



# **MEASURING THE IMPACT OF FINANCIAL SOUNDNESS INDICATORS ON BANKS' OBLIGATIONS TO DEPOSITORS-A FIELD STUDY OF A GROUP OF PRIVATE COMMERCIAL BANKS FOR THE YEARS 2020 TO 2023**

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## **Abstract:**

Financial safety in commercial banks is one of the main pillars in their business, as it reflects the greatest concern of depositors and lenders in Commercial Bank before dealing with it, as well as the bank's management to ensure that the bank fulfills its obligations towards its depositors and invests these deposits in safe investment activities while ensuring profits. From this picture, the researcher's idea began by explaining the concept of financial safety in commercial banks, its importance, its indicators approved by the Central Bank of Iraq, and the extent of their impact and evaluation of the bank's commitment to its depositors. The researcher used financial soundness indicators (Capital Adequacy Index (CAR), Liquidity Index (LIQ) and Non-Performing Loans (NPL) ) as an independent variable, as these indicators are the most influential in the bank's obligations towards its depositors, while the dependent variable was used by the researcher as an index (the ratio of total deposits to total liabilities). By adopting two banks, (Commercial Economy Bank and Middle East Investment Bank) as an intentional sample for research and a time series that spanned four years (2020-2023). The researcher starts from the hypothesis that there is a strong and significant correlation and effect relationship between the independent variable and the dependent variable, and tries to prove it using financial analysis as well as statistical analysis. The researcher reached a set of conclusions, the most important of which are: the non-compliance of commercial banks with the ratios of financial soundness set by the Central Bank, whether by neglecting the increase or decrease, as well as the fact that the Bank of Economy is exposed to a very high percentage of non-performing credit facilities, and that the non-performing loans index has no significant impact on the bank's obligations towards its depositors in most of the banks in the research sample. There were also a set of recommendations, the most important of which The need to adhere to the financial ratios set by the Central Bank, as well as the need to formulate efficient credit policies to avoid the default of the credit granted by commercial banks.

**Keywords:** Financial Soundness Indicators, Bank Liabilities, Deposits

## **INTRODUCTION:**

The banking sector is considered the cornerstone of the financial sector in the local economy. It is the main component that plays a prominent role in the financial stability of the country, so it is necessary to pay attention to the banking sector and work to develop it continuously in line with the international decisions (Basel III) in order to create a sound and stable financial system in the economy. From this point of view, great attention has begun to pay attention to the indicators of financial soundness in the banking sector, which is one of the most important indicators used to know and evaluate the ability of commercial banks to meet their obligations. It is very necessary to work on developing these indicators in line with international decisions and to adopt them in the banking sector and under close supervision from the Central Bank of Iraq, and the Central Bank must oblige commercial banks to work according to financial soundness indicators in line with the Iraqi economy, and in this research we have addressed the impact of financial soundness indicators on the bank's obligations towards Depositors of a number of commercial banks operating in Iraq for the period 2020-2023, where this research was divided into four topics. The first topic included the scientific methodology



of the research, while the second topic dealt with the theoretical framework of the research from the concepts and importance of financial soundness indicators as well as the bank's obligations towards its depositors. The third topic showed the practical aspect of the research and the use of quantitative and statistical methods in it, and the fourth and final topic included a set of conclusions and recommendations related to the research.

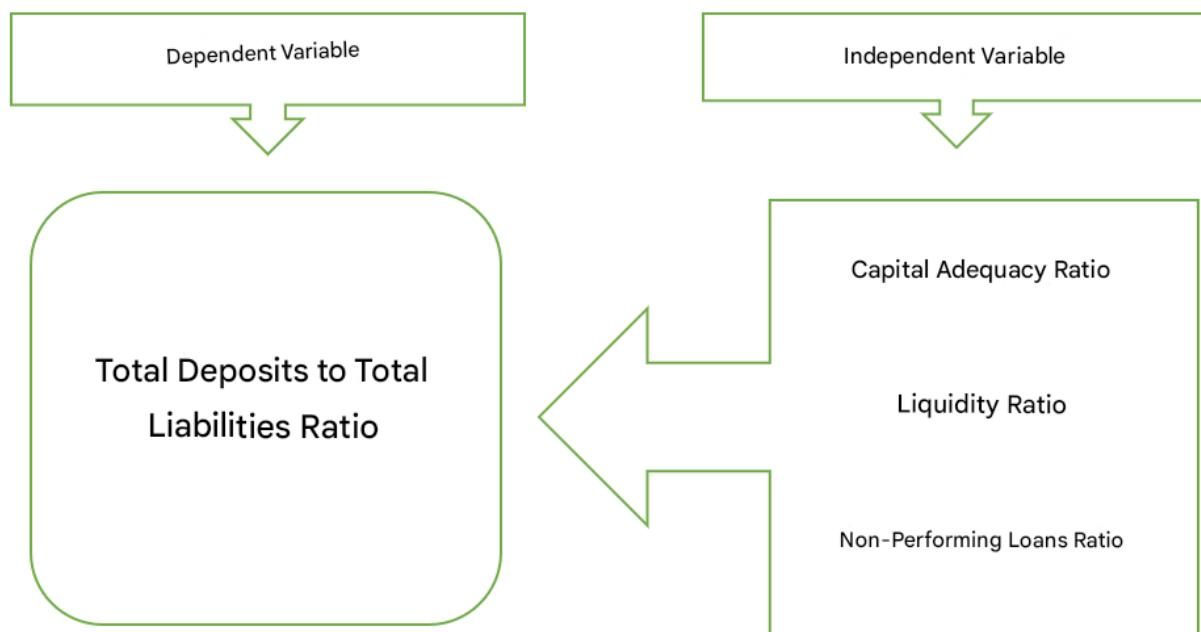
### **The first topic: Research methodology.**

#### **First: The Research Problem:**

In order to prevent financial crises and avoid their negative effects, the Central Bank of Iraq needs to oblige commercial banks to pay attention to the ratios of financial soundness indicators and to work in line with the ratios approved by the Central Bank that ensure financial stability in the banking sector and enable banks to be able to face crises, and thus reach a situation in which banks are able to meet their obligations towards their customers. The problem of the research lies in the non-compliance of most commercial banks with the ratios of financial soundness indicators, whether higher or lower than the prescribed percentages, which paves the way for the emergence of banking crises in the event of negligence in the application of these ratios according to the minimum and upper limits set by the Central Bank of Iraq. Here arises the most prominent question that can clarify the main picture of this problem

- Is there an impact relationship between financial soundness indicators and the bank's obligations to depositors?

#### **Second: Research Outline:**



#### **Third: The importance of research.**

The importance of this research stems from the importance of financial soundness indicators and their ability to assess the ability of the commercial bank to meet the financial obligations of depositors and creditors, as follows:

1. It reveals the most important indicators of financial strength and uses it as an early warning to alert banks to potential financial risks.
2. Contribute to solving the issue of financial stability. This is a recent topic that has been of interest to international financial institutions and central banks in different countries, with financial liberalization and the openness of countries around the world.
3. The results of the research and its recommendations showed that its importance to the banking sector will be of great benefit to the management of commercial banks in making future decisions.

#### **Fourth: Research Objectives. research aims**

- 1 - Clarifying the concept and importance of financial safety in commercial banks, and the most important indicators for measuring it.
- 2- Clarifying the importance of commercial banks' interest in meeting the financial obligations of depositors and their role in developing their activity.



3- The research works to find out the nature of the correlation and impact relationship between financial soundness indicators and financial obligations towards depositors in commercial banks.

**Fifth: Research Hypotheses.**

The main hypothesis of the research

(There is a correlation and significant effect between financial soundness indicators and the bank's obligations towards its depositors)

From these we derive the following sub-hypotheses:

1. There is a significant correlation and effect between the capital adequacy index and the total deposits to total liabilities index.
2. There is a significant correlation and effect between the liquidity index and the total deposits to total liabilities index.
3. There is a significant correlation and impact between the non-performing loans index and the total deposits to total liabilities index.

**Sixth: Research Method**

- 1- Theoretical aspect: The researcher relied on the inductive method, and the descriptive-analytical method by relying on books, theses, researches, reports, and instructions related to the research topic.
- 2- Practical aspect: The researcher relied on the analytical method in analyzing the financial data using the statistical software SPSS.

**Seventh: Research population and sample**

The spatial boundaries of the research include private commercial banks listed on the Iraq Stock Exchange. The research sample is (Commercial Economy Bank - Middle East Investment Bank).

**Eighth: Research sources.**

1. The researcher used a group of Arab and foreign sources such as books, letters and theses, as well as the Internet to enhance the theoretical aspect of the research

**Second Topic**  
**Theoretical Framework of Research**

**First: The concept and definition of financial soundness.**

The financial crises during the 1990s and the beginning of the new millennium raised many concerns about the soundness of the banking system in the world, so specialized international financial institutions, including the International Monetary Fund, asked all their member countries to re-evaluate the integrity of their banking systems as part of their supervisory work, (Youssef 2019: 289), through which the means of evaluating banking systems began to receive great attention at the local and international levels. It also worked to enhance the efficiency and resilience of banking systems when economic crises occur. Banking systems and their integrity are a pivotal part of the global financial system's infrastructures. Therefore, central banks and domestic financial institutions should pay increased attention to monitoring the integrity and stability of the banking system in their countries (Sundararajan et al., 2002:11). From this point of view, it can be said that financial soundness is an integrated state of efficiency and resilience enjoyed by the financial and banking system with its various components, including banks, financial markets, and specialized institutions that enable it to perform its basic functions with flexibility and high efficiency, which are represented in attracting and accumulating savings, allocating resources in an appropriate and deliberate manner between the different economic sectors, providing financing through banking and non-banking channels, managing risks, facilitating trading operations and exchange of goods and services, and practicing effective governance of investments. Nguyen, 2020:48).

Financial soundness is manifested in the ability of commercial banks to withstand internal and external shocks and imbalances, whether they are the result of economic crises, sharp fluctuations in markets, or the collapse of some financial institutions, without leading to widespread disruptions in the financial intermediation process or in the stability of economic activity (Pizzutto, 2019:21). It is a dynamic and continuous process that requires constant follow-up and monitoring to detect and address vulnerabilities early on, thus limiting the accumulation of risks that may develop into a comprehensive financial crisis (Volodymyrivna, 2014:224).

Financial soundness also encompasses three main interrelated dimensions:

1. Access: Ensuring that individuals and organizations are able to access the necessary services and financial resources.
2. Stability: Maintaining the robustness and continuity of the work of financial institutions, especially the banking system, as the first line of defense against crises (Nguyen, 2020:48).
3. Efficiency: Improving the quality and efficiency of financial services provided in order to achieve optimal use of resources (Noman & Isa, 2021:1).



From an economic policy perspective, financial soundness is a top priority for central banks and regulators, as it is a key tool to promote financial stability and protect the banking system from collapse, and a key pillar for achieving sustainable economic growth, social welfare, and reducing systemic risks that may affect the performance of the national economy (Jawaaid & Mahdi, 2021:253)

(Jawaaid & Mehdi, 2021) (253) defined it as "a specialized assessment of the stability of the financial system in order to identify any weakness in it over a period of time."

As stated (2021:26,Kadhum) financial integrity is "an important means of achieving financial stability, and monitoring the safety of financial institutions helps in the early detection of any potential accumulation of risks that could lead to the creation of a financial crisis."

As defined by another team of researchers in the context of financial system stability, it is a comprehensive concept synonymous with financial soundness: (2021:31, Noman & Isa) referred to financial safety as "a situation in which the financial system, which includes financial institutions, markets, and infrastructure, is able to resist shocks and financial imbalances, thereby eliminating the possibility of disruptions in the financial intermediation process."

### **Second: The importance of financial soundness.**

The banking activity is exposed to many crises and risks, as it needs precautionary means to detect these risks before they occur so that the bank is always in a good position, (Babihuga, 2007:4). Financial soundness indicators play a fundamental role in the evaluation and supervision of banks, as these indicators can allow regulators such as central banks and investors to assess the health status of the banking system on an ongoing basis. They help in the early detection of financial risks to which a commercial bank can be exposed, and enable it to take all measures that can protect depositors' funds and maintain the financial and banking stability of the bank and the country in general. Therefore, financial safety indicators are considered as an early warning to analyze and evaluate the strengths and weaknesses of the banking system in order to support the stability of the banking system in the country and identify the severity of risks that may cause imbalance in the banking sector, so the importance of financial soundness indicators is as follows: (Bouhrira & Mustafa, 2017: 109)

1. It provides the ability to assess the soundness of the financial and banking system based on real quantitative indicators.
2. These indicators consolidate the principle of disclosure and transparency by making the necessary information available to all customers in the banking sector and beyond.
3. It allows the comparison of financial performance between different countries through the application of internationally approved indicators.
4. The correct use of these indicators can reveal many risks of financial contagion, thus mitigating them.
5. These indicators act as an early warning of imbalances, dangers, or crises inside and outside the banking system.

### **Thirdly. Indicators used to measure financial soundness:**

In 2006, the International Monetary Fund (IMF) and the relevant international financial institutions (IFFIs) identified a set of "Financial Guidelines" containing six approved indicators of financial soundness, which are internationally adopted in assessing the state of the financial and banking sectors. (Hassan, 2022: p. 75) is the same one that the Central Bank of Iraq adopts for the banking system in Iraq based on international methodologies (IMF). In this study, three indicators of financial soundness will be relied on based on the degree of their impact on the bank's obligations towards depositors, which are as follows:

#### **1Capital Adequacy Index (CAR)**

Why? The more capital adequacy, the higher the confidence depositors have in the bank's ability to protect their funds, which may reduce the pressure on immediate liabilities.

Measurement Method:  $(\text{Regulatory Capital} \div \text{Risk-Weighted Assets}) \times 100$

#### **2. Liquidity Index (LIQ)**

Why? Liquidity represents the bank's ability to meet withdrawal requests from depositors, and is directly linked to its obligations to them.

Measurement Method:  $(\text{Liquid Assets} \div \text{Short-Term Liabilities}) \times 100$

#### **3. Non-Performing Loans (NPLs)**

Why? Higher non-performing loans negatively impacts asset quality and the bank's ability to provide liquidity, increasing the risk of non-fulfillment of obligations.

Measurement Method:  $(\text{Non-Working Loans} \div \text{Total Loans}) \times 100$

### **Second: The Bank's obligations towards depositors.**

1 Concept of the Bank's obligations to depositors



The bank's obligations to depositors are defined as the majority of financial liabilities that fall on the bank as a result of the funds deposited by individuals and institutions in their accounts, which the bank is obligated to return upon request or on the due date, depending on the type of deposit. These liabilities always constitute the largest aspect of banks' liabilities and the bulk of them are short-term (current deposits, savings), and are considered an essential element in the balance of the balance sheet structure, as deposits are the main source of financing banking operations (Saleh, 2021, p. 88). According to the International Monetary Fund, banks' obligations to depositors are a direct indicator of public confidence in the banking sector, and the more these commitments are made as the bank's financial position stabilizes, the more efficient it is to attract and manage funds (IMF, 2021, p. 27).

## **2 Types of depositors**

Bank deposits vary into several types, each of which is classified according to the extent of its relationship to liquidity or its maturity period:

A. Current Deposits (Request): Deposits that can be withdrawn at any time, and are usually used in daily transactions, and do not generate any interest for their owners in most banking systems. It is one of the most sensitive types of liabilities, as it is used as a payment instrument and therefore the bank must maintain adequate liquidity to counter it (Ali, 2019, p. 112).

b. Savings deposits: A type of deposit on which low interest is granted, and provides a type of flexibility in withdrawals that are less than current deposits, and it is an intermediate type between current and future deposits. It is preferred by individuals who wish to save while retaining their ability to withdraw when needed (Al-Shammari, 2020, p. 134).

c. Time deposits: Deposits that are agreed upon between the bank and the customer in advance and the deposit is not refunded until the end of its maturity date or with no interest in the event that the deposit is broken before the maturity date. It is one of the most relatively stable sources of bank financing, and it is granted higher interest rates than savings deposits (IMF, 2021, p. 36).

## **3 The importance of the bank's obligations to depositors**

Customer deposits are a key pillar of banking activity, as they represent the largest financial resource used to finance loans and other investments. The volume of liabilities to depositors also reflects the level of public trust in the bank, and the higher the volume of deposits relative to the capital, the more effective the bank is in attracting funds (Al-Tamimi & Obeidat, 2013, p. 223).

On the other hand, these liabilities are a sensitive element of any financial turmoil or liquidity crisis, as rumors or negative news may cause a "bank run", leading to a liquidity crisis that may affect the bank's stability (Diamond & Dybvig, 1983, p. 403). Therefore, proper management of these liabilities is a prerequisite for the bank's continuity and financial stability.

## **4 Factors affecting the size of liabilities towards depositors**

The size of the bank's obligations towards depositors is affected by several internal and external factors, the most important of which are:

A. Profitability: The higher the profitability of a bank, the more confidence depositors have in it, which enhances the size of deposits (Berger & Bouwman, 2013, p. 149).

B. Liquidity: The bank's high liquidity gives it the ability to meet on-demand deposits, which reassures customers even in times of crisis (IMF, 2021, p. 41).

C. Reputation: Market position, transparency of disclosure, size of the bank, number of branches, volume of investments, and previous events in dealing with crises play a direct role in attracting depositors' funds (Al-Kinani, 2022, p. 99).

d. Economic conditions: such as inflation, interest rate, and the stability of the political, economic, and social environment all play a role in determining the size of deposits (Ali, 2019, p. 117).

## **5 Risks associated with the Bank's obligations to depositors**

a. Liquidity risk: It is considered one of the most important risks resulting from the lack of sufficient liquidity to meet withdrawal requests, especially in commercial banks that rely heavily on short-term deposits such as (current deposits, savings) (Diamond & Dybvig, 1983, p. 406).

B. Reputational risks: Loss of trust in the bank as a result of defaults, past events, or negative news specific to the bank or even in general in the country as a whole, such as wars, crises, etc., may lead to a mass withdrawal of deposits, so the bank must always be prepared for such exceptional circumstances. Al-Kinani, 2022, p. 103).

c. Market risks: A sudden rise in interest rates may lead to the redirect of savings to more attractive investment alternatives outside the bank, which reduces the volume of deposits with commercial banks and may result in a banking crisis for banks that rely heavily on deposit funds (IMF, 2021, p. 46).

### **Third Topic / Practical Framework of Research**

**First: Financial analysis of the ( financial soundness) indicators used in the research.**



## 1. Capital Adequacy Index Analysis.

The Capital Adequacy Index is mainly used to measure the strength of a bank's financial position and its ability to face potential losses, and it is one of the most important indicators of financial soundness adopted by the Central Bank of Iraq and the Basel Standards. It is also used to assess the bank's ability to absorb losses, ensure the protection of depositors' funds, and determine the extent of expansion in lending and investment. The high percentages of this indicator indicate the strength and ability of the bank to meet its obligations to its depositors and vice versa. Which can be analyzed according to the following table:

Table (1) Analysis of the Capital Adequacy Index Ratios for Commercial Banks Research Sample

2023	2022	2021	2020	2019	2018	السنة
						المصرف
46%	49%	37%	32%	32%	31.90%	مصرف الاقتصاد التجاري
99%	102%	127%	106%	111%	106%	مصرف الشرق الأوسط للاستثمار
21%	21%	26%	30.9%	58.1%	82.8%	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial statements of commercial banks The research sample for the period (2018-2023)

Table (1) shows the variables in the financial ratios of the Capital Adequacy Index. In the Commercial Economy Bank, we see that all the percentages are within the limits approved by the Central Bank of Iraq, the minimum limits of which are (12.5%), on the other hand, they are considered moderate percentages, which do not indicate excessive holding of funds to protect depositors' funds, but rather to use them for other operational and investment activities. We note that the highest percentage of the index was in 2022 (0.49) The lowest percentage of the index was in 2018 (31.9%), which is within the permissible limits, and this indicates the moderate policy adopted by the bank in holding funds to meet the obligations of depositors on the one hand, and the success of its investment policy in order to achieve permissibility and not disrupt the available funds on the other hand.

As for the Middle East Investment Bank, it is noted in the same table above that the highest percentage of the capital adequacy index was in 2021, as it achieved a percentage of (127%) if we note the bank's excessive retention of funds within this index. . On the one hand, it reflects a positive image through the fact that capital covers risk-weighted assets in large proportions, providing a very high level of security for the bank's creditors, which is a type of marketing message for the bank that operates within a safety zone that attracts depositors. On the other hand, it reflects the negative picture of high ratios, as it often reflects the inefficiency of management in investing capital in profitable operational activities, such as granting loans or investing in financial instruments. According to the Basel Committee principles, the objective Capital adequacy is to strike a balance between solvency and maximize returns, as an excessive increase in this ratio may reflect an overly hedging policy, leading to lower returns on shareholders' rights , and restricting credit growth. Consequently, effective capital management requires maintaining the ratio at a safe level that exceeds the minimum required without reaching levels that slow down operational activity or reduce the bank's profitability .

As for the National Bank of Iraq, it is noted in the same table above that the highest percentage of the capital adequacy index was in 2018, when it achieved a percentage of (82.8%), which is also considered a high percentage of this index, in which there is a clear excess that may lead to the disruption of the use of available resources. This is a moderate percentage higher than the minimum approved by the Central Bank of Iraq, and according to the existing readings of the capital adequacy index ratios of the National Bank of Iraq, it is noted that during the period under review, the bank is reducing the percentages of this index, so we note its decrease from 82.8% in 2018 to 21% in 2023, and this indicates that the bank develops its investment policies annually and works to improve the use of its funds in various activities. In general, we find that the Middle East Investment Bank has problems in employing its funds that may reflect negatively on it in a way that cannot be contained in the future. As for the National Bank of Iraq, its percentage has been continuously improving and there has been efficiency in employing its funds in recent years. As for the Bank of Economy, we can see through the financial reading of the capital adequacy ratios that there is a clear stability in its policies to protect depositors' funds on the one hand, and the stability of employing its funds on the other hand. According to the diagram below.

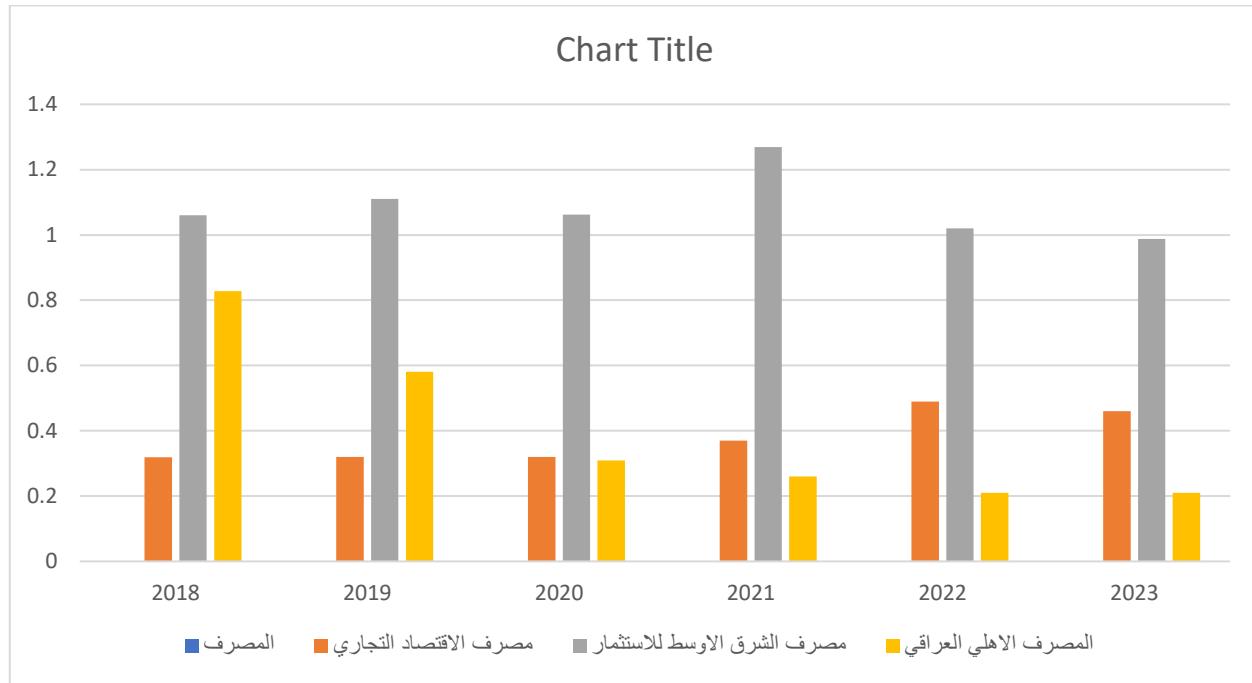


Figure (1): The percentage of the Capital Adequacy Index for Commercial Banks shows the research sample for the period from (2018-2023)

### 1- Liquidity Index Analysis.

Liquidity indicators are used in the banking sector to measure a bank's ability to meet its short-term financial obligations on time, especially towards depositors and creditors, without the need to liquidate its long-term assets or resort to emergency sources of financing. It is considered an important indicator of financial soundness in commercial banks, as it gives the bank's management a clear view of the availability of the liquidity needed to meet the bank's crisis. Trust between the bank and creditors and vice versa, according to the following table:

Table (2) Analysis of the Liquidity Index Ratios of Commercial Banks Research Sample

2023	2022	2021	2020	2019	2018	السنة
						المصرف
38%	33%	30%	10%	14%	10%	مصرف الاقتصاد التجاري
168%	223%	70%	84%	117%	109%	مصرف الشرق الأوسط للاستثمار
72.5%	67%	49.6%	105.4%	141.7%	124%	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial statements of commercial banks The research sample for the period (2018-2023)

Table (2) shows the variables in the financial ratios of the Liquidity Index. In the Commercial Economy Bank, we see that the percentages in the first years studied were below the limits approved by the Central Bank of Iraq, which had a minimum limit of (35%), while the rest of the years were within the normal limits of the approved liquidity ratios. We note that the highest percentage of the index was in 2023 (38%) within the limits set by the Central Bank. The lowest percentages of the index were in 2020 and 2018 (10%), which is lower than the permissible limits, and from the readings of the percentages in the table above, we find that the management of the Bank of Economy works within high risk limits in the first years researched, as it does not have the minimum limits of liquidity set to meet the obligations of depositors, and the situation improves in the following years to be able to provide the minimum required liquidity, but in general, during the research years, this factor of liquidity had a negative impact on attracting customers' deposits. And build a strong trust with them.



As for the Middle East Investment Bank, it is noted in the same table above that the highest percentage of the liquidity index was in 2022, when it achieved a percentage of (223%), which is much higher than the limits set by the Central Bank, although it shows great strength and confidence on the part of the bank's management to meet the obligations of depositors, but it reflects a very bleak picture of the retention of funds and the failure to operate them in profitable activities. Although it gives a strong impression of the bank's ability to face sudden withdrawals, it also reflects the failure of the bank's management to achieve a high return on assets, as it means disrupting a large part of these assets and not investing in instruments with a good return for the bank, as well as maintaining high ratios of liquidity, which shows the lack of efficiency in using Resources such as return on equity also show the absence of an effective investment strategy.

As for the National Bank of Iraq, it is noted in the above table that the highest percentage of the liquidity index was in 2018, as it achieved a percentage of (141.7%), which is considered a high percentage of this index, in which there is a clear excess that may lead to the disruption of the use of available resources. This is a moderate percentage, although it is higher than the minimum approved by the Central Bank of Iraq, but it represents a significant change in the bank's strategy to employ the existing funds, and according to the existing readings of the liquidity index ratios of the National Bank of Iraq, it is noted that the bank during the period under study reduces the percentages of this index, so we note its increase in the first years of the research, where it exceeds the barrier of 100% and its decline during the subsequent years, despite its fluctuation between 49% and 72%, but it reflects the picture of a clear improvement in the bank's development of its investment policies. annually and works to improve the use of his funds in various activities.

In general, we find that the Middle East Investment Bank also has problems in employing its funds within this index as well as the capital adequacy index, which shows that the bank suffers from a great weakness in the efficiency of the management to develop an effective strategy to employ funds that may reflect negatively on it in achieving acceptable annual profits. As for the National Bank of Iraq, its percentage has been continuously improving and there has been efficiency in employing funds in recent years. As for the Bank of Economy, we can see through the financial reading of the capital adequacy ratios that there is a clear fluctuation in its policies related to this index, which affects the confidence of customers in depositing their money with it. According to the diagram below.



Figure (2): The percentage of the liquidity index of commercial banks shows the research sample for the period from (2018-2023)

## 2- Non-Performing Loans Index Analysis.

The Non-Performing Loans Index (NPL) will serve in the banking sector as a basic measure of the quality of the credit portfolio and the effectiveness of risk management that the bank may face in its credit activity, as the high percentage of this indicator indicates that a large part of the loans granted is facing a problem in repayment, which reflects the



poor quality of the assets and the decrease in its profits in the future. This index is considered one of the main indicators of financial soundness, as it is considered closely related to the bank's obligations towards its depositors and creditors because the higher the percentage, the lower the bank's capacity. In generating liquidity to meet the required obligations, as well as the fact that the high percentage significantly weakens depositors' confidence in the bank, especially if alarming limits are reached, according to the following table:

Table (3) Analysis of Non-Performing Loans Index Ratios of Commercial Banks Research Sample

2023	2022	2021	2020	2019	2018	السنة
						المصرف
86%	83%	92.5%	97.6%	98.5%	65%	مصرف الاقتصاد التجاري
9.6%	8.1%	21.5%	22.2%	1.2%	1.7%	مصرف الشرق الأوسط للاستثمار
2.7%	3.9%	3%	9.4%	11.1%	22.5%	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial statements of commercial banks The research sample for the period (2018-2023)

Table (3) shows the variables in the financial ratios of the Non-Performing Loans Index. In the Commercial Economy Bank, we see that the percentages in all the years in the framework of the research have been high in a way that threatens a banking disaster. Although the Central Bank of Iraq always advises commercial banks not to exceed the 10% barrier of total loans. We note that the highest percentage of the index was in 2019 (98.5%), and this percentage is very high, which threatens the collapse of the bank's credit policy, which puts depositors' and creditors' funds at risk. The lowest percentages of the index were in 2018 (65%), which is also considered very high and unacceptable, while the rest of the years in addition to the index percentages were very high. This threatens its ability to provide the liquidity needed to meet its obligations to depositors.

As for the Middle East Investment Bank , it is noted in the same table above that the highest percentage of the non-performing loans index was in 2020, when it achieved a percentage of (22.2%), which is higher than the limits recommended by the Central Bank of 10%, as it shows that there is an imbalance in the bank's credit policy, but it can be controlled by the bank's management, as the percentage is not considered as high as in the Commercial Economy Bank. The lowest percentage of the liquidity index was in 2019 (1.2%), which is considered an ideal percentage because it represents much lower than the percentages recommended by the Central Bank. As for the rest of the years, the percentages of this index were fluctuating, but most of them were below 10%, as shown in the table above, which means that the bank's management is able to develop a credit policy and manage it efficiently after getting rid of some problems that hinder this.

As for the National Bank of Iraq , it is noted in the table above that the highest percentage of the non-performing loans index was in 2018, as it achieved a percentage of (22.5%), which is considered a high percentage of this index, in which there is a clear excess that may lead to the failure to utilize the available resources. This is a very good percentage, as it represents a significant change in the bank's credit strategy, and according to the existing readings of the non-performing loans index ratios of the National Bank of Iraq, it is noted that during the period under study, the bank had a rise in the percentages of this index in the first three years and a significant decrease during the recent years. This reflects the clear improvement in the Bank's annual credit policies and optimization of its funds for reliable credit activities.

In general, we find that the Commercial Economy Bank had major problems in the credit policy during the period under review, and this was clearly reflected in the percentages of this index, and this shows that the bank suffers from a great weakness in the efficiency of the management to develop an effective strategy to employ funds. As for the National Bank of Iraq and the Middle East Investment Bank, the percentages of this index have been continuously improving, and there is a clear effort by the administrations of this bank during the recent years to develop efficient credit policies. . According to the diagram below.

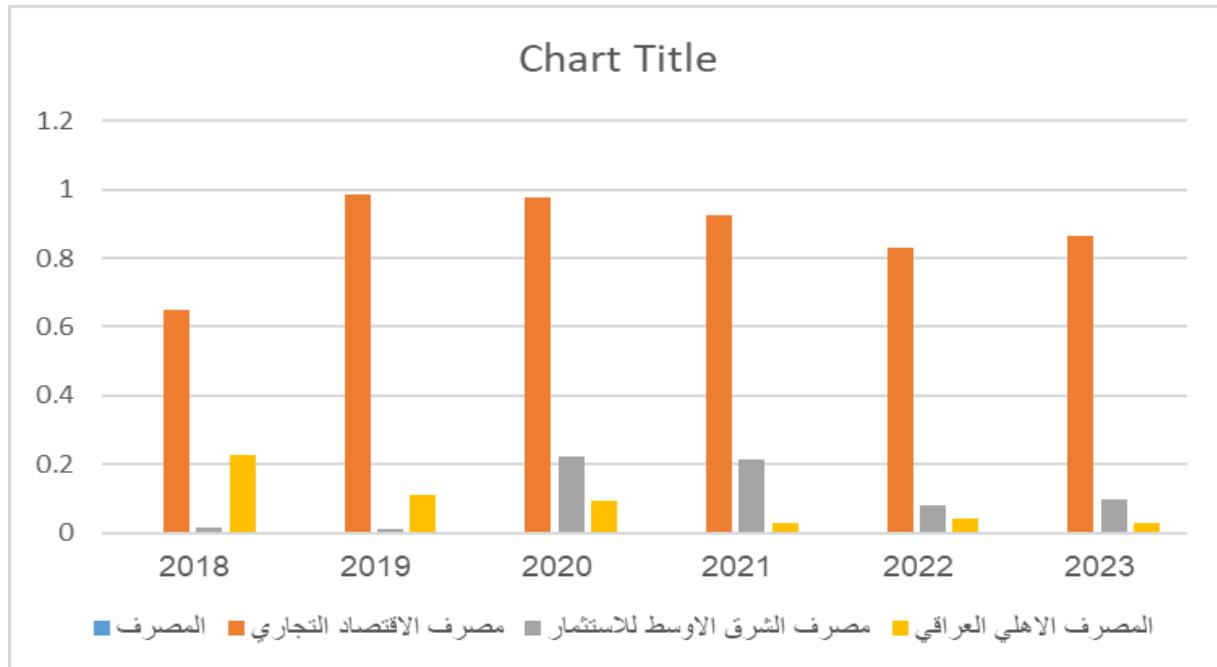


Figure (3): The ratio of non-performing loans to commercial banks shows the research sample for the period (2018-2023)

#### **Second: Financial analysis of the indicators ( the bank's obligations towards its depositors) used in the research.**

##### **1- Analysis of the Total Deposits to Total Liabilities Index.**

The Total Deposits to Total Liabilities Index is used in the banking sector to measure the extent to which banks rely on deposits as a major source of financing compared to all their liabilities, and it is one of the important indicators for assessing the financing structure and financial stability of the bank. The high percentages of this indicator mean that the majority of liabilities are financed by customer deposits, which puts a greater responsibility in front of the bank to provide sufficient liquidity to face the withdrawals of these deposits, which increases the bank's sensitivity to depositors' surprise withdrawals, and vice versa, according to the table below:

Table (4) Analysis of the Ratios of the Total Deposits to Total Liabilities of Commercial Banks Research Sample

2023	2022	2021	2020	2019	2018	السنة
						المصرف
25%	44%	41.1%	44.2%	42.9%	44.4%	مصرف الاقتصاد التجاري
52.4%	47.7%	74.2%	69.6%	69.3%	80.5%	مصرف الشرق الاوسط للاستثمار
79.3%	81.7%	81.6%	46.0%	39.6%	31.4%	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial statements of commercial banks The research sample for the period (2018-2023)

Table (4) shows the variables in the financial ratios of the Total Deposits to Total Liabilities Index. In the Commercial Economy Bank, we see that the percentages in all the years within the framework of the research were normal and tend to decrease. We note that the Commercial Economy Bank is working on balancing its sources of funding, so we see that it does not rely on deposits as the main source of financing, but participates with other sources. We note that the highest percentage of the index was in 2018 (44.4), and this average percentage reflects the bank's policy of relying on deposits as a source of financing, which does not exceed half. The lowest percentage of the index was in 2023 (25%), which is a very low percentage, so the bank does not rely on deposits as the main source of financing, but relies on other sources (75%). From the readings of the percentages in the table above and the gradual decline of the percentages of this index during the research years, we find that the management of the Bank of Economy is working



to reduce its reliance on deposits as a source of financing, and although the bank is getting rid of short-term and sudden obligations that it needs to be highly prepared to face them, but at the same time it loses a source of financing that is considered one of the least expensive sources.

As for the Middle East Investment Bank, the matter is not much different from the Bank of Economy, but at a higher pace, as it is noted in the same table above that the highest ratio of the total deposits to total liabilities index was in 2018, when it achieved a percentage of (80.5%), which is a very high percentage, as it means that the bank relies 80% on deposits as its source of financing and 20% on other sources, which increases the bank's sensitivity and readiness to provide liquidity to meet surprise withdrawals more. The index of total deposits to total liabilities was in 2022 (47.7%), and this is considered an acceptable percentage, which means that the bank relies on deposits as a source of financing by only 47%. In general, from the table above, we find that the Middle East Bank follows the example of the Commercial Economy Bank in gradually reducing the percentage of reliance on deposits, and this is what we note from the table above, where these percentages decrease tragically, but remain in higher percentages than the Bank of Economy, and this shows a very important thing, which is that The Middle East Investment Bank does not want to give up on the least expensive sources of financing and at the same time does not want to rely heavily on it as it has to provide liquidity to meet depositors' withdrawals.

As for the National Bank of Iraq, it is noted in the table above that the highest percentage of the non-performing loans index was in 2022, as it achieved a percentage of (81.7%), which is considered a high percentage of this index, in which there is a clear over-reliance on deposits as a main source of financing. This is a low percentage, as it means that the bank relies on deposits as a source of financing not exceeding 32%, which is a clear neglect of a low-cost source of financing, and on the other hand, it may indicate that the bank has problems in attracting customer deposits. It is noteworthy that during the period under review, the bank was moving in the direction of reversing the banks of the other research sample, as it was the only one that started relying on deposits as a main source of financing gradually, as the percentages of this index began to rise from 2018 and continued to rise until 2023. This reflects a clear improvement in the Bank's policy towards customers in terms of building trust. At the same time, it is ready to meet its deposit obligations in a timely manner.

In general, we find that the Commercial Economy Bank and the Middle East Bank are moving in a downward trend to rely on deposits as a source of financing, and this may indicate problems in their deposit attraction policies. The National Bank of Iraq is moving in an upward trend in relying on deposits as the main source of financing for its various activities, which in turn entails obligations against this trend. According to the diagram below.

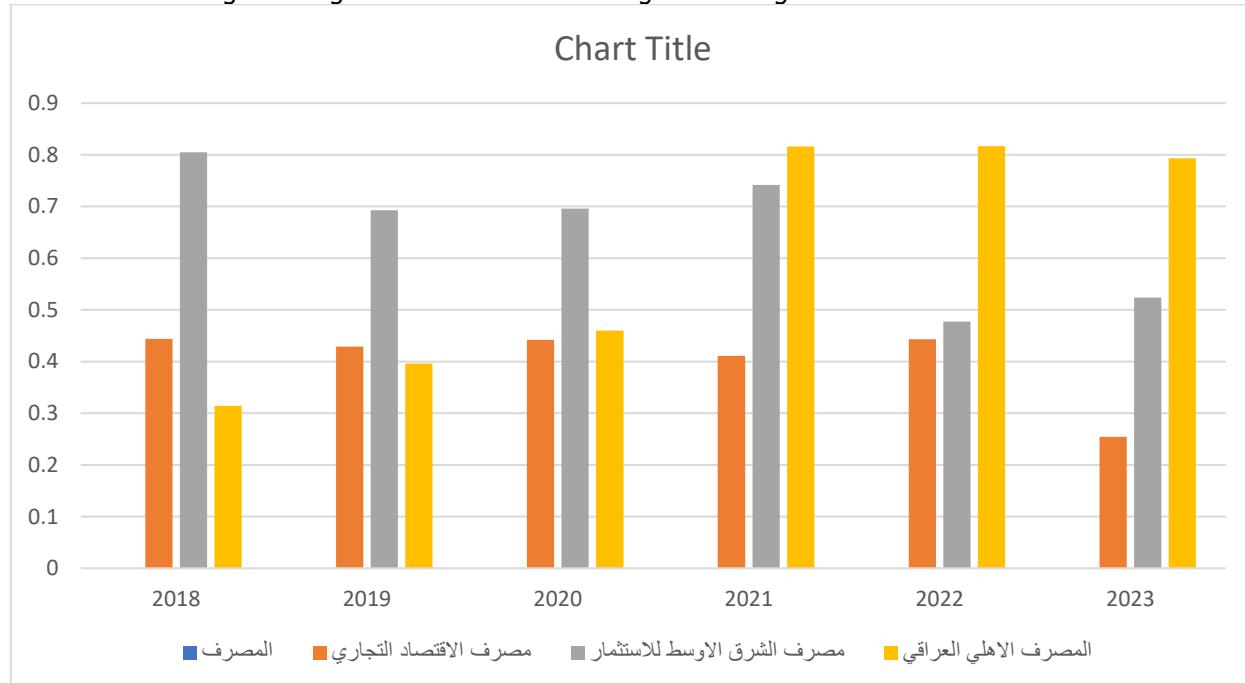


Figure (4): The ratio of the total deposits to total liabilities of commercial banks for the period (2018-2023) shows the ratio of the index of total deposits to total liabilities of commercial banks for the period from (2018-2023).

#### **Second: Hypothesis testing.**

##### **1- Proving the first sub-hypothesis in the research sample banks.**



For the purpose of testing the main research hypothesis, which states that there is a significant correlation and effect between financial soundness indicators and indicators of the bank's obligations towards its depositors) and the first sub-hypothesis (there is a significant correlation and effect between the capital adequacy index and the total deposits index to total liabilities), statistical methods (simple linear correlation and simple linear regression) have been used. As it gives more detailed statistical data that contributes to a greater understanding of the extent of the correlation and impact relationship between the two indicators, as shown in the table below:

Table (5) Analysis of the Correlation and Impact (of the Capital Adequacy Index on the Index of Obligations to Depositors) of the Banks Research Sample

Sig.	B	R Square معامل التأثير	معامل الارتباط R	المعاملات الاحصائية
				المصرف
0.042	.496-	0.253	-0.503	مصرف الاقتصاد التجاري
0.53	-0.735	0.325	-0.57	مصرف الشرق الأوسط للاستثمار
0.0233	-0.806	0.749	-0.866	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial data and statistical program (SPSS.23)  
The results of the analysis of the first sub-hypothesis of the research showed that there is a correlation and a swing effect between acceptable and strong with significant significance between (the capital adequacy index and the index of total deposits to total liabilities) in the banks in the research sample. In the Bank of Commercial Economy, and referring to the details of the statistical data in the table above, we find that when testing the ratios of the capital adequacy index to The index of total deposits to total liabilities, the correlation coefficient (R) with the dependent variable was average (-0.503) and its interpretation coefficient was (.253), meaning that the mentioned index was able to interpret the dependent variable at a rate of 25.Only 3%, and the significant value of S was (0.042), i.e., significant, while the value of (B) was (-0.496), i.e., a change of one unit in the independent variable results in an inverse change in the dependent variable by 49.6 units. From this, it can be said that there is a significant correlation and reversal relationship between the capital adequacy index and the index of total deposits to the total liabilities in the Commercial Economy Bank. In the Middle East Investment Bank , and referring to the details of the statistical data above, we find that when testing the ratios of the Capital Adequacy Index to the Total Deposits to Total Liabilities Index, the correlation coefficient (R) with the dependent variable was also average (-0.57), i.e., there is an average inverse correlation between the two variables and its interpretation coefficient was (.325).) means that the mentioned indicator was able to interpret the dependent variable at a rate of 32.Only 5% and the significant value of S was (0.53), i.e., not significant, while the value of (B) was (-0.735), i.e., a change of one unit in the independent variable results in an inverse change in the dependent variable by 73.5 units. From this, it can be said that there is a moderate but non-significant correlation and adverse effect between the capital adequacy index and the index of total deposits to total liabilities in the Middle East Bank. For investment. In the National Bank of Iraq, and referring to the details of the statistical data, we find that when testing the ratios of the capital adequacy index to the index of total deposits to total liabilities, the correlation coefficient (R) with the dependent variable was (-0.866), i.e., there is a strong inverse correlation between the two variables and that its coefficient of interpretation was (.749), i.e. the variable The aforementioned was able to explain the dependent variable at a rate of 74.The value of S was (0.0233) i.e. significant and the value of (B) was (-0.806), i.e., the change of one unit in the independent variable results in an inverse change in the dependent variable by 80.6 units. From this, it can be said that there is a strong correlation and effect with significant significance between the capital adequacy index and the index of total deposits to the total liabilities in the National Bank of Iraq. The natural relationship between the two variables is generally inverse, i.e., the more capital the bank, the less liabilities the bank has, since the bank does not need new deposits to finance its activities.

## **2- Proving the second sub-hypothesis in the banks of the research sample.**

For the purpose of testing the second sub-hypothesis (the existence of a significant correlation and effect relationship between the liquidity index and the total deposits index to total liabilities), statistical methods (simple linear correlation and simple linear regression) were used, as it gives more detailed statistical data that contribute to a greater understanding of the extent of the correlation and effect between the variables, as shown in the table below:



Table (6) Analysis of the Correlation and Impact (of the Liquidity Index on the Liquidity Index towards Depositors) of the Banks Research Sample

Sig.	B	معامل التأثير R Square	معامل الارتباط R	المعاملات الإحصائية
				المصرف
0.015	-0.4	0.43	-0.66	مصرف الاقتصاد التجاري
0.019	-0.16	0.37	-0.61	مصرف الشرق الأوسط للاستثمار
0.005	-0.65	0.88	-0.94	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial data and statistical program (SPSS.23)

The results of the analysis of the second sub-hypothesis of the research showed that there is a correlation and a significant correlation and effect between (the liquidity index and the index of total deposits to total liabilities) in the banks in the research sample. In the Bank of Commercial Economy, and referring to the details of the statistical data in the table above, when testing the ratios of the liquidity index to the index of total deposits to total liabilities, we find, The correlation coefficient (R) with the dependent variable was average (-0.66) and its interpretation coefficient was (.43), i.e., the mentioned index was able to explain the dependent variable at a rate of only 43%, and the significant value of S was (0.015), i.e., significant, while the value of (B) was (-0.4). That is, a change of one unit in the independent variable results in an inverse change in the dependent variable by 40 units. From this, it can be said that there is a correlation and an intermediate inverse relationship with significant significance between the liquidity index and the index of total deposits to total liabilities in the Commercial Economy Bank. In the Middle East Investment Bank, and referring to the details of the statistical data above, we find that when testing the ratios of the liquidity index to the total deposits to total liabilities index, the correlation coefficient (R) with the dependent variable was (-0.61), i.e., there is a moderate inverse correlation between the two variables and its interpretation coefficient was (.37).) i.e., the mentioned index was able to explain the dependent variable at a rate of only 37%, and the significant value of S was (0.019), i.e. significant, while the value of (B) was (-0.16), i.e., a change of one unit in the independent variable results in an inverse change in the dependent variable by 16 units. From this, it can be said that there is a significant intermediate correlation and adverse effect between the liquidity index and the total deposits index to Total liabilities in Middle East Investment Bank. In the National Bank of Iraq, and referring to the details of the statistical data, we find that when testing the ratios of the liquidity index to the index of total deposits to total liabilities, the correlation coefficient (R) with the dependent variable was (-0.94), i.e., there is a strong inverse correlation between the two variables and its coefficient of interpretation was (.88), i.e., the mentioned index was able to interpret the dependent variable at a rate of 88% only, and the significant value of S was (0.005), i.e. significant, while the value of (B) was (-0.65), i.e., a change of one unit in the independent variable results in an inverse change in the dependent variable by 65 units. From this, it can be said that there is a strong correlation and effect with significant significance between the liquidity index and the index of total deposits to the total liabilities in the National Bank of Iraq. The two variables are an inverse relationship, i.e. the more liquidity, the less the bank's liabilities are, since the bank does not need new deposits and fulfills most of its obligations on their maturity date.

### 3- Proving the third sub-hypothesis in the banks of the research sample.

For the purpose of testing the third sub-hypothesis (there is a significant correlation and effect between the non-performing loans index and the total deposits index to total liabilities), statistical methods (simple linear correlation and simple linear regression) were used, as it gives more detailed statistical data that contribute to a greater understanding of the existence of the correlation and effect relationship between the variables, as shown in the table below:

Table (7) Analysis of the Correlation and Impact Relationship (for the Non-Performing Loans Index on the Depositors Liability Index) for the Banks Research Sample



Sig.	B	معامل التأثير R Square	معامل الارتباط R	المعاملات الاحصائية
				المصرف
0.3	-0.018	0.00088	-0.029	مصرف الاقتصاد التجاري
0.069	-0.0717	0.0026	-0.051	مصرف الشرق الاوسط للاستثمار
0.0483	-2.76	0.803	-0.896	المصرف الاهلي العراقي

Source: Prepared by the researcher based on the financial data and statistical program (SPSS.23)

The results of the analysis of the third sub-hypothesis of the research showed that there is a correlation and oscillating effect between weak and strong, and mostly non-significant between (the liquidity index and the index of total deposits to total liabilities) in the banks in the research sample. In the Bank of Commercial Economy, and referring to the details of the statistical data in the table above, we find that when testing the ratios of the non-performing loans index to The index of total deposits to total liabilities, the correlation coefficient (R) with the dependent variable was weak (-0.029) and its coefficient of interpretation was (.00088), the mentioned index explains less than 1% only, and the significant value of S was (.3), i.e., not significant significant, while the value of (B) was ((.018) i.e., a change of one unit in the independent variable results in an inverse change in the dependent variable by 1. From this, it can be said that there is a weak and inverse correlation between the liquidity index and the index of total deposits to total liabilities in the Commercial Economy Bank. In the Middle East Investment Bank , and referring to the details of the statistical data above, we find that when testing the ratios of the non-performing loans index to the index of total deposits to total liabilities, the correlation coefficient (R) with the dependent variable is also average (-0.051), i.e., there is a weak inverse correlation between the two variables, and its coefficient of interpretation was (.0026), i.e., the mentioned index explains less than 1% only, and the significant value of S was (0.069), i.e., it is not a significant function, while the value of (B) was (-0.0717). That is, a change of one unit in the independent variable results in an inverse change in the dependent variable by 7 units. From this, it can be said that there is a weak correlation and adverse effect between the non-performing loans index and the total deposits to total liabilities index of the Middle East Investment Bank. In the National Bank of Iraq, referring to the details of the statistical data, when testing the ratios of the non-performing loans index to the total deposits to total liabilities, the correlation coefficient (R) with the dependent variable was strong (-0.896), i.e., there is a strong inverse correlation between the two variables and its interpretation coefficient was (.803). In other words, the mentioned index was able to explain the dependent variable at a rate of only 80%, and the significant value of S was (0.0483), i.e. significant, while the value of (B) was (-2.76), i.e., a change of one unit in the independent variable results in an inverse change in the dependent variable by 276 units. From this, it can be said that there is a strong correlation and effect relationship with significant significance between the liquidity index and the index of total deposits to total Obligations in the National Bank of Iraq. Note that the natural relationship between the two variables is inverse, i.e., the higher the non-performing loans, the less confidence depositors have and thus the ratio of deposits to total liabilities decreases.

#### **FOURTH TOPIC CONCLUSIONS AND RECOMMENDATIONS**

##### **First: Conclusions**

- 1- All the banks in question had excessive capital adequacy ratios, especially the Middle East Investment Bank.
- 2- The Middle East Investment Bank and the National Bank of Iraq maintain very high liquidity ratios that exceed the rates set by the Central Bank of Iraq, and this is not considered a strength factor because it shows that there are problems in investment policies, while the Commercial Economy Bank, in most of the research years, has maintained lower liquidity ratios than the rates set by the Central Bank of Iraq, and this is also considered a defect in the bank's management that threatens depositors' confidence in it.
- 3- It was found that the Commercial Economy Bank has very high rates of non-performing loans during the years under study, reaching more than 95% of its total credit facilities, and this is considered a clear failure in its credit policies, while the rest of the banks had the non-performing loans index ratios controlled despite their slight increase at times.



- 4- The financial analysis of the same banks during the period under study showed that the Bank of Al-Eqtesad is exposed to a very large default in its credit policy, but the positive picture in this is that it does not rely on depositors' funds mainly to finance its various activities, and despite this, this represents a great threat to the bank.
- 5- The Commercial Economy Bank does not rely on depositors' funds to finance its activities except for a maximum of 44% during the years studied, while the remaining banks had a balanced approval in most years, despite the excessive reliance on deposits in some years, where the percentage reaches 80%.
- 6- Through the statistical analysis, it was found that the indicators of (capital adequacy and liquidity) despite their natural relationship with the indicators of liabilities towards depositors in the bank, there is no significant impact of these two indicators on the bank's obligations towards its depositors in the commercial economy and the Middle East investment banks, except for the National Bank of Iraq, the effect of the two indicators was strong on the bank's obligations towards depositors.
- 7- It was found that the non-performing loans index had a very small relationship with the bank's obligations towards depositors, except for the National Bank of Iraq, where the impact relationship between the non-performing loans index and the bank's obligations towards depositors was strong.

#### **Second: Recommendations.**

- 1- The necessity of the commitment of commercial banks to the rate set by the Central Bank of Iraq regarding financial indicators, especially (financial sound indicators) as an early warning that reveals potential financial risks before they occur.
- 2- The necessity of drawing up investment and credit policies with a high degree of efficiency in commercial banks so that they can invest the available funds and get rid of unjustified retention of funds and on the other hand, achieve profits.
- 3- The necessity for the Bank of Economy to adopt an efficient credit strategy to avoid the non-performing credit facilities that pose a clear threat to this bank.
- 4- It is necessary to rely on financial performance indicators, especially financial soundness indicators, and act according to them and what is decided by the Central Bank of Iraq to evaluate the bank's work and avoid potential risks.
- 5- The need for commercial banks to conduct financial studies related to financial soundness using all financial indicators, including those that we have not been able to address in this research.

#### **Arabic sources:**

- 1- Bouhrira, Abbas Mustapha Abdellatif (2017), Analysis of Banking Safety Indicators in Algeria. *Algerian Journal of Economic Development*, 4 (2)
- 2- Jawaaid and Mahdi, Samaa Moussa and Sabah Rahim, Indicators of the Financial Soundness of the Authority for the Iraqi Banking System for the Period (2010-2018), *Al-Muthanna Journal of Administrative and Economic Sciences*, Al-Muthanna University, Issue 4, Volume 11, Iraq, 2021.
- 3- Hassan, Zahraa Hussein (2022). Financial Sound Indicators and Their Role in Improving the Performance of the Banking Sector in Iraq. *Journal of Economic, Administrative and Legal Sciences*, Volume (6), Issue (19),
- 4- Al-Shammari, Hussein (2020). Liquidity management in commercial banks. Baghdad: Dar Al-Amal.
- 5- Saleh, Fatima, Principles of Banking. Beirut: Dar Al-Rawafed Cultural Center, 2021
- 6- Ali, Mohamed Hassan (2019). Financial Analysis in Banking Institutions. Amman: Dar Safa,
- 7- Al-Kinani, Taha Abdel Karim (2022). Banking supervision and risk management. Baghdad: Dar Ibn al-Athir,
- 8- Youssef, Rawa Ahmed, The Relationship between Credit Risk and Financial Soundness Indicators of Banks, *Tikrit Journal of Administrative and Economic Sciences*, Vol. 51, No. 41, Iraq.

#### **SOURCES IN ENGLISH**

- 1. Al-Tamimi, H. & Obeidat, S. Determinants of Capital Adequacy in UAE Banks. *Journal of Economics and Finance*, 4(2), 2013.
- 2. Babihuga, R. Macroeconomic and financial soundness indicators: An empirical investigation, 2007.
- 3. Berger, A., & Bouwman, C. How Does Capital Affect Bank Performance During Financial Crises? *Journal of Financial Economics*, 109(1), 2013.
- 4. Diamond, D. W., & Dybvig, P. H. Bank Runs, Deposit Insurance, and Liquidity. *Journal of Political Economy*, 91, 1983.
- 5. IMF. Financial Soundness Indicators: Compilation Guide. International Monetary Fund, 2021.



6. Kadhum,J.H. & Halboos, A.A. Evaluation of the Financial Soundness of the Iraqi Private Banks. *Arab Journal for Scientific Publishing (AJSP)*,2021.
7. Nguyen, H. D. H., & Dang, V. D. Bank-specific determinants of loan growth in Vietnam: Evidence from the CAMELS approach. *The Journal of Asian Finance, Economics and Business*, 7(9),2020.
8. Norman, A. & Isa, C. Financial Soundness and Macroprudential Regulation of Banks in ASEAN-5 Countries. O Springer Nature Switzerland, 2021.
- 9- Pizzutto, G. *The US Financial System and its Crises From the Panic to the 2007 Crash*. London School of Economics, London,2019.
10. Sundararajan, V., Enoch,C., José,A., Hilbers, P., Krueger,R. Moretti,M., Slack, G. *Financial Soundness Indicators: Analytical Aspects and Country Practices*. International Monetary Fund,2002.
11. Volodymyrivna,O.K. *Lending Dynamics as Indicator of Banking Systems Financial Soundness*. *Economics and management*,2014.