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## The Role of Fiscal Soundness on Achieving Financial Stability: A Sample of Private Commercial Banks For 2016-2023

### دور المتانة المالية في تحقيق الاستقرار المالي، عينة من المصارف التجارية العراقية الخاصة للمدة 2016-2023

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### كلية الادارة والاقتصاد / جامعة المستنصرية المستخلص

يهدف البحث إلى معرفة أثر المتانة المالية المقاسة بمؤشر (الربحية، وكفاية رأس المال، والسيولة) على الاستقرار المالي، والتعرف على قوة المركز المالي للمصارف التجارية العراقية الخاصة المدرجة في سوق العراق للأوراق المالية والمتمثلة بمؤشر (Z-SCORE)، ولغرض تحقيق أهداف البحث تم تبني الفرضية الرئيسية (أن للمتانة المالية دوراً إيجابياً على تحقيق الاستقرار المالي) وقد تمثل مجتمع البحث بعينة مكونة من خمسة مصارف تجارية عراقية خاصة ممثلة بـ (مصرف المنصور للاستثمار، ومصرف الائتمان العراقي، والمصرف الأهلي العراقي، ومصرف بغداد، ومصرف الاستثمار العراقي)، وتم الاعتماد على المنهج الوصفي التحليلي للبيانات المالية السنوية المنشورة في هيئة الأوراق المالية للفترة من (2016 - 2023). توصل الباحثون إلى عدد من الاستنتاجات، أبرزها وجود تأثير للقوة المالية في تحقيق الاستقرار المالي، إذ تتمتع بقوة مالية جيدة تتوافق مع النسب المحددة والمعتمدة من قبل البنك المركزي العراقي ولجنة بازل. وقدم الباحثون مجموعة من التوصيات، أهمها ضرورة تركيز المصارف على مؤشرات القوة المالية، والمتمثلة في (الربحية، وكفاية رأس المال، والسيولة)، عند تقييم الأداء، باعتبارها من أكثر المؤشرات تعبيراً عن قوة المراكز المالية للمصارف التجارية.

**الكلمات الرئيسية:** المتانة المالية ، الاستقرار المالي ، Z-SCORE

### Abstract:

The aim of the research is to know the impact of financial strength measured by the index (profitability, capital adequacy, and liquidity) on financial stability, to identify the strength of the financial position of private Iraqi commercial banks listed on the Iraqi Stock Exchange, represented by the (Z-SCORE) index, and to indicate which sample banks were selected. The research is the most stable, and for the purpose of achieving the research objectives, the main hypothesis was adopted (that financial soundness has a positive role on achieving financial stability). The research population was represented by a sample of

five private Iraqi commercial banks, represented by (Al-Mansour Investment Bank, Iraqi Credit Bank, National Bank of Iraq, Baghdad Bank, and Iraqi Investment Bank), and the descriptive analytical approach was relied upon for the annual financial statements published in the Securities Commission for the period From (2016 - 2023). The researchers have reached a number of conclusions, the most prominent of which is the presence of an effect of financial strength in achieving financial stability. The banks in the research sample enjoy financial stability as they have good financial strength that conform to the specified ratios approved by the Central Bank of Iraq and the Basel Committee. The researchers presented a set of recommendations, the most important of which is the need for banks to focus on financial strength indicators, represented by (profitability, capital adequacy, and liquidity), by evaluating performance, as they are among the most expressive indicators of the strength of commercial banks' financial positions.

**Keywords: Financial Soundness, Financial Stability, Z-Score**

### **Introduction**

The banking industry has experienced rapid changes and challenges in recent decades, owing to financial some openness, liberalization of markets and the escalation of financial soundness risks especially after global and regional financial crises that have exposed the vulnerability of many banking systems which not able enough to withstand shocks. In this regard, financial soundness has been considered as one of the main objectives in reflecting status banks have to confront against different risks while keeping their financial positions safe and running their operations efficiently without interruption under unstable economic environment. Soundness is widely accepted as a key measure for evaluating the health of banks in terms of several financial indices like capital adequacy, asset quality, liquidity, profitability and management competence. Together, these indicators help to improve the capacity of banks to absorb losses and restrict contagion from a financial crisis through the banking system. Managing financial stability has thus emerged as one of the guiding principles aiming at achieving financial soundness, and constitutes a strategic objective that is reasonably sought after by the Monetary and Banking Authorities for its main contribution in favor of sustainable economic growth and reinforcing confidence in the banking sector. The problem of financial stability is particularly relevant for emerging countries where commercial banks are confronted with exchange rate instability, fluctuating income, high non-performing loans and susceptibility to economic and political shocks. It has empirically been established that under-capitalized commercial banks engender financial instability with an attendant diminished performance of the financial system and a decline in macroeconomic activities. Based on the above, this paper is intended to investigate the significance of financial soundness in realizing bank stability by focusing on a targeted sample of commercial banks during 2016–2023, which is full with economic and financial swings that make it appropriate for determining how the investigated factors could help banks adopt better financial soundness and its same reflection on enhancing their financial stability. In order to provide decision-makers, banking management, and researchers in the financial and banking fields with both scientific and practical value, the study aims to elucidate the nature of the

relationship between financial soundness and financial stability as well as the degree to which financial soundness indicators contribute to improving the stability of commercial banks.

### **Research methodology**

**1. Research Problem** :The problem of the research lies in the fact that developing countries, including Iraq, suffer from the weakness of the banking system and the heightened risks associated with financial soundness leading to financial instability. The following query might be used to construct the study's problem: "What is the effect of financial soundness on attaining financial stability for the sample of commercial banks that are under study?" The next sub-question follows from this one:

1. Does the research sample's private commercial banks' financial stability change in response to the ratio of capital adequacy indicator?
2. Does the research sample's private Iraqi commercial banks' financial soundness depend on the bank liquidity indicator?
3. How does the financial stability of the sample of private commercial banks relate to the bank profitability variable?

**2. Research Important:**The academically scientific import of this study lies in connecting the financial resilience to the banking practice, particularly under situations where there are several challenges that encounter the banking like changes at economic and financial conditions, lack confidence for banking, increasing levels of credit and liquidity risks. By highlighting how crucial it is to comprehend how financial resilience metrics such as capital sufficiency, asset quality, liquidity, and profitability relate to financial stability metrics in Iraqi commercial banks, the study contributes to the body of knowledge. Doing so will enrich the scientific base for understanding how commercial banks resistant to shocks and their resilience to financial and economic disruptions. The scientific relevance of the study, further, derives from the fact that it tries to close a gap in applied microeconomic studies focusing on banking industry setting by providing an econometric analysis on whether fiscal resilience matters for strengthening financial stability and mitigating banking crises. The outcomes of this study are anticipated to be a qualitative addition to the research literature and could be used as a theoretical and methodological reference for studies dealing with the soundness and profitability of Iraqi commercial banks, their risk management policies, or in order to improve their financial stability.

### **3. Research Objectives**

1. To uncover the impact of financial soundness on achieving financial stability for private Iraqi commercial banks.
2. To measure the impact of profitability in achieving financial stability.
3. To measure the impact of bank liquidity in achieving financial stability.
4. To measure the impact of capital adequacy ratio in achieving financial stability

**4. Research Hypothesis:**The latter starts its pursuit of goals with the fundamental premise that "financial stability is positively impacted by financial health." The following sub-hypotheses are derived from this hypothesis:

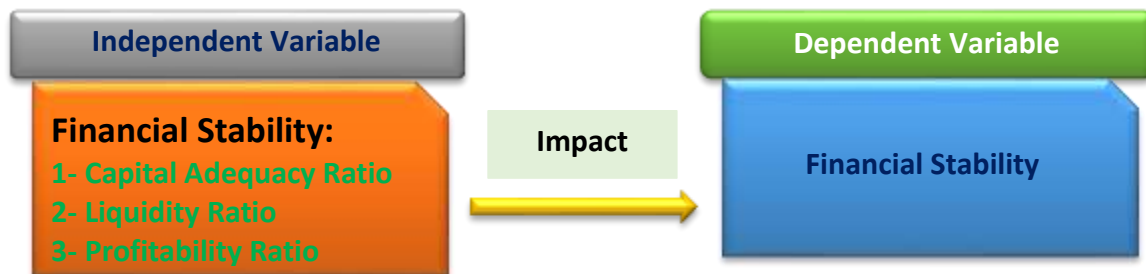
1. Stability benefits from the capital adequacy ratio.
2. Financial stability is positively impacted by the bank liquidity indicator.
3. Financial stability is positively impacted by profitability indicators.

**5. Research Methodology:**The theoretical portion of the investigation was described and explained using the descriptive technique. The study also used the inductive way of reasoning to look at how soundness affects financial stability. The real facts of a selected sample of Iraqi commercial banks have been used to do this, and information will be collected based on financial indicators & ratios extracted from their annual reports and statements. These will then be statistically examined in order to draw broad conclusions. The method is based on tracking partial phenomena (indicators of financial soundness) and how they change over time, using this information to deduce how they relate to financial stability. This inductive reasoning technique will help ensure that reliability results are safe as well as extrapolation possibilities are relevant for the impacts on the banking sector by generating scientifically sound conclusions from the real facts.

**6. Hypothetical research plan:**The study's theoretical framework was created as shown in Figure (1), which shows how the variables under investigation relate to one another. Based on the theoretical frameworks of financial stability and soundness, as well as the study's goals and difficulties, the following theoretical framework was developed to show how the variables under investigation logically relate to one another:

1. Financial soundness is an independent variable that is shown by financial indicators such as the profitability, liquidity, and capital adequacy ratios.
2. The stability of the finances as determined by the Z-SCORE model is the dependent variable.

Figure (1): The Theoretical Framework of the Study



#### Previous studies

**1. Study Afroj (2022)(A CAMEL framework analysis of the banking industry's financial strength in Bangladesh):**The study made a number of assumptions to ascertain the financial health of Bangladeshi banks and the factors that affect it. The most important of them was the belief that Islamic banks in Bangladesh are more financially stable than conventional banks. Bangladesh's banking industry made up the study population, and 35 conventional and Islamic banks from 2010 to 2015 made up the study sample. In addition to using statistical analysis based on linear regression models to ascertain the

degree of impact of the study variables, financial analysis was used for the CAMEL model's indicators (capital adequacy, asset quality, management quality, profitability, and liquidity) in determining the financial strength of banks. The study's most important conclusion was that Bangladeshi Islamic banks outperform conventional banks in terms of performance and financial stability.

**2. Study (Al-Batrani & Metwally, 2022):(The Effect of Financial Soundness Measures on Egyptian Stock Exchange-Listed Banks' Values.):**The study sought to determine how the value of banks listed on the Egyptian Stock Exchange was affected by financial soundness indicators, as determined by the Capital Adequacy and Leverage Ratio, Asset Quality Indicator, Revenue & Profitability Indicator, Management Indicator, and Z-Score Indicator. The value of banks listed on the Egyptian Stock Exchange is statistically significantly correlated with financial soundness indicators as indicated by the aforementioned indicators, according to one hypothesis that was employed to study this. Commercial International Bank, Qatar National Bank Alahli, Housing in addition to Development Bank, Egyptian Gulf Bank, and National Bank of Kuwait – Egypt were the five companies that were listed on the Egyptian Stock Exchange between 2017 and 2019. Multiple linear regression analysis was utilized to examine the hypotheses utilizing the descriptive-analytical technique. The study found that financial soundness metrics have a statistically significant impact on the value of banks that are listed on the Egyptian Stock Exchange.

**3. (Ramskyi et al., 2018)Study (Financial stability of Banks: factor of stability of banking system):**Through a number of hypotheses, the most significant of which was the assumption that there are a number of internal and external factors that directly affect the financial stability of banks, the study sought to evaluate the financial stability of Ukrainian banks as well as investigate the factors influencing it using financial soundness indicators. The study population consisted of the Ukrainian banking sector, while the sample included all Ukrainian commercial banks during the period 2016–2018, using financial analysis of a number of financial and economic indicators. The study reached several conclusions, the most significant of which is that management quality represents the most influential internal factor, as ineffective bank management leads to a deterioration in its financial position. External factors were represented by the level of competition and the country's economic and political conditions. In addition, the results indicated that there are no absolutely financially stable banks in Ukraine, and that external factors have a greater impact on the financial stability of Ukrainian banks.

#### **First axis: Theoretical aspect**

**1.. Concept of Financial Soundness:**Financial soundness refers to a set of indicators used to measure the strength and resilience of financial institutions and their ability to grow over a long period within a competitive financial market environment (AFROJ, 2022:12). The concept of financial soundness is also defined as a condition in which financial indicators such as liquidity, capital adequacy,

profitability, and asset quality remain within certain limits that enable commercial banks to withstand adverse market conditions (Pukhov, 2013:19). It can further be defined through a group of financial indicators that reflect the financial health of the banking sector and evaluate performance, through which it is possible to judge whether banks are financially sound or financially weak over a specific period of time (Razali et al., 2023:17).

**2. Importance of Financial Soundness:** Commercial banks are one of the most important economic sectors, whether in developing or advanced countries. The banking sector represents the nerve center of the financial system, not only in its crucial role in mobilizing and attracting domestic and foreign savings and financing investments but also as the link with the rest of the world. Due to the expansion and diversification of their activities, commercial banks have become the window through which the external world communicates with us. Thus, the development of commercial banks and their enhancement of financial soundness have become a standard for the strength and resilience of countries' economies. Therefore, the importance of financial soundness can be summarized as follows (Abdulkarim, 2022, p. 4)

1. The ability of commercial banks to confront and absorb financial risks through their high financial soundness.
2. The ability of the banking sector to develop its operations and enhance its banking activities, increasing its role as a financial intermediary between borrowers and depositors by acquiring financial soundness.
3. Commercial banks with financial soundness enjoy the capability to achieve high profitability ratios and sustain their various activities.
4. The financial soundness of commercial banks reflects their high capability to provide the necessary liquidity to the country's economy for various economic activities.

**3. Financial Soundness Ratios:** Financial soundness ratios are a set of financial metrics that reflect the strength and resilience of commercial banks, aiming to evaluate financial performance and identify strengths and weaknesses by serving as an early warning tool for the risks facing the banking sector (Almahadin, 2020, p. 224). The most important indicators used to measure financial soundness in the banking sector can be explained as follows:

**3.1. Profitability ratio:** The profitability indicator indicates the bank's ability to generate profits from the funds invested to finance its assets, whether these funds come from investors, borrowers, or both (Al-Shammari, 2016, p. 98). Profitability is of great importance to bank management because it provides a comprehensive view of the efficiency of commercial banks' performance and their ability to sustain and grow. Profitability can be measured through:

• **Return On Equity (ROE):** ROE is one of the most important measures used to gauge the profitability indicator of commercial banks, as it reflects the extent to which all banks achieve the goal they strive for, which is maximizing shareholder wealth. (Fakhri & Qadir, 2016, p. 150). A higher ROE indicates the efficiency of bank management. ROE can be calculated using the following equation:

$$\text{Return On Equity (ROE)} = (\text{Net Income after Tax} / \text{Equity}) * 100\%$$

**3.2. Liquidity ratio:** This indicator demonstrates the bank's ability to meet its short-term cash obligations as they become due. Strong commercial bank liquidity indicators indicate that the banks are able to manage unanticipated fund withdrawals from depositors. Conversely, a low liquidity indication implies that the bank is experiencing difficulties meeting its immediate obligations. (Ziyara, 2020, page 183). Utilizing: is one method for assessing the liquidity indicator.

• **Ratio of Current Assets to Total Assets:** This ratio is one of the most important measurements for assessing bank liquidity. A higher ratio shows that a bank has enough of liquidity and can settle all of its loans. It displays the total amount of liquidity that commercial banks maintain. (Faour, 2019, p. 36). The liquidity can be ascertained using the formula below:

$$\text{Ratio of Current Assets to Total Assets} = (\text{Current Assets} / \text{Total Assets}) * 100\%$$

**3.3. Capital Adequacy ratio:** This is a tool used to evaluate the strength and resilience of commercial banks' financial situations since it is thought of as the first line of defense to protect deposits and shareholders' money and acts as a barrier to hedge against risks (Ongoro & Kusa, 2013, p. 237). The Capital Adequacy indicator is computed using the subsequent financial ratio: **Ratio of Owned Capital to Total Deposits:** This ratio indicates the ability of commercial banks to respond to deposit withdrawals, i.e., meeting depositors' requests when they withdraw their deposits or withdraw a portion of them using owned capital. This ratio should not be less than 10%. (Al-Shahili, 2020, p. 51). The Capital Adequacy can be calculated using the following equation:

$$\text{Capital Adequacy} = (\text{Owned Capital} / \text{Total Deposits}) * 100\%$$

**4. Concept Financial Stability:** Financial stability is the state in which the financial system, including financial institutions, commercial banks, and financial markets, is capable of withstanding all financial shocks and disruptions (Mohamed, 2022, p. 6). It is also defined as the situation in which the financial system can efficiently and effectively perform all its functions with competence and avoid risks if they occur (Malik et al., 2022, p. 1).

**5. Effects of Financial Stability:** The most important effects of financial stability can be summarized as follows: (Rajal & Schoniger, 2020, p. 25; Awad, 2023, p. 52):

**1. Enhancing Banking Confidence :**Financial stability contributes to strengthening the confidence of depositors and investors in the banking system, as stakeholders feel secure about their funds. As a result, deposits rise and commercial banks' funding sources become more stable.

**2. Improving Financial Performance Efficiency:**Economic stability results in a more efficient financial resource management through reduced risk and volatility. This is undoubtedly also manifested in profitability, liquidity and solvency ratios.

**3. Reducing Banking Risks:**By strengthening asset quality and loan-granting practices, financial stability assists banks in reducing a variety of hazards, most notably credit, liquidity, and market risk.

**4. Supporting Sustainability and Growth Capacity:**Financial stability provides a suitable environment for the sustainable growth of commercial banks and enables them to expand their credit and investment activities without exposure to high financial risks.

**5. Enhancing the Intermediary Role of Banks:**Financial stability enables commercial banks to efficiently perform their intermediary role between surplus and deficit units in the economy by mobilizing savings and directing them toward productive investments.

**6. Supporting Macroeconomic Stability :**The financial stability of commercial banks has a positive impact on overall economic stability, as it reduces the likelihood of banking and financial crises and contributes to achieving economic growth and monetary

**6. Indicators of Financial Stability:**There are several indicators that measure the degree of financial stability within financial institutions. These indicators serve as early warning systems for the management of commercial banks and as measures of their financial position, assessing their strength or weakness and their ability to confront crises and disruptions in their operations. (Bouvatier et al., 2018, p. 2). Financial stability can be measured using the following model:

● The quantitative model (Z-SCORE):The quantitative model (Z-SCORE) is considered one of the most important and latest metrics for measuring the financial stability and fragility of commercial banks. It aids in determining whether commercial banks are likely to face financial distress or not. There is an inverse relationship between the probability of bank failure and the value of Z. Financial failure occurs when banks become incapable of meeting their financial obligations towards creditors or when their assets are less than their liabilities. The financial stability can be calculated using the following equation:

$$Z-SCOR = \frac{ROA+E /A}{\sigma (ROA)}$$

Where:

Z refers to the level of financial stability., ROA indicates the return on assets.

E (Equity) refers to equity., A (Assets) refers to assets. ,  $\sigma$  (ROA) indicates the standard deviation of the return on assets.

The Z-SCORE model classifies banks into three categories: [5]

● High-risk banks when ( $Z < 1.81$ )

- Medium-risk banks when  $(2.99 < Z > 1.81)$
- Low-risk banks when  $(Z > 2.99)$

### Second axis: The practical aspect

This axis encompasses financial analysis and graphical presentation of financial indicators, aimed at measuring financial strength and stability. It includes the extracted results for the sample banks during the period (2016-2023) as follows:

**.1. Measurement of Financial Soundness:**The independent variable (financial strength) is measured using three financial indicators (profitability ratio, liquidity ratio, and capital adequacy ratio) as follows:

#### 1.1.Profitability ratios:

1.2.ratio is measured using the most expressive financial ratios, namely:

- Financial Analysis of Return on Equity (ROE):

Through financial analysis of the annual financial reports published by the private commercial banks in the research sample, Table (1) displays the Return on Equity (ROE) percentage as follows:

**Table (1): Return on Equity (ROE) Percentage (%)**

Year / Bank	Mansour Investment Bank	Iraqi Credit Bank	Iraqi Al-Ahli Bank	Baghdad Bank	Iraqi Investment Bank
2016	4.50	1.61	9.88	7.16	3.51
2017	4.60	2.12	1.04	2.67	1.41
2018	7.12	1.78	3.07-	1.56	0.12
2019	2.96	-1.72	3.57	2.67	0.01
2020	2.44	-1.16	6.45	7.29	1.76
2021	2.90	-1.71	8.27	9.70	0.35
2022	4.46	3.74	32.46	15.20	2.62
2023	12.71	5.85	67.94	32.88	10.35
Average	5.21	2.40	16.58	9.89	2.51

Source: Prepared by the researcher based on the annual financial reports published on the website of the private commercial banks sampled for the period(2023-2016)

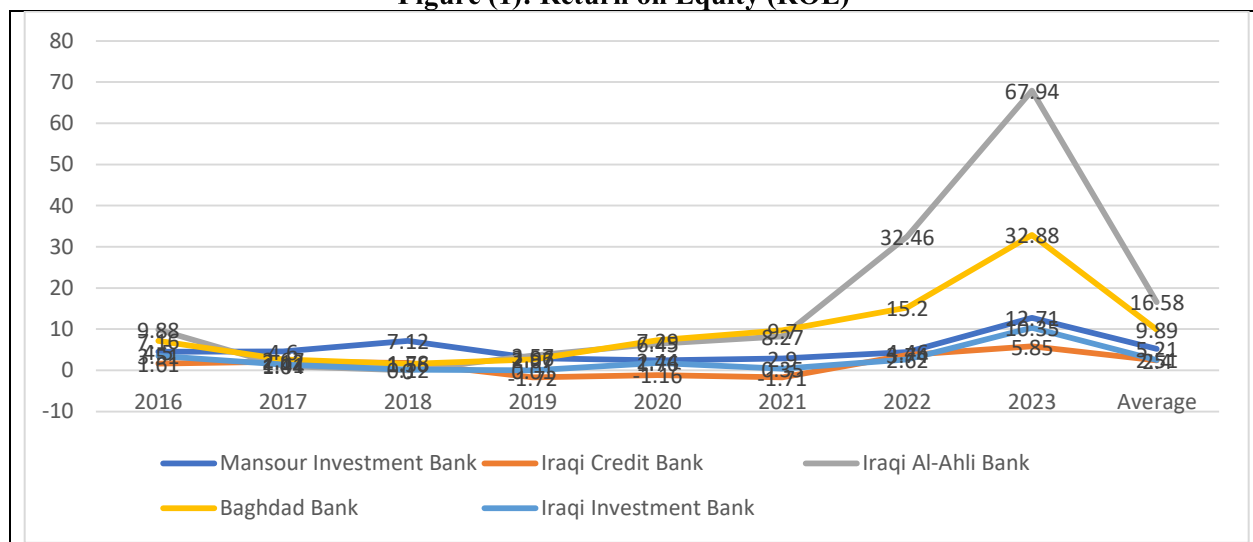
From Table (1), it is noted that the return on equity (ROE) showed volatile behavior throughout the research period. The return on equity for Mansour Investment Bank was 4.50% in 2016, increased to 7.12% in 2018. This increase can be attributed to developments in paid-up capital as well as an increase in reserves and profits transferred from previous years by 17.93% (Mansour Investment Bank Annual Report, 2018, p. 25). It fluctuated thereafter between increases and decreases until stabilizing at 12.71% in 2023. The average growth rate for the return on equity over the period was 5.21%. It was also observed that Iraqi Credit Bank's return on equity was 1.61% in 2016, increased to 2.12% in 2017, then decreased to negative levels during the three years (2019-2020-2021) until reaching -1.71% in 2021. This decrease can be attributed to the COVID-19 pandemic in these years, in addition to the bank's adoption of a very low credit policy (Iraqi Credit Bank Annual Report, 2021, p. 2). It then started to rise until reaching its highest level of 5.85% in 2023. The average return on equity over the research period

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was 2.40%. Regarding the Iraqi Al-Ahli Bank, it was observed that the return on equity (ROE) was 9.88% in 2016, then decreased to -3.07% in 2018. This decrease can be attributed to a decline in shareholders' equity (capital and reserves) by 9.8% (Iraqi Al-Ahli Bank Annual Report, 2018, p. 21). Subsequently, the return on equity increased to 67.94% in 2023. This increase is attributed to the rise in activity profits after tax deduction during this year, with the primary reason being the increase in commissions earned from the foreign exchange buying and selling window (Iraqi Al-Ahli Bank Annual Report, 2023, p. 2). The average return on equity over the research period was 16.58%, the highest rate achieved by the bank compared to other banks. Additionally, it was found that Baghdad Bank's return on equity was 7.16% in 2016, decreased to 1.56%, then gradually increased to stabilize at 32.88% in 2023. The reason for this increase is the rise in net commissions, in addition to the decrease in the bank's operating expenses during this year (Baghdad Bank Annual Report, 2023, p. 81). The average return on equity over the research period was 9.89%.

Furthermore, Iraqi Investment Bank's return on equity was 3.51% in 2016, decreased to 0.01% in 2019. This decrease is attributed to the inability of most bank branches to achieve profits due to the country's economic situation and the limited expansion of its activities (Iraqi Investment Bank Annual Report, 2019, p. 13). It then fluctuated between increase and decrease until stabilizing at 10.35% in 2023. The average return on equity (ROE) during the study period was 2.51%. Figure 1 illustrates the trends in the profitability index, represented by the ROE percentage.

**Figure (1): Return on Equity (ROE)**



**Source: Prepared by the researcher based on the financial data mentioned in Table No. (1)**  
 A comparative profitability analysis of the return on equity (ROE) for the sample banks throughout the period of 2016–2023 revealed that the Iraqi Al-Ahli Bank

achieved the highest profitability among the study sample, with a ROE of 67.94% in 2023. This demonstrates how successfully the bank and its management are generating revenue from each stock unit, hence boosting shareholder value.

However, the data shows that, with a ROE of -1.17%, the Iraqi Credit Bank had the lowest profitability in 2020 out of all the study sample. This indicates the bank's loss for this year, the decline in the bank's activity, and its inability to generate profits due to increased expenses and decreased net income (net loss) compared to shareholders' equity. Additionally, the bank faced challenges posed by the COVID-19 pandemic, which hindered its expansion in investment activities and service development.

**1.2-. Liquidity ratios:**The liquidity ratio is measured using financial ratios that best express it, namely:

- Financial analysis of the current assets to total assets ratio:Through the financial analysis of the annual financial reports published by the private commercial banks in the research sample, Table (2) displays the ratio of current assets to total assets as follows:

**Table (2): Ratio of Current Assets to Total Assets %**

Year / Bank	Mansour Investment Bank	Iraqi Credit Bank	Iraqi Al-Ahli Bank	Baghdad Bank	Iraqi Investment Bank
2016	97.99	99.44	97.10	86.88	91.09
2017	97.98	99.39	97.18	86.22	92.89
2018	98.08	104.56	96.35	96.03	93.24
2019	97.92	98.26	95.95	95.52	96.55
2020	97.69	97.74	96.66	96.05	97.30
2021	96.04	97.49	97.18	96.05	97.78
2022	95.63	48.09	93.48	95.35	96.39
2023	96.98	58.65	97.35	96.10	97.15
Average	97.29	87.95	96.41	93.65	95.30

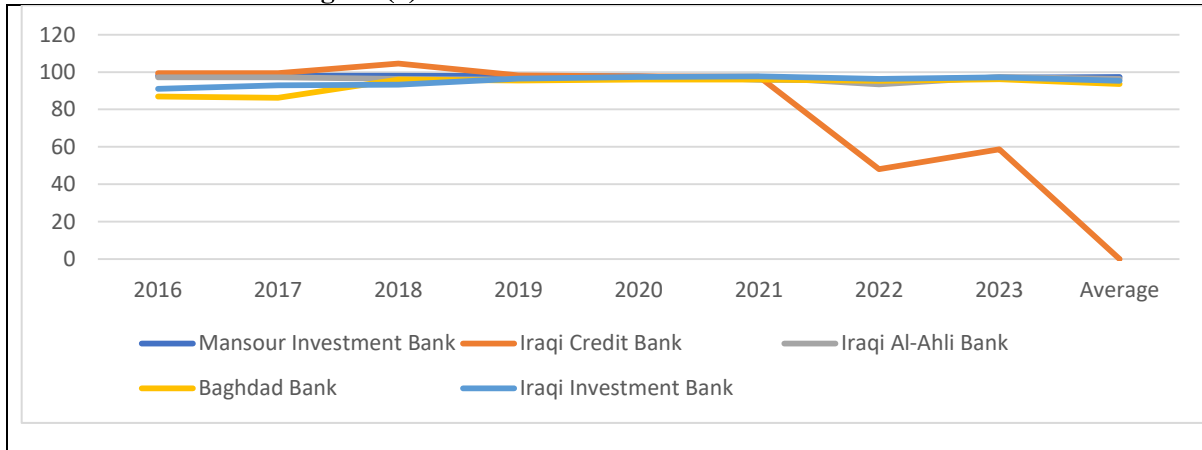
**Source:** Prepared by the researcher based on the annual financial reports published on the website of the private commercial banks sampled for the period(2023-2016)

It is observed from Table (2) that the ratio of current assets to total assets exhibited volatile behavior throughout the research period. For instance, the liquidity ratio represented by the ratio of current assets to total assets for Mansour Investment Bank was 97.99% in 2016, increasing to 98.08% in 2018. This increase can be attributed to the bank's success in balancing its investment side and its maturity, as well as providing cash liquidity to meet various withdrawal demands, including customer withdrawals (Mansour Investment Bank Annual Report, 2018, p. 22). Subsequently, it fluctuated between increase and decrease, stabilizing at 96.98% in 2023. The average ratio of current assets to total assets reached 97.29%, which is the highest among the other banks. Similarly, the liquidity ratio for the Iraqi Credit Bank was 99.44% in 2016, rising to 104.56% in 2018. The reason for this increase is attributed to retaining cash liquidity represented by cash in the fund and an increase in cash value by 4.6% compared to the previous year (Iraqi Credit Bank Annual Report, 2018, p. 23). Subsequently, it gradually decreased to reach 58.65% in 2023. The average ratio of current assets to total assets was

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87.95%, which is the lowest compared to other banks. It is also evident that the ratio of current assets to total assets for the Iraqi Al-Ahli Bank was 97.10% in 2016, decreasing thereafter to 95.95% in 2019. This decline was due to a decrease in cash balances and reserves held at central banks from the previous year by 22.1%, representing cash liquidity in local and foreign currencies deposited in the bank's vaults (Iraqi Al-Ahli Bank Annual Report, 2019, p. 17). Subsequently, it fluctuated between increase and decrease until stabilizing at 97.35% in 2023. The liquidity ratio for this bank, represented by the ratio of current assets to total assets, averaged 96.41%. Additionally, it was observed that the liquidity ratio for Baghdad Bank was 86.88% in 2016, increasing to 96.03% in 2018. This increase was attributed to the bank's assets increasing by 16% from the previous year, providing cash liquidity to meet financial obligations (Baghdad Bank Annual Report, 2018, p. 21). It then fluctuated between increase and decrease until stabilizing at 96.10%. The liquidity ratio for this bank, represented by the ratio of current assets to total assets, averaged 93.65%. Moreover, the liquidity ratio for the Iraqi Investment Bank was 91.09% in 2016, rising to 97.78% in 2021. This increase was attributed to the bank's clear focus on maintaining good liquidity ratios to meet current and future financial obligations, satisfy deposit withdrawals, ensure continued lending to applicants, and avoid liquidity risks (Iraqi Investment Bank Annual Report, 2021, p. 23). It then decreased to 96.39% in 2022 before stabilizing at 97.15%. The ratio of current assets to total assets for this bank averaged 95.30%. Figure (2) illustrates the trends in the liquidity ratio represented by the ratio of current assets to total assets.

**Figure (2): Ratio of Current Assets to Total Assets**



**Source: Prepared by the researcher based on the financial data mentioned in Table No. (2)**

Through a comparative analysis of liquidity, represented by the ratio of current assets to total assets, for the selected banks in the research sample during the period (2016-2023), it becomes evident that the chosen banks in the research sample maintain a high liquidity exceeding the minimum standard set by the Central Bank of Iraq at 30% for the ratio of current assets to total assets. This indicates the strength and resilience of the banking liquidity index, which reflects the high capability of the banks in the study sample to meet all current and future financial obligations. The highest liquidity ratio was

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achieved by the Iraqi Credit Bank among the banks in the research sample, reaching 104.56% in 2018. This indicates its high ability to meet all current and future financial obligations, as well as to satisfy deposit withdrawals and ensure continued lending to applicants. However, it achieved the lowest liquidity ratio for the same bank at 48.09% in 2023. Despite exceeding the ratio set by the Central Bank of Iraq, this ratio is considered unfavorable compared to the rest of the banks in the research sample, indicating a delay and weakness in the bank's liquidity management planning and an increased likelihood of facing a liquidity crisis, in addition to a decrease in the bank's ratio of current assets to total assets

**1.3. Financial ratio of Capital Adequacy:** The capital adequacy ratio is measured using the most expressive financial ratios, one of which is:

- Financial analysis of the ratio of owned capital to total deposits:

Through the financial analysis of the annual financial reports published by private commercial banks in the research sample, Table (3) presents the ratio of owned capital to total deposits as follows:

**Table (3): Ratio of Owned Capital to Total Deposits %**

Year / Bank	Mansour Investment Bank	Iraqi Credit Bank	Iraqi Al-Ahli Bank	Baghdad Bank	Iraqi Investment Bank
2016	36.82	171.55	146.80	34.16	114.09
2017	29.68	218.80	154.67	38.76	115.07
2018	23.99	193.08	135.19	33.92	118.66
2019	24.16	142.60	102.44	34.08	105.94
2020	29.67	135.03	72.22	25.94	98.61
2021	73.28	181.48	25.70	26.69	106.96
2022	46.07	328.60	21.65	26.70	111.71
2023	72.09	190.52	17.25	21.82	84.85
Average	41.97	195.20	84.49	30.25	106.98

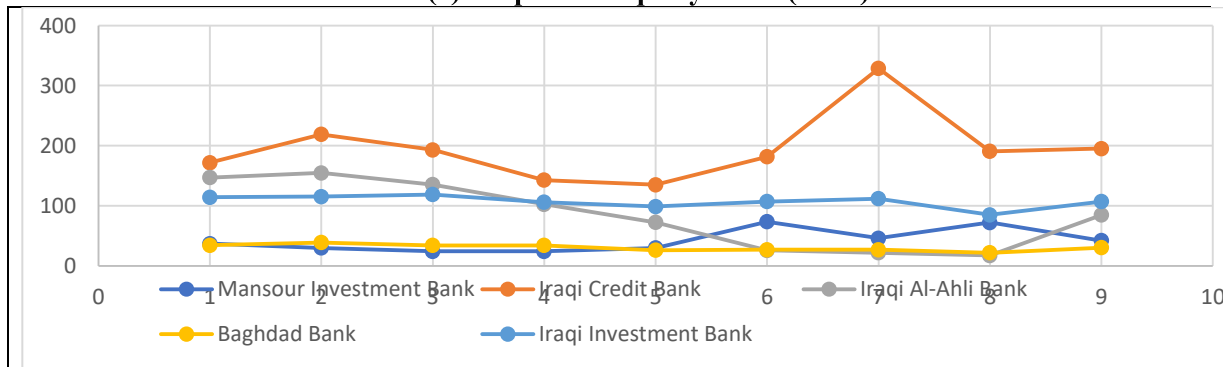
**Source:** Prepared by the researcher based on the annual financial reports published on the website of the private commercial banks sampled for the period(2023-2016)

It is observed from Table (3) that the capital adequacy ratio, represented by the ratio of owned capital to total deposits, exhibited fluctuating behavior throughout the research period. For instance, the ratio of owned capital to total deposits for Al-Mansour Investment Bank was 36.82% in 2016, declining thereafter to 23.99% in 2018. The reason for this decrease can be attributed to the bank's decreased activity due to a reduction in deposit volume resulting from financial panic among depositors, coupled with the security and economic conditions that affected our beloved country (Al-Mansour Investment Bank Annual Report, 2018, p. 39). It fluctuated thereafter between increases and decreases until stabilizing at 72.09% in 2023. The average capital adequacy ratio during the period, represented by the ratio of owned capital to total deposits, was 41.97%. Additionally, the capital adequacy ratio for Iraqi Credit Bank, represented by the ratio of owned capital to total deposits, was 171.55% in 2016, increasing thereafter to 218.80% in 2017. The reason for this increase lies in the absence of uninvested cash surplus, as investments in treasury bills, Iraqi Central Bank deposits, and deposits for certain periods bear no risks and contribute to raising this ratio (Iraqi Credit Bank Annual Report, 2017, p. 206). It fluctuated thereafter between increases and decreases until stabilizing at 190.52% in 2023. The average capital adequacy ratio during the period, represented by the ratio of owned capital to total deposits, was 195.20%, which is the highest compared to other banks. From Table (3), the capital adequacy ratio as measured by owned capital to total deposit was found to

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be fluctuating for the period under review. As an example, for Iraqi Al-Ahli Bank the capital adequacy ratio were 146.80% and 154.67 in 2016 and 2017 respectively. This rise is due to the decrease of required by bank as well as according to CBI A CAR, should be adjusted in order to re-structure a bank's capital structure with respect changes within business environment thus it resulted with higher level of CAR (Iraqi Al-Ahli Bank Annual Report, 2017:73). This then proceeded to sharply decrease into single digits over the next couple of decades until reaching 17.25% in 2023. It is higher than the threshold applied by Iraq Central Bank, and was less when compared with any other criteria in the period studied. The average for the time being of equity to deposits ratio i.e., capital adequacy position was 84.49%. The capital ratio of Bank of Baghdad reached (34.16%) in 2016, and then rose to (38.76%) in 2017. This increase came in line with the bank's policy to manage its capital targets because it has to satisfy accessing sufficient capital according to CBI regulations, gain a better credit rating, generate good capital adequacy ratios that cater for its operations and also can add shareholder value (Bank of Baghdad Annual Report, 2017, p. 49). Since then, it has varied from spikey up and down peaks to 21.82%. The average specific rate (owned capital/total deposits) during the quarter has been 30.25%, which is as well, lowest among banks. Also, the capital default ratio equaled to (owned capital to deposits received) was also 114.09% by 2016 and in sank even lower to 118.66% in 2018. It indicates there is high holding capital adequacy ratio by the LISG at a rate higher than established by Central Bank and demonstrates that index can absorb unexpected changes occurred (Investment bank of Iraq Annual Report, 2018, p. 23). It kept creeping up and down, and finally stabilized at 84.85%. The average (i) Capital Adequacy Ratios in the period was 106.98%, which is the result of the owned capital as a proportion of total deposits made by the panel member banks. (3) Capital adequacy ratio pattern shows it is measured by the ratio between owned capitals without reserves and total deposits.

**Table (3): Capital Adequacy Ratio (CAR)**



**Source: Prepared by the researcher based on the financial data mentioned in Table No. (3)**

Through comparing the capital adequacy ratio of the sampled banks during the period from 2016 to 2023, it becomes apparent that Iraqi Credit Bank achieved the highest ratio among banks for all study years, reaching 328.60% in 2022. This ratio surpasses the prescribed or defined standard of 10% as the minimum ratio of owned capital to total deposits. This indicates the strength and robustness of the bank's capital adequacy ratio, which reflects its high capacity to meet sudden withdrawals

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by depositors from owned capital and to control risks arising from increased deposits at the bank without reaching a state of financial distress. It is also noted that Iraqi Al-Ahli Bank achieved the lowest ratio of capital adequacy ratio among the sampled banks during the period from 2016 to 2023, reaching 17.25% in 2023. Despite exceeding the ratio set by the Iraqi Central Bank, it is considered a poor ratio compared to other sampled banks, indicating the bank's sluggish activity due to a decrease in deposit volume resulting from financial panic among depositors associated with political, economic, and social conditions.

**2. Financial Stability Measurement sample of private commercial banks for the period (2016-2023):** The dependent variable of the research (financial stability) in the banking sector can be measured using the Z-Score model. This model is preferred for measuring financial stability in the banking sector because it indicates whether the bank is likely to face financial distress or not. Financial distress means that the bank is unable to meet its financial obligations to its creditors or that the value of assets in the bank is less than its liabilities, indicating that the bank is close to insolvency and liquidation. Table (4) illustrates the values of the Z-Score for financial stability (in multiples).

**Table (4): Z-Score Values for Financial Stability (Multiples)**

Year / Bank	Mansour Investment Bank	Iraqi Credit Bank	Iraqi Al-Ahli Bank	Baghdad Bank	Iraqi Investment Bank
2016	30.24	36.99	25.36	38.84	24.60
2017	25.61	40.71	26.85	40.13	23.72
2018	22.82	38.62	26.71	37.43	22.13
2019	21.89	33.66	23.60	38.16	23.31
2020	25.51	33.17	20.57	32.38	22.39
2021	45.88	36.63	10.55	33.88	19.23
2022	44.08	45.94	5.23	21.68	18.47
2023	33.53	36.13	8.70	19.49	17.7
Average	31.20	37.73	18.45	32.62	21.44

**Source:** Prepared by the researcher based on the annual financial reports published on the website of the private commercial banks sampled for the period(2023-2016)

Table (4) illustrates the values of the Z-Score for financial stability. It is noted from the table that the financial stability index measured using the Z-Score model for the sampled banks during the period (2016-2023) exhibited fluctuating behavior throughout the research period. For instance, the Z-Score for Mansour Investment Bank was 30.24 in the beginning of the research period in 2016, then decreased to 21.89 in 2019, attributed to an 8.7% decrease in equity. Subsequently, it fluctuated until stabilizing at 33.53 in 2023. The average Z-Score throughout the research period was 31.20. Similarly, the Z-Score for Iraqi Credit Bank was 36.99 in 2016, increased to 40.71 in 2017 due to a rise in net profit after tax from 4,943 billion dinars in 2016 to 6,707 billion dinars in 2017. Then, it fluctuated until reaching its peak in 2022 at 45.94, attributed to the bank's focus on maintaining good profitability ratios through optimal utilization of its assets to achieve higher profits and sustain its various banking activities. It stabilized thereafter at 36.13 in 2023. The average Z-Score throughout the research period was 37.73.

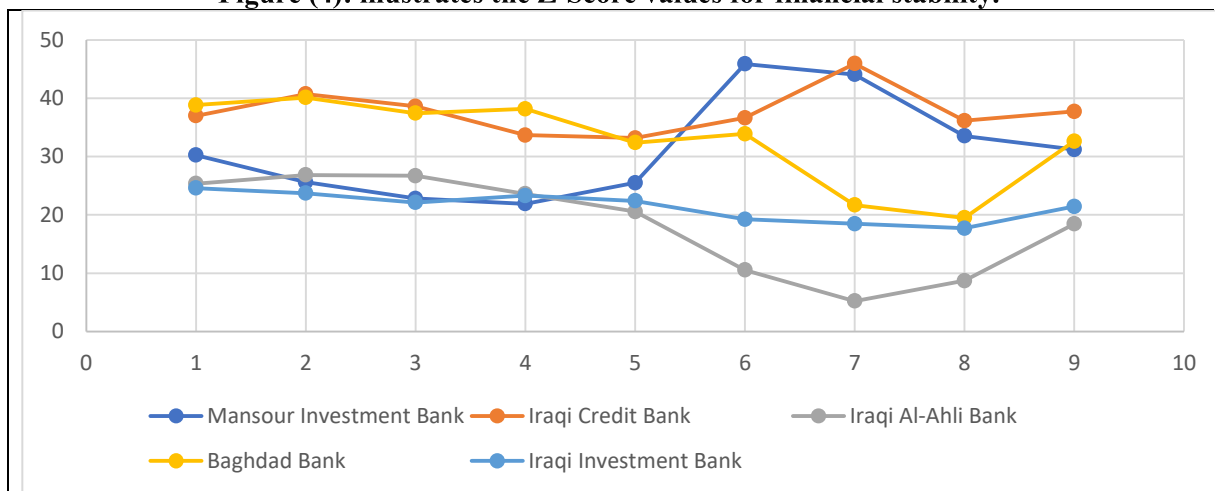
Moreover, the Z-Score for Al-Ahli Bank of Iraq was 25.36 in 2016, increased to 26.85 in 2017 due to an increase in capital adequacy levels. Then, it decreased to its lowest level of 5.23 in 2022 before rising again to 8.70 at the

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end of the study period. The average Z-Score throughout the research period was 18.45. It was observed that the Z-Score value for Baghdad Bank was 38.84 at the beginning of the research period in 2016, and then rose to 40.13 in 2017, which is its highest level during the research period. This increase was attributed to the bank's development of services, expansion of its operations, and opening of new bank branches, leading to increased profitability and consequently an increase in the return on assets (ROA), which resulted in an elevation of the Z-Score. It then varied until 2023, when it stabilized at 19.49. The average Z-Score throughout the research period was 32.62.

Similarly, the Z-Score value for Iraqi Investment Bank was 24.60 at the beginning of the research period in 2016. It gradually decreased to its lowest level of 17.7 at the end of the study period in 2023. The reason for this gradual decline is attributed to the instability in capital adequacy and the return on assets, which is evident when the standard deviation of return on assets increases. The average Z-Score throughout the research period was 21.44. Figure (4) illustrates the trends of the financial stability index and the corresponding Z-Score values for financial stability (in multiples).

**Figure (4): illustrates the Z-Score values for financial stability.**



**Source: Prepared by the researcher based on the financial data mentioned in Table No. (4)**

Through comparing the Z-Score index for financial stability (in multiples) for the sampled banks during the period from 2016 to 2023, it becomes evident that the Iraqi Credit Bank achieved the highest percentage of the Z-Score for financial stability (in multiples) among the banks for all the study years, reaching 45.94% in 2022. This achievement can be attributed to the bank's focus on maintaining a good percentage of profitability indicators by optimally utilizing its assets to achieve profits and continue its banking activities. It was also noted that the Iraqi Al-Ahli Bank attained the lowest percentage of the Z-Score for financial stability (in multiples) among the sampled banks during the period from 2016 to 2023, reaching 37.73% in 2022. This percentage is considered poor compared to the other sampled banks, indicating the bank's weakened activity due to a decrease in deposits, which was a result of financial panic among depositors associated with political, economic, and social conditions.

**3. The Role of Financial soundness in Achieving Financial Stability:** After analyzing the indicators of financial resilience and stability, and as a continuation of the financial analysis discussed for these two variables, it is necessary to clarify the relationship between them in order to reach the most important conclusions and recommendations for this research. From observing Tables (1, 2, 3), it is noticeable that the indicators of financial resilience (profitability, capital adequacy, and liquidity) generally played a prominent role among other factors in enhancing the stability of all private commercial banks in the study sample. It was evident that the Iraqi Credit Bank achieved the highest Z-Score value among the other sampled banks, reaching a value of 37.73 times as the average for the study period. It can be said that the aforementioned financial resilience indicators contributed to that value, especially the liquidity indicator, which also enjoyed the highest percentage as an average compared to other sampled banks, reaching 195.20% as the average for the study period. This Z-Score value for the Iraqi Credit Bank significantly exceeds the safe standard value for this indicator, which is more than 2.99 times. This means that this bank's profitability (37.73 times) must decrease from its standard deviation so that its equity can be depleted enough to say that this bank will face failure or will be unable to meet its financial needs or repay its obligations. As for the Iraqi Al-Ahli Bank, which also achieved the lowest Z-Score value among the other banks in the study sample, reaching 18.45 times as the average for the study period, it is noteworthy that despite this, this bank falls within the safe "green zone," characterized by low risk, and it is financially stable as long as that value is higher than the standard value of the indicator (more than 2.99 times). It is also observed that this bank's financial resilience indicators also contributed to achieving this Z-Score value, especially the profitability indicator, where this bank achieved the highest rate compared to other banks in the study sample, reaching 16.58% as the average for the study period. Additionally, the capital adequacy ratio in this bank was also the highest compared to other banks, except for the Mansour Investment Bank. The value achieved by this bank for the Z-Score indicator means that its profitability must decrease by 18.45 times from its standard deviation so that its equity can be depleted enough to say that this bank will face bankruptcy or financial failure and will be unable to meet its financial obligations. The following tables illustrate the relationship between the average financial soundness indicators and the financial stability index.

**Table (5) Averages of Financial Strength Indicators and Financial Stability Index**

	average	Financial Soundness(x)			Financial Stability (y)
	Bank	average ROE	average Ratio of Current Assets to Total Assets	average Ratio of Owned Capital to Total Deposits	Average Z-Score Values for Financial Stability
1	Mansour Investment Bank	5.21	97.29	41.97	31.20
2	Iraqi Credit Bank	2.40	87.95	195.20	37.73
3	Iraqi Al-Ahli Bank	16.58	96.41	84.49	18.45
4	Baghdad Bank	9.89	93.65	30.25	32.62
5	Iraqi Investment Bank	2.51	95.30	106.98	21.44

**Source:** Prepared by the researcher based on Tables 1, 2, 3, and 4

It is evident from the above table that there is a clear variation among the private commercial banks included in the study sample in terms of the average values of financial soundness indicators, namely profitability (ROE), liquidity, and capital

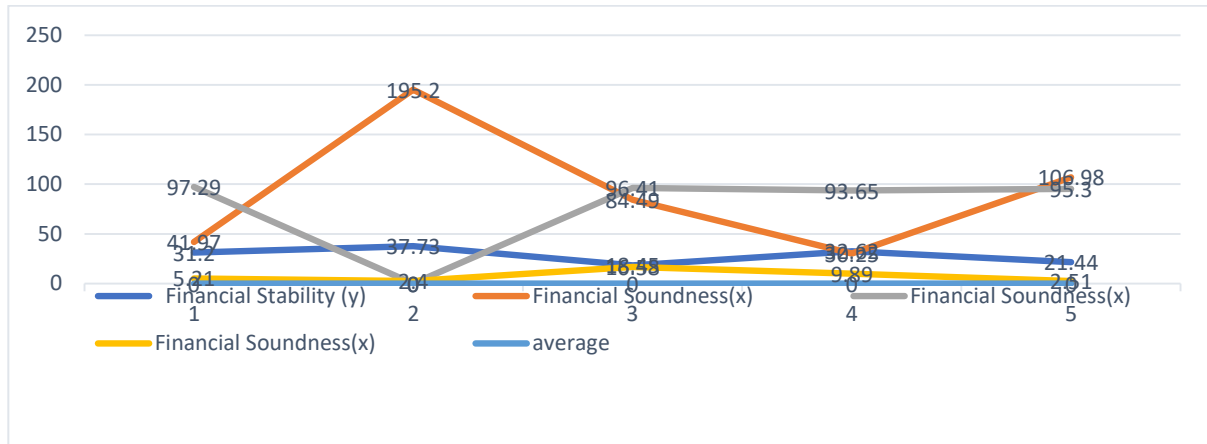
adequacy. This variation was reflected in the levels of financial stability measured by the Z-Score index. Some banks in the study sample exhibited high levels of financial stability, while others recorded lower levels. This can be attributed to differences in their ability to manage financial resources and achieve a balance between profitability and risk. Table (5) above shows that the Iraqi Al-Ahli Bank achieved the highest average return on equity, amounting to (16.58%). However, its financial stability index reached (18.45), which is among the lowest values compared to the other banks. This indicates that high profitability alone is not sufficient to achieve financial stability unless it is supported by adequate levels of liquidity and capital adequacy. In contrast, Baghdad Bank recorded an average profitability of (9.89%), which is lower than that of Al-Ahli Bank, yet its financial stability index reached (32.62), a significantly higher value. This suggests that moderate and balanced profitability may contribute more effectively to financial stability than high profitability that is not accompanied by comprehensive financial soundness. These results indicate that the relationship between banking profitability and financial stability is not fully linear, but rather depends on the bank's ability to utilize profits to strengthen its capital base and reduce risks.

The results also show that Mansour Investment Bank recorded the highest ratio of liquid assets to total assets, reaching (97.29%), accompanied by a financial stability index of (31.20). This reflects the positive role of high liquidity in enhancing the bank's ability to meet short-term obligations. Meanwhile, the Iraqi Credit Bank recorded the lowest liquidity ratio at (87.95%), yet achieved the highest financial stability index, amounting to (37.73). This is attributed to the high capital-to-deposits ratio, indicating that the impact of liquidity on financial stability becomes stronger when combined with adequate capital adequacy. It is therefore evident that higher liquidity contributes to enhancing financial stability; however, its effect becomes more effective when supported by other soundness indicators, particularly capital adequacy.

It is also observed that the Iraqi Credit Bank recorded the highest ratio of equity to total deposits, reaching (195.20%), and simultaneously achieved the highest financial stability index of (37.73). This reflects a clear positive relationship between capital adequacy and financial stability. Conversely, Baghdad Bank recorded the lowest capital adequacy ratio at (30.25%), yet its financial stability index reached (32.62), which is relatively good. However, it remains lower than that of banks with stronger capital bases, confirming the crucial role of capital in supporting long-term financial stability. These results confirm that capital adequacy is the most influential indicator in achieving financial stability, as it represents the primary line of defense against banking risks. Figure (5) illustrates the trajectory of average financial soundness indicators and the financial stability index.

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**Figure (5) The trajectory of average financial soundness indicators and the financial stability index**



**Source: Reliance settings on Table No. (5)**

Accordingly, private commercial banks that combine appropriate levels of profitability, liquidity, and capital adequacy achieve higher values of the financial stability index, while an increase in one indicator without the others is not sufficient to attain high financial stability. Based on the above, financial stability is the result of the combined interaction of financial soundness indicators rather than the reflection of a single indicator. This supports the study's hypothesis that there is a positive relationship between financial soundness and financial stability in private commercial banks.

### Conclusions and Recommendations

#### 1. Conclusions

1. The study results demonstrated the significance and effectiveness of financial resilience indicators in measuring the financial strength of these banks, identifying their strengths and weaknesses, and evaluating their performance, allowing judgment on whether a bank is financially strong or weak over a certain period.
2. It became evident that all private commercial banks in the study sample exhibit financial soundness ? measured by indicators such as profitability, capital adequacy, and liquidity. None of these banks showed financial resilience ratios lower than those set by the Central Bank of Iraq and the Basel Committee.
3. All of the study sample's banks exceeded the Basel Committee's (10.5%) and the Central Bank of Iraq's (12.5%) minimal restrictions for outstanding capital adequacy ratios, indicating that they complied with financial soundness regulations.
4. Because the research sample banks' liquidity ratios were higher than the Central Bank of Iraq's minimal threshold of 30%, all of them satisfied the liquidity criteria.
5. The quantitative model's Z-Score was higher than the necessary minimum ratio of 2.99 times, suggesting that all of the study sample's private commercial banks are sound financially.

#### 2. Recommendations

1. Since financial resilience measures like profitability, capital adequacy, and liquidity correctly represent the state of commercial banks' finances, they ought to be given top priority in assessments of bank performance.

2. It is critical to look into the reasons behind the declining earnings of the research sample institutions in order to increase profitability. You may draw in more customers and boost sales by staying current with financial services.
3. Banks should increase their role in providing credit under favorable conditions to borrowers, aiming to maximize their profits through the interest earned on these loans.
4. It is necessary to reduce the capital adequacy ratio for the commercial banks in the study sample and adhere to the ratios set by the Central Bank of Iraq (12.5%) and the Basel Committee (10.5%).
5. It is imperative to reduce the liquidity ratio for the banks in the study sample to the ratio set by the Central Bank of Iraq (30%), as excessive accumulation of liquidity in bank reserves hinders investment of these funds, leading to decreased profits.
6. Adoption of the quantitative model (Z-Score) is recommended for testing financial stability and evaluating banks' financial positions to identify whether banks are financially stable or fragile, and to work on strengthening their financial stability by addressing their weaknesses.

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### Financial data appendix published in the annual reports of commercial banks (research sample)

Data from Al Mansour Investment Bank (million dinars)						Bank
Net income after tax	Property rights	Total assets	Total deposit	Current asset	Equity	Year/index
12,915	287,534	1,104,063	781,009	1,081,829	250,000	2016
13,350	290,096	1,316,451	977,535	1,289,879	250,000	2017
21,164	297,286	1,550,293	1,239,309	1,520,556	250,000	2018
8,278	279,661	1,461,478	1,157,608	1,431,149	250,000	2019
7,005	286,554	1,278,867	965,702	1,249,375	250,000	2020
8,177	280,081	697,917	382,193	670,245	250,000	2021
12,651	283,054	736,839	375,552	470,548	350,000	2022
39,647	311,845	1,135,357	442,071	529,936	350,000	2023
Data from the Iraqi Credit Bank (million dinars)						Bank
Net income after tax	Property rights	Total assets	Total deposit	Current asset	Equity	Year/index
4,942	306,898	507,699	178,894	502,854	250,000	2016
6,707	315,465	476,618	144,170	355,437	250,000	2017
5,597	313,498	497,694	162,366	491,505	250,000	2018
(5,121)	297,126	522,536	208,358	511,448	250,000	2019
(3,427)	293,699	527,045	217,501	513,850	250,000	2020
(4,938)	288,761	466,751	159,111	454,363	250,000	2021
10,743	299,504	406,730	91,144	396,418	250,000	2022
17,530	287,034	507,729	150,657	498,563	250,000	2023
National Bank of Iraq data (million dinars)						Bank
Net income after tax	Property rights	Total assets	Total deposit	Current asset	Equity	Year/index
23,501	237,838	578,874	162,017	562,086	250,000	2016
2,965	285,719	603,980	184,729	586,953	250,000	2017
(7,912)	257,849	525,757	190,731	506,584	250,000	2018
9,164	256,641	632,802	250,526	607,189	250,000	2019
19,828	307,294	893,205	425,501	863,358	250,000	2020
26,122	315,862	1,821,341	1,228,801	1,769,970	250,000	2021
27,538	328,455	2,416,088	1,534,000	1,968,000	250,000	2022
190,003	500,049	3,982,984	2,237,000	2,915,000	400,000	2023
Baghdad Bank data (million dinars)						Bank
Net income after tax	Property rights	Total assets	Total deposit	Current asset	Equity	Year/index
20,245	282,821	1,200,424	827,926	1,042,904	250,000	2016
7,404	276,942	1,090,152	714,522	939,879	250,000	2017
4,152	266,742	1,113,538	786,385	1,069,321	250,000	2018
7,298	273,641	1,132,744	803,011	1,081,970	250,000	2019
20,300	278,435	1,419,528	1,073,265	1,363,437	250,000	2020
29,980	309,129	1,539,808	1,158,326	1,478,923	250,000	2021
53,154	349,626	1,724,199	1,310,150	1,310,000	250,000	2022
155,781	473,718	2,748,497	2,181,395	2,181,000	250,000	2023
Data from the Iraqi Investment Bank (million dinars)						Bank
Net income after tax	Property rights	Total assets	Total deposit	Current asset	Equity	Year/index
10,179	289,792	577,890	254,003	526,421	250,000	2016
3,995	283,082	573,706	246,005	532,916	250,000	2017
7,381	283,101	607,084	238,583	566,029	250,000	2018
6,431	260,626	529,829	246,005	511,544	250,000	2019
9,450	265,274	571,480	269,018	556,062	250,000	2020
10,395	263,138	650,958	246,011	636,519	250,000	2021
13,087	284,362	752,255	2,032,915	2,448,196	250,000	2022
20,324	317,069	958,172	2,716,884	3,287,512	250,000	2023