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The effect of financial robustness indicators on stock returns: An analytical study of a sample of Iraqi private banks listed in the Iraqi Stock Exchange for the period (2005-2021)

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A R T I C L E I N F O

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Abstract: The research aims to demonstrate the effect of financial robustness indicators on stock returns in the banking sector. The research sample consisted of eight commercial banks listed in the Iraq Stock Exchange through their annual reports published in the Iraq Stock Exchange. These banks are (Baghdad, Iraqi Commercial, Investment, Sumer, The Middle East, the Iraqi National Bank, the Credit, The Commercial Gulf). For the period 2005-2021, using the statistical program [Microsoft Excel vs.10, Eviews V.12]. The research extracted a set of results, including the presence of a significant effect of indicators of financial robustness in Stock returns with the existence of a close relationship between financial robustness and stock returns, as it is not possible to achieve a rise in stock returns without the availability of financial robustness. The research concluded that the commercial banks, the research sample, vary in indicators of financial robustness. In light of this, the research came out with a number of recommendations, the most important of which is the need to adhere to measuring financial robustness indicators issued by the authorities concerned with banking guidance.

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تأثير مؤشرات المتانة المالية في عوائد الأسهم: دراسة تحليلية لعينة من المصارف العراقية الخاصة المدرجة في سوق العراق للأوراق المالية للفترة (2005-2021)

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المستخلص

يهدف البحث إلى بيان تأثير مؤشرات المتانة المالية في عوائد الأسهم في القطاع المصرفي، وتكونت عينة البحث من ثمان مصارف تجارية مدرجة في سوق العراق للأوراق المالية من خلال تقاريرها السنوية المنشورة في سوق العراق للأوراق المالية وهذه المصارف هي (بغداد، التجاري العراقي، الاستثمار، سومر، الشرق الأوسط، الاهلي العراقي، الائتمان، الخليج التجاري) للمدة الزمنية 2005-2021، باستخدام البرنامج الاحصائي [Microsoft Excel vs.10، Eviews V.12]، وقد خرج البحث بمجموعة من النتائج منها وجود أثر ذو دلالة معنوية لمؤشرات المتانة المالية في عوائد الأسهم بوجود علاقة وثيقة بين المتانة المالية وعوائد الأسهم اذ لا يمكن تحقيق ارتفاع بالعوائد الأسهم من دون توفر المتانة المالية، وتوصل البحث الى ان المصارف التجارية عينة البحث تتباين في مؤشرات المتانة المالية وفي ضوء ذلك خرج البحث بعدد من التوصيات أهمها ضرورة الالتزام بقياس مؤشرات المتانة المالية الصادرة من الجهات المختصة بالإرشاد المصرفي.

الكلمات المفتاحية: المتانة المالية، عوائد الاسهم.

Introduction

Recent decades have witnessed intense competition in all economic sectors, including the banking sector, which has given investors multiple options for investment, so investors should constantly evaluate stock returns to see the feasibility of investing in these stocks, as these indicators measure the financial robustness of banks. Which reflects positively on stock returns, and accordingly the research will address the research methodology and concepts of indicators of financial robustness of banks and stock returns, as well as the practical side of the research and the most important conclusions and recommendations.

Methodology:

1. **The research problem:** In light of the intense competition that the business environment is witnessing at the present time in various sectors in general and in the banking sector in particular, interest in the financial robustness of banks has become one of the most important indicators that are considered by direct stakeholders from the current and prospective investors to judge the returns Stocks, so the research problem lies in the extent to which the indicators of the financial robustness of banks affect the returns of stocks,

and accordingly the returns of stocks are affected directly by the indicators of the financial robustness of banks, and the research problem lies in the following question:

A. Do the commercial banks, the research sample, differ in the level of financial strength?
B. Do the commercial banks, the research sample, differ in the level of their returns?
C. Do the commercial banks, the research sample, suffer from a decline in stock returns during the research period?
D. Is there a statistically significant effect of financial robustness indicators on stock returns?

2. **The research importance:** The importance of research is highlighted by the following:

A. Provide a theoretical framework on the concepts of financial robustness indicators and the concept of stock returns.
B. Shedding light on indicators of the financial robustness of banks and their importance in predicting stock returns, since these indicators show the bank's efficiency and effectiveness, which reflects positively on stock returns in terms of increasing earnings per stock or increasing its price.
C. Statement of the extent to which banks disclose the search for indicators of financial strength.
D. The importance of explaining the causes of low stock returns.

3. **Research objectives**: The research aims to:

A. Analyzing indicators of financial robustness and bank stock returns and indicating the extent of their rise, fall or fluctuation.
B. Measuring the impact of financial robustness indicators on stock returns.
C. Increasing the awareness of the administrative leaderships of banks of the importance of banking strength indicators on stock returns.

4. Research Hypothesis: In light of the research questions, the research hypotheses took the following form:

A. The first main hypothesis: - The commercial banks, the research sample, do not vary in the level of financial strength.
B. The second main hypothesis: - The commercial banks in the research sample do not vary in the level of their returns.
C. The third main hypothesis: - The research sample commercial banks do not suffer from a decrease in stock returns during the research period.

D. The fourth main hypothesis: - There is no statistically significant effect of financial robustness on the returns of banking stocks.

5. **Research community and sample :**The research community was represented by accreditation and access to all Iraqi commercial banks listed in the Iraq Stock Exchange. The research sample was selected, which included eight banks, namely: (Baghdad, Iraqi Commercial, Investment, Sumer, Middle East, National Iraqi, Credit, Commercial Gulf) for the period of time 2005 - 2021

First) Financial robustness

1. **The concept of financial robustness**: Financial robustness is described as evaluating the various activities and businesses of banks, which are conducted by monitoring risks, to determine the strength of the financial position of banks and to avoid crises. (Mishkin, 2000: 523). Moody's rating agency indicates that financial robustness indicators exclude some external credit risks and credit support elements that are dealt with by bank deposit ratings, as the bank's financial robustness ratings do not take into account the possibility that the bank will receive such external support, nor do they address the risks arising from the procedures. Sovereign factors that may interfere with the bank's ability to fulfill its obligations in the local or foreign currency, and the factors that are taken into account when allocating the bank's financial robustness ratings include elements specific to the bank such as financial fundamentals, franchise value, business diversification and assets, although the bank's financial robustness ratings exclude factors. However, it takes into account other risk factors in the bank's operating environment, including the strength of the economy and its expected performance. As well as the structure and relative fragility of the financial system, and the quality of banking regulation and supervision. (Moody's, 2006: 3). According to the International Monetary Fund, financial robustness indicators are a warning guide and indicators for analyzing, evaluating, and following up the strength and weakness of the banking system in order to support stability and identify risks that may result in the worst-case failure of the banking sector (FMI, 2006: 108). And stakeholders such as investors usually build and creditors make their financial decisions on the ratings, and there are many financial ratings, including the rating of the financial robustness of the bank. And the rating agency, such as Moody's, determines the rating of the financial robustness of the bank and defines it as the opinion on the fundamental safety and security of the bank, the financial robustness

ratings of banks have gained wide popularity. Especially after the recent financial turmoil Rating agencies have been criticized for their ratings and their failure to predict bank insolvency (Öğüt, et al., 2012: 632-633).

2. **The importance of financial robustness indicators**: Financial robustness indicators have a set of points that represent the importance of these indicators in the business environment, which are as follows: (Moody's, 2006: 6)

A. Banks in developing markets face a significantly different set of challenges than banks in mature (advanced) markets. Therefore, the importance of financial robustness indicators emerges from two aspects:

- ❖ The aspect of the business environment in mature (developed) markets: Financial robustness indicators increase the effectiveness of financial reports in general, which leads to banks operating in developed markets benefiting in general from more effective financial reports and regulatory environments that allow external observers to give more weight to the available financial data disclosed in making credit decisions.
- ❖ The aspect of the business environment in developing markets: Developing markets are characterized by a high degree of economic volatility, in addition to the possibility of weak regulatory oversight and less reliable financial reports. In addition to the relative risk of relying heavily on the current financial figures disclosed for banks in developing markets, which gives greater importance to financial robustness indicators for different stakeholders.

B. Financial robustness indicators are of high importance because banks are evaluated and classified on the basis of their financial robustness.

C. **Indicators of measuring financial robustness**: Financial robustness is usually measured according to the indicators below: (Shahzadi, et al., 2020: 2128: 2136) (Sucipto & Hasibuan, 2020:44).

- ❖ **Capital adequacy ratio**: One of the measures used to measure the bank's financial robustness is the capital adequacy ratio, as this ratio indicates the ability of the bank's capital to cover unforeseen circumstances (Irawati, et al., 2019: 23), and it can be measured by the following equation: (Shahzadi, et al., 2020: 2128: 2136)

  $$capital\ adequacy = Shareq\ uity \div total\ assets \ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

- ❖ Leverage ratio: Financial leverage refers to the effects that fixed costs have on the returns earned by shareholders. By "fixed costs" we mean costs that do not rise and fall with changes in bank sales (Gitman & Zutter, 2012: 508),

and can be measured according to the following equation: (Sucipto & Hasibuan, 2020: 44)

Leverage = Total Debt / Total assets …….(2)

❖ The rate of return on assets: The financial ratio plays an important role in estimating the company's financial condition and performance. And that the return on assets ratio is one of the most useful measures for assessing the financial robustness of the company and its efficiency in the use of its resources (Pandey & Diaz, 2019: 134). The return on assets reflects the management's ability to reap profits from the bank's assets (480: Aissa & Goaied, 2016), and (Botchkarev & Andru, 2011: 247-248) indicate that the ROA index is one of the most prominent indicators used for several reasons, including:

- It is easy to understand and apply.
- It encourages detailed financial analysis.
- Focuses on the most important criteria for banks, namely profitability, and encourages cost efficiency.
- It provides logical outputs and depends on the accounting records, and the data on which this indicator depends is available in the accounting system and official documents. It allows comparison of profitability between different institutions.
- Enhancing transparency by relying on official financial statements and evaluating them, and encouraging accountants, administrators and the various relevant work teams to cooperate.

This indicator can be calculated using the following equation: (Shahzadi, et al., 2020: 2128: 2135).

$ROA = net\ income \div average\ total\ assets$ ……(3)

❖ The growth rate of bank deposits: The growth of deposits is an important indicator of the success and efficiency of any bank and expresses the extent of its ability to mobilize society's resources in the form of bank deposits, but resource mobilization is a very difficult task because it indicates the bank's efficiency in attracting deposits (Mahmood, et al., 2020: 3). The following factors affect the mobilization of resources by depositing customers in commercial banks (Ambe, 2017: 57).

- Number of clients: The dual goals of commercial banks, i.e., obtaining deposits and making loans, cannot be achieved without people's good banking habits. In addition, the number of deposit accounts is also very important as it ensures that the probability of account holders withdrawing

cash at the same time decreases as the number of deposit accounts increases. As a result, it creates an advantage for banks in terms of increased ability to provide loans.

- Savings interest rate (deposit rate): One of the most effective factors for making a deposit decision in the banking system is the interest rate, since the interest rate is an attractive factor for bank deposits.
- The number of bank branches: the more the number of bank branches increases, the more this contributes to mobilizing the community's resources and, as a result, a steady increase in the growth of deposits .

The deposit growth rate is measured by the difference between the total deposits in the current year and the total deposits in the previous year divided by the total deposits in the previous year. The equation can be written in the following form (Pasaribu & Mindosa, 2021: 105).

Customer deposit growth = t**he difference between deposits in year t and deposits in year t**−1 / **deposits in year t**−1 …….(4)

❖ The growth rate of bank loans: The facilities provided by banks are the loans granted to others, as many studies indicate that excessive growth in loans leads to a decrease in its financial stability and as a result the weak financial robustness of this bank (Pasaribu & Mindosa, 2021: 95). The growth rate of facilities can be measured by the following equation:- (Pasaribu & Mindosa, 2021: 105).

Loan growth=The difference between bank loans in year t and bank loans in year t-1/Bank loans in year t-1.....(5)

Second) stock returns

1. **The concept of stock returns**: Stock returns are described as the amount or percentage of profits achieved from investment or the stimulus and equivalent for each investment made by the investor. And it expresses the ability of the assets to achieve income expressed by the rate of return, and this ratio reveals the profitability of the bank from its operational and non-operating operations. Or it is expressed as the profit or loss resulting from investing in shares during a specific period of time (Gangadhaw, 2006: 238), or it is the cash flows resulting from investing in an asset (Assan & Thomas, 2013: 76). As for (Violita & Soeharto, 2019: 112) he defined it as the income that shareholders get as a result of their investment in certain companies, and without it, investors will not invest, because stocks that have a high rate of return will encourage investors to invest and increase capital flows. While stocks whose returns are uncertain and difficult to predict will cause

investors to turn away from investment, and (Solihati, 2019: 166) indicated that the stock return is the amount of income received Investors for their investments in certain companies. The return can be in the form of an achieved return that has occurred or an expected return that has not yet occurred but is expected to occur in the future. And the return is often referred to as the total return, as the total return is the total return of the investment in a certain period. The stock return consists of:- (Violita & Soeharto, 2019: 112)

A. The distributions obtained by the shareholder from the annual profits achieved by the bank and decided to be distributed among the shareholders.
B. Capital gains resulting from the difference between the value of buying a stock and the value of selling it at a later date.

2. Types of stock returns: The stock return consists of several types, as follows: (Solihati, 2019: 166)

A. The actual return of shares: The actual return is calculated or it can be called the achieved return on the basis of historical data. As the achieved return is used as one of the bank's performance measures and shows the amount of profit that investors invest in ordinary shares. Or as they refer to it (Brigham & Houston, 2007: 294) that it is the rate of return that the investor actually gets when investing in ordinary shares for previous periods of time and is equal to the sum of the revenue and capital returns divided by the initial stock price.
B. Expected return on stock: The expected return is the return that investors are expected to receive in the future, as the expected return is the return used in making investment decisions. And this return is important compared to the historical return, because the expected return is the expected return on the investment that was made. Or as explained (Al-Qudah & Laham, 2013: 136) that the expected return on stock is the amount expected to add value to the investor's current wealth or the return during a future period of time. And since this return is linked to the future, it is uncertain, meaning that it carries a number of risks and is measured according to Method of variance or standard deviation of potential returns.
C. Abnormal stock returns: The abnormal return or excess return is described as the increase in the actual return (actual return) of the natural return. The normal return is the expected return (the return expected by investors).
D. The rate of return required by the investor: it is the reward necessary to compensate the investor for his risk tolerance and consists of the risk-free

return and the market risk premium. The risk-free return is the return on treasury bonds, The market risk premium is the extra return that exceeds the risk-free rate that investors would expect (2014: 231 (Gunarathna, 2014).

3. **Factors affecting stock returns and their measurement mechanism:** Stock returns are affected by an unlimited number of factors, as many studies have studied and are still studying the relationship between stock returns and multiple variables (Kim & Nguyen, 2008: 379). (John, 2008: 221)

A. In terms of its relationship to the interest rate: changes in interest rates implicitly affect operating returns and stock returns.

B. In terms of its relationship to monetary policy: the effects of monetary policy announcements on total stock returns, positive evidence of the impact of the day of the sudden announcement of monetary policy on stock returns

C. In terms of the impact of internal and external historical determinants: the internal and external historical determinants are affected by the volatility of bank stock returns, as the following indicators have a significant impact on returns, which are (the ratio of long-term investments to assets, the solvency ratio, price to book value, unemployment rate, and beta (Niewińska, 2020: 133).

D. In terms of its relationship to leverage: Although the stock market rewards leverage with higher returns, the indebtedness on the balance sheet also comes with higher fluctuations in stock prices. And most of the fluctuations in bank stock returns associated with leverage are not priced higher in the market, and this means that strict capital rules reduce leverage and reduce the required return in the stock market (Yang & Tsatsaronis, 2012: 51).

E. In terms of its relationship to profitability indicators: profitability indicators, net profit margin and return on equity (have a positive effect on the absolute cumulative return) (Solihati, 2019). As indicated by (Luxianto, et al., 2020: 262), the calculation of the monthly compound returns continuously for the market or stocks is carried out according to the following equation:

$$Rt = \ln Pt - \ln Pt\text{-}1 \quad (6)$$

Since:

Rt = return of the market (m) or stock (i) at time (t)

ln = natural logarithm

Pt = value of the index or stock price at time (t)

4. **The effect of financial robustness indicators on stock returns** (Edirisinghe & Zhang, 2010: 197) and (Choi & Sias, 2010: 1) indicate that indicators of financial robustness are closely related to stock returns. On the

one hand, stock prices can be predicted in general by external factors such as economic conditions that determine market demand, on the other hand, the quality of the economic unit in managing its resources internally, compared to its competitors, affects the stock returns of this economic unit. And that there are many methods or measures used to predict stock returns. And the most important of these measures is the measure of financial robustness.

First: Financial analysis of indicators of financial robustness: Robustness indicators are a guide for early warning when a bank is exposed to any risks it may face, and it is an indicator for analyzing, evaluating, and following up on the bank's fragility in order to support banking stability, and identify risks that may result in bank failure. Financial robustness indicators are among the precautionary indicators because they are among the standards that allow comparing conditions in banks to detect and reduce financial crises, as they are an efficient tool for measuring the safety of banks (Al-Batrani & Metwally, 2021: 7). Below is a set of financial robustness indicators, which are the most prominent among the indicators:

A. Capital adequacy

The capital adequacy ratio is one of the most important ratios for measuring the financial robustness of banks, and according to the decisions of Basel III, the capital is 10.5% of the risk-weighted assets. The capital adequacy ratio is calculated according to the equation formula, which is:

Capital Adequacy Ratio = (Capital Owned / Risk Weighted Assets) x 100%

Through table (1), we see the capital adequacy ratios of the commercial banks, the study sample for the period 2005-2021, as it is clear from them the following:

- The highest capital adequacy ratio for commercial banks, the study sample, was in the Credit Bank in 2020, as it amounted to (637.46%), and the reason for this high ratio is due to the efficiency of the bank's management in managing its money and avoiding the risks it is exposed to by increasing the owned capital. At the expense of his use of his assets for commercial activities. Which exceeds the required percentages, and the required limit according to the instructions of the Central Bank of Iraq is 15%, and according to the Banking Law, 12% No. (94) of 2004, and in accordance with the decisions of the Basel II Conference, which is 8%. As for the lowest capital adequacy ratio, it was the stock of the Middle East Bank in 2005, when it reached (12.73%). Which indicates a high risk-weighted assets, and

although this ratio is higher than the minimum required 10.5% by law, it remains the lowest ratio compared to the remaining years of the study period and the rest of the other banks.

- ❖ The highest arithmetic mean for the capital adequacy ratio is for the Sumer Commercial Bank, as it amounted to (138.57%). And the lowest arithmetic mean for the capital adequacy ratio is for the Bank of Baghdad, as it amounted to (39.51%), which indicates the financial robustness of the study sample banks, because the capital adequacy ratio is a tool for measuring the bank's ability to pay its obligations and face any losses that may occur.
- ❖ The lowest annual average for banks in 2006, when it reached (55.66%), due to the decrease in the capital adequacy ratios of four banks from the previous year. And that these banks are (commercial, investment, credit, and Sumer). As the decline rates reached (64.07%, 20.89%, 79.24%, 13.20%, respectively, while the highest average in the year (2020), when it reached (166.67%). Rates above the minimum set by the Central Bank of Iraq and the Basel III Committee.

Table (1): Capital adequacy ratios for commercial banks, sample study for the period 2005-2021

year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2005	%36.10	%133.72	%12.73	%33.72	%125.23	%83.21	%83.21	%46.41	%69.29
2006	%41.40	%48.05	%22.26	%26.68	%169.62	%17.28	%72.23	%47.76	%55.66
2007	%37.53	%37.55	%21.71	%123.86	%236.49	%40.65	%91.24	%31.10	%77.52
2008	%27.60	%43.01	%18.12	%213.56	%109.96	%54.55	%159.39	%24.06	%81.28
2009	%33.64	%45.45	%37.44	%167.74	%124.53	%55.04	%81.23	%29.50	%71.82
2010	%30.52	%58.58	%35.60	%91.54	%93.04	%35.04	%117.38	%32.41	%61.76
2011	%33.41	%97.59	%46.23	%68.13	%141.16	%61.19	%101.38	%47.82	%74.61
2012	%42.45	%91.78	%52.88	%53.59	%194.29	%46.29	%130.38	%56.32	%83.49
2013	%38.82	%137.43	%57.59	%64.46	%105.77	%48.50	%156.86	%73.66	%85.39
2014	%35.02	%90.37	%92.13	%139.64	%128.18	%68.52	%150.34	%76.66	%97.61
2015	%39.56	%101.74	%79.18	%147.77	%116.09	%93.30	%161.08	%56.80	%99.44
2016	%42.94	%87.84	%77.75	%191.40	%106.23	%67.50	%153.15	%49.87	%97.09
2017	%47.00	%77.32	%73.45	%150.69	%85.79	%87.55	%154.67	%79.92	%94.55
2018	%53.19	%95.11	%79.83	%112.36	%80.55	%200.51	%139.69	%81.88	%105.39
2019	%47.06	%110.18	%78.53	%115.18	%54.31	%250.92	%188.39	%94.43	%117.37
2020	%48.32	%114.16	%78.21	%124.09	%46.95	%637.46	%198.72	%85.43	%166.67
2021	%37.08	%80.74	%85.37	%80.15	%21.33	%359.09	%216.35	%96.51	%122.08
mean	%39.51	%85.33	%55.82	%112.03	%114.09	%129.80	%138.57	%59.44	%91.82
MAX	%53.19	%137.43	%92.13	%213.56	%236.49	%637.46	%216.35	%96.51	%166.67
MIN	%27.60	%37.55	%12.73	%26.68	%21.33	%17.28	%72.23	%24.06	%55.66
S.D	0.066	0.297	0.261	0.520	0.514	1.538	0.413	0.229	0.258

Preparation of researchers based on the reports of the Securities Commission for the period 2005-2021.

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B. Financial leverage ratio: The financial leverage ratio is one of the important indicators in measuring the financial robustness of banks, as this ratio enables the assessment of the financial structure of banks depending on owned and borrowed financing sources, i.e. internal and external sources of funds. The following is the financial leverage scale: Financial Leverage Ratio = (Total Liabilities / Total Assets) x 100%

This measures the percentage of the total funds provided by the debt (Zelalem, 2020: 64), and we see in Table (2) the presence of fluctuations in the financial leverage ratios of the banks in the study sample for the period 2005-2021, as we note the following:

- ❖ The highest leverage ratio was in the Middle East Bank for the year 2005. When it amounted to (91.44%) due to the bank's reliance on debts to a large extent, and this makes it exposed to high risks because the remaining ratio, amounting to (8.56%), represents the bank's reliance on owned financing, meaning that the bank can only cover a small part of the bank's debts. As for the lowest financial leverage ratio, it was the stockof Sumer Commercial Bank in 2020, when it reached (21.08%), due to the decrease in the volume of financing through liabilities, compared to financing through ownership.
- ❖ The highest arithmetic mean for the financial leverage ratio is for the Bank of Baghdad, as it reached (81.29%), and the lowest arithmetic mean for the financial leverage ratio is for the Sumer Commercial Bank, as it reached (33.65%).
- ❖ The lowest annual average of the financial leverage ratio for commercial banks in the study sample in 2017 was (48.97%) due to the low dependence of most of the commercial banks in the study sample on debts this year and their reliance on ownership. And the highest annual average of the financial leverage ratio for commercial banks in the study sample was in 2005, when it reached (70.20%).

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Table (2): Leverage ratios for commercial banks, study sample for the period 2005-2021

year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2005	%82.42	%59.73	%91.44	%77.86	%57.65	%85.52	%33.52	%73.50	%70.20
2006	%82.04	%61.25	%88.05	%81.41	%39.99	%90.57	%40.57	%70.48	%69.29
2007	%79.08	%69.37	%87.60	%70.29	%45.41	%78.33	%42.75	%79.96	%69.10
2008	%82.81	%67.24	%88.79	%70.26	%55.95	%72.46	%35.83	%82.89	%69.53
2009	%86.39	%59.60	%86.45	%67.36	%44.95	%69.25	%37.62	%77.11	%66.09
2010	%87.64	%53.69	%85.50	%64.06	%50.80	%77.29	%36.84	%76.64	%66.56
2011	%84.05	%45.37	%79.36	%64.27	%42.91	%65.78	%36.94	%65.62	%60.54
2012	%84.07	%51.20	%77.08	%68.81	%54.14	%68.74	%41.25	%64.90	%63.77
2013	%83.50	%41.29	%73.81	%64.20	%68.93	%67.32	%36.75	%61.10	%62.11
2014	%84.00	%36.70	%55.05	%49.21	%57.18	%53.59	%38.09	%57.63	%53.93
2015	%82.67	%33.91	%58.98	%49.02	%51.40	%51.20	%28.67	%60.34	%52.02
2016	%76.44	%33.48	%58.86	%49.85	%50.27	%40.24	%24.06	%60.38	%49.20
2017	%74.60	%36.65	%65.09	%50.66	%52.69	%33.82	%31.44	%46.81	%48.97
2018	%76.05	%36.04	%68.90	%53.36	%50.96	%37.01	%34.46	%45.62	%50.30
2019	%75.84	%39.54	%62.24	%50.81	%59.44	%43.14	%23.09	%44.15	%49.78
2020	%80.39	%50.08	%62.07	%53.58	%65.60	%44.27	%21.08	%39.86	%52.12
2021	%79.92	%38.60	%58.61	%59.58	%82.66	%38.13	%29.13	%43.49	%53.76
mean	%81.29	%47.87	%73.40	%61.45	%54.76	%59.80	%33.65	%61.79	%59.25
MAX	%87.64	%69.37	%91.44	%81.41	%82.66	%90.57	%42.75	%82.89	%70.20
MIN	%74.60	%33.48	%55.05	%49.02	%39.99	%33.82	%21.08	%39.86	%48.97
S. D	0.037	0.117	0.125	0.101	0.101	0.178	0.063	0.135	0.080

Preparing researchers based on the reports of the Securities Commission for the period 2005-2021.

C. The rate of return on assets: This ratio shows the amount of net profit obtained by the bank when measured by the value of its assets. As the higher the return on assets, it indicates that the financial robustness of the bank is better. It can be measured according to the following formula:

ROA = (Net Income / Total Assets) x 100%

Through table (3), we notice that there is a discrepancy in the rate of assets of the surveyed banks, i.e. we note the following:

❖ The highest rate of return on assets was the stock of Commercial gulf Bank in 2012, when it reached (7.26%). As this year is an exceptional growth for the bank due to the increase in net income compared to previous years, and therefore the increase in its revenues, which indicates that the higher this

ratio, the greater the financial robustness of the bank. As for the lowest rate of return on assets for the Iraqi Investment Bank in 2019, it reached (0.003%), due to a decrease in net income as a result of the bank's weak credit and investment policy, which indicates a decrease in the bank's financial robustness in that year.

- ❖ The highest arithmetic mean of the rate of return on assets was in the Khaleej Commercial Bank, when it reached (2.73%), and the Sumer Commercial Bank had the lowest arithmetic mean of the rate of return on assets, which amounted to (1.20%).
- ❖ The lowest average annual rate of return on assets for commercial banks, the study sample in 2019, when it reached (0.74%), and the highest annual average rate of return on assets for commercial banks, the study sample was in 2007, when it amounted to (3.84%). The reason is due to the increase in net profit for most banks in this year.

Table (3): The rate of return on assets for commercial banks, the study sample for the period 2005-2021

year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2005	%0.58	%0.95	%3.27	%3.59	%2.47	%2.58	%3.51	%2.85	%2.47
2006	%2.54	%0.65	%1.72	%0.01	%1.69	%3.40	%2.83	%2.98	%1.98
2007	%5.43	%0.71	%3.55	%6.18	%3.09	%5.33	%3.01	%3.36	%3.84
2008	%3.94	%0.85	%2.45	%5.11	%4.44	%5.09	%1.12	%6.30	%3.66
2009	%1.97	%1.84	%2.10	%2.40	%0.62	%2.09	%4.63	%3.08	%2.34
2010	%1.42	%6.50	%1.49	%3.62	%1.06	%1.38	%0.41	%2.27	%2.27
2011	%2.39	%2.90	%2.76	%3.03	%1.35	%3.54	%0.15	%3.38	%2.44
2012	%1.93	%4.50	%2.96	%0.36	%4.57	%4.09	%0.51	%7.26	%3.27
2013	%1.82	%2.65	%2.70	%5.15	%2.56	%1.91	%0.43	%6.07	%2.91
2014	%1.52	%2.05	%0.53	%5.17	%1.15	%2.15	%0.47	%4.43	%2.18
2015	%0.37	%1.75	%0.80	%3.17	%0.43	%1.88	%0.98	%1.22	%1.32
2016	%1.69	%1.79	%1.97	%1.76	%4.06	%0.97	%1.07	%0.73	%1.75
2017	%0.56	%2.18	%0.63	%0.70	%0.49	%1.41	%0.10	%0.70	%0.85
2018	%0.37	%2.45	%0.41	%0.06	%1.50	%1.12	%0.22	%0.10	%0.78
2019	%0.64	%1.45	%0.41	%0.003	%1.45	%0.98	%0.29	%0.72	%0.74
2020	%1.42	%5.75	%0.17	%0.82	%2.23	%0.65	%0.32	%0.00	%1.42
2021	%1.95	%2.54	%0.05	%0.14	%1.43	%1.06	%0.31	%0.94	%1.05
mean	%1.80	%2.44	%1.65	%2.43	%2.04	%2.33	%1.20	%2.73	%2.08
MAX	%5.43	%6.50	%3.55	%6.18	%4.57	%5.33	%4.63	%7.26	%3.84
MIN	%0.37	%0.65	%0.05	%0.00	%0.43	%0.65	%0.10	%0.00	%0.74
S.D	0.013	0.016	0.011	0.021	0.013	0.014	0.013	0.022	0.009

Preparation of researchers based on the reports of the Securities Commission for the period 2005-2021.

D. The growth rate of bank deposits: Deposit growth is an important indicator of financial robustness, which is the difference between the total deposits in the current year and the total deposits in the previous year divided by the total deposits in the previous year. The bank deposit growth equation can be written as follows:

Deposits growth = ((Total deposits in the current year - Total deposits in the previous year) / Total deposits in the previous year) x 100%

We see through Table (4) that there is a discrepancy in the growth of bank deposits of commercial banks, the study sample, and we note the following:

- ❖ The highest growth of deposits in the study sample banks was the stock of the Sumer Commercial Bank in 2006 when it reached (174.45%). This increase came as a result of the growth of deposits of all kinds. The lowest growth rate of deposits belonged to the National Bank of Iraq in 2006, when it reached (-52.19%).
- ❖ The highest arithmetic mean of the deposit growth rate was for the stock of the National Bank of Iraq, as it reached (37.29%), and it was the lowest percentage for the stock of the Middle East Bank, as it reached (3.26%).
- ❖ The highest arithmetic mean was in 2006, when it reached 44.57%, and this indicates the policy pursued by banks in attracting more deposits in that year, while the lowest arithmetic mean was in 2015, when it amounted to (-17.36%).

Table (4): The growth rate of bank deposits of commercial banks, the study sample, for the period 2005-2021

year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2005	-	-	-	-	-	-	-	-	
2006	-0.94%	-9.86%	-15.93%	39.37%	-52.19%	72.70%	174.45%	148.93%	44.57%
2007	2.29%	23.74%	48.87%	-35.83%	45.41%	-17.64%	1.60%	98.08%	20.81%
2008	60.37%	-1.74%	24.53%	31.47%	83.16%	-16.79%	19.53%	54.45%	31.87%
2009	68.69%	-1.94%	7.47%	20.55%	8.10%	5.21%	40.03%	27.13%	21.91%
2010	21.46%	-5.98%	3.10%	13.67%	31.24%	101.61%	63.80%	4.12%	29.13%
2011	-12.56%	4.86%	6.01%	30.28%	47.46%	-41.11%	-1.41%	12.48%	5.75%
2012	43.63%	31.19%	25.25%	8.42%	95.47%	30.31%	103.60%	21.55%	44.93%
2013	25.98%	-13.72%	-11.85%	51.99%	93.34%	12.92%	14.17%	62.31%	29.39%
2014	9.14%	29.13%	-35.11%	-10.23%	-12.91%	-16.48%	2.02%	10.71%	-2.97%

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year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2015	-37.11%	-25.88%	-7.07%	4.99%	-27.76%	-48.10%	12.62%	-10.57%	-17.36%
2016	-6.69%	31.85%	-20.39%	0.84%	-14.08%	12.85%	-21.35%	14.45%	-0.32%
2017	-12.19%	14.42%	28.86%	-3.15%	23.88%	-19.58%	32.67%	-37.78%	3.39%
2018	13.43%	-0.12%	32.25%	-3.02%	2.74%	12.62%	-10.05%	-12.37%	4.44%
2019	2.11%	8.97%	-36.85%	-11.58%	32.01%	28.33%	-22.36%	-13.46%	-1.60%
2020	33.65%	86.03%	-1.80%	27.52%	66.96%	4.39%	-12.92%	-10.32%	24.19%
2021	7.84%	-41.46%	4.74%	-8.55%	173.77%	-26.85%	-11.80%	13.39%	13.88%
Mean	13.70%	8.09%	3.26%	9.80%	37.29%	5.90%	24.04%	23.94%	15.75%
MAX	68.69%	86.03%	48.87%	51.99%	173.77%	101.61%	174.45%	148.93%	44.93%
MIN	-37.11%	-41.46%	-36.85%	-35.83%	-52.19%	-48.10%	-22.36%	-37.78%	-17.36%
S.D	0.269	0.283	0.236	0.219	0.548	0.381	0.505	0.456	0.174

Preparation of researchers based on the reports of the Securities Commission for the period 2005-2021.

E. The growth rate of bank loans: The loan is the main income-generating activity for banks, and the lending activity of the bank helps economists obtain capital in order to achieve development, and the development of banks provides opportunities to mobilize capital for the functioning of business in society, so banking activities do not provide benefits to the economy only, but also cause risks to customers. Customers are concerned about their deposits if there is weakness in the banking system and the capital mobilization activities or the lending activity of the bank is problematic, so the loan is considered an important indicator for assessing the level of banking risks. The bank loan growth equation can be written as follows:

Bank loan growth = ((Total loans in the current year - Total loans in the previous year) / Total loans in the previous year) x 100%

When looking at table (5), we notice that there is a discrepancy in the growth rates of bank loans to commercial banks, the study sample, that is, we note the following:

❖ The highest growth rate of loans for the banks in the study sample was for the Credit Bank in 2015. As it reached (440.72%) due to the increase in granting loans from the bank in that year. While the lowest growth rate for loans for the banks in the study sample was for the Commercial Bank of Iraq,

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as it amounted to (-94.60%) in 2010, due to the unstable conditions that the country suffers from, the bank's policy reduced the loans granted.

- ❖ The highest arithmetic mean of the loan growth rate was for the National Bank of Iraq, as it reached (52.69%), and the lowest loan growth rate was for the Bank of Baghdad, as it reached (10.06%).
- ❖ The lowest annual average for banks in 2016 was (-19.93%) due to the decrease in the volume of loans granted to commercial banks, the study sample, except for the Commercial Bank of Iraq, while the highest average was in 2009, when it reached (134.10%).

Table (5): The growth rate of bank loans to commercial banks, the study sample for the period 2005-2021

year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2005	-	-	-	-	-	-	-	-	
2006	-31.32%	15.89%	-20.22%	-14.56%	103.15%	-16.62%	-14.79%	84.02%	13.19%
2007	21.64%	-7.50%	-15.49%	-46.36%	-0.39%	-18.04%	117.90%	0.08%	6.48%
2008	-13.46%	-56.48%	-8.21%	-53.03%	34.75%	-73.28%	52.02%	25.20%	-11.56%
2009	70.31%	-34.28%	311.16%	91.08%	73.89%	131.54%	351.10%	78.03%	134.10%
2010	132.90%	-94.60%	123.17%	269.20%	117.38%	17.58%	30.45%	11.14%	75.90%
2011	-19.43%	130.54%	32.64%	33.68%	37.61%	-26.88%	19.02%	90.40%	37.20%
2012	-5.77%	178.72%	4.49%	56.64%	37.59%	-26.39%	43.98%	149.32%	54.82%
2013	51.68%	71.19%	4.78%	-11.83%	71.18%	-66.47%	48.02%	43.99%	26.57%
2014	8.89%	80.84%	-9.15%	-28.80%	43.09%	-50.39%	46.91%	1.85%	11.66%
2015	3.98%	27.22%	-20.20%	-20.29%	11.32%	440.72%	-17.20%	14.25%	54.98%
2016	-17.25%	8.81%	-24.15%	-24.60%	-32.25%	-55.89%	-4.86%	-9.27%	-19.93%
2017	-25.36%	8.94%	-11.84%	14.19%	7.76%	185.09%	-11.68%	-30.90%	17.03%
2018	11.23%	10.60%	-5.67%	45.59%	-42.82%	-3.22%	-14.52%	-17.51%	-2.04%
2019	-7.63%	-4.07%	-0.55%	1.11%	119.92%	0.00%	-8.90%	-14.84%	10.63%
2020	-5.33%	64.60%	-9.48%	-19.18%	87.97%	-7.54%	-40.60%	-10.77%	7.46%
2021	-14.12%	44.03%	-0.69%	20.68%	172.86%	-7.20%	-18.82%	85.52%	35.28%
mean	10.06%	27.78%	21.91%	19.59%	52.69%	26.44%	36.13%	31.28%	28.24%
MAX	132.90%	178.72%	311.16%	269.20%	172.86%	440.72%	351.10%	149.32%	134.10%
MIN	-31.32%	-94.60%	-24.15%	-53.03%	-42.82%	-73.28%	-40.60%	-30.90%	-19.93%
S.D	0.412	0.657	0.820	0.747	0.567	1.256	0.900	0.499	0.368

Preparation of researchers based on the reports of the Securities Commission for the period 2005-2021.

Through Table (6), we see the hypothesis test for the research sample banks through the variance test of the indicators of financial robustness. If we notice through the table below, there is a discrepancy between the

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indicators of durability because the value (P-Value) is less than the level of significance of (0.05). And the calculated value of F is greater than the tabular value of F. Thus, the researcher infers from the above analysis the rejection of the first hypothesis, meaning that there is a discrepancy between the commercial banks, the research sample, in the level of financial robustness.

Table (6): Variance test for the level of financial robustness of the research sample banks

ANOVA						
Source of Variation	**SS**	**Df**	**MS**	**F**	**P-value**	**F crit**
Between Groups	4.175561	4	1.04389	27.61929	0.000	2.641465
Within Groups	1.322849	35	0.037796			
Total	5.49841	39				

Source: Prepared by researchers according to the results of Excel V.10

Second: Financial analysis of bank stock returns: The return is one of the most important elements in evaluating the financial position of the bank, and the consequences of increasing the return that the bank can achieve are high risks, so the banks seek to achieve the exchange between return and risk, in a way that leads to maximizing the return at a certain level of risk.

Banking stock returns = Natural log of the current stock price - Natural log of the previous stock price

Upon reflection in Table (7), we notice that there is a discrepancy between the returns of banking stocks, the study sample, during the study period, that is, we note the following:

A. We see from table (7) that the highest return in the Bank of Baghdad in 2021 reached (0.9212). The reason for the increase is due to the increase in the stock prices of the Bank of Baghdad in that year compared to other years and banks. And the lowest return for the Commercial Bank of Iraq in 2006, when it reached (-2.7334), and the reason for the decrease in stock returns for the Commercial Bank is due to the decline in stock prices, due to the bank's conservative investment policy. Thus, maintaining high levels of liquidity due to the security and economic situation of the country, as well as the political situation. This has negatively affected the performance of the bank.

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B. The highest arithmetic mean of bank stock returns is for the National Bank of Iraq (-0.0729). And the lowest arithmetic mean for bank stock returns is for the Credit Bank of Iraq (-0.2437), i.e. We note that the arithmetic mean for all banks is a negative value due to the decline in stock prices of the commercial banks under study as a result of the economic, social, security and political conditions the country is going through.

C. The highest annual average of bank stock returns in 2020, reaching (0.0513), due to the rise in stock prices of three banks, which are (Baghdad, Al-Sharq Al-Awsat, Al-Ahly Al-Iraq), as the rates of increase in stock prices reached (36.67%, 20%, and 50.82%), respectively. As for the lowest annual average of bank stock returns in 2006, it reached (-1.3183).

Table (7): Returns on banking stocks for commercial banks, the study sample for the period 2005-2021

year	Baghdad bank	Commercial bank	Middle east bank	Investment bank	National bank	Credit bank	Sumer bank	Gulf bank	mean
2005	-	-	-	-	-	-	-	-	-
2006	1.1632-	2.7334-	1.1701-	1.0986-	1.3249-	0.5798-	0.8522-	1.6241-	1.3183-
2007	0.4383	0.0377	0.3285	0	0	1.0704-	0.4769-	0.1054	0.0797-
2008	0.3429-	0.1603-	0.1508-	0.2136-	0.1542-	0.2336-	0	0.0339-	0.1612-
2009	0.1076	0.2318	0.1900	0.4212	0.0339-	0.1765	0	0.2162	0.1637
2010	0.3139-	0.0423-	0.8602-	0.2549-	0.0715-	0.3277-	0.1054-	0.6931-	0.3336-
2011	0.6648	0.0903-	0.5570	0.2664-	0.0482	0.3848	0.0123	0.1153	0.1782
2012	0.6592-	0	0.2739-	0.0612	0.0118-	0.4265-	0.2183	0.0762	0.1270-
2013	0.1349	0.3224-	0.0916	0.0404-	0.0241-	0.0252	0.0198-	0.0536	0.0127-
2014	0.2845-	0.3321-	0.9808-	0.0305	0.0931	0.8308-	0	0.2451-	0.3187-
2015	0.2813-	0.4761-	0.1625-	0.3857-	0.4925-	0.5764-	0.0513-	0.5680-	0.3742-
2016	0.2513-	0.1576	0.1706-	0.1252-	0.2938-	0.2400	0.0541-	0.1252-	0.0778-
2017	0.4000-	0.0206	0.2059-	0.3567-	0.1366	0.0980-	0	0.1431-	0.1308-
2018	0.7436-	0.0417-	0.9904-	0.4055-	0.3238-	0.5306-	0	0.7191-	0.4693-
2019	0.0339	0.0215-	0.2624-	0.0364-	0.5845	0.0723	0.5680-	0.3054-	0.0629-
2020	0.3124	0.0445-	0.1823	0.1603-	0.4109	0.0476-	0.2429-	0	0.0513
2021	0.9212	0.3429	0.5108	0.2657	0.2904	0.0760-	0.0513-	0.0690	0.2841
mean	0.1142-	0.2171-	0.2105-	0.1603-	0.0729-	0.2437-	0.1370-	0.2388-	0.1743-
MAX	0.9212	0.3429	0.5570	0.4212	0.5845	0.3848	0.2183	0.2162	0.2841
MIN	1.1632-	2.7334-	1.1701-	1.0986-	1.3249-	1.0704-	0.8522-	1.6241-	1.3183-
S.D	0.521	0.680	0.522	0.327	0.415	0.391	0.263	0.456	0.357

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We see from Table (8) that it is clear that the (F) value calculated for the discrepancy between bank stock returns amounting to (0.275894) is less than the tabular (F) value amounting to (2.08677) and with a significant degree (0.962262). These results indicate that the second null hypothesis has not been rejected, and therefore we can say that there is no significant difference between the banks in the research sample in the level of banking returns.

Table (8): Variance test for the level of bank returns

ANOVA						
Source of Variation	**SS**	**Df**	**MS**	**F**	**P-value**	**F crit**
Between Groups	0.441619	7	0.063088	0.275894	0.962262	2.08677
Within Groups	27.4403	120	0.228669			
Total	27.88192	127				

Source: Prepared by researchers according to the results of Excel V.10

Through Table (7) it is clear that the commercial banks examined suffer from low banking returns, which led to the rejection of the third study hypothesis, meaning that the commercial banks, the research sample, suffer from a decrease in stock returns during the research period.

Third: Statistical analysis and hypothesis testing

This paragraph aims at analyzing tablet data, which deals with multiple observations or phenomena for more than one period of time, which are referred to as cross-sectional units, as it provides an expansion of the size of the sample used, an increase in the degrees of freedom, and a reduction in the correlation between the explanatory or explanatory variables. Accordingly, it will help in improving the efficiency of statistical estimates. That is, according to this analysis, the research period will cover (2005-2021) with the research sample represented by the eight banks and through the EViews statistical program, and this is what was included in the fourth main hypothesis.

The fourth main hypothesis: There is no significant effect of financial robustness on the returns of banking stocks.

Through Table (9), we see that there is a significant effect of financial resilience in the returns of bank stocks in (8) banks for the period (2005-2021), as the number of observations reached (136) observations using the

(Panel Regression) model. The tablet data was used through the application of three statistical models. Which are: - (Pooled Regression Model), Fixed Effects Model, and Effects Model Random. We will now work on the comparison between these methods in order to rely on the best method, and to reach this goal. the F test will be used in order to compare between models to prove the fourth main hypothesis. And the models will be explained as follows:

1. **Pooled Regression Model:** It is clear from Table (9) that the estimated model was significant according to the probability value of the F test (Prob F-statistic). Which amounted to (0.040417), which is less than the significant level (10%), and there are two indicators of financial robustness indicators whose value is significant according to the value of (Prob), namely (leverage and rate of return on assets) at a level of significance (10%), while the remaining three indicators were not significant according to the value of (Prob). In addition, the value of the R2 interpretation coefficient is (0.084569), meaning that the model explains 45.8% of its effect on stock returns according to the aggregate effect model, and the rest of the percentage is explained by other factors not included in the regression model.
2. **Fixed Effects Model:** When looking at Table (9), we notice that the estimated model was not significant according to the probability value of the F test (Prob F-statistic) of (0.387205), which is higher than the significant level (10%), and that all indicators of financial robustness were not significant according to the value of (Prob) at the significant level (10%). With the exception of the indicator (rate of return on assets), the value of (Prob) was (0.0717), which is significant at a significant level of (10%). In addition, the value of the interpretation coefficient R2 is (0.094896), meaning that the model explains 9.48% of its effect on bank stock returns according to the fixed effects model (LSDV), and the rest of the percentage is explained by other factors not included in the regression model.
3. **The Random Effects Model:** It appears from Table (9) that the estimated model was significant according to the probability value of the F test (Prob F-statistic) which amounted to (0.040417). Which is less than the significant level (10%), and that all indicators of financial robustness were insignificant according to the value of (Prob) at a significant level (10%) except for the two (financial leverage and rate of return on assets). The level of significance (Prob) reached (0.0987, 0.0705).) respectively, which is less than the

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significant level (10%). In addition, the value of the square of the correlation coefficient (R-square) is (0.084569), meaning that the model explains 8.45% of its effect on bank stock returns according to the random effects model (EGLS) and the rest of the ratio is explained by other factors not included in the regression model.

Table (9): The effect of financial robustness indicators on the returns of banking stocks

Sample: 2005-2021 Cross-sections included: 8 Total panel (balanced) observations: 136												
Bank stock returns	Pooled Regression Model				Fixed Effects Model				Random Effects Model			
Bank stock returns	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	Prob
Constant	0.225810	0.167397	1.348954	0.1797	0.274588	0.243617	1.127132	0.2619	0.225810	0.171121	1.319597	0.1893
capital adequacy	-0.072145	0.053368	-1.351846	0.1788	-0.076585	0.059727	-1.282254	0.2022	-0.072145	0.054555	-1.322426	0.1883
Leverage	0.379559	0.223227	1.700328	0.0915	0.306545	0.371435	0.825298	0.4108	0.379559	0.228193	1.663325	0.0987
The rate of return on assets	-3.762703	2.018163	-1.864420	0.0645	-4.002573	2.202965	-1.816903	0.0717	-3.762703	2.063060	-1.823845	0.0705
deposit growth rate	-0.029966	0.085163	-0.351864	0.7255	-0.006144	0.096284	-0.063806	0.9492	-0.029966	0.087058	-0.344206	0.7312
loan growth rate	-0.000192	0.042261	-0.004534	0.9964	-0.000159	0.043506	-0.003652	0.9971	-0.000192	0.043201	-0.004435	0.9965
R-square	0.084569				0.094896				0.084569			
R-squared Adj.	0.049360				0.006593				0.049360			
F-statistic	2.401916				1.074661				2.401916			
Prob (F-statistic)	0.040417				0.387205				0.040417			

Source: Prepared by researchers based on the Eviews Vs.12 program

Despite the results achieved above, the methods of choosing between these models must be used to indicate the most suitable for the variables and the research sample according to the Hausman test. It is clear that the statistical value is Chi-Sq. Statistic was (0.967719), which is not significant at the level of (10%) and with a degree of freedom (5), which depends on the number of indicators of the independent variable, meaning that the random effects model is the appropriate model when compared to the fixed effects, and Table (10) shows that.

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Table (10): Hausman test results

d.f.	Prob.	Test value	Test tupe
5	0.9651	0.967719	Hausman test

Source: - Prepared by researchers based on (Eviews V.12).

Accordingly, the appropriate model for the regression of the three models according to this hypothesis is the random effects model, due to the non-significance of the Hausman test, which means the rejection of the fourth main hypothesis, that is, there is a statistically significant effect of financial robustness in the returns of bank stocks.

As for the regression equation extracted from Table (9) under the random effects model test, it is as follows:

Y=0.225810-0.072145X1+0.379559X2-3.762703X3-0.029966X4-0.000192X5

List of conclusions and recommendations

List of Conclusions:

1. The commercial banks, the research sample, do vary in the indicators of financial robustness.
2. The commercial banks, the research sample, do not vary in the level of banking returns.
3. There is a close relationship between financial robustness and stock returns, as it is not possible to achieve a rise in stock returns without financial robustness .
4. Dealing with financial robustness indicators has contributed to increasing the efficiency of the Iraqi banks sampled in the study, which was reflected positively in increasing their financial returns, which also contributed to increasing their profitability.
5. the results showed that there is a statistically significant effect of financial robustness indicators on stock returns.
6. The rate of return on stocks for the banks surveyed is mostly negative, and this indicates poor stock performance for the banks.
7. The results of the financial analysis showed that the highest growth of deposits in banks, the research sample, was for Sumer Commercial Bank in 2006 if it reached (174.45%) as a result of the growth of deposits of all kinds. The lowest rate was for the National Bank of Iraq, as it reached (-52.19%).

8. Most leveraged bank stock returns are not priced higher than the market, which means that strict capital rules reduce leverage and the required return in the stock market.
9. Through financial analysis, most banks depend on the rate of return on assets, and its rise leads to an increase in the financial robustness of banks to determine the extent of the strength of the financial position and its efficiency in using its resources and avoiding the occurrence of crises.
10. We conclude that the main income-generating activity of the banks, the research sample, is bank loans, and that the lending activity helps economists to obtain capital in order to achieve development. Therefore, banking activities do not provide benefits to the economy only, but rather present risks to customers.
11. The results showed that the reason for the decline in stock returns for some of the research sample banks was due to the decline in stock prices. Due to the banks following a conservative investment policy and thus maintaining high levels of liquidity due to the security and economic situation of the country as well as the political situation, which has negatively affected the performance of banks.

List of Recommendations:

1. The necessity of adhering to the measurement of financial robustness indicators issued by the authorities concerned with banking guidance.
2. The management of the banks under study must deal with the decline in stock returns in recent years.
3. The financial and banking sector and the Iraqi market for securities must be supported and contribute to improving the economic, social, security and political conditions of the country. It contributes to increasing the returns of banking stocks and their recovery because their decline causes a decline in the stock prices of the commercial banks in question.
4. The need to pay attention to financial leverage because it is one of the most important indicators in measuring the financial robustness of banks, as this ratio enables the assessment of the financial structure of banks depending on owned and borrowed financing sources, and in the event of a significant increase in debt dependence by the research sample banks, it makes them exposed to high risks.
5. The need to increase the capital adequacy ratio because it is a tool for measuring the ability of these banks to pay their obligations and face any

losses that may occur, which contributes to increasing the financial robustness of the research sample banks, which affects the increase in stock returns because the stocks that have a high rate of return will encourage investors to invest and increase capital flows.

6. The necessity of relying on indicators of financial robustness as a warning sign and indicators for analyzing, evaluating, and following up the strength and weakness of the banking system in order to support stability and identify risks, because they are indicators of high importance on the basis of which banks are evaluated and classified based on their financial robustness .
7. The need to educate and educate investors in the Iraq Stock Exchange through the establishment of courses and development programs to rehabilitate their capabilities and experience in increasing stock returns.

References

A. Books:

1. Brigham, Eugene F. & Houston, Joel F., (2007), Fundamentals of Financial Management. 11th Edition, Thomson South-Western, United States of America.
2. Gangadhar, V. & Ramesh G. Babu, (2006), "Investment Management", Anmol Publications, Pvt. Ltd.
3. Gatemen Lawrence, (2009), "Principles of managerial finance", USA, Pearson Education, 9ed.
4. Gitman, Lawrence J. & Chad J. Zutter, (2012), "Principles of Managerial Finance", Thirteenth Edition, Prentice Hall, United States of America.
5. Mishkin, Frederic, (2000), "Markets Financial and Institutions", Addison Wesley Longman Inc 3rd ed., USA.

B. Research and periodicals

1. Aissa, Ben, Sami & Goaied, Mohamed, (2016), "Determinants of Tunisian hotel profitability: The role of managerial efficiency", Tourism Management, 52.
2. AL-Qudah, Anas &. Laham, Mahmoud, (2013), The Effect of Financial Leverage & Systematic Risk on Stock Returns in the Amman Stock Exchange (Analytical Study – Industrial Sector). Research Journal of Finance and Accounting, 4(6).
3. Ambe, Mamo Esayas, (2017), "An investigation of determinants of deposit mobilization in commercial banks of Ethiopia", Journal of Research on Humanities and Social Sciences, Vol. 7, NO.19.
4. Assan, A. & Thomas, S., (2013), Stock returns and trading volume: does the size matter?. Investment Management and Financial Innovations, 10(3).
5. Botchkarev, A., & Andru, P., (2011), A Return on Investment as a Metric for Evaluating Information Systems: Taxonomy and Application. Interdisciplinary Journal of Information, Knowledge, and Management, Volume 6.

6. Choi, Nicole Y. & Richard W. Sias, (2010), "Why does Financial Strength Forecast Stock Returns? Evidence from Subsequent Demand by Institutional Investors", The Review of Financial Studies, Volume 25, Issue 5.
7. Edirisinghe, N. C. P. & Xin Zhang, (2008), "Portfolio Selection under DEA-based Relative Financial Strength Indicators: Case of U.S. Industries", Journal of the Operational Research Society volume 59.
8. Edirisinghe, N. C. P. & Xin Zhang, (2010), "An Optimized Dea-Based Financial Strength Indicator of Stock Returns For U.S. Markets", Applications of Management Science, Volume 14.
9. El-Batrny, Rana Mohamed & Metwally, Alaa Mamdouh Mohamed, (2021), The Impact of Financial Strength Indicators on the Value of Banks Listed on the Egyptian Stock Exchange, Arab Journal of Management.
10. FMI, Fonds monétaire international, (2006), "Indicateurs de Solidité Financière", guide D'établissement, Publication Services.
11. Gunarathna, Vijitha, (2014), Determinants of Expected Rate of Return on Common Stock: An Empirical Study in Sri Lanka. Reshaping Management and Economic Thinking through Integrating Eco-Friendly and Ethical Practices, Proceedings of the 3rd International Conference on Management and Economics 26-27 February 2014, Faculty of Management and Finance, University of Ruhuna, Sri Lanka .
12. Irawati, Nisrul & Azhar Maksum& Isfenti Sadalia& Iskandar Muda, (2019), "Financial Performance of Indonesian's Banking Industry: The Role of Good Corporate Governance, Capital Adequacy Ratio, Non-Performing Loan and Size", International Journal of Scientific & Technology Research Volume 8, Issue 04.
13. John J. Vaz& Mohamed Ariff & Robert D. Brooks, (2008), "The effect of interest rate changes on bank stock returns", Investment Management and Financial Innovations, 5.
14. Luxianto, Rizky & Usman Arief & Muhammad Budi Prasetyo, (2020), "Day-of-the-Week Effect and Investors' Psychological Mood Testing in a Highly Mispriced Capital Market", Journal of Indonesian Economy and Business Volume 35, Number 3.
15. Moody's, (2007), "Bank Financial Strength Ratings: Revised Methodology", Moody's Investors Service.
16. Öğüt, Hulisi, & M. Mete Doğanay & Nildağ Başak Ceylan & Ramazan Aktaş, (2012), "Prediction of bank financial strength ratings: The case of Turkey", Economic Modelling 29.
17. Pandey, Rudresh, & John Francis Diaz, (2019), "Factors Affecting Return on Assets of Us Technology and Financial Corporations", Jmk, Vol. 21, No. 2.
18. Pasaribu, Pananda, & Mindosa, Bonnie, (2021), "The Bank Specific Determinants of Loan Growth and Stability: Evidence from Indonesia", Journal of Indonesian Economy & Business, Vol. 36, NO.2.
19. Shahzadi, Sunble & Ammar Abid & Ahmed Shahzad & Usman Zahoor, (2020), "Interactions Between Financial Indicators And Bank Financial Strength Ratings: A Case Study On Bric Countries", International Journal of Management (IJM) Volume 11, Issue 8.

20. Solihati, Garin Pratiwi, (2019), "Analysis of Factors Affecting Abnormal Return Stock in Private Banking Sector Registered in Indonesia Stock Exchange 2015-2017", International Journal of Academic Research in Accounting, Finance and Management Sciences Vol. 9, No.2.
21. Sucipto, Tia Novira; Hasibuan, Renika, The Effect of Return on Assets and Debt to Assets Ratio on Tax Avoidance in Plantation Companies Listed in Indonesia Stock Exchange 2016-2018 Period. Accounting and Business Journal, 2020, 2.1: 41-52.
22. Violita, Cynthia E. & Soeharto, Sri Maemunah, (2019), Stock Liquidity and Stock Return. Journal of Business and Management, 3 (2).
23. Zelalem, Desta, The impact of financial leverage on the performance of commercial banks: Evidence from selected commercial banks in Ethiopia. International Journal of Accounting, Finance and Risk Management, 2020, 5.1: 62-68