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The Impact of Capital Increase on Credit Risk: An Analytical Study of Banks Listed on the Iraq Stock Exchange

Hasan Sahab Mutar al naamnah[1], Humam Manaf Raheem[2], Layth hussen kadim[3]
[1]University of Wasit / College of Administration and Economics / Department of Accounting
[2]Ministry of Communications / informatics & telecommunications public company
[3]University of Wasit / College of Administration and Economics / Department of Accounting

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Corresponding Author:
Hasan Sahab Mutar al naamnah

ABSTRACT
This study aims to explore the impact of the economic and political environment on the effectiveness of capital increases in reducing credit risk, and to analyze the influence of capital growth on banking stability and the extent to which it contributes to credit risk mitigation. The study sample consists of a group of banks listed on the Iraq Stock Exchange during the period from 2018 to 2023. The deductive analytical method was employed to analyze financial statements and assess the relationship between capital increase and credit risk. The study reached several important findings. Notably, some banks failed to manage credit risk effectively. Data revealed that in certain cases, an increase in capital was accompanied by a rise in risk levels, indicating an inverse relationship between the two variables. Although a few banks demonstrated slight improvement in risk management, it remained below the required standard—highlighting weaknesses in internal oversight, poor supervision, and insufficient adherence to corporate governance guidelines.

KEYWORDS: Capital Increase, Credit Risk.

1. INTRODUCTION

The banking sector is considered one of the most important pillars upon which the economy relies to achieve growth and financial stability. Banks play a vital role as intermediaries in mobilizing financial resources and directing them toward optimal use to support economic activities. In this context, strengthening capital is one of the strategies that banks adopt to address various risks. Increasing capital not only enhances banks' financial capacity but also contributes to improving their resilience and ability to absorb financial shocks. However, the question remains regarding the effectiveness of this strategy in reducing credit risk, especially in light of the economic and political challenges facing the Iraqi economy.

This study sheds light on the relationship between capital increases and credit risk in banks listed on the Iraq Stock Exchange. By analyzing financial data and reviewing previous studies, the research seeks to answer the fundamental question: Do capital increases effectively reduce credit risk? If so, what are the factors influencing this relationship?

The study aims to provide a comprehensive view of the impact of capital increases on credit risk, with a focus on the Iraqi banking sector, which faces unique challenges arising from economic and structural conditions. The expected results will contribute to improving both academic and practical understanding of this relationship and assist decision-makers and practitioners in the banking sector in adopting more effective risk management policies.

Research Problem

The research problem lies in the lack of clarity regarding the relationship between capital increases and credit risk in banks listed on the Iraq Stock Exchange. Do capital increases effectively reduce credit risk, or is this relationship indirect and influenced by other factors?

Research Objectives

1. To study the relationship and analyze the effect of capital increases on the stability of banks.
2. To identify the impact of capital increases on risk management.
3. To understand how the Risk Management Committee and the Corporate Governance Committee contribute to controlling credit risk.
4. To evaluate the role of auditors and supervisory control in loan granting and their impact on the stability of banks.

5. To assess the role of management quality in enhancing the benefits resulting from strengthening the financing structure.

Research Hypothesis

H0: There is no relationship between capital increases and credit risk.

H1: There is a relationship between capital increases and credit risk.

Importance of the Research

The importance of this study lies in its attempt to analyze the relationship between capital increases and the credit risks faced, in light of the rapid developments in the Iraqi banking sector. It helps shed light on the extent to which capital increases can enhance financial stability and reduce credit risk. The findings also provide policymakers and investors with a clearer understanding of the effectiveness of capital policies in supporting credit performance. Additionally, it serves as an important reference for financial institutions seeking to improve their risk management tools.

Sample and Study Population

The study population includes all banks listed on the Iraq Stock Exchange. A sample was selected from these banks for the period from 2018 to 2023.

Data Sources

Annual reports of listed banks and financial statements published by the Iraq Stock Exchange for the years 2018–2023.

Previous Studies:

1. Study (2024): Massimo Massa, André Silva, and Hanjiang Zhang

This study examines the impact of capital requirements under the Basel III reforms on banks' risk-taking behaviour in Europe. The researchers found that banks required to increase capital became more conservative in lending, resulting in lower credit risk. However, the effects varied depending on the size and structure of the bank. The results support the effectiveness of Basel III in promoting financial stability by curbing excessive risk-taking.

2. Study (2023): Abeer El-Khatib & Ali M. Kutan

This study investigates the impact of Basel III capital requirements on the performance of banks in Australia and the United Kingdom. The results indicate that increasing capital led to improved operating profits in the short term but did not significantly affect operational efficiency or overall profitability. The study supports the view that increasing capital reduces credit risk but may limit banks' flexibility in investing and lending.

3. Study (2023): Duygu Yengin & Basile Grassi

This study utilizes bank failure prediction models to analyze whether Basel III capital requirements are sufficient to prevent bank failures. It uses data from U.S. banks from 2000 to 2018. The study finds that raising the capital ratio to 15% significantly reduces the probability of bankruptcy, confirming an inverse relationship between increased capital and credit risk.

---Chapter One: Theoretical Framework

Capital Increase Its importance in banks :Section One

Increase capital In banks, it's a strategic step that significantly impacts a bank's ability to manage risk and achieve financial stability. In this section, we'll discuss the importance of increasing capital in banks through several key aspects that impact a bank's efficiency and ability to meet financial challenges.

1. Improve loss tolerance

capital increase It enables banks to cover unexpected losses ,that may arise from market fluctuations or economic crises contributing to the bank's long-term stability. Banks with strong capital can reduce credit risk by expanding their lending safely, while demonstrating their ability to deal with crises. This is whatBessis (2015) pointed out ,in his book *"Risk Management in Banking."* It explains that increasing capital enhances banks' ability to absorb unexpected financial losses.

2. Achieving compliance with regulatory requirements

capital increase These regulatory requirements enable banks to meet these requirements, which are aimed at maintaining the stability of the global banking system. Banks that meet these requirements are better able to avoid sanctions from financial authorities, and this also improves their reputation in financial markets, which helps attract investors and customers. This effect was emphasized by*Basel III: A global regulatory framework for more resilient banks and banking systems* (2011), which indicates the need to increase capital to ensure banks' ability to deal with financial crises.

3. Improving the bank’s credit rating

A better credit rating increases a bank's ability to attract investments, whether local or international, which strengthens the capital base and helps in expanding banking operations. In a study byAkhigbe & McNulty (2012) *Capital Requirements and Bank Lending* It was confirmed that increasing capital improves the bank's credit rating, which leads to reducing the cost of financing.

4. Expanding lending and business development

Not only does it allow the bank to provide new loans, but increasing capital also allows the bank to diversify its credit portfolio, which contributes to risk distribution and reduces .the impact of credit risks on the bank's overall performance Akhigbe & McNulty (2012) ,confirmed this in their study *Capital Requirements and Bank Lending.* Increasing capital improves the bank's ability to provide loans and expand its banking business.

5. Increased confidence among customers and investors

The increase contributes to making the bank more attractive to investors seeking safe investments. Banks with a strong capital base are also less vulnerable to financial crises and economic risks. This is whatBelkhir (2009) addressed in his ,study*"The Impact of Capital Structure on Bank Profitability* *and Risk."* He explained that increasing capital contributes to improving the bank's reputation and increasing the confidence of customers and investors.

6. The role of capital in international expansion

It contributes to increasing capital. In improving the bank's ability to adapt to economic fluctuations in international markets, which enhances its sustainability in global markets. Liu & McCauley (2011) in their book*International Banking and Financial Markets* They discuss how capital help enhance a bank's ability to expand into international markets.

7. Reducing systemic risks

Acharya & Richardson (2009) in their book*Systemic Risk and the Role of Capital in the Financial System* discussed ,The importance of capital in reducing systemic risk explaining how increased capital contributes to the stability of the banking system as a whole.

8. Improving risk management within the bank

capital increase It allows the bank to allocate sufficient resources to enhance risk management techniques, such as financial modeling and effective loan oversight, which helps reduce the likelihood of unexpected losses. AsBessis (2015) noted in*Risk Management in Banking* Increasing capital helps improve overall risk management.

: Section Two: The concept of credit risk

Credit risk is a type of financial risk that a bank or financial .institution faces when extending loans or credit to customers It is the possibility that borrowers will be unable to repay their loans or financial obligations on time. In other words, it is the risk that arises when a customer (whether an individual or an institution) is unable to fulfill the terms of a credit or loan agreement. As defined by*Mishkin (2015) :* These are the risks that lead to losses as a result of the customer’s failure to pay the amounts due to the bank.

Credit risk is one of the most serious types of risks that can affect the stability of financial institutions and banks, as the occurrence of these risks can lead to significant losses. These risks can result from a range of factors, such as a customer's financial deterioration, economic changes, changes in interest rates, and sometimes unexpected customer behavior or changes in laws and regulations. *Saunders and Allen (2010)* They discuss how these factors significantly affect a bank's ability to recover the loans it has made.

Types of credit risk

1. Direct credit risk: This is the risk banks are exposed to when they provide loans or credit to customers, and those customers default on their payments. *Saunders and Allen (2010)* They explain that direct risks represent a greater threat to the bank because they relate to credit provided directly to customers.
2. Indirect credit risk: This includes risks associated with the bank's investments, such as investments in securities or bonds, which may be affected by the financial strength of the issuer. As*Bessis (2015) noted,* ,However these risks may increase if banks focus heavily on foreign investments.
3. Credit concentration risk: This occurs when a bank has significant exposure to a particular sector or client. If that client or sector defaults, the risks can significantly impact the bank. *Mishkin (2015)* It discusses the importance of diversifying the loan portfolio to reduce these risks.
4. Sovereign credit risk: Occurs when credit-related risks are linked to the country itself, such as sovereign debt .defaults or a downgrade of the country's credit rating *Bessis (2015) discusses* These risks illustrate how political and economic events can affect a country's ability to repay its debts, exposing banks to significant credit risks.

Factors affecting credit risk

- Ability to Repay: Credit risk is affected by a customer's ability to meet their financial obligations. If a customer is experiencing financial difficulties or their economic .sector is unstable, the likelihood of credit risk increases *Saunders and Allen (2010) explain:* If the customer's ability to repay is weak, the probability of him defaulting on the loan is greater.
- Economic fluctuations: Changes in general economic conditions such as inflation, unemployment, and economic downturns may lead to an increase in the number of customers who default on loans. *Mishkin (2015)* Discusses how economic crises can lead to higher rates of financial distress among clients.
- Credit assessment: A bank or financial institution relies on a customer's credit assessment (such as a credit rating) to determine their ability to meet their obligations. Any flaw in this assessment increases the likelihood of exposure to credit risk. *Bessis (2015)* Explains the role of credit assessment in determining the extent of the risks to which the bank is exposed.
- Policies and laws: Domestic and international laws .regulating the financial sector also affect credit risk Changes in these regulations may have unexpected effects on financial institutions' ability to collect their .debts*Bessis (2015) notes:* Banks must keep pace with changes in regulations to reduce credit risks.

Credit Risk Management

Credit risk management requires a comprehensive strategy that includes:

1. Credit analysis: Studying and analyzing a customer's financial capacity using financial data and credit history to ensure sound credit decisions. *Mishkin (2015)* It explains the importance of this process in assessing the client's ability to repay the loan.
2. Portfolio diversification: Not concentrating on lending to a specific sector or group of customers, which helps reduce the risk of exposure to a single sector. *Saunders*

and Allen (2010) They discuss how diversification can reduce overall risk in a credit portfolio.

3. Documentation and guarantees: Taking measures to secure the bank's rights by requesting guarantees, mortgages, or insurance to ensure the recovery of debts in the event of the customer's default. *Bessis (2015)* It indicates that having strong collateral can significantly reduce credit risk.
4. Continuous monitoring: Regularly monitoring the financial status of customers, especially in cases where long-term credit is provided, helps in early detection of any problems that may affect the customer's ability to repay.

Effects of credit risk

- Financial losses: If a customer is unable to pay the amounts due to the bank, this causes direct financial losses to the bank, which can significantly impact profits and returns. *Saunders and Allen (2010)* They assert that defaulting on loans erodes the bank's capital gains.
- Impact on the bank's reputation: If customers repeatedly default, this may lead to a deterioration in the bank's reputation in the market, affecting its ability to attract new customers or even attract affordable financing. *Mishkin (2015)* Explains how a bank's reputation plays an important role in attracting investors and customers.
- Macroeconomic effects: When a large number of banks are exposed to credit risks, this can cause a financial crisis that impacts the economy as a whole, especially if large banks are involved. As*Bessis (2015) noted,* Credit risks in the banking system could lead to a comprehensive financial crisis that would affect overall economic stability.

The relationship between capital increase and credit risk

Increasing capital is one of the methods used by financial institutions, including banks, to reduce credit risk and enhance their financial resilience in times of crisis. The relationship between increased capital and credit risk is how increased capital affects a bank's ability to cope with losses resulting from loan and debt defaults.

.Improving the bank’s ability to withstand losses -1

When a bank's capital increases, its ability to withstand losses that may result from credit risks is enhanced. Increased capital represents a "safety buffer" that can help a bank absorb losses resulting from customer defaults without significantly impacting its financial stability. According to *Mishkin (2015)* capital is a critical factor that enables a bank , to absorb losses resulting from credit risks and achieve stability during times of crisis.

Raising the bank’s credit rating -2

.Increasing capital can positively impact a bank's credit rating A credit rating is a measure of a bank's ability to meet financial obligations, and financial institutions and investors use it to assess risk. According to*Bessis (2015)* increasing , capital indicates a bank's ability to take risks and achieve long-term stability, which helps enhance the bank's reputation with investors and customers and thus reduces credit risk.

.Increasing the bank’s flexibility in providing loans -3

When a bank has more capital, it has greater flexibility in extending loans to customers. This allows the bank to make more diversified credit decisions and reduce the concentration of loans in a specific sector, reducing credit concentration risk, as noted by*Saunders and Allen (2010)* . ,Rather than expanding loans to a small number of customers the bank can spread risk across a broader customer base or economic sectors, enhancing the stability of the bank's credit portfolio.

-4 Reducing dependence on external funding sources

Increasing capital means that the bank will be less dependent on debt or external financing, thus reducing debt-related costs, such as interest and fees associated with external financing. When a bank relies more on internal capital than debt, it reduces its exposure to credit risks arising from .fluctuations in capital and debt markets*Mishkin (2015) points out:* However, heavy reliance on debt can increase credit risk if the bank faces difficulties in repaying its debts in the event of financial crises.

Enhancing the efficiency of financial management -5

Increasing capital provides banks with greater capacity to implement credit management strategies more effectively. A bank with more capital can invest additional resources in developing more accurate credit assessment systems and technologies, which helps reduce credit risk. *Bessis (2015)* It explains that banks with strong capital can invest this money in improving credit forecasting and scoring techniques, reducing their exposure to the risk of non-performing loans.

-6 Relationship with Basel capital rules

The relationship between capital and credit risk is also related to global banking regulations such as the Basel Accord which require banks to maintain a certain , percentage of capital buffers to address credit and other financial risks. According to*Saunders and Allen (2010)* , compliance with Basel rules helps banks ensure they have sufficient capital to cover potential losses, thus reducing their exposure to credit risk.

-7 Increase transparency and accountability

Increasing capital may prompt banks to improve ,transparency and accountability in their financial operations including credit risk management. Companies that raise capital may need to improve their financial reporting to meet the regulatory requirements of investors and lenders. This shift toward transparency helps improve the credit risk assessment process and reduce errors in credit decision-making, as*Mishkin (2015) noted.* Improving transparency can reduce information collection costs and make credit assessments more accurate.

:Chapter Two / Data Analysis and Hypothesis Proof

. increasing capital :The first topic

,Banks often increase their capital by issuing new shares .capitalizing retained earnings, writing off debt, or merging These can be subscribed to by shareholders or offered to the public. This policy helps banks obtain new financial resources, and is considered a financing policy known as .external financing

1- Asia Islamic Bank of Iraq

Table No. (1) shows the gradual development of the bank's capital during the period from 2018 to 2023. Capital in 2018 amounted to 100 billion dinars. In 2019, the bank subscribed for 50 billion dinars, but the shares of this increase were not listed for trading due to the failure to complete the deposit procedures at the Securities Depository Center. In 2020, the shares of the increase were officially listed and trading began on the Iraq Stock Exchange. In 2021, the bank decided to increase its capital once again by offering 50 billion dinars for public subscription. This was followed by another decision in the same year to raise its capital by an additional billion dinars. The increase procedures were completed 50 by the end of the year, bringing the total capital to 250 billion dinars. During 2022 and 2023, the bank maintained its capital at KWD 250 billion, unchanged. Statistical analysis shows that the average value reached 6.59% with a standard deviation of 2.29, reflecting relative stability in capital performance during this period.

Table No. 1

rate of change	relative importance	capital	the details
	3.44%	100,000,000,000	2018
50.0%	5.16%	150,000,000,000	2019
0.0%	5.16%	150,000,000,000	2020
66.7%	8.60%	250,000,000,000	2021
0.0%	8.60%	250,000,000,000	2022
0.0%	8.60%	250,000,000,000	2023
116.7%	39.54%	1,150,000,000,000	the total
23.3%	6.59%	191,666,666,667	Average
66.7%	8.60%	250,000,000,000	highest value
0.0%	3.44%	100,000,000,000	lowest value
32.5%	2.29%	66458006791	s.d

2- Amin Al Iraq Islamic Bank

Table No. (2) shows that the bank's capital remained stable at 100 billion dinars during the first three years of the period under study, i.e., in 2018, 2019, and 2020. In 2021, the bank took the initiative to increase its capital from 100 billion to billion dinars, by issuing 50 billion dinars, which were 150 fully subscribed. In 2022, the bank continued its capital expansion policy in two phases: the first at the beginning of ,the year, offering 50 billion dinars for public subscription and the second before the end of the year, offering an additional 22.5 billion dinars, bringing the capital to 222.5 billion dinars by the end of the year. In 2023, the bank increased its capital by issuing 27.5 billion dinars, bringing .its total capital to 250 billion dinars by the end of the year Statistical analysis showed that the average capital during this period amounted to 263,571,428,571 dinars, with a standard deviation of 67,337,768,006 dinars, indicating gradual growth and relative stability in the bank's financial policy.

Table No. 2

rate of change	relative importance	capital	year
0	11%	100,000,000,000	2018
0%	11%	100,000,000,000	2019
0%	11%	100,000,000,000	2020
33%	16%	150,000,000,000	2021
33%	24%	222,500,000,000	2022
11%	27%	250,000,000,000	2023

77%	100%	922,500,000,000	the total
22%	16.67%	263,571,428,571	Average
33%	27%	922,500,000,000	highest value
0	11%	100,000,000,000	lowest value
16%	7%	67337768006	s.d

3- : Mashreq Arab Islamic Bank

Table No. (3) shows that the bank was established as a joint-stock company in 2017 with a capital of 100 billion dinars. It maintained this level of capital during 2018 and 2019. In 2020, the bank increased its capital to 150 billion dinars by issuing 50 billion shares, and subsequently amended its articles of association. In 2021, the bank witnessed a significant development represented by its listing on the Iraq Stock Exchange. During the same year, it also made an increase that was not specifically disclosed in official reports, but the added value amounted to 50 billion dinars, bringing the capital at the end of the year to 200 billion dinars. The bank continued its expansionary approach. In 2022, it increased its capital by 50 billion dinars through a public offering, bringing its capital to 250 billion dinars by the end of the year. In 2023, the bank maintained its capital at 250 billion dinars without any additional changes. Statistical analysis showed that the average capital during the study period amounted to 300,000,000,000 dinars, with a standard deviation of 68,920,243,760 dinars, reflecting gradual growth and significant stability in the bank's financial performance.

Table No. 3

rate of change	relative importance	capital	year
0	10%	100,000,000,000	2018
0%	10%	100,000,000,000	2019
33%	14%	150,000,000,000	2020
25%	19%	200,000,000,000	2021
20%	24%	250,000,000,000	2022
0%	24%	250,000,000,000	2023
78%	100%	1,050,000,000,000	the total
22%	16.67%	300,000,000,000	Average
33%	24%	1,050,000,000,000	highest value
0	10%	100,000,000,000	lowest value
15%	7%	68920243760	s.d

4- :International Islamic Bank

Table No. (4) shows that the bank was established as a joint-stock company in 2016 with an initial capital of 100 billion dinars. It maintained this level of capital during the years 2018, 2019, and 2020, noting that the bank was listed on the Iraq Stock Exchange in 2020 with the same capital. In 2021, the bank began procedures to increase its capital in two stages; the first stage was a public offering of shares worth 60.846 billion dinars, which were actually traded on the market. The second stage was through the acquisition of the First Capital Islamic Bank, while the International Islamic Bank retained its name and activity after the merger. This step resulted in an addition of 100 billion dinars to the capital. Thus, the bank's capital reached a total of 260.846 billion dinars at the end of 2021. However, in 2022 and 2023, capital remained stable at the aforementioned level. According to statistical analysis, average capital during the period amounted to 309,296,571,429 dinars, with a standard deviation of 88,098,982,484 dinars, reflecting a relatively balanced growth pattern during the study period.

Table No. 4

rate of change	relative importance	capital	year
0	9%	100,000,000,000	2018
0%	9%	100,000,000,000	2019
0%	9%	100,000,000,000	2020
62%	24%	260,846,000,000	2021
0%	24%	260,846,000,000	2022
0%	24%	260,846,000,000	2023
62%	100%	1,082,538,000,000	the total
18%	16.67%	309,296,571,429	Average
62%	24%	1,082,538,000,000	highest value
0	9%	100,000,000,000	lowest value
25%	8%	88098982484	s.d

5- :Al-Tayf Islamic Bank

Table No. (5) shows that the bank's capital amounted to 100 billion dinars in 2018. In 2019, trading in the bank's shares was launched, with the bank offering 55 billion dinars for public subscription. The following year, 2020, the bank decided to increase its capital again by offering 53 billion dinars for public subscription, bringing the capital to 153 billion dinars. The bank continued its policy of strengthening its capital, and in 2021, it offered 50 billion dinars for public subscription, raising the capital to 203 billion dinars. This expansion did not stop, and in 2022, an additional increase ,of 47 billion dinars was made through a public subscription bringing the capital to 250 billion dinars by the end of the year. In 2023, the bank maintained its capital at this level without any changes. According to statistical analysis, the ,average capital ratio during the study period was 28.6% while the standard deviation was 6.5%, indicating a relative balance in the bank's capital growth strategy over the year.

Table No. 5

rate of change	relative importance	capital	year
	9.5%	100,000,000,000	2018
0.0%	9.5%	100,000,000,000	2019
34.6%	14.5%	153,000,000,000	2020
24.6%	19.2%	203,000,000,000	2021
18.8%	23.7%	250,000,000,000	2022
0.0%	23.7%	250,000,000,000	2023
78.1%	100.0%	1,056,000,000,000	the total
26.0%	28.6%	176,000,000,000	Average
34.6%	23.7%	250,000,000,000	highest value
0.0%	9.5%	100,000,000,000	lowest value
0	6.5%	68937652992	s.d

6- National Bank of Iraq

Table (6) shows that the bank's capital witnessed a state of ,stability during the period extending from 2018 to 2021 ,maintaining a constant level of 250 billion dinars. In 2022 the bank took a step to strengthen its capital base by ,capitalizing 20 billion dinars from retained earnings bringing the total capital to 270 billion dinars. New shares were issued and distributed to shareholders according to this increase. In 2023, capital reached its highest value during the study period, recording 300 billion dinars. This increase was achieved through an additional capitalization of 30 billion dinars from retained earnings, reflecting the bank's orientation towards strengthening its internal financial capacity without resorting to external financing. The relative importance of capital in this year reached 9.61%, with an annual growth rate of 11.1%, which reflects the success of the banking policy pursued in supporting sustainable capital growth.

Table No. 6

rate of change	relative importance	capital	the details
	15.92%	250,000,000,000	2018
0.0%	15.92%	250,000,000,000	2019
0.0%	15.92%	250,000,000,000	2020
0.0%	15.92%	250,000,000,000	2021
8.0%	17.20%	270,000,000,000	2022
11.1%	19.11%	300,000,000,000	2023
19%	100%	1,570,000,000,000	the total
4%	17%	261,666,666,667	Average
11%	19%	300,000,000,000	highest value
0%	16%	250,000,000,000	lowest value
5%	1%	20,412,414,523	sd

7- Islamic Advisor Bank

Table No. (7) shows that the bank's capital amounted to 100 billion dinars in 2018. In 2019, the bank increased its capital to 150 billion dinars. This growth continued in 2021, with 50 billion dinars being offered for public subscription, bringing the capital to 200 billion dinars by the end of the year. In the bank implemented a double capital increase, first ,2022 capitalizing 7 billion dinars from the accumulated surplus (shareholders' dividends), in addition to offering 43 billion dinars for public subscription, bringing the capital to 250 billion dinars by the end of the year. In 2023, the bank maintained this level of capital unchanged. Thus, the average capital during the study period amounted to 183,333,333,333 dinars, with a relative importance of the same value, and a standard deviation of 60,553,007,082 dinars, which reflects a gradual and stable growth pattern in the bank’s capital policy.

Table No. 7

rate of change	relative importance	capital	the details
	3.58%	100,000,000,000	2018
50.0%	5.37%	150,000,000,000	2019
0.0%	5.37%	150,000,000,000	2020
33.3%	7.16%	200,000,000,000	2021
25.0%	8.95%	250,000,000,000	2022
0.0%	8.95%	250,000,000,000	2023
108.3%	39.37%	1,100,000,000,000	the total
21.7%	6.56%	183,333,333,333	Average
50.0%	8.95%	250,000,000,000	highest value
0.0%	3.58%	100,000,000,000	Minimum value
21.7%	2.17%	60553007082	sd

The Second Topic: Credit Risk

Risk Measurement: Although mechanisms have existed to manage credit risk since banks first began lending, accurately measuring credit risk presents several challenges. The primary components of credit risk include exposure, the probability of default or credit deterioration, and recoveries in the event of default. The scarcity of relevant data makes evaluating these components particularly difficult (Bessis, 2002, p. 15). According to Schuller (2008, p. 29), the most important indicators for measuring credit risk in banks include specific financial ratios. One such ratio, which should remain below 15%, is calculated using the following equation (Al-Bazouni, Sajjad Jawad, p. 61):

Credit Risk Index = Allowance for Loan Losses / Total Loans

1- .Asia Islamic Bank of Iraq

We see from Table No. (8) that the ratio of loan provisions to total loans was low from 1018 to 2023, and this is a good indicator for the bank, indicating that it manages its credit risks effectively, as well as the customers’ commitment to Accordingly , the bank’s management is efficient .repayment and the average was , in investing its money in loans2.8% and the standard deviation0.9%)

Table No. 8

ratio	Loans	Provision for loan losses	the details
1.8%	16,311,810,452	295,697,497	2018
1.8%	25,366,143,542	456,529,618	2019
3.0%	25,408,842,359	759,343,948	2020
3.8%	59,038,281,579	2,222,293,532	2021
2.7%	87,283,716,546	2,384,759,082	2022
3.7%	90,108,352,176	3,329,027,706	2023
16.8%	303,517,146,654	9,447,651,383	the total
2.8%	50,586,191,109	1,574,608,564	Average
3.8%	90,108,352,176	3,329,027,706	highest value
1.8%	16,311,810,452	295,697,497	lowest value
0.9%	32938822932	1241305494	s.d

2- Amin Al-Iraq Islamic Bank

We see from Table No. (9) and Figure No. (9) that the ratio of loan provisions to total loans in the bank was low during .the study period, and this is a good indicator for the bank The maximum increase reached by the bank in 2023 was 2.3 %, gives a clear which is a small percentage, which indication to the bank that it manages its credit risks effectively and also the customers’ commitment to The bank’s management is considered efficient .repayment and the average was , in investing its money in loans1.4% and the standard deviationwas 1.1% .

Table No. 9

ratio	Loans	Provision for loan losses	the details
0.0%	0	0	2018
0.0%	0	0	2019
2.0%	4,979,962,382	99,599,247	2020
2.1%	13,372,487,416	274,666,123	2021
2.1%	65,383,377,401	1,340,478,569	2022
2.3%	63,246,786,360	1,436,544,605	2023
8.4%	1.46983E+11	3151288544	the total
1.4%	24497102260	525214757.3	Average
2.3%	65383377401	1436544605	highest value
0.0%	0	0	lowest value
1.1%	31234971924	676875385.5	s.d

3- Mashreq Arab Islamic Bank-

We see from Table No. (10) that the ratio of loan provisions ,to total loans in the bank was low during the study period and this is a good indicator for the bank. The maximum increase reached by the bank in 2020 was5.2% which is a , gives a clear indication to the bank small percentage, which that it manages its credit risks effectively, as well as the The bank's .customers' commitment to repayment management is considered efficient in investing its money in and the average was , loans2.9% and the standard deviation was 1.9% .

Table No. 10

ratio	Loans	Provision for loan losses	the details
0.0%	0	0	2018
4.6%	5,375,958,000	248,031,000	2019
5.2%	14,156,298,000	738,543,000	2020
3.4%	35,919,595,000	1,227,077,000	2021
2.1%	120,000,351,000	2,508,633,000	2022
2.2%	122,802,550,000	2,747,021,000	2023
17.6%	2.98255E+11	7469305000	the total
2.9%	49709125333	1244884167	Average
5.2%	1.22803E+11	2747021000	highest value
0.0%	0	0	lowest value
1.9%	56875454602	1153570759	s.d

4-:International Islamic Bank-

We see from Table No. (11) that the ratio of loan provisions to total loans in the bank was low, and this gives a good indication for the bank. The maximum increase reached by the bank in 2023 was2.4% , which is a very small percentage gives a clear indication for the bank that indicates its which , commitment to its credit risks effectively, as well as the The bank's management is .loyalty of customers to repay and the , considered efficient in investing its money in loans average was2.1% and the standard deviationwas 0.9% .

Table No. 11

ratio	Loans	Provision for loan losses	the details
0.5%	35,665,502,000	175,000,000	2018
2.4%	49,146,551,000	1,166,584,000	2019
2.7%	100,794,089,000	2,673,794,000	2020
1.6%	204,082,992,000	3,359,729,000	2021
2.8%	296,208,706,000	8,206,584,000	2022
2.4%	416,281,189,000	9,946,995,000	2023
12.3%	1,102,179,029,000	25,528,686,000	the total
2.1%	183,696,504,833.33	4,254,781,000.00	Average
2.8%	416,281,189,000.00	9,946,995,000.00	highest value
0.5%	35,665,502,000.00	175,000,000.00	lowest value
0.9%	151,036,365,161.95	3,937,010,512.26	s.d

5-:Al-Tayf Islamic Bank

We see from Table No. (12) that the ratio of loan provisions to total loans in 2018 was zero due to the issuance of the license to practice the banking business at the end of the year There is no credit, whether it was granted in cash or by . pledge, in the budget . When looking at the table, we notice that from 2019 to 2023 the ratio was very low, and this gives a good indication to the bank, indicating the effective 'management of its credit risks and also the customers Therefore, The bank's management .commitment to payment with , is considered efficient in investing its money in loans an average of1.6% and a standard deviation of0.8% .

Table No. 12

ratio	Loans	Provision for loan losses	the details
	0	0	2018
2.0%	182,717,000	3,666,000	2019
1.8%	1,188,638,000	20,853,000	2020
1.8%	119,777,798,000	2,195,322,000	2021
2.0%	243,643,781,000	4,820,805,000	2022
1.8%	358,201,943,000	6,586,471,000	2023
9.4%	7.22995E+11	13627117000	the total
1.6%	1.20499E+11	2271186167	Average
2.0%	3.58202E+11	6586471000	highest value
0.0%	0	0	lowest value
0.8%	1.51591E+11	2845766274	s.d

6- National Bank of Iraq -

We see from Table No. (13) that the ratio of loan provisions to total loans reached (14.7%) for the year 2018, which is a very high ratio. This means credit risks, which indicates inefficient management in the employment of funds. In this year, the debts of the previous year were written off, while in the ratio reached ,20213.3% which is the lowest ratio, and this is a good indicator that means customers are committed to repaying the loan with interest. In 2022 and 2023, the capitalization process took place, and the ratio increased moderately. This indicates good planning and management in collecting funds. The average reache (7.2%) and the standard deviation (4.4%) .

Table No. 13

ratio	Loans	Provision for loan losses	the details
12.1%	93,536,244,000	11,283,838,000	2018
9.1%	194,222,357,000	17,652,731,000	2019
6.1%	349,694,241,000	21,460,832,000	2020
3.1%	907,392,417,000	28,270,237,000	2021
4.0%	1,006,274,315,000	40,397,208,000	2022
4.3%	1,380,766,442,000	58,824,973,000	2023
38.7%	3,931,886,016,000	177,889,819,000	the total
6.4%	655,314,336,000	29,648,303,167	Average
12.1%	1,380,766,442,000	58,824,973,000	highest value
3.1%	93,536,244,000	11,283,838,000	lowest value
3.5%	5.16643E+11	17417796075	sd

7-Islamic Advisor Bank -

We see from Table No. (14) that the ratio of loan provisions to total loans in the bank was low, and this is a good indicator for the bank. When examining the table, we notice that from to 2023 the ratio was very low, and this gives a good 2018 indication for the bank, indicating that it is managing its credit risks effectively, as well as the customers' commitment Therefore , The bank management is considered .to payment and the average was , efficient in investing its money in loans (0.03) and the standard deviation was (0.01).

Table No. 14

ratio	Loans	Provision for loan losses	the details
0.02	4,500,000,000	102,905,461	2018
0.03	64,730,890,123	2,166,972,916	2019
0.04	77,555,903,968	3,133,327,663	2020
0.04	77,448,832,122	2,868,432,103	2021
0.03	105,290,892,810	3,207,275,953	2022
0.03	143,177,327,800	4,089,249,965	2023
0.19	472,703,846,823	15,568,164,061	the total
0.03	78,783,974,471	2,594,694,010	Average
0.04	143,177,327,800	4,089,249,965	highest value
0.02	4,500,000,000	102,905,461	Minimum value
0.01	45973926258	1368646660	sd

Analysis of General Results:

1. Asia Iraq Islamic Bank increased its capital in 2019 and 2021 by 50% and 66%, respectively. We observe that the credit risk ratio began to rise gradually starting in 2019, reaching 18%, 30%, 38%, 27%, and 37% over the subsequent years. This suggests that the capital increase facilitated the issuance of more loans in pursuit of profits. However, the credit risk ratio exceeded the regulatory threshold of 15%, constituting a violation of the Central Bank's guidelines.

2. Amin Al-Iraq Islamic Bank increased its capital in 2020, 2021, and 2022 by 33%, 33%, and 11%, respectively. Credit risks during these years were recorded at 20%, 21%, 21%, and 23% for 2020 through 2023. This reflects the bank's insufficient compliance with Central Bank directives, despite indications of effective management in decision-making.

3. International Islamic Bank significantly increased its capital in 2021 by 62%, equivalent to more than half of its existing capital. Credit risk ratios for 2021, 2022, and 2023 were 16%, 28%, and 20%, respectively. Although these figures slightly exceeded the regulatory cap, they point to the bank's policy of pursuing higher financial returns.

4. Al Taif Islamic Bank raised its capital in 2020, 2021, and 2022 by 34%, 24%, and 18%, respectively. Credit risk ratios during these years were 18%, 18%, 20%, and 18%. These levels slightly exceeded the allowed threshold, implying the bank's general adherence to Central Bank regulations, while still seeking profit maximization.

5. Mashreq Arab Islamic Bank increased its capital during 2020, 2021, and 2022 by 33%, 25%, and 20%, respectively. The credit risk ratio showed a steady decline over the years 2019 to 2023, falling from 46% to 22%. This indicates that the capital increase contributed to reducing credit risks, although the ratio remained above the allowed limit.

6. Islamic Advisor Bank increased its capital in 2019, 2021, and 2022 by 50%, 33%, and 25%, respectively. Credit risk ratios remained consistently low at 2%, 3%, 4%, 4%, 3%, and 3% from 2018 through 2023. This demonstrates the presence of highly disciplined management and a proactive board of directors effectively overseeing risk.

7. National Bank of Iraq raised its capital in 2022 and 2023 by 8% and 11%, respectively. However, credit risks remained elevated from 2018 to 2023 at 121%, 91%, 61%, 31%, 40%, and 43%. This suggests that the capital increase did not meaningfully reduce credit risk. Rather, the bank's management permitted excessive lending in the pursuit of expanded revenues, in clear violation of Central Bank regulations and the 15% cap. This indicates weak adherence to sound banking practices and heightened exposure to financial risk.

Hypothesis Testing:

Null Hypothesis (H0): There is no relationship between capital increases and credit risk.

Alternative Hypothesis (H1): There is a relationship between capital increases and credit risk.

From the analysis, it is evident that Islamic Advisor Bank, despite increasing its capital, maintained stable credit risk levels. This supports the null hypothesis, suggesting no correlation between capital increases and credit risk in this case.

For the remaining banks, there is clear evidence of a relationship between capital increases and changes in credit risk, notably in Mashreq Arab Islamic Bank and National Bank of Iraq. While these banks showed improvements in risk reduction, their ratios still exceeded regulatory limits, supporting the alternative hypothesis of a relationship between capital increases and credit risk.

CONCLUSIONS

1. Islamic Advisor Bank successfully managed credit risk, with consistently low ratios during the study period. This reflects a strict credit policy and sufficient provisioning to absorb potential losses, demonstrating the bank’s capability to handle non-performing loans.
2. In several cases, capital increases led to higher credit risks, indicating weak supervisory control and non-compliance with Central Bank regulations. This aligns with the study’s objectives and highlights poor adherence to corporate governance principles.
3. Although some banks, such as National Bank of Iraq and Mashreq Arab Islamic Bank, saw a decline in credit risk following capital increases, the ratios remained above acceptable levels. This indicates a partial commitment by management but also reflects ineffective risk management.
4. Banks must adopt well-informed credit decisions and avoid excessive risk-taking. Some banks demonstrated efficiency in allocating capital toward low-risk loans.
5. Overall, the findings suggest that capital increases did not consistently lead to better credit risk management. In some cases, increased capital was accompanied by higher risks, pointing to a possible inverse relationship. Despite marginal improvements in some institutions, risk control remains insufficient, reflecting weaknesses in internal oversight mechanisms.

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