liquid reserves to bank assets ratio (%), 2004-2022  
Source: The World Bank

In terms of credit risk, the Iraqi banks witnessed a high percentage of non-performing loans compared to the gross loans provided by the banks, as shown in figure 1.2. Figure 1.2 elucidates the trend in the ratio of non-performing loans to total gross loans in Iraqi banks for the period spanning from 2015 to 2022, based on World Bank data. A careful observation of this trend delineates an alarming escalation in the proportion of loans that have ceased to be productive assets for the banks. Starting at 9.02% in 2015, the non-performing loans ratio had an incremental ascent year-over-year, reaching a worrisome peak of 23.65% in 2022.

The rise is not monolithic but characterized by intermittent fluctuations. Notably, between 2017 and 2019, there was a slight dip, where the ratio decreased from 17.55% to 16.18%. However, this appears to be a momentary respite, as the ratio surged back up, breaking the 20% mark in 2021 and escalating further in 2022. The highest ratio was recorded in 2022 (23.65%), and the lowest in 2015 (9.02%).

These trends point toward escalating credit risk in the Iraqi banking sector, which could have grave implications for the financial stability of the system. A high rate of non-

performing loans may not only jeopardize a bank's solvency but also could have ripple effects across the financial ecosystem, ultimately impacting economic growth. In a broader socio-economic context, this trend raises concerns about the accessibility and quality of credit in the economy, which could further exacerbate economic disparities and social tensions.

Importantly, the consistent rise in non-performing loans highlights deficiencies in the risk assessment and credit allocation mechanisms within these banks. This uptrend should catalyze further research to understand the intricate dynamics between credit risk and financial performance, particularly within the unique socio-economic landscape of Iraq. Moreover, it provides an empirical basis to investigate the efficacy of risk management practices in mitigating credit risk.

The data in Figure 1.2 underscores the urgency for robust policy interventions and governance mechanisms that could mitigate the risk of credit default, thereby restoring the health of the financial system. Given the crucial role that banks play in economic development, addressing the upward trajectory in non-performing loans is not merely a banking issue but a national priority that calls for multi-pronged strategies at both micro and macro levels.

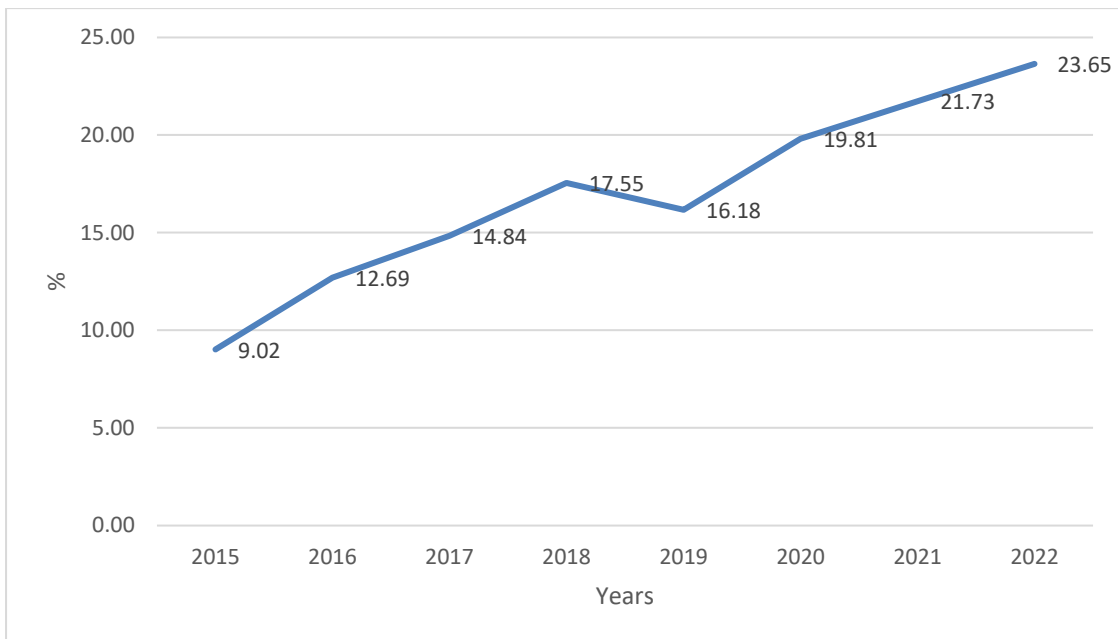


Figure 1.2: Bank nonperforming loans to total gross loans (%), 2015-2022

Source: The World Bank

Iraqi banks, like other banks, rely primarily on deposits received from their customers. In terms of deposits, Iraqi banks experienced negative annual growth from 2010 to 2022, as shown in Figure 1.3. The decline in Iraqi bank deposits raises operational risk, which is attributed to the bank's deficit in diversifying its profit investment.

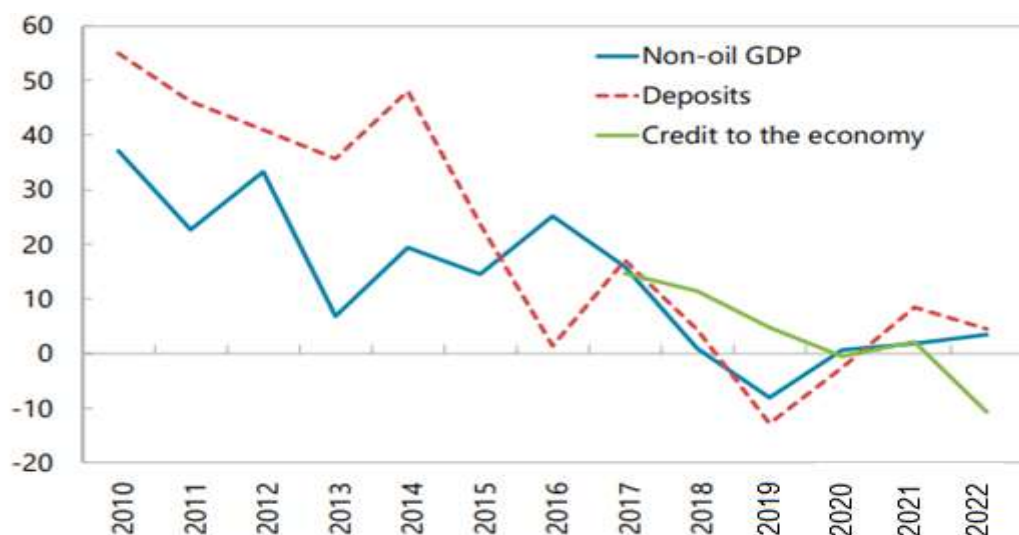


Figure 1.3: Bank Deposits, Credit, and Non-Oil Activity (In annual percentage change), 2010-2022

Source: International Monetary Fund (IMF)