The Efficiency of the banking evaluation model BANKOMETER in evaluating the financial performance of private commercial banks in Iraq

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Abstract

The aim of this research is to evaluate the performance of a sample of private financial banks in Iraq using the BANKOMETER model, which is one of the modern models introduced by the International Monetary Fund in 2000. This research stands out due to the limited studies that have addressed it in terms of explanation and analysis, especially in the Arabic language. The model includes a set of financial indicators totaling six, combined in the linear equation S-SCORE.The analysis results revealed variations in the level of achieving the desired financial performance for the sample banks. Based on the application of the S-SCORE equation, the research demonstrated the effectiveness of the BANKOMETER evaluation model in highlighting the true financial situation of the sample banks. The research concluded a set of findings, including the need to adopt a supporting model for the control processes of banks carried out by the monetary authority. The BANKOMETER evaluation model showed accuracy in assessing the financial performance of the study sample banks.All the study sample banks recorded S-SCORE values significantly higher than the upper limit of the model's evaluation standard, 70%. This indicates a sound and financially stable position for the future, except in the event of a financial crisis. The research also arrived at several recommendations, including the possibility for the Central Bank of Iraq to rely on the BANKOMETER model as one of the models used for two main purposes: evaluating current and future financial performance, aiming to achieve a secure banking sector.

Keywords: financial performance evaluation, BANKOMETER model

1.1 Introduction

The banking system represents the fundamental pillar of any economy and is considered the main driver of economic growth. It helps provide the necessary financing for individuals and companies to establish and expand businesses, improve living standards, and when the banking system is robust and stable, it attracts foreign and domestic investments, thereby enhancing economic growth and improving the financial sustainability of the state. However, if the banking system is unstable or experiencing problems, it will have a negative impact on the economy and lead to a decline in economic growth. Therefore, it is important to maintain the stability of the banking system and continuously ensure its development and improvement

to promote the economy and maintain its sustainability. The increasing concerns shown by local and international monetary authorities, international rating agencies, and the Organization for Economic Cooperation and Development (OECD) regarding the importance of implementing effective regulatory systems to monitor the performance of banks. The main objective of these efforts is to enhance transparency, improve accountability in the banking sector, and promote overall financial stability. A variety of models have been used to assess the financial performance of banks in the global banking sector. The United States, for example, uses the CAMELS model, while Italy uses the PATROL model. According to these models, financial performance is evaluated based on rating grades assigned by each model. The American rating agency and the International Monetary Fund are among the leading organizations in this field. The International Monetary Fund has introduced the Bankometer model as a comprehensive tool for assessing the financial performance of banks. This model utilizes various indicators and variables to determine the extent of the impact of different risks faced by the banking system and to identify different levels of financial performance. It is expected that these efforts will continue in the future to improve financial performance and achieve stability in the global banking system.

1.2 Research Problem

The Iraqi banking sector utilizes modern models such as CAMELS and PATROL for supervisory control over the performance of banks. These models rely on personal estimates and analysis results that only reflect the current financial situation, without considering the future performance of the banks. In order to enhance the supervision of the financial performance of banks, both currently and in the future, it is worth considering the use of other control models that rely on comprehensive analysis of bank performance. Among these possible models is the Bankometer model, which is based on a comprehensive analysis of bank performance over the long term. It analyzes various factors that impact the financial performance of the bank and provides a comprehensive analysis of the bank's performance and its ability to achieve profits and growth in the future.

As a result of these dilemmas, the research problem emerges, which can be formulated in the following questions:

1. To what extent is the Bankometer model applicable to the Iraqi banking environment?
2. Is the Bankometer model, endorsed by the International Monetary Fund, an effective model for evaluating financial performance?
3. Can the S-SCORE formula of the Bankometer model be used to predict the future financial position of the research sample banks?

1.3 Importance of the Research

The importance of the research stems from the following points:

1. The topic of evaluating financial performance is of utmost importance as it provides necessary information about the performance of banking operations. It helps in making informed decisions and addressing any weaknesses that may exist by applying the Bankometer model.

2. The research focuses on a modern approach to evaluating financial performance, namely the Bankometer model. This research stands out due to the limited studies that have addressed it in terms of explanation and analysis, especially in the Arabic language.
3. To the best of the researcher's knowledge, this is the first Iraqi study that utilizes the Bankometer model to evaluate the financial performance of Iraqi banks and explore the differences in bank performance through its application.

1.4 Research Objectives

The primary objective of the research is to evaluate the financial performance of Iraqi banks through the application of the Bankometer model. The secondary research objectives can be formulated as follows:
1. Clarify the ability of the combined indicators in the Bankometer model to identify the current financial position of each bank in the research sample.
2. Rank the research sample banks based on the results of each indicator in the Bankometer model.
3. Identify the banks in the research sample that are experiencing weaknesses in financial performance.
4. Explain the ability of the S-SCORE formula in the Bankometer model to identify the future financial positions of each bank in the research sample.

1.5 Research Hypothesis

The research is based on the hypothesis that the Bankometer model can be applied to evaluate the current and future financial performance of private Iraqi banks in the research sample.

1.6 Duration of the research

The research period extended (12) years from the year (2010) to the year (2021).Because these banks provided the data needed by the research, in addition to that The selected banks are characterized by continuity, large size, and influence in the market Iraq Securities .
Table NO (1) Commercial banks listed in the Iraq Stock Exchange, the study sample

Banks	Bank Code	Year Of Establishment
Commercial Bank of Iraq	BCOB	1992
Investment Bank of Iraq	BIBI	1993
United Bank for Investment	BUND	1994
National Bank of Iraq	BNOI	1995
Credit Bank of Iraq	BROI	1998

Source: Prepared by the two researchers based on the website http// www.iq-isx.net.

2.1 Financial Performance of Banks

Financial performance of banks refers to the degree of achieving the financial objectives set by banks and the execution of their financial activities (Al-Shaghdari et al., 2023: 34). It focuses on using financial indicators to measure the achievement of objectives that reflect the performance of banks. It is considered the fundamental support for the operations and practices of banks, which contribute to providing financial resources, creating investment opportunities, and meeting the needs and goals of stakeholders
(Al-Ardaha & Al-Okdeh, 2021: 22).

From another perspective, bank performance is a mirror reflecting the true financial position of banks and represents their ability to utilize available financial resources to achieve objectives and maximize the value of banks in the financial market (Mukumbi et al., 2020: 166). The process of performance evaluation serves as an important indicator to measure the extent to which banks are able to achieve their objectives using appropriate measures. It helps in identifying strengths and weaknesses, understanding the reasons that support the positives and overcome the negatives (Alrikabi, 2023: 4).

2.2 The Objectives of Financial Performance (Abdi, 2010: 19):

A. Evaluate the current operational and profitability efficiency of the bank as a whole, as well as the different departments of each component, in order to assess the financial soundness of the bank.
B. Determine the relative significance of various elements of the bank's financial position to identify the reasons for changes in financial elements and profitability.
C. Assess the long-term and short-term liquidity position and determine the bank's ability to meet its obligations.

2.3 The Importance of Financial Performance

Evaluating the financial performance of banks holds significant importance from an efficient economic perspective. Accurate and modern evaluation methods should be utilized, in addition to comparing the actual financial performance results among banks in order to differentiate between troubled banks and sound ones (Stankeviciene & Mencaite, 2012:190). Assessing financial performance is crucial as it is used to evaluate the strength of banks and their ability to fulfill their debts, as well as serving as a measure of liquidity and profitability. Future financial performance evaluation likely focuses on the light shed by past financial performance through financial statement analysis (Anthony et al., 2019:82).

2.4 Origin and Development of the Bankometer Model

The Bankometer model was introduced by the International Monetary Fund (IMF) in 2000. It incorporates a set of financial indicators combined in the linear equation S-SCORE, derived from the Camels system, along with stress testing indicators from the CLSA-stress test, with adjustments made to the percentages. The Bankometer model is a modern system used for assessing the financial performance of banks and is applied globally (Saddam et al., 2022:68). The main motivation behind creating the model was the deterioration of some financial systems in advanced economies. Based on IMF standards, the model was used to monitor privately-owned and publicly-owned banks, predict their potential financial distress, measure

their financial status, and assess their solvency to avoid bankruptcy. This is of utmost importance for banks, equity investors, and creditors (Kumar, 2019:35).

2.5 Importance of the Bankometer Model

Assessing the significance of the Bankometer model requires a sufficient understanding of its general importance and its applications in various fields, such as:

A. Internal management utilization for predicting future financial conditions.
B. Using the S-SCORE formula to detect early signs of financial failure in banks.
C. Utilizing the combined indicators in the model, which include six indicators recommended by the IMF, to differentiate between banks with strong financial positions and those with weak financial positions (Homsy, 2022:42).

2.6 Mechanism and Classification Criteria of the Bankometer Model

The Bankometer model is an early warning system used to determine banks' ability to withstand risks and assess their level of financial performance (Sakarya, 202:49). The model exhibits high quality in providing accurate results through a set of combined financial indicators that lead to the linear equation in the Bankometer model, represented as S-SCORE. The formula for the model is as follows (Africa, 2019:6):

$$\text{S-SCORE} = 1.5\,(CA)+1.2\,(EA)+3.5\,(CAR)+0.6\,(NPL)+0.3\,(CIR)+0.4\,(LA)$$

Table (2): Bankometer Model Indicators2

Variable	The ratio	The equation	Weights	Standard proportions	Source
X1	CA	Capital to Asset Ratio	1.5	% 4 ≤ CA	(Laila, 2020: 173)
X2	EAR	Equity to Total Assets	1.2	% 2 ≤ EAR	(Kirori & Oum, 2019: 6)
X3	CAR	Capital Adequacy Ratio	3.5	8 ≤ % 40 ≤ CAR %	& Radianto , 2020: 330) (Bella
X4	NPL	Non Performing Loan Ratio	0.6	% 15 ≥NPL	(Wirawan, 2021 :330)
X5	ClR	Cost to Income Ratio	0.3	% 40 ≥ CI	(Suresh, et al., 2019: 443)
X6	LAR	Loans to Asset Ratio	0.4	% 6.5 ≥LA	(Eren & Ucar, 2021: 139)

source : was prepared by the two researchers based on the scientific literature

- Where:

A. S-SCORE: Indicates the degree of solvency that measures the future financial stability to meet financial obligations.

B. The numbers: (1.5) (1.2) (3.5) (0.6) (0.3) (0.4) were set by the International Monetary Fund as relative weights for each indicator in the S-SCORE equation.
The classification criterion for banks based on the S-SCORE model evaluation is as follows:
• Banks with S-SCORE > 70 are classified as having a good financial position.
• Banks with S-SCORE < 70 are classified as facing financial problems.
• Banks with S-SCORE < 50 are classified as facing significant financial problems and high risk of bankruptcy (Khan, 2019:7).

2.7 Concepts of BANKOMETER Model Variables

2.7.1 Capital to Asset Ratio

Is the main standard that must be followed by credit organizations and one of the most important indicators of bank performance, as well as its soundness and capacity. In general, it characterizes bank'sability to mitigate possible financial losses using its own capital, while maintaining their customer's funds. Capital to asset ratio defines whether bank possesses sufficient capital to support its assets. A higher ratiosuggests that bank employs more internal and external sources of funds to invest in various assets. According to the core principles of IMF, the minimum level of bank's capital ratio must be 4% (BOLAT, 2017:8).

(Capital / Total Assets) *100 ≥ 4%

2.7.2 Equity to Total Assets

Equity to Asset Ratio that measures the amount of assets that are contributed by owners' investments by comparing the total equity in the bank to the total assets. The higher the ratio, the more secure the financial position of the bank and the major part of the assets are financed by equity capital and is less dependent on external funding (Kumar, 2019:36). According to the criteria of the BANKOMETER model, the ratio for banks should be greater or equal to It is calculated by the following equation:

(Equity / total Assets) *100 ≥ 2%

2.7.3 Capital Adequacy Ratio

Capital adequacy is one of the most important tools used in determining the solvency of the bank and its ability to face potential financial risks, so the lower the possibility of financial risk for the bank (Awwad, 145:2023) and the size of the capital is determined based on the risks expected by banks, In other words, adequacy indicates that banks have sufficient capital to cover the expected risks and deal with potential financial difficulties without the need to increase capital or resort to external financing, and the growing concern for capital adequacy in banks has become one of the important issues in our time 536 2021. (Jothr, 2021: 536). According to the standards of the BANKOMETER model, the ratio for banks should be 8% to 40% (Kherbeek, 2020 :11). It is calculated by the following equation :

((Tier1 Capital + Tier2 Capital) / Risk weighted assets) ≥ 8%

2.7.4 Non Performing Loan Ratio

Is a ratio that measures the volume of debts that debtors were unable to repay on time. Non-performing loans, or which are usually called non-performing loans, are considered a basic financial ratio that is able to provide assessment information on the state of capital, profitability, and credit risks. Banks used the ratio of non-performing loans to total loans as an indicator of financial performance (Rifansa & Pulungan 2022:15726), as the high ratio indicates an increase in non-performing loans granted by banks, which leads to poor quality

of assets. Research and evidence from various countries indicated that the increasing levels of non-performing loans It has a direct impact on the profitability of banks, there is a negative relationship between non-performing loans and performance efficiency (Chimkono, 2016: 80-82). According to the standards of the BANKOMETER model, the percentage for banks must be no less than 15%, and it is calculated through the following equation:

(Non -performing loan / Total Loan) *100 ≤ 15%

2.7.5 Cost to Income Ratio

The cost to income ratio is the ratio that compares operating expenses excluding non-cash expenses and operating income () (Erari et al., 2013: 14) This ratio is measured by dividing operating expenses by operating income (ALmazari 2013: 288). A major percentage that determines the profitability of banks, where the increase of this percentage indicates a decrease in operating income with an increase in operating expenses for banks. This means that banks spend a greater percentage of their operating income on operating expenses, and this indicates that the efficiency of banks in managing their operating expenses is weak, which leads to its financial performance (Khan et al., 2019: 433). According to the criteria of the BANKOMETER model, the ratio at banks must be greater or equal to 40% (Nlmalathasa et al., 2012:13), and it is calculated through the following equation:

(Operating expenses / Operating Income)*100 ≤ 40%

2.7.6 Loans to Asset Ratio

This ratio is used to measure the quality of assets in banks and highlights the ratio of total assets of the balance sheet of banks that are issued as loans that loans carry a higher level of risk compared to other assets (Davis & Obasi, 2019 : 15) and the higher This ratio is indicated by the high credit risk of banks, however, the low ratio of loans to total assets may indicate that the bank is more conservative, which reduces the possibility of making profits (Shakbutova & Shopasheva 2020: 182). According to the criteria of the BANKOMETER model, the percentage for banks must be no less than 65% (Widiastuty 29: 2018), and it is calculated through the following equation:

(Loans / total Assets) *100 ≤ 65%

3.1 Method of Analysis: Bankometer Model

3.1.1 Capital to Asset Ratio Analysis

Table (3) Capital to Asset Ratio Analysis

Bank / Year	National	Investment	United	Credit	Commercial
2010	46.48	30.48	28.92	16.8	29.38
2011	54.15	30.51	30.49	22.51	40.41
2012	29.65	26.3	35.39	29.65	34.07
2013	18.43	29.77	39.74	27.65	44.79
2014	24.7	44.75	50.27	40.63	55.64
2015	46.66	45.31	51.61	40.41	60.25
2016	43.13	43.26	56.83	48.69	58.98
2017	41.39	43.57	57.75	52.45	54.26
2018	47.55	41.18	58.18	50.23	56.31
2019	39.5	47.18	49.64	47.84	55.58
2020	27.96	43.74	42.9	47.43	40.55
2021	13.72	35.56	36.26	53.56	48.79
Average	36.11	38.467	44.831	39.82	48.25
MAX	54.15	47.18	58.18	53.56	60.25
MIN	13.72	26.3	28.92	16.8	29.38
SD	12.84	7.42	10.61	12.57	10.26

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel .

We note from the Table (3) the following:

A. National Bank of Iraq: National Bank of Iraq recorded a percentage of CA (Cash Assets) higher than the standard model limit of 4% throughout the studied period. This indicates that the bank has good and safer capital. The ratio fluctuated during the research years, ranging from a maximum of (54.15%) in 2011 to a minimum of (13.72%) in 2021. The reason for this is an increase in total assets while the capital remained the same. The average value of the capital-to-assets ratio during the research years was (36.11%) with a standard deviation of (12.84%).

B. Investment Bank of Iraq: The percentage of CA for Investment Bank was higher than the standard model limit of 4% throughout the studied period. This increase in the ratio enhances the confidence level in the bank and improves its financial performance. The ratio ranged from a maximum of (47.18%) in 2019 to a minimum of (26.3%) in 2012. The average value of the capital-to-assets ratio during the research years was (38.467%) with a standard deviation of (7.2%).

C. United Bank for Investment: The analysis results showed that the CA ratio for the United Investment Bank was higher than the standard model limit of 4% throughout the studied period. This overall increase is considered positive as it indicates that the bank has sufficient capital to cover potential risks. The ratio ranged from a minimum of 28.92% in

2010 to a maximum of (58.18%) in 2018. The average value of the capital-to-assets ratio during the research years was (44.831%) with a standard deviation of (10.16%).

D. Credit Bank of Iraq: Credit Bank recorded a (CA) ratio higher than the standard model limit of 4% during the research years, indicating that the bank has the ability to finance commercial operations and serious investments. The ratio ranged from (16.8%) as a minimum in 2010 to (53.56%) as a maximum in 2021. The average value of the capital-to-assets ratio during the research years was (39.82%) with a standard deviation of (12.57%).

E. Commercial Bank of Iraq: The ratio (CA) for Commercial Bank of Iraq followed an upward trend exceeding the standard model limit of 4% throughout the studied period. This indicates that the bank has better protection for depositors, which is the bank's objective. The ratio ranged from a minimum of (29.38%) in 2010 to a maximum of (60.25%) in 2015. The average value of the capital-to-assets ratio for the bank was 48.25% with a standard deviation of (10.26%).

3.1.2 Equity to Total Assets Analysis

Table on (4) Equity to Total Assets Analysis

Bank / Year	National	Investment	United	Credit	Commercial
2010	49.19	35.94	35.47	22.7	46.3
2011	57.08	35.73	37.73	34.21	54.63
2012	45.85	31.19	43.92	52.05	48.8
2013	31.07	35.79	44.88	36.33	58.7
2014	42.81	50.79	53.1	47.16	63.29
2015	49.789	50.97	55.34	48.79	66.09
2016	49.64	50.14	61.15	59.76	66.52
2017	47.3	49.34	57.26	66.18	63.28
2018	49.04	46.63	58.91	62.99	63.96
2019	40.55	49.19	50.21	56.86	60.45
2020	34.39	46.41	43.42	55.72	49.92
2021	17.34	37.52	36.96	61.86	61.39
Average	24.73	43.3	48.19	50.38	58.61
MAX	57.08	50.97	61.15	66.18	66.52
MIN	17.34	31.19	35.47	22.7	46.3
SD	10.74	7.39	9.01	13.27	7.01

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel

We note from the Table (4) the following:

A- National Bank of Iraq: The analysis of the Equity-to-Asset Ratio (EAR) for National Bank of Iraq shows stable and significantly higher results than the benchmark of the evaluation model (2%) throughout the studied period. This indicates that the bank has a strong financial position. The recorded ratios were close, indicating that the bank has worked

on increasing its external financing ratio, which is comparable to the increase in owned capital through raising the ratio of deposits and long-term borrowing. The highest ratio was recorded in 2011 at (57.08%), while the lowest ratio was recorded in 2021 at (17.34%). The average value of the equity-to-asset ratio was 42.73% with a standard deviation of (10.74).

B- Investment Bank of Iraq: Investment Bank recorded an EAR ratio higher than the benchmark (2%) of the evaluation model throughout the studied period. This indicates that the bank used a significant portion of its capital to finance its assets without relying on debt. The bank recorded its highest ratio in 2015 at (50.97%) and its lowest ratio in 2013 at (31.19%). The average value of the equity-to-asset ratio was 43.3% with a standard deviation of (7.39%).

C- **United Bank for Investment**: The ratio (EAR) for the United Investment Bank was higher than the benchmark (2%) of the evaluation model throughout the studied period. This indicates a high financial capacity and resilience for the bank. The lowest ratio was recorded in 2010 at (35.47%), and it gradually increased to its highest level in 2015 at (50.97%) due to an increase in equity and a decrease in total assets resulting from a decline in cash balances at other banks. This is an important factor in attracting more depositors. The average value of the equity-to-asset ratio was 48.19% with a standard deviation of (9.01%).

D- Credit Bank of Iraq: The analysis of Credit Bank's (EAR) ratio shows stable and higher results than the benchmark (2%) of the evaluation model throughout the studied period. The lowest ratio was recorded in 2010 at 22.7%, and the highest ratio was recorded in 2017 at (66.18%) due to an increase in the bank's reserves and retained earnings and a decrease in the asset account. The average value of the equity-to-asset ratio was (50.38%) with a standard deviation of (13.27%).

E- Commercial Bank of Iraq: The analysis of the Equity-to-Asset Ratio (EAR) for Commercial Bank of Iraq shows results higher than the benchmark (2%) of the evaluation model throughout the research period. The lowest ratio was recorded in 2010 at (46.3%), and the highest ratio was recorded in 2016 at (66.52%) due to a decrease in the bank's reserves and an increase in the volume of assets in that year. The ratio showed a significant increase in 2015 by (70%) due to a decrease in the bank's assets in that year, attributed to a decline in direct credit facilities. The average value of the equity-to-asset ratio was 58.61% with a standard deviation of (7.01%).

3.1.3 Capital Adequacy Ratio Analysis

Table on (5) Capital Adequacy Ratio Analysis

Bank / Year	National	Investment	United	Credit	Commercial
2010	124	49	20	218	577
2011	196	63	22	250	495.5
2012	133	64	20.81	315	414
2013	104.15	63	30.5	314	489.7
2014	111.51	93	50.53	286	760.4
2015	116.9	152	29.6	302	536
2016	103.22	130	33.03	374	728.8
2017	106.65	139	36	399	594.1
2018	82. 87	122	36.64	370	657.6
2019	27. 81	102	45	374	529.2
2020	30. 91	105.06	52%	266	73.7
2021	25. 99	102.55	49.5	264	98.9
Average	124.4	98.71	31.17	311	578.23
MAX	196	152	50.53	399	760.4
MIN	103.22	49	20	218	73.7
SD	65.97	33.45	16.11	102.37	248.19

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel

We note from the Table (5) the following:

A- National Bank of Iraq: The analysis results of the Capital Adequacy Ratio (CAR) for National Bank of Iraq exceed the minimum required ratio in the evaluation model, ranging from 8% to 40% throughout the study period. This indicates that the bank is safer and meets its financial obligations. Its highest ratio was in 2011, reaching (196%), due to an increase in regulatory capital and a decrease in total risk-weighted assets. Its lowest ratio was in 2019 at (27.81%(. The average value of the capital adequacy ratio was 124.4% with a standard deviation of (65.97%).

B- Investment Bank of Iraq: Investment Bank of Iraq achieved a CAR ratio that exceeds the minimum required ratio in the evaluation model, ranging from 8% to 40% throughout the study period. This indicates that the bank is more capable of withstanding potential risks and provides high protection for customer deposits. Its highest ratio was in 2015 at 152%, and its lowest ratio was in 2010 at (49%). The average value of the capital adequacy ratio was 98.71% with a standard deviation of (33.45%).

C- United Bank for Investment: United Investment Bank recorded a CAR ratio that exceeds the minimum required ratio in the evaluation model, ranging from 8% to 40% throughout the study period. This indicates that the bank enjoys high financial health and stability. Its highest ratio was in 2014 at (50.53%), and its lowest ratio was in 2010 at (20%). The average value of the capital adequacy ratio was (31.17%) with a standard deviation of (16.11%)..

D- Credit Bank of Iraq: The analysis results of the ratio (CAR) for Iraqi Credit Bank exceed the minimum required ratio in the evaluation model, ranging from 8% to 4% throughout the

study period. This indicates that the bank provides a form of protection for depositors against unexpected risks it faces during its operations. Its highest ratio was in 2017 at (399%) due to an increase in regulatory capital and a decrease in total risk-weighted assets. Its lowest ratio was in 2010 at(218%). The average value of the capital adequacy ratio was (311%) with a standard deviation of (102.37%). As a result, the bank ranked 9th in the overall performance of the sampled banks.

E- Commercial Bank of Iraq: Commercial Bank of Iraq showed a ratio (CAR) that exceeds the minimum required ratio in the evaluation model, ranging from 8% to 4% throughout the study period. This indicates the bank's management ability to meet the need for capital. Its highest ratio was in 2014 at (760.4%) due to an increase in regulatory capital and a decrease in total risk-weighted assets. Its lowest ratio was in 2020 at 73.7%. The average value of the capital adequacy ratio was (578.23%) with a standard deviation of (248.19%).

3.1.4 Non Performing Loan Ratio Analysis

Table (6) : Non Performing Loan Ratio Analysis

Bank / Year	National	Investment	United	Credit	Commercial
2010	16.279	19.53	0.49	9.83	3.44
2011	17.16	14.61	1.59	10.96	1.32
2012	11.07	9.33	0.86	10.7	6.43
2013	7.28	10.58	2.47	31.92	3.83
2014	9.37	14.86	5.78	65.79	2.19
2015	14.29	18.64	14.05	1.82	2.11
2016	23.32	24.73	29.35	28.96	1.3
2017	46.06	21.65	10.01	10	9.83
2018	27.39	14.87	50.37	8.76	16.22
2019	12.76	14.71	6.43	11.23	17.68
2020	10.36	18.2	65.88	9.47	4.58
2021	4.54	6.79	3.52	13.055	0.63
Average	16.66	15.71	15.9	17.71	5.8
MAX	46.06	24.73	65.88	65.79	17.68
MNI	4.54	6.79	0.49	1.82	0.63
SD	11.29	6.6	21.08	17.34	5.78

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel.

We note from the Table (6) the following:

A- National Bank of Iraq: The financial analysis results of the Non-Performing Loans (NPL) ratio at National Bank of Iraq significantly exceeded the standard threshold of the evaluation model of 15% during the following years: 2018, 2017, and 2016. The increase in this ratio indicates a rise in the bank's non-performing loans, which it cannot collect on their due dates, resulting in credit risks that negatively affect its performance. The mentioned bank also recorded a slight exceeding of the evaluation model threshold during the following

years: 2011 and 2010, but it did not significantly affect its performance. Additionally, the bank maintained a ratio within the evaluation model threshold during the following years:(2021, 2020, 2015, 2014, 2013, and 2012), with this ratio ranging from 12.76% to 4.54%. The decrease in the ratio indicates that the bank did not have significant risks due to good credit granting management. The average ratio of non-performing loans to total loans was (16.66%), with a standard deviation of (11.2%).

B- Investment Bank of Iraq: Investment Bank of Iraq obtained an NPL ratio that significantly exceeded the standard threshold of the evaluation model of 15% during the following years: 2017, 2016, and 2010. The increase in this ratio indicates a rise in the bank's non-performing loans, which it cannot collect on their due dates, resulting in credit risks that negatively affect its performance. The mentioned bank also recorded a slight exceeding of the evaluation model threshold during the following years: 2020 and 2015, but it did not significantly affect its performance. Additionally, the bank maintained a ratio within the evaluation model threshold during the following years(2021, 2019, 2018, 2014, 2013, 2012, 2011,) with this ratio ranging from (14.87%) to (6.79%). The decrease in the ratio indicates that the bank did not have significant risks due to good credit granting management. The average ratio of non- loans to loans was 15.71%, with a standard deviation of (6.6%).

C- United Bank for Investment: The NPL ratio at United Investment Bank has shown an upward trend, significantly exceeding the standard threshold of the evaluation model of 15% during the following years: 2020, 2018, and 2016. The increase in this ratio indicates the possibility of the bank's borrowers not fulfilling their obligations towards the bank during those years, posing direct credit risks to the bank's financial position. The bank also recorded an NPL ratio within the evaluation model threshold during the following years : 2021, 2019, 2017, 2015, 2014, 2013, 2012, 2011, and 2010, ranging from 14.05% to 0.49%. The decrease in the ratio indicates that the bank had a good asset quality during that period. The average ratio of non-performing loans to total loans was (15.9%), with a standard deviation of (21.08%).

D- Credit Bank of Iraq: The Non-Performing Loans (NPL) ratio for the Credit Bank significantly exceeded the 15% benchmark of the assessment model during the following years: 2016, 2014, and 2013. The increase in this ratio indicates a weakness in credit risk quality and loan management, posing a direct threat to the bank's financial position. However, the bank recorded an NPL ratio within the benchmark during the following years: 2021, 2020, 2019, 2018, 2017, 2015, 2012, 2011, and 2010. This ratio remained relatively stable for the bank, ranging between (11.23%) and (1.82%). The decrease in the ratio suggests that the bank had a limited number of non-performing loans and was able to collect them during the repayment period. The average ratio of non-performing loans to total loans for the bank was (17.71%) with a standard deviation of (17.34%).

H- Commercial Bank of Iraq: Commercial Bank of Iraq achieved an NPL ratio within the benchmark of the assessment model, except for the following years: 2019 and 2018, where it recorded a slightly higher ratio, which did not significantly affect its performance. This ratio remained relatively stable for the bank, ranging between (9.83%) and(0.64%). This indicates that the credit risks for this bank are low. The average ratio of non-performing loans to total loans for the bank was (5.8%) with a standard deviation of (5.78%).

3.1.5 Cost to Income Ratio Analysis

Table (7) : Cost to Income Ratio Analysis

Bank / Year	National	Investment	United	Credit	Commercial
2010	378	88.2	34.49	116.45	100.78
2011	197.2	97.7	34.8	110.89	87.58
2012	38.07	434.53	62.95	73.15	54.39
2013	85.1	57.543	74.3	121.39	96.44
2014	251.54	57.27	75.64	60.59	73.8
2015	590.64	91.28	87.03	56.42	102.86
2016	61.08	129.54	156.92	152.01	113.91
2017	533.74	342.38	730.61	84.59	115.64
2018	386.39	340.03	189.31	112.12	83.06
2019	314.4	654.43	614.6	197.49	197.12
2020	146.47	188.07	290.43	241.86	42.3
2021	156.75	107.89	738.28	198.52	138.88
Average	261.61	215.74	257.45	127.12	100.56
MAX	590.64	654.43	738.28	241.86	197.12
MIN	38.07	57.27	34.49	56.42	42.3
SD	181.92	187.67	274.89	59.24	40.38

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel.

We observe the following from Table (7):

A- National Bank of Iraq: The financial analysis of National Bank of Iraq showed that the Cost-to-Income Ratio (CIR) significantly exceeded the 40% benchmark of the assessment model during the studied period, except for the year 2012, where it reached (38.07%). This is due to the increase in operating expenses compared to operating income. The average ratio of cost to income for the bank was (261.61%) with a standard deviation of (181.92%). As a result, the bank ranked 9th in terms of overall performance among the sample of banks in the research.

B- Investment Bank of Iraq: Investment Bank of Iraq recorded a CIR ratio that significantly exceeded the 40% benchmark of the assessment model during the studied period. This is due to the inefficiency of the bank's management of operating expenses, which affects its financial performance. The bank also recorded a ratio higher than the benchmark in 2014, reaching (57.27%). The average ratio of cost to income for the bank was (215.74%) with a standard deviation of (187.67%). As a result, the bank ranked 5th in terms of overall performance among the sample of banks in the research.

C- United Bank for Investment: The Cost-to-Income Ratio (CIR) in United Investment Bank followed an upward trend, significantly exceeding the 40% benchmark of the assessment model during the studied period. This indicates that the bank incurred losses in those years, which had a negative impact on its performance. The bank also recorded a ratio lower than the benchmark in the years 2010 and 2011. This ratio remained relatively stable

for the bank, indicating that it achieved profits during that period due to effective management of operating expenses and resource allocation. The average ratio of cost to income for the bank was (257.45%) with a standard deviation of (274.89%).

D- Credit Bank of Iraq: The CIR ratio in the Iraqi Credit Bank significantly exceeded the 40% benchmark of the assessment model during the studied period. The increase in this ratio indicates a significant decrease in the bank's profitability due to a decline in operating income. The bank also recorded a ratio higher than the benchmark in 2015, reaching (56.42%). This ratio remained relatively stable for the bank, indicating that it achieved profits during that period due to effective management of operating expenses and resource allocation. The average ratio of cost to income for the bank was (127.12%) with a standard deviation of (59.24%).

H- Commercial Bank of Iraq: Commercial Bank of Iraq achieved a CIR ratio that significantly exceeded the 40% benchmark of the assessment model during the studied period. The increase in this ratio is attributed to higher operating expenses compared to erating income, indicating that the bank incurred losses in those years, which had a negative impact on its performance. The bank also recorded a ratio lower than the benchmark in 2020. This ratio remained relatively stable for the bank. The average ratio of cost to income for the bank was (100.56%) with a standard deviation of (40.38%).

3.1.6 Loans to Asset Ratio Analysis

Bank / Year	National	Investment	United	Credit	Commercial
2010	33.14	30.79	50.5	2.3	0.17
2011	26.56	30.9	42.69	2.25	0.33
2012	20.01	41.74	54.35	2.19	0.78
2013	21.2	26.87	71.23	0.45	1.18
2014	26.87	17.82	71.96	0.19	1.59
2015	34.35	14.38	55.78	1.07	2.19
2016	21.51	10.35	51.65	0.57	2.33
2017	22.24	11.91	63.35	1.75	2.34
2018	14.61	16.39	66.14	1.62	2.68
2019	26.7	18.99	41.73	1.54	2.54
2020	35.52	14.22	16.99	1.41	3.056
2021	20.8	36.68	18.01	1.48	5.29
Average	25.29	22.58	49.52	1.4	2.13
MAX	35.52	41.74	71.96	2.3	5.29
MIN	14.61	10.35	16.99	0.19	0.17
SD	9.34	11.78	22.36	0.78	1.45

Table No(8): Loans to Asset Ratio Analysis

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel.

We note from the Table (8) the following:

A- National Bank of Iraq: The analysis of the Loan-to-Asset Ratio (LAR) for National Bank of Iraq shows that it was below the standard threshold of the evaluation model (65%) during the entire study period. This ratio remained stable for the bank, with the lowest percentage recorded in 2018 (14.61%). The decrease in the ratio indicates that the bank had a good level of liquidity but did not invest its funds in profitable areas other than loans. Gradually, the ratio increased and reached its highest point in 2020 at (35.52%). The average ratio of loans to total assets for the bank was (25.29%) with a standard deviation of (9.34%).

B- Investment Bank of Iraq: Investment Bank of Iraq also had a Loan-to-Asset Ratio (LAR) below the standard threshold of the evaluation model (65%) during the study period. The ratio remained stable for this bank, with the lowest percentage recorded in 2016 (10.35%). The decrease in the ratio indicates that the bank had a low credit risk level. Gradually, the ratio increased and reached its highest point in 2012 at 41.74%. The average ratio of loans to total assets for the bank was (22.58%) with a standard deviation of (11.78%).

C- United Bank for Investment: The Loan-to-Asset Ratio (LAR) for the United Investment Bank varied over the years. It showed an increase in the following years (2014-2013) above the standard threshold of the evaluation model (65%). This was due to a significant increase in loan disbursements by the bank, which had an impact on its financial performance. However, the bank recorded a ratio within the standard threshold during the other years, with the lowest percentage recorded in 2020 (10.35%). The decrease in the ratio indicates that the bank had a good level of liquidity. Gradually, the ratio increased and reached its highest point in 2014 at (71.96%). The average ratio of loans to total assets for the bank was (49.52%) with a standard deviation of (22.36%).

D- Credit Bank of Iraq: The Loan-to-Asset Ratio (LAR) for the Iraqi Credit Bank was below the standard threshold of the evaluation model (65%) during the entire study period. The ratio was significantly low for this bank, indicating that it did not invest its funds in profitable investment areas other than loans. However, it had the highest level of liquidity compared to the other banks in the research sample. The average ratio of loans to total assets for the bank was (1.4%) with a standard deviation of (0.78%).

E- Commercial Bank of Iraq: The financial analysis of Commercial Bank of Iraq revealed a significant decrease in the Loan-to-Asset Ratio (LAR) compared to the standard threshold of the evaluation model (65%) during the entire study period. This was due to the bank's different policy caused by the country's economic situation and banks' reluctance to grant loans. The average ratio of loans to total assets for the bank was (2.13%) with a standard deviation of (1.45%).

4.1 S-SCORE BANKOMETER Model for Future Financial Performance Evaluation

Table (9): S-SCORE Model for the Sample of Banks Research

Bank	National	Investment	United	Credit	Commercial
Variable / Year	S-SCORE	S-SCORE	S-SCORE	S-SCORE	S-SCORE
2010	963.766	310.842	186.785	211.373	2181.74
2011	1053.841	359.577	196.481	219.308	1915.054
2012	617.711	453.531	219.765	222.825	1597.803
2013	527.402	342.4619	272.48	286.607	1928.843
2014	746.617	486.798	370.924	366.409	2857.186
2015	1150.414	486.798	304.274	295.091	2091.898
2016	569.209	637.898	359.576	358.103	2765.099
2017	1062.392	731.531	531.866	338.06	2296.415
2018	828.571	662.213	399.673	376.516	2511.297
2019	537.981	699.549	497.142	372.009	2084.421
2020	358.287	562.041	251.727	237.156	411.334
2021	300.147	508.402	502.792	340.864	553.51
المتوسط	726.3615	538.35	341.12375	302.02675	1932.8
MAX	1150.414	731.531	531.866	376.516	2857.186
MIN	300.147	310.842	186.785	211.373	411.334
SD	285.387994	150.71	122.492689	64.926539	765.993778

Source: Prepared by the two researchers based on the financial reports of the banks, the research sample, and the outputs of the Excel.

We note from the Table (9) the following:

That all the banks in the research sample have a good future financial performance and a very strong financial position. They do not face any financial difficulties in the future, according to the disclosure of the International Monetary Fund related to the BANKOMETRE model. The average S-SCORE for the research sample banks exceeds the standard threshold of the evaluation model (70%). The Credit Bank recorded the lowest average S-SCORE value at 302.026%, which is within the legal ratio set in the model. Similarly, the Trade Bank recorded the highest average S-SCORE value at 1932.8%. From the above, it is evident that the banks are capable of meeting their obligations without facing any hardships or financial failures in the coming period, except in the case of a major financial crisis.

Conclusions

After analyzing the data and results in the field of financial analysis using the Bankometer model and in light of theoretical literature, the research has reached the following conclusions:

1. The research results indicate that it is necessary to adopt a supportive model for monitoring the banks implemented by the monetary authority. The Bankometer evaluation model showed accuracy in assessing the financial performance of the banks in the study sample.

2. Based on the current research, which evaluated the financial performance of private commercial banks in the research sample using the Bankometer model and understanding how the model is applied, as all the data used to calculate the model's indicators are available and can be extracted from the financial statements of Iraqi private banks in the research sample, it can be said that the Iraqi environment is suitable for implementing this model, thus accepting the research hypothesis.

3. The results of the analysis of the Capital-to-Asset Ratio (CA) showed that all the banks in the research sample achieved a ratio significantly higher than the minimum threshold of the model standard of 4%. This indicates the banks' ability to bear risks and provide necessary financing for various business operations.

4.The results of the financial analysis of the Equity-to-Asset Ratio (EAR) showed that all the banks in the research sample achieved a ratio exceeding the standard threshold of the evaluation model by 2%. This reflects the ability of the banks in the research sample to finance their activities using shareholder equity rather than borrowing.

5. All the banks in the research sample achieved a Capital Adequacy Ratio (CAR) significantly higher than the minimum threshold of the model standard of 40%. This indicates the financial strength of the banks, ensuring their stability and protecting customer deposits.

6. The financial analysis of the banks in the research sample showed a decrease in the Non-Performing Loans ratio (NPL) below the model evaluation threshold of 15%. This low ratio indicates borrowers' ability to repay

7. The financial analysis of the banks in the research sample demonstrated an increase in the Cost-to-Income Ratio (CIR), indicating that the banks in the research sample did not follow good management of operational expenses and resource allocation. The Credit recorded significantly higher rates exceeding the model evaluation threshold, indicating an inverse relationship between the CIR ratio and profitability for these banks.

8. There was a decrease in the Liquidity Adequacy Ratio (LAR) for the banks in the research sample, with rates lower than the model evaluation threshold. This indicates that the banks in the research sample were more secure in terms of banking liquidity.

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