EVALUATING THE FINANCIAL PERFORMANCE OF IRAQI COMMERCIAL BANKS BY TOPSIS METHOD

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THESIS APPROVAL PAGE

I certify that in my opinion the thesis submitted by Ali JIRJEES titled “Evaluating the Financial Performance of Iraqi Commercial Banks by Topsis Method” is fully adequate in scope and in quality as a thesis for the degree of Master of Finance and Banking.

Prof. Dr. Murat YILDIRIM .....

Thesis Advisor, Department of Business Administration

This thesis is accepted by the examining committee with a unanimous vote in the Department of Finance and Banking as a Master of Finance and Banking. 04-07-2022

Examining Committee Members (Institutions)	Signature
Chairman : Prof. Dr. Murat YILDIRIM (KBU)	.....
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The degree of Master in Finance and Banking by the thesis submitted is approved by the Administrative Board of the Institute of Graduate Programs, Karabuk University.

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Director of the Institute of Graduate Programs

DECLARATION

I hereby declare that this thesis is the result of my own work and all information included has been obtained and expounded in accordance with the academic rules and ethical policy specified by the institute. Besides, I declare that all the statements, results, materials, not original to this thesis have been cited and referenced literally.

Without being bound by a particular time, I accept all moral and legal consequences of any detection contrary to the aforementioned statement.

Name Surname: Ali JIRJEES

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DOĞRULUK BEYANI

Yüksek lisans tezi olarak sunduğum bu çalişmayi bilimsel ahlak ve geleneklere aykiri herhangi bir yola tevessül etmeden yazdiğimi, araştirmami yaparken hangi tür alintilarin intihal kusuru sayilacağini bildiğimi, intihal kusuru sayilabilecek herhangi bir bölüme araştirmamda yer vermediğimi, yararlandiğim eserlerin kaynakçada gösterilenlerden oluştuğunu ve bu eserlere metin içerisinde uygun şekilde atif yapildiğini beyan ederim.

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Adi Soyadi: Ali JIRJEES

İmza :

FOREWORD

I extend my thanks and appreciation to my supervisor Prof. Dr. Murat YILDIRIM, because of his great role in completing this thesis through his guidance and continuous follow-up throughout the research period.

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Finally, I present the effort of my thesis to those I have lost from this world (my father) and my friend (Muhammad Fadhil Jaber). May God have mercy on them. I thank my dear mother; without her, I would not have reached this stage, and I thank my family and dedicate this effort to them.

ABSTRACT

Evaluating the performance of Iraqi commercial banks is considered a necessary process due to the reforms the Iraqi banking sector is witnessing after it was exposed to many financial losses during the previous years. This thesis aims to assess the financial performance of Iraqi commercial banks by using financial indicators according to the topsis method for the period 2016–2020. The performance of these banks was evaluated using capital adequacy ratios, liquidity ratios, profitability ratios, and asset quality ratios.

This thesis consists of three chapters. Chapter one discussed the Iraqi banking sector and the banks and banking institutions operating in it. Chapter two discussed the evaluation of financial performance and the financial statements and financial ratios. Chapter three discussed the performance evaluation of 12 Iraqi commercial banks according to the topsis method for 2016–2020.

As a result of the financial analysis through performance determined, the Union Bank of Iraq is the most evaluated in the performance of the other commercial banks selected in the sample according to the THRESHOLD VALUE indicator. And Gulf Commercial Bank was the least evaluated of the other commercial banks selected in the sample. It was noted that the banks with a high ranking are the Trans Iraq Bank and Investment Bank of Iraq.

Keywords: Financial Ratios; Financial Performance; Iraqi Banking Sector; TOPSIS Method.

ÖZ

Iraklı ticari bankaların performansının değerlendirilmesi, Irak bankacılık sektörünün önceki yıllarda yaşanan çok sayıda mali kayıpla karşı karşıya kaldığı reformlar nedeniyle gerekli bir süreç olarak kabul ediliyor. Bu tez, Irak ticari bankalarının mali performansını, 2016–2020 dönemi için geçerli olan topsis yöntemine göre finansal göstergeler kullanarak değerlendirmeyi amaçlamaktadır. Bu bankaların performansı sermaye yeterlilik oranları, likidite oranları, karlılık oranları ve varlık kalitesi oranları kullanılarak değerlendirildi.

Bu tez üç bölümden oluşur. Birinci bölümde Irak bankacılık sektörü ve bu sektörde faaliyet gösteren bankalar ve bankacılık kurumları ele alındı. İkinci bölümde finansal performans değerlendirmesi, finansal tablolar ve finansal oranlar ele alınmıştır. Üçüncü bölümde, 2016–2020 yılı topsis yöntemine göre 12 Iraklı ticari bankanın performans değerlendirmesi ele alındı.

Performans değerlendirmesiyle finansal analiz sonucunda, Union Bank of Iraq, örneğe seçilen diğer ticari bankaların performansının en yüksek olduğu THRESHOLD VALUE göstergesine göre belirlenmişti. Ve Gulf Commercial Bank numunede seçilen diğer ticari bankaların en az değerlendirildiği oldu. Yüksek rütbeli bankaların Trans Iraq Bank ve Investment Bank of Iraq olduğu kaydedildi.

Anahtar Kelimeler: Finansal Oranlar; Finansal Performans; Irak Bankacilik Sektörü; TOPSIS Yöntemi.

ARCHIVE RECORD INFORMATION

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ARŞİV KAYIT BİLGİLERİ

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ABBREVIATIONS

CBI: Central Bank of Iraq

MCDM: Multiple-Criteria Decision Making

NIS: Negative Ideal Solution

PIS: Positive Ideal Solution

TOPSIS: Technique for Order Preference by Similarity to Ideal Solution

PURPOSE AND IMPORTANCE OF THE RESEARCH

One of the most important tools that banks use to achieve clarity and banking transparency is financial ratios. These financial ratios help to clarify the associated financial performance of banks. The Iraqi banking sector is trying to build a stable and strong financial system, one of the developing countries starting to recover from the crises it has gone through.

The Iraqi private banking is one of the most important banking sectors in Iraq, which has gained significant growth in late years. This research aims to evaluate the financial performance of the Iraqi commercial banks by measuring financial ratios using the TOPSIS method.

METHOD OF THE RESEARCH

This study uses the Topsis Method to evaluate the financial performance of Iraqi commercial banks. Multi-criteria decision-making strategies were employed in the study to make an evaluate. In the literature, there are various multi-criteria decision-making strategies. TOPSIS (Technique for Order Preference by Similarity to Ideal Solution Methods) is the most often used method for comparing financial performance in the literature.

In this thesis, twelve commercial banks are evaluated and listed in the Central Bank of Iraq (CBI); based on the annual statistical bulletins of the (CBI) they are examined for five years, the period between 2016 and 2020. This thesis was based on secondary data. Data from financial reports for every fiscal year is first used to calculate nine ratios. The TOPSIS method is then used to calculate each bank's annual financial performance score. For each bank and each year, we calculated a ranking index score. Accordingly, the banks studied were ranked according to their ranking index scores as a final step.

POPULATION AND SAMPLE

The research sample included the Bank of Baghdad, Commercial Bank of Iraq, Gulf Commercial Bank, Investment Bank of Iraq, National Bank of Iraq, Iraqi Middle East Bank for Investment, Trans Iraq Bank, Ashur International Bank for Investment, Summer Commercial Bank, Union Bank of Iraq, Credit Bank of Iraq, and Al-Mansour Investment Bank, all of which are listed on the Iraq Stock Exchange. These 12 banks

were chosen because they publish their financial accounts on the Iraqi Stock Exchange on a regular basis. Furthermore, these banks have big branches in Iraqi cities.

SCOPE AND LIMITATIONS / DIFFICULTIES

The data in this thesis consists of twelve commercial banks listed in the Central Bank of Iraq (CBI). The study spans years between 2016-2020. The sample size is limited to 12 banks. As a result, the study incorporates the limitations of secondary data. The study period was set at five years. The results may vary if different financial ratios are used in a study. The main constraint for research is to obtain the financial statements of Iraqi banks, as most banks in Iraq do not publish their financial statements periodically and for years on an ongoing basis. In addition, financial results are announced later than in other countries. For the reasons mentioned, the research data was limited to the financial reports of the statistical bulletin of the Central Bank of Iraq for the years between 2016-2020.

PREVIOUS STUDIES

Handan Argunhan (2022). Analysis and Comparison of the Financial Performances of Participation Banking and Participation Banks and Deposits Banks in Turkey by Topsis Method. This study dealt with the concept of banking and participation services by evaluating the performance of a group of banks for the period 2016-2020 according to the topsis method. The study's results indicated that Participation banks' financial performance varies yearly. Also, all banks indicated that private deposit money banks have higher performance scores and are more profitable than participation banks.

Yavuz Gül (2021). Performance Evaluation of Banks By Entropy-Based Topsis Method. This study dealt with the evaluation of the performance of Turkish deposit banks using Entropy, Enhanced Entropy and TOPSIS methods. The study included 20 banks for the period 2009-2019. The results of this study were that Akbank is the highest performer and the Turkish bank is the lowest, and that the return on equity (ROE) and return on assets (ROA) have a significant role in the banks' performance.

Falah Hadi Saleh et al. (2021). The Impact of the Sustainable Balanced Scorecard For Strategic Decision-Making Under Competitive and Uncertain Climatic Conditions, Evidence From Iraq. In this study, the TOPSIS approach was used. The

results indicate that a particular strategy is favored, which may assist management in making strategic decisions in volatile and chaotic situations. Due to the increasing sophistication of economic units in today's competitive world, performance appraisal frameworks have to be proposed. The Balanced Scorecard (BSC) approach is one of the most widely used methods for measuring project efficiency, which can be adapted to specific situations. This study is unique in integrating environmental issues into a dynamic BSC model of an economic unit.

Yuksel Akay (2020)**.** Financial Performance Analysis of Banks with Topsis and Fuzzy Topsis. According to reports from The Banks Association of Turkey for the 2014-2018 financial year, the first seven banks were ranked in total assets based on relevant criteria. A performance review was conducted using the TOPSIS and Fuzzy TOPSIS techniques.

Kamil Firidin (2019). Comparison of Deposit and Participation Banks According to Topsis Method. This study dealt with the topsis method to compare and evaluate the participating banks. The study results indicate using two types of assessments: The first of these assessments is carried out through financial indicators. Another performance appraisal is the evaluation conducted using some non-financial criteria, which are concepts such as customer satisfaction, workforce size, and productivity.

Haşim Bağci (2013) Comparison of Profitability Performances of Commercial and Participation Banks with Topsis Method. This study dealt with comparing the profitability performance of the Turkish banking sector, and the topsis method was used to measure the performance of banks for the period 2003-2011. The results of this study are the banks with the highest performance scores are Bank Asya and Finansbank, and the bank with the lowest performance score is Bank Mellat. When all the banks were studied, it was found that Islamic banks have reached higher performance scores and, as a result, are more profitable than commercial banks.

Javier Mullor and Jose Martinez (2021). The evaluation performance for commercial banks by intuitionistic fuzzy numbers: the case of Spain. This study showed the field of sustainability in the financial performance in the Spanish financial sector. This study was conducted according to the Analytic Hierarchy Process and the

TOPSIS. According to this study, through a sensibility analysis, it is possible to isolate the relevance of the sustainability process to obtain a global performance evaluation.

Arif SALDANLI and Ibrahim SIRMA (2014). Usage of the Topsis method as a Financial Performance indicator. In this study, the topsis method was used through the data possessed by decision-makers in companies during the decision-making process. This study examined the various financial values of the Production Industry companies traded on BIST-100, and the TOPSIS scores were compared to the market performances of the businesses.

Younis Ahmed and Wrya Zahir (2022). Evaluating the financial performance of a sample of banks operating in the Kurdistan Region - Iraq for the period (2009-2019). This study evaluated the performance of banks operating in the Kurdistan Region - Iraq for the period 2009-2019 by relying on the most important criteria and main indicators in the financial evaluation. The results of this study showed that there are large fluctuations in the annual financial statements of banks and that the level of performance has not been stable in banks from one period to another due to financial instability.

1. CHAPTER ONE: THE IRAQI BANKING SECTOR

1.1. The Historical Development of the Iraqi Banking Sector

The first period 1863-1930: At the end of the last decade of the nineteenth century, the Ottoman Bank was established. It was the mainstay for extending Britain's influence to the areas under Ottoman control. The Ottoman Empire and this situation were embodied at the beginning of the growth of banking activity and the opening of branches of foreign banks in Iraq, which contributed greatly to the growth and expansion of commercial activity, so the Ottoman Imperial Bank was opened, which was established in London on June 1 of 1863 with a capital of (ten million pounds sterling), In the last decade of the nineteenth century opened branches in Iraq (AlSuwaidi, 2016, p. 306).

Second period 1930-1950: The Iraqi banking sector has been established since the nineteenth century as a private sector that includes a group of banks with seventeen branches. Then a government banking sector was established, represented by the Industrial and Agricultural Bank in 1935, AL-Rafidain Bank in 1941, the Central Bank in 1947, and Real Estate Bank in 1948. These banks were operating based on competition and the provision of public services. In 1931, the Iraq Currency Board was established in London to issue paper currency and maintain the new dinar currency reserve. The currency board adopted a conservative monetary policy by keeping very high reserves as a cover for the Dinar. The strength of the Dinar was strengthened by linking it to the British pound, which was linked to the par value with the British pound until 1959. In 1947 the National Bank of Iraq, a government bank, was established, and the currency board was abolished in 1949, which was established in London as soon as the new Bank took over the responsibility of issuing paper currency and maintaining the reserves. The National Bank of Iraq followed the conservative monetary policy and maintained 100% of the reserves to cover the existing local currency (Central Bank of Iraq, 2022).

Third period 1950-1990: In 1964, the monetary authority took the initiative to expand the governmental sector by canceling the private activity in its various forms, banking, commercial and industrial, and nationalizing all private banks, including

branches of foreign banks, according to Law 100 of 1964, and attaching them to the Commercial Bank, which was merged with AL-Rafidain Bank and transferring its ownership to the state. Thus, the foreign and national private capital were eliminated. And there were major failures in growth and development, as governments intervened in the work of the Central Bank and then lost its independence and was used to finance the war machine through the cash issuance in the eighties and completely depleted its reserves and this led to the collapse of the Iraqi dinar exchange rate to 3000 dinars for one dollar. And inflation reached three ranks as the Bank lost its role in achieving general price stability due to hyperinflation (Al-Dirawi, 2020, p.p. 98-99).

Fourth period 1990-2003: Law No. 12 of 1991 was issued, which allowed the private sector to establish private banks and the Socialist Bank to support the living conditions of people with limited incomes from state employees. Also, the Baghdad Stock Exchange was established under Law No. 24 of 1991.

The situation of the banking system was represented by a huge accumulation of treasury transfers (which represent the basis of the internal public debt, amounting to 46 billion dinars in 1990). Inflation indicators increased from 306 in 1990 to about 7000 in 2003, budget expenditures increased during the same period from 1705 billion dinars to 20 trillion dinars for the same period, and the public revenues transferred through inflationary financing, which exceeded 85% of the revenues of that budget in most years from the nineties until the 2003 war.

Post-war period 2003: The Banking Law was issued on September 19, 2003. The law brings Iraq's legal framework for banking to international standards and seeks to promote confidence in the banking system by establishing a safe, sound, competitive, and accessible banking system. Between October 15, 2003, and January 15, 2004, the Coalition Provisional Authority issued new Iraqi dinar coins and notes, with the notes printed using modern anti-forgery techniques, to "create a single unified currency that is used throughout all of Iraq and will also make money more convenient to use in people's everyday lives. Old banknotes were exchanged for new ones at a one-to-one rate, except for the Swiss dinars, which were exchanged at 150 new dinars for one Swiss Dinar (Central Bank of Iraq, 2022). The stage of financial liberalization in Iraq began in 2004, when the Central Bank of Iraq Law No. 56 of 2004 was issued, according to which the Central Bank obtained complete independence from the

government in the conduct of its central and banking operations and became isolated from the pressures of the financial policy to lend to the treasury in a way Direct, by Article (26) of the law, and then control the money supply. In the same year, the Iraqi Commercial Banks Law No. (94) was issued, representing an important beginning towards establishing a financial system that works under international standards. Issuance of the Investment and Securities Markets Law No. 13 (Hussein, 2019, p. 256).

1.2. The Financial Development of the Iraqi Banking Sector

Since 2006, the Central Bank of Iraq has used the electronic payment system as one of the payment and settlement systems for electronic information transmission between banks. It has worked to improve its performance and efficacy. And activating them through his role as a System operator and preparing the infrastructure for it, in addition to his duties as system supervisor and monitor, which include establishing rules and standards that govern the work of these systems, as well as ensuring that the integrity of operations is maintained to ensure that the country's financial stability is maintained through the banking system's work. Reducing reliance on the circulation of paper money. This system is made up of the following components (Karim, 2022, P.P. 9-10):

1. Real-Time Gross Settlement (RTGS): This method ensures that continuous payment orders between participants are settled during the working day. The system provides strong security by utilizing the following features:
   - The system secures the knowledge of any network intrusion or tampering.
   - A system base site and two backup sites assure information security in case of an emergency, such as a malfunction or other damage to the main site.
   - The Central Bank of Iraq is solely responsible for issuing electronic system (E-Token) users a permit to access the system. Because it operates on the dual control principle, no operation may be completed by a single person (through communication and authentication).
2. Automated Clearing House (ACH): This system facilitates participant exchange, calculates net exchange positions for all participants, and submits net settlement orders to the RTG5 system. The system aids in delivering payment

orders directly from bank systems to the central system, allowing the settlement procedure to be complete.

3. Government Securities Registration System (GSRS): A system that manages the Central Bank of Iraq and the Ministry of Finance's government bonds. To summarize, this technology allows the Central Bank to monitor liquidity from its location. The auction management process is also carried out as bonds are issued, as well as roasting and maintenance activities. On bond ownership, interest payments, and mortgages, the RTGS system is linked with the GSRS system to complete the financial settlement process on the participants' accounts.
4. Electronic Check Enablement Project (CEP): This project, which is part of the automated clearing system, works on transferring electronic checks between banks and their sites by using the check encoder image.
5. The Iraq Inter-Banking Network (IIBN): It is a high-tech wireless network that connects the main branches of all governmental and private banks, as well as the Ministry of Finance, with the Central Bank of Iraq, as well as linking the Central Bank's branches to each other to support the Iraqi payment system and banks authorized to carry out various activities related to money.
6. Managing the Swift alliance access system transmits cash from Iraq's Development Fund (DFI) and daily auction remittances.
7. Creating banking connections (RMA) with international banks and institutions that have a relationship with the Central Bank of Iraq through the (Swift) system.

The system for electronic payment of money services, which controls the functioning of electronic payment service providers and the issuing of licenses, was issued in 2014. It includes the establishment of a nationwide retail switchboard to electronically move payments to points of sale and automated teller machines. In addition to being a common operating system for mobile payment in Iraq, which allowed Iraqi banks and mobile network operators to use the most contemporary and integrated tools for cash payments, it was also important in developing the banking industry. Examine and test the new system version and implement various forms of transfers on this system. The (INTERFACE) program for integrating the RTGS and

ICBS accounting systems has been completed. The systems have been implemented in all Central Bank of Iraq institutions and directorates (CBI, 2014, P.P. 103-104).

In the following years, qualitative changes in the Iraqi financial sector proceeded, and various banking systems were established and updated. To keep up with the rate of development in this sector, the Central Bank of Iraq took additional actions and steps in 2018, the most notable of which are as follows (CBI, 2018, P.29):

1. Signing agreements for cooperative cooperation with the World Bank, the International Monetary Fund, and the International Finance Corporation to examine and develop Iraq's financial and banking sector.
2. Signing a memorandum of understanding with the Arab Monetary Fund to develop a financial inclusion strategy.
3. Establishing a Deposit Insurance Company to boost citizens' trust in the Iraqi banking sector and protect their funds in all banks.
4. Created the National Payments Council to create electronic payment, collection, and collection services.
5. The issuance of numerous new instructions and procedures related to the foreign currency window to narrow the gap between the official and parallel exchange rates, as it began to classify banks by adopting specific main and subsidiary weighting criteria that reflect the Bank's level of compliance with the rules governing foreign currency sales.
6. Strengthening comprehensive risk-based control systems to activate the role of the banking sector and financial institutions in ensuring financial system stability and efficiency to achieve a banking system free of crises and within the best international banking supervision standards.

One of the most important developments that the financial system in Iraq has gained in recent years is the project to localize the salaries of state employees. In 2017, a decision was issued by the Council of Ministers (281) to switch from cash to electronic payment in the payment of salaries and employee entitlements by opening a bank account for all employees linked to a civil card exclusively. Within the project to localize the salaries of state employees, the salaries of state employees for the year 2020 were localized at a rate of (2,076) spending units (self-financed and centrally), and the number of employees whose salaries were localized reached (867.6) thousand

government employees in 2020, bringing the total number to (1,861.1) thousand employees until December 1 / 2020, as well as the settlement of the entitlements of (608,9) thousand beneficiaries from the National Pension Authority in accordance with Resolution (270) issued by the Secretariat of the Council of Ministers (CBI, 2020, P.66).

Creating and adding (4) banks to the list of banks approved by this Bank in the salary settlement project to accommodate the total number of (32) bankers and by (6) government banks and (22) private banks, as well as (4) branches of foreign banks.

Based on National Security Council Resolution No. (12) on 22/5/2019, which included settling employee salaries and ranks in the Ministries of Defense and Interior, the Ministry of Interior began in April -2020. To pay the salaries of its employees electronically. The number of employees whose salaries were localized reached 302.4 thousand as of December 2020.

Another aspect of the development of the financial system of the Iraqi banking sector is financial inclusion. Financial inclusion means improving access to financial services and products for all segments of society, including marginalized and poor groups, fairly and transparently and at reasonable costs, protecting the rights of financial service consumers, and encouraging them to manage their money and savings properly. The Central Bank worked to attain this goal by taking several critical initiatives, including the formation of new sub-committees from the Supreme Committee for Financial Inclusion, as follows (CBI, 2020, P.67):

- The Financial Consumer Protection Committee aims to establish the legal frameworks and controls required for banks and non-bank financial institutions to improve levels of disclosure and transparency about financial services provided, as well as rights and duties for the purpose of customer protection.
- The Digital Financial Services Committee intends to contribute to implementing the national strategy for financial inclusion's work plan programs and establish strategies that contribute to the proliferation of various electronic payment methods.

- Working with the World Bank and the German Agency for International Development (GIZ) to plan and carry out unique surveys on the demand side for services.
- Joining the Global Alliance for Financial Inclusion (AFI) as a major member contributing to developing a national financial inclusion plan.

1.3. Development of the Iraqi Banking System

The banking system is one of the most important necessities in economic life, as it is one of the main catalysts for economic development. Data in the reports of the Central Bank show that private commercial banks in Iraq have developed significantly during the years after 2003, as the number of these banks increased from (18) in 2004 to (76) banks in 2020. And The structure of the Iraqi banking system changed during the year 2020, despite the world facing the virus (COVID-19) in general and Iraq in particular, but this did not prevent the expansion of granting new bank licenses, as the number of operating banks became (76) banks, of which (7) Governmental banks, including (3) specialized banks, (3) commercial banks and one Islamic Bank, while the number of private banks reached (69) banks, including (24) local commercial banks, (27) local Islamic banks, and (2) Islamic banks.

It is noted that the largest share in terms of the number of banks is for private banks, with a percentage of approximately (90.7%) and the rest for government banks (9.3%), as the percentage of commercial banks is equivalent to (56.5%), followed by Islamic banks account for (39.5%) and then the specialized banks account for (4%) of the total banks operating in Iraq.

Figure 1: The structure of the Iraqi banking system in 2020

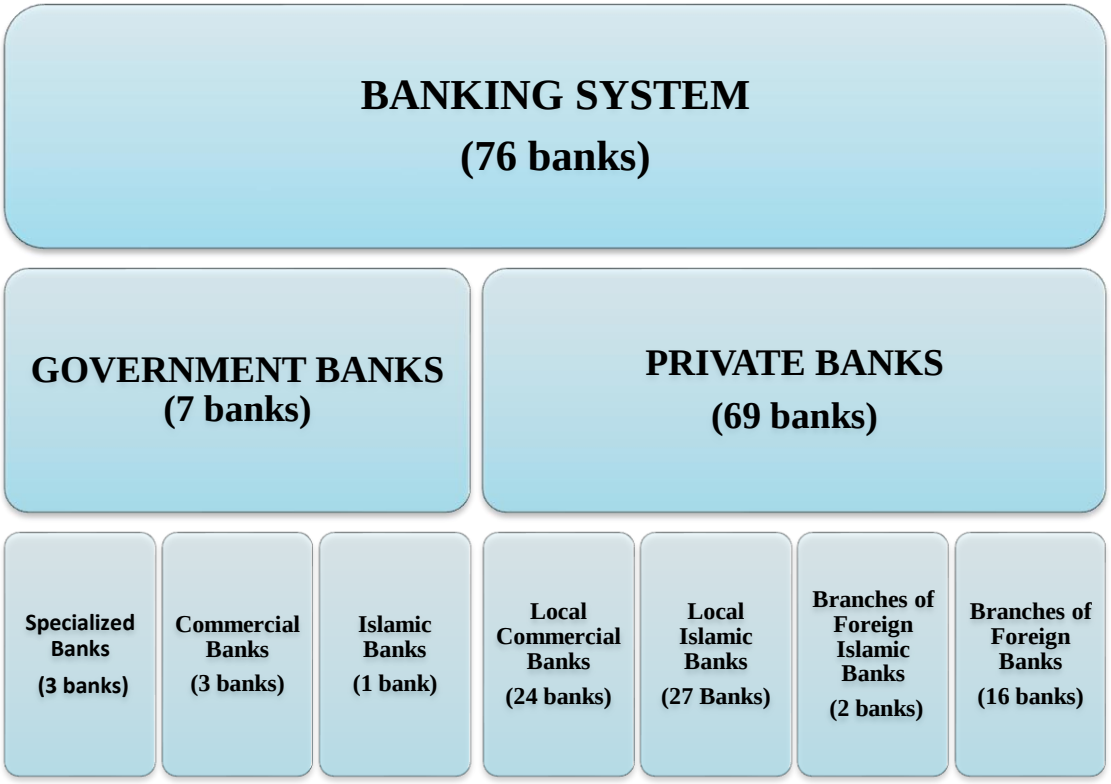


Figure 1: Central Bank of Iraq, Department of Statistics and Research, 2020.

As for the assets of the Iraqi banking sector, despite the events that Iraq experienced in 2020 during the Coronavirus and the repercussions Of which globally, regionally, and locally, the assets of the banking sector developed and recorded a rise, reaching (138.5) trillion dinars in 2020, with a growth rate of (4.13%)) for 2019, whose total assets were (133) trillion dinars as a result of the increase in the value of banks' assets in foreign currency, as it rose from (22.4) trillion dinars in 2019, to (26.7) trillion dinars in 2020. This increase came due to the difference in the Iraqi dinar exchange rate, the trend of the U.S. dollar, and the increase in the rest of the assets by (1.2) trillion dinars due to the increase in the volume of banking activity. The level of concentration of the largest assets of the five banks, according to the (Herfindahl - Hirschman) index, amounted to (1951.6) points in 2020, and this indicates a high level of concentration in the assets of the banking system, as the decrease in the concentration index means a high level of competition between banks, as well as the possibility of a decrease This level in the future if other banks adopt financial technology tools by providing new financial services and products (Central Bank of Iraq, 2020).

Figure 2: The Level of Asset Concentration for the Five Largest Banks

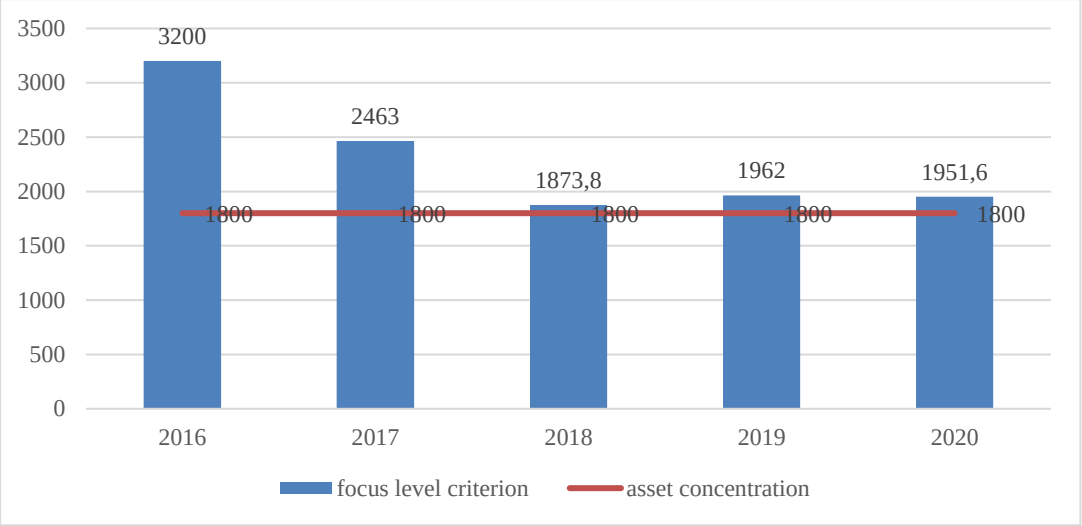


Figure 2: Central Bank of Iraq, Department of Statistics and Research, 2020.

In terms of the sectoral distribution of cash and pledge credit granted by Iraqi commercial banks for 2020, the total cash credit amounted to 49,817,737 million Iraqi dinars, 66% of the total public credit, while the pledge credit amounted to 25,450,156 million Iraqi dinars and 34% of the total public credit as described in the following Figure 3 (Central Bank of Iraq, 2020).

Figure 3: Distribution of Cash & Pledged Credit Extended by Commercial Banks for 2020 (Million ID)

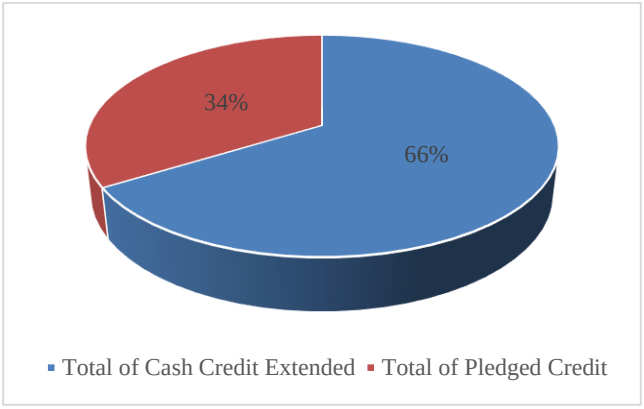


Figure 3: The Annual Statistical Bulletin of the Central Bank of Iraq 2020.

Figure 4 shows a slight decrease in the ratio of government bank's assets to total assets in 2020 and a slight increase in the assets of private banks for the same year due to the increase in the value of their foreign currency assets after the change in the Iraqi dinar exchange rate against the U.S. dollar. Despite that, it is a good indicator

that reflects the continuity of competition between private and government banks (Central Bank of Iraq, 2020).

Figure 4: Assets of public and private banks

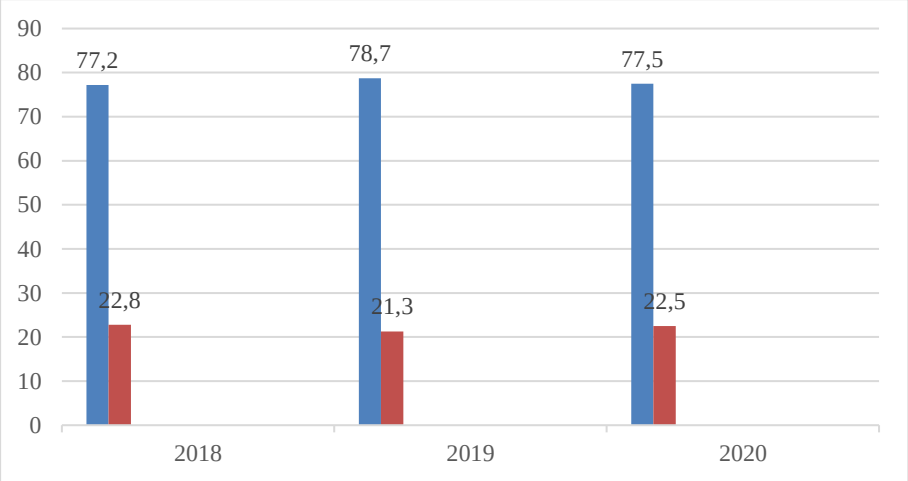


Figure 4: The Annual Stability Report of the Central Bank of Iraq, 2020.

Figure 5: Deposits with Commercial Banks (State & Private Banks) for 2021 (Million ID)

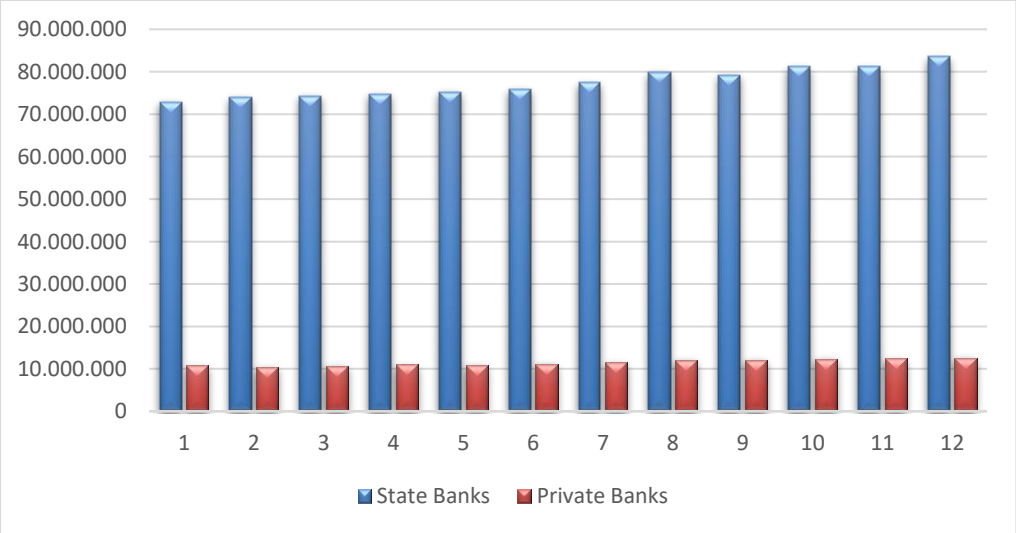


Figure 5: The Annual Stability Report of the Central Bank of Iraq, 2021.

Figure 6: Cash Credit Extended by Commercial Banks(State & Private Banks) for 2021 (Million ID)

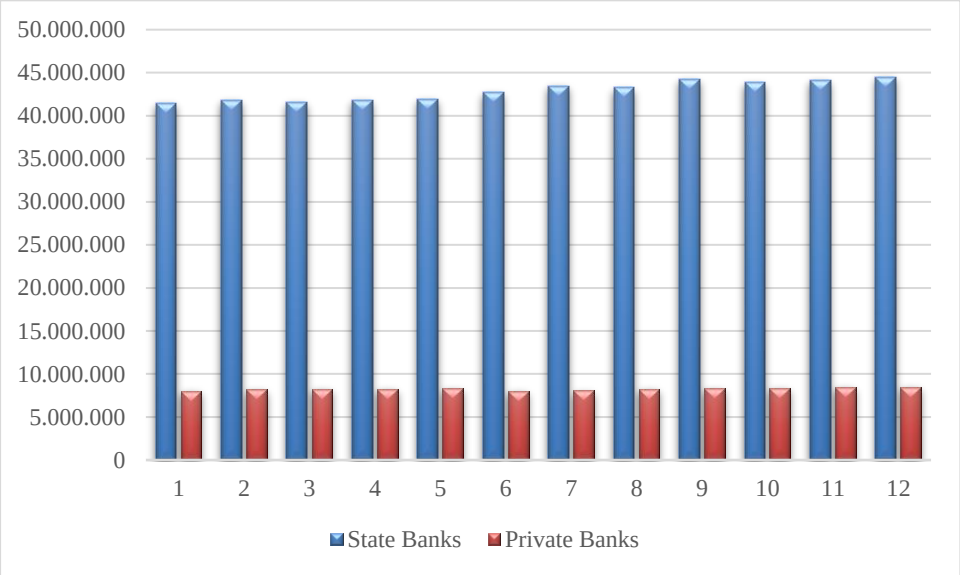


Figure 6: The Annual Stability Report of the Central Bank of Iraq, 2021.

Figure 7: Pledged Credit Extended by Commercial Banks (State & Private Banks) for 2021 (Million ID)

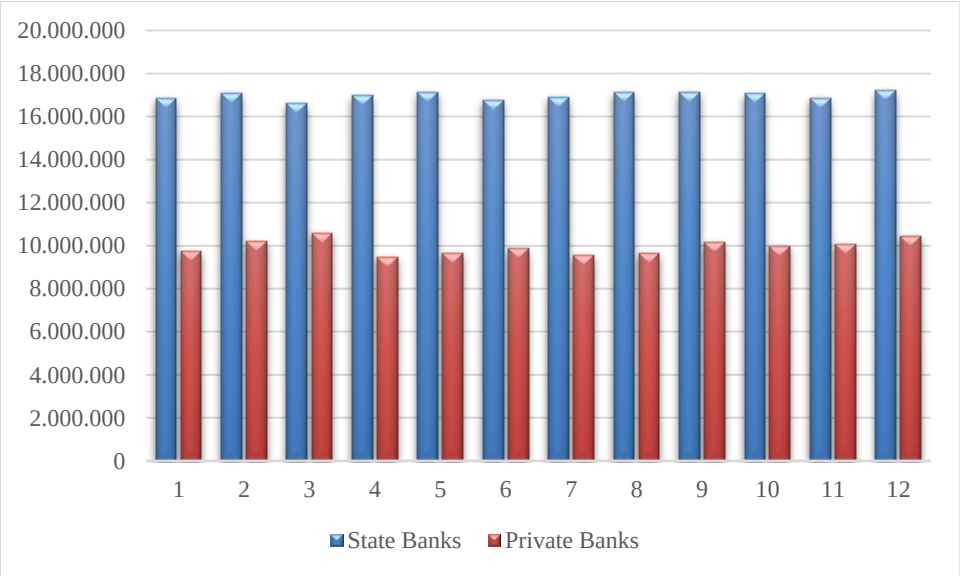


Figure 7: The Annual Stability Report of the Central Bank of Iraq, 2021.

There are six types of banks operating in Iraq, and These banks can be classified as follows: central Bank, commercial banks, Islamic banks, industrial drains, real estate banks, and agricultural banks. The Iraqi banking structure can be shown as follows:

Figure 8: Explains the structure of the Iraqi banking system in 2020

Figure 8: Prepared by the researcher based on the data of the Central Bank of Iraq for the year 2020.

1.3.1. Types of Banks Operating in Iraq

The list of Iraqi banks consists of government, private, commercial, and Islamic banks, as well as branches of overseas Islamic and commercial banks licensed by the Central Bank of Iraq. The minimum amount required to create a bank in Iraq is 100 billion Iraqi dinars. And for foreign banks, the minimum amount required to create a bank in Iraq is Fifty million dollars.

1.3.2. Central Bank

The Central Bank of Iraq was established as an independent Iraqi bank under the Central Bank of Iraq Law issued on March 6, 2004. The Iraqi constitution states that the Central Bank is a financially and administratively independent institution responsible to the Iraqi Parliament. According to the constitution, the Iraqi federal government has the "exclusive power" to "establish and manage a central bank." As of March 28, 2011, the CBI's official website states, "The primary objectives of the CBI are to ensure domestic price stability and promote a stable market-based financial system. The CBI shall also promote sustainable growth, employment, and prosperity in the Iraq ". The CBI website also states that the functions of the CBI, in addition to the primary objectives listed above, include(Central Bank of Iraq, 2022):

- Implementation of monetary policy and exchange rate policy for Iraq.
- Possession of gold and management of state reserves of gold.
- Issuance and management of the Iraqi currency.
- Create, manage, and improve a reliable and efficient payment system.
- Issuing licenses or permits to banks and regulating and supervising banks as specified in the Banking Law.
- Carry out any related tasks or minor transactions under Iraqi law.

There are a series of legal changes that the law of the Central Bank of Iraq has undergone, represented by the abolition of its founding law No. 43 of 1947 by Law No. 71 of 1956 and its abolition, and the issuance of a new Law No. 64 of 1976 and its amendment by Law No. 2 of 1991, The most recent of which was the promulgation of Law No. 56 of 2004 to improve its work and ensure its independence to be next to the world's developed central banks.

Law No. 56 of 2004 granted the Central Bank of Iraq the status of independence in work is carried out. Paragraph 2 of Article 2 stipulates that the Central Bank of Iraq shall have independence in the endeavors it undertakes to achieve its objectives and that the Central Bank shall not receive any instructions from any person or entity, including government agencies, except for what is stipulated otherwise as well as respecting this independence and in line with the provisions of Article 6 of the above law, which prohibited the Central Bank of Iraq from lending to the government, or any public body owned by the state, directly or indirectly, except for purchasing government securities within the framework of market operations. Therefore, the Central Bank of Iraq has become independent with its tools. He is no longer the largest financier to finance the state's general budget deficit, as he was doing so reluctantly during the past period to meet the needs of public spending, and in a way that led to the vibration and destruction of the elements of economic stability in the overall economy, and the deterioration of growth and the loss of investment and stability opportunities. The independence of the Central Bank of Iraq is evident in the following aspects (Abd al-Nabi, 2018, p.p 7-11):

1. CBI's affiliation with the House of Representatives and his non-subordination to another body based on Law No. 6 of 2004.
2. CBI's failure to lend to the state and its institutions to guarantee them with others, or to purchase government public debt instruments, except the secondary market to provide liquidity to banks in necessary cases, is based on Article 26 of his law.
3. The Board of Supreme Audit audits its accounts by an international auditor and the regular audit under international standards.
4. CBI publishes its reports and financial statements on its website, and these data are published and available to various institutions and the public.

The Central Bank of Iraq was established as Iraq's independent Central Bank by the Central Bank of Iraq Law of March 6, 2004, and The Bank is in charge of (Central Bank of Iraq, 2022):

- Maintaining price stability.
- Implementing monetary policy (including exchange rate policies).
- Managing foreign reserves. Issuing and managing the currency.

- Regulating the banking sector to promote a competitive and stable financial system.

1.3.2.1. The Objectives of the Central Bank of Iraq

The banking system in Iraq, like the rest of the banking systems in the countries, aims to contribute to achieving economic and social development for the people of the country by carrying out and carrying to its various and diverse activities in the economic and social fields through multiple methods, the most important of which is securing the necessary resources for the requirements of investment financing, and this encourages individuals to Saving and attracting new customers and working to increase them. Investment financing operations work to provide production requirements for the productive sectors, whether industrial or agricultural. Therefore, strengthening the investment operations of various investors through investment, employment, and improving the lending system would increase their participation in the gross national product and support the national economy (Khattab, 2009, p. 31).

The primary objectives of the Central Bank of Iraq are to achieve and maintain domestic price stability and to promote and maintain a stable and competitive market-based financial system. With these objectives in mind, the CBI will work to promote sustainable growth, employment, and prosperity in Iraq. And According to the CBI Law, the main functions of the CBI in achieving its objectives include the following (CBI, Annual Financial Report, 2020, p. 5) :

a. Formulation and implementation of monetary policy, including exchange rate policy.
b. Maintain and manage all official foreign reserves of Iraq, except for the work balances of the Government of Iraq.
c. Gold retention and management of the Government of Iraq's gold reserves.
d. Providing liquidity services to banks.
e. Issuance and management of the Iraqi currency.
f. Establish, supervise and enhance sound and efficient payment systems.
g. CBI Issuing the licenses or permits for banks and regulating and supervising banks.

1.3.2.2. The Functions of the Central Bank of Iraq

Central banks perform general functions in all countries, such as issuing currency, being the government's Bank, controlling bank credit, and other functions that they exercise, some of which can be mentioned as follows:

The Central Bank As the Issuing Bank: The privilege of issuing paper money was mostly linked to the development of central banks, and until the early twentieth-century central banks were called issuing banks. In the past, the issuance of paper money was confined to the state. Then the issuance of paper money was handed over to the banks due to the public's lack of confidence in the paper money issued by the government. In some others, the right to issue money to banks in exchange for loans provided by the state was given. But with time, the expansion of trade, and the need for the symmetry of paper money in circulation, a good organization for the issuance of money. Countries formed legislation monopolizing the right to issue money to one Bank, called the Central Bank. The monopoly privilege was the first factor in the development of banks into central banks that led to a semi-governmental feature (Al-Janabi, 2009, p.p. 179-180).

The main reasons for limiting the privilege of issuing paper money are due to:

a. Achieving the sameness of the issued paper money circulating in the local market.
b. Increasing confidence in the issued paper money.
c. Increasing the state's supervision of the Central Bank's commitment to the applicable rules for issuing papers.
d. Giving the Central Bank greater control and supervision over the volume of credit provided by commercial banks through the effect of the Central Bank on the monetary base.
e. Fear of excessive government issuance of paper money if the issuance remains in its hands.

The Bank Of Banks: The Central Bank performs this function by accepting voluntary and compulsory bank deposits (compulsory cash reserves). The Central Bank also supervises the clearing operations between commercial banks. The Central Bank also monitors the work of commercial banks. It ensures their commitment to the Banks

Law and the instructions it issues to them from time to time to maintain the integrity of the banking system and increase confidence in it. The central Bank re-discounts the bills of exchange that banks have already discounted its clients. Or deduction of treasury bills that are kept with the Central Bank, and the commercial Bank obtains money by borrowing directly from the central bank for a short period, in exchange for the commercial Bank providing guarantees, usually treasury bills and government bonds. Commercial banks often find that they should obtain cash by direct borrowing from the Bank to shorten the time and simplify the procedures (Al-Wadi, 2010, p. 171).

The Central Bank is The Government's Bank: This function is derived from the characteristics of unity and public ownership of the Central Bank, the focus of decisions related to monetary policy in the Central Bank, and the trend toward state ownership of this institution. All of this aims to create close relations between the executive authority and the Central Bank so that the Bank becomes a source of banknotes or an observer of monetary and financial policy unambiguously, not only does it agree with the economic interests of the national economy as a whole, but it also accepts treasury bills issued by the executive authority, and always provides it with the means of payment necessary to perform its activities. In addition to this traditional relationship, the Central Bank provides the government with many services. It regulates government accounts and public projects, performs external financing operations, collects foreign currencies and foreign payments, issues public loans, and regulates public debt (Ismail, 2009, p. 176).

Central Bank Pooled Reserve Banks: Commercial banks keep their cash reserves with the Central Bank, and the central Bank assumed this historical task when the factors of ease and convenience motivate commercial banks to deposit their surplus cash reserves with the issuing Bank (the central bank hereafter), especially when the issuing Bank was in charge of settling accounts between sides of the banking system. The result of depositing cash reserves in excess of the banks' needs with the Central Bank is to collect these balances in one pool (the Central Bank) and put them at the disposal of the banks as a whole, and to meet the needs of each of them from the cash balances they need, which ultimately leads to securing the liquidity of the banking system through transferring surplus to deficit units. The matter later turned to the

commercial banks, under the law or banking customs, depositing a percentage of their deposits with the Central Bank (the legal cash reserve ratio). This ratio has become one of the Central Bank's tools in imposing its banking supervision and control over credit activity, which helped it to exercise its monetary and banking powers secured by law and government legislation (Al-Shammari, 2010, p.p. 176-177).

The Central Bank Is The Last Lender To Commercial Banks: The Central Bank provides and grants credit to commercial banks or the credit market in times of financial crisis. The monetary and financial market may suffer a sudden increase in the demand for money - so depositors panic to the commercial banks to withdraw their deposits in cash. The commercial banks, collectively or individually, do not find enough in their coffers to meet all these requests, which forces them to close their doors and go bankrupt. Thus the credit system collapses and the accompanying severe shock to the public and the entire national economy. In such cases, the Central Bank resorted to borrowing money from it, with which cash withdrawal requests are directed (Al-Wadi, 2010, p. 171).

1.3.3. Commercial Banks

1.3.3.1. Definition of Commercial Banks

Commercial banks, sometimes called Deposit Banks, are those that deal with direct and indirect credit), and the essential thing that distinguishes them is their acceptance of demand deposits and current accounts, which results in money creation (Abdullah, 2014, p. 35). Given the main features of their work, commercial banks can be defined as those institutions that provide various banking services to the public without discrimination. They offer savers various opportunities to invest their savings through traditional deposits or short-term certificates of deposit and provide many opportunities for borrowers by providing short and medium loans. And long term (Haddad et al., 2005, p. 144). A commercial bank is a financial institution that obtains deposits from a group of individuals and institutions and then provides them as loans to other groups (Nordhaus, 2006, p. 541). A commercial bank is defined in terms of its legal form as an institution that takes the form of a large joint-stock company and works in the manner of commercial institutions to achieve profits. It also has branches spread within the country or other countries to expand the geographical scope of its banking services (Daoud, 2010, P.218). commercial banks can be described as

institutions that accept deposits, payable on demand or for a specific term, engage in internal and external financing operations and services to achieve the objectives of the development plan and support the national economy and undertake development, saving, and financial investment operations at home and abroad, including. This includes contributing to establishing projects and the necessary commercial and financial banking operations, following the conditions determined by the Central Bank (Hanafi, 2000, p. 24).

1.3.3.2. The Emergence of Commercial Banks

The word "Bank" is derive from the Italian word "Banca," and the word "bank" can also be trace back to the French word "Banjue," which means these two words, the table on which currency exchange takes place or a solid box for keeping valuables (Al-Saffar, 2015, p. 4).

The (modern) emergence of commercial banks goes back to the last period of the Middle Ages when some merchants, moneylenders, and goldsmiths in Europe, especially in Venice, Genoa, and Barcelona, accepted depositors' money to preserve them from loss in return for issuing nominal certificates. They gradually transferred deposits from a depositor account to a deposited account Last to pay business transactions (Al-Assar et al., 2010, P.63). In addition to providing part of the available deposits in the form of loans in exchange for interest, later on, some customers were allowed to withdraw amounts greater than the value of their deposits, which is called (overdraft), as this excessiveness led to the bankruptcy of many of those in charge of accepting deposits (Al-Hallaq et al., 2010, p. 57). Some banks were established in Vienna in 1157, Barcelona in 1401, Genoa in 1407, Amsterdam in 1609, and Hamburg in 1619 (Al-Bayati et al., 2013, p. 153). The Bank of France was established, which was founded by Napoleon in the year (1800). Then banks were based in other countries after the developments in the world, especially after the industrial revolution in the eighteenth century. Banks developed a lot to keep pace with the increase in global industrial production and commodity and monetary exchange, which led to the emergence of Multinational companies and giant companies in the world to establish specialized national, regional, and global banks (Hadeel, 2013, p. 5).

1.3.3.3. Functions of Commercial Banks

Through the many changes and in the presence of intense competition in the banking environment, so the activities and business of commercial banks expanded and became play an important and vital role and not a place for collecting and lending money through their traditional work as a mediator between surplus units and deficit units. Still, banks play a vital and essential role in Performing all kinds of banking services needed by society, in addition to the role it plays in serving the national economies of countries, developing broad sectors, and rebuilding the infrastructure in the country, as the functions of a commercial bank are many, including, for example (Al-Shammari, 2018, p.p. 45-46) :

- Discounting commercial papers for the benefit of customers.
- Buying and selling securities for customers.
- Financing and supporting development projects that perform a great service for the benefit and development of society.
- Providing clients with consultancy services ranging from feasibility studies to project development.
- Payment.
- Letters of guarantee.
- Opening documentary credits.
- Buying and selling forex.
- Credit Card Services.
- Safes rental.
- Foreign currency exchange.
- Payment of wire transfers and postal transfers.
- ATM Services.
- Personal Home Finance.
- Management of business and property of clients.

1.3.3.4. Types of Commercial Banks

Single Banks are small institutions owned by individuals or companies of people, and their work is mainly limited to a small area. And they are distinguished from other types of banks in that they restrict the employment of their resources to highly liquid assets such as securities and discounted commercial papers, and other highly liquid

investments that can be converted into cash at any time. It is short and without losses, and the reason for this is that it cannot bear the risks of investing its money in medium or long-term loans due to the small size of its resources banks in capitalist countries (Husseini, 2000, p. 19).

Commercial Banks With Branches: These banks primarily take the form of joint-stock companies as a legal form. They have multiple branches that cover most parts of the state, especially important places, and follow decentralization in the conduct of their affairs, as it is left to the department to manage its affairs and does not return to the main center of the Bank except concerning the essential matters stipulated in the regulation The Bank, and of course, the central bank sets the general policy aimed at the branches. This type of Bank is characterized by operating on the national scale and subject to the state's general laws and not to the laws of the governorates in which the Bank is located in its geographical scope. It also performs all the traditional business of commercial banks and provides short-term loans. It deals in foreign exchange (Hilal, 2009, p. 12).

Chain Banks: They are banks that practice their activities through opening an integrated chain of branches that arose as a result of the growth of commercial banks, the increase in the volume of their actions, and the expansion of their scope of work, and they consist of several banks that are administratively separate from each other but supervised by one main center that takes charge of drawing up the general policies that all units of the chain are committed to (El-Serafy, 2006, p. 34).

Group Banks: are similar to holding companies that establish several banks and financial companies, owning most of their capital and supervising and directing their policies. These banks have a monopolistic character and have become a feature of the times. Such banks have spread in the United States of America and Western European countries.

Local Banks: These banks arose to carry out their work in a specific geographical area, which may be a province, governorate, state, or even a particular city, and if the local government system in the country varies in the laws of geographical areas, the local Bank is subject to local laws and supervision by the supervisory authorities of banks in its work area(Farida, 2008, p. 24).

General Commercial Banks: Banks whose main center is located in the capital or one of the major cities conduct their activities through branches at the state level or abroad. These banks carry out all the traditional business of commercial banks, prevent short and medium-term credit, and undertake the costs of foreign exchange and foreign trade financing ((El-Serafy, 2006, p. 32).

Correspondent Banks: These are the banks that arose in response to the Bank's need for a system of collecting checks drawn by their customers from banks in other geographical areas. Correspondent banks perform the following functions (Husseini, 2000, p.p. 19-20):

- Clearing instruments, settling accounts, and financial obligations.
- Providing advice on the use of financial resources in specific investment activities.
- Participation with some financial institutions in granting loans and providing financial facilities.
- Re-discounting some commercial papers.
- Commercial banks Benefit from specialists with financial and economic expertise in these banks to provide various financial and banking services for different destinations.

1.3.4. Industrial Drains

The industry is one of the main sectors in the national economy, as it has links within the manufacturing sector itself, as well as with the rest of the economic sectors. These links are of great importance in the process of economic development. The purpose is to reach an idea about the prospects for the economic future in Iraq, so it must be linked to reality and the temporal coherence of the events it experienced. The circumstances that Iraq has experienced during the last decades have affected the country's economic situation in general and the industrial sector in particular (Kadhim, 2013, p. 292). The Agricultural Industrial Bank was established in 1935 and became an industrial development bank in 1946 to develop the national industrial sector in Iraq by supporting the private and mixed sectors. Vital is important in developing the national economy (Industrial Bank of Iraq, 2022).

1.3.5. Islamic Banks

An Islamic bank is a licensed institution that provides banking services on a non-interest-based basis. It opens current accounts and accepts investment deposits for use within the scope of the prevailing liquidity systems and the Bank's financial resources in financing commercial projects and Islamic principles (Al-Bayrouti, 2010, p. 6). The legislative or supervisory authorities have recognized the special nature of Islamic banks in terms of their objectives and functions, and the most important of these special features is the rejection of usury by giving and taking, the developmental character, the comprehensiveness of investment banking, the nature of participation in the resources and uses of assets, as well as the features of the financial and accounting system of these banks in addition to the social dimension. The privacy stems from the fact that the controls of Islamic banking work are carried out according to the rules of Islamic law, so central banks must take into account this privacy (Saad, 2014, p. 355).

1.3.6. Agricultural Cooperative Bank

The Bank was established in 1935. Its objectives and tasks were defined by financing agricultural and industrial activities. Its financial investments attempted to cover the needs of various agricultural businesses and activities and applied to industrial projects established by some traders and artisans. Due to the high price policy for important crops, the Bank's lending policy was frozen in 1994 under central directions to raise farmers' earnings. The Bank's mission was to provide development loans governed by central guidelines. After issuing Resolution No. (9) in 1996, which permitted specialized banks to engage in comprehensive commercial banking in addition to their activities outlined in their internal rules and regulations, the Bank began practicing comprehensive commercial banking 1996.

In 2007, the Bank's activities shifted and diversified, from providing comprehensive banking services through a network of governorate-based branches to playing a key role in supporting the agricultural sector by providing banking services and facilities to all agricultural workers and for various agricultural purposes, Through the Peasant Loans Fund, whose capital was raise to 54 billion and the interest rate was decreased to (3-5%), as well as through the agricultural facilities given through loans,

the interest collected on them was reduced to 8% from 14-16% (Agricultural Cooperative Bank, 2022)

1.3.7. Types of Banking Institutions Operating in Iraq

The non-banking financial sector is made up of non-banking financial institutions that play an important role in achieving financial and economic stability and growth by diversifying their investment portfolios across financial and non-financial assets, lending to individuals and businesses, and investing in government treasury bills and bonds. And some of these institutions are supervised by the Central Bank of Iraq, and others are not, according to the following:

1.3.8. Non-Bank Financial Institutions Under the Supervision of the Central Bank of Iraq

1.3.8.1. Small and Medium Enterprises Finance Company

An Iraqi company was established on May 18, 2009, to finance small and medium projects, with a capital of (270) million Iraqi dinars, with the participation of 8 private banks to contribute to the development and improvement of the economic situation in Iraq. Thus the company will contribute to developing the performance of private banks in Iraq by providing loans. The facilitator has an interest rate of 10%, of which 4% goes to the company and 6% to the Bank (Battal et al., 2011, P. 59). The company's management has set a range of targets when established in which the company can make the financing of small and medium enterprises in Iraq (Juma&ali, 2018, p. 93):

- Prepare a program to grant loans to the economic situation of small and medium-sized enterprises, ideas and donors' ideas and directions by determining loans, loan utility, and joint funding ratio by banks participating in the capital.
- Contribute to economic development by expanding loans for small and medium enterprises.
- Preserving existing job opportunities and providing job opportunities for the unemployed.
- Granting loans at encouraging interest rates less than the market interest rate.

- Establishing credit programs that include all segments of society and the various economic sectors.

1.3.8.2. Exchange and Mediation Companies Selling and Buying Foreign Currency

Exchange companies are one of the non-banking infrastructures. They exercise an important role in meeting local needs from the various foreign exchange currencies, such as travel, health, or tourism, as well as remittances from residents and their friends abroad.

1.3.8.3. Financial Investment Companies

They are non-bank financial institutions subject to oversight by the Central Bank of Iraq and specialize in the investment in securities. They form and manage securities portfolios by moving frozen capital towards investment channels and thus activating and developing the role of the national economy. Their number reached (7) companies in 2020, with a minimum capital of (10) billion dinars, while the volume of assets during the year 2020 reached (7.2) billion dinars, compared to 2019, when it amounted to (12.1), with a decrease rate of (-68.1%) (The Financial Stability Report of the Central Bank of Iraq, 2020, p. 54).

1.3.8.4. Electronic Payment Service Providers

Electronic payment companies have witnessed remarkable growth as a result of the great development that has taken place in information and communication technology, as this growth has depended mainly on the Iraqi payment system, which contributes to the implementation of financial and banking operations with ease and guarantee, more quickly, and at a lower cost, and this has helped to achieve a leap in Use of electronic payment services by individuals and companies across the Internet. The number of electronic payment companies increased from (11) in 2019 to (17) in 2020, with an increased rate of (54.5%). Their assets rose to reach (653.6) billion dinars in 2020 after it was (444.7) billion dinars in 2019, and this increase is due to the transformation Towards the use of electronic payment in payment transactions instead of using cash (The Financial Stability Report of the Central Bank of Iraq, 2020, p. 55).

1.3.8.5. The Iraqi Company For Bank Guarantees

The Iraqi Company for Banking Guarantees was established to assist small and medium enterprises in Iraq to access official financing through private Iraqi banks. The secured loans system also encourages banks to adopt modern risk assessment methods and follow advanced administrative systems. The General Assembly approved the transformation into a joint-stock company, Especially by increasing the capital and entering new shareholders. This was done according to the approval of the Central Bank of Iraq in its letter 9/3/1974 on May 7, 2009, and the approval of the Ministry of Trade / Companies Registration Department dated September 11, 2009, and under the provisions of the Companies Law No. 21 of 1997, and the date of the transformation was fixed on September 25, 2009, According to the letter of the Ministry of Commerce / Companies Registration Department / National 29-84 on 14/December/2009, the company was transformed from a limited liability company to a private joint-stock company, and the number of shareholders in the capital from private banks became 16 banks (The Iraqi Company for Banking Guarantees, 2022).

1.3.9. Non-bank Financial Institutions Outside the Supervision of the Central Bank of Iraq

1.3.9.1. Iraq Housing Fund

The Ministry of Construction, Housing and Municipalities are responsible for this fund in accordance with what was approved by Parliament and ratified by the President of the Republic, as it is represented by the Director-General of the Fund or his representative, and the capital of the Fund is 1 trillion dinars, subject to increase according to the decision of the Council of Ministers or the Board of Trustees of the Fund The purpose of establishing the fund is to provide housing and a decent housing environment for the largest proportion of families and individuals, and to expand Iraqis' choices regarding the type and location of housing, as well as to increase the efficiency of housing production, and that the fund's share by the 3 trillion dinars initiative of the Central Bank of Iraq, which the Ministry of Finance sovereignly guarantees, reached 1.2 trillion dinars (The Financial Stability Report of the Central Bank of Iraq, 2020, p. 56).

1.3.9.2. National Pension Fund

The National Pension Fund aims to serve retirees of all categories, including civilians, military, and security forces, implement all pension legislation, install services for state employees, lay the foundations and principles, issue instructions to facilitate the implementation process, raise proposals to higher authorities to develop work for the better, implement decisions issued by the competent authorities and address the problems facing the application Within the framework of these goals, eliminating redundant rings in the completion of the retirement transaction, introducing mechanization and computer work in all the activities of the organization, and setting future plans to ensure the development of the work of the organization for the better, to serve the retired segment as best as possible and ensure that they obtain their pension rights in the shortest possible time (Iraqi Public Retirement Authority, 2022).

1.3.9.3. Social Security Fund

The Social Security Fund is a self-financed department of the Ministry of Labor and Social Affairs that works to embody the humanitarian value of the action as a fundamental area in the economic and social development process. It is an understanding and ensuring social security for all workers covered by the coaching level to ensure they have a ladder and a dignified life through warranty branches (health insurance, work injury insurance, and retirement guarantee (Social Security Fund, 2022).

1.3.9.4. Insurance Institutions

These institutions are financially active because of their impact on economic growth and the achievement of development programs. They have specificity related to investment and the investment of funds according to contractual formulas to achieve social and economic goals. They play a prominent role in the national economy of any country. The first insurance law was issued in Iraq in the year (1936) with the number (74), and a purely Iraqi insurance company was established in (1946) as some foreign companies opened branches in Iraq to ensure those goods. The business of these companies was not limited to insurance. But it included insurance against fire and other accidents. In the same period, the state insured its property with foreign

companies and paid them huge sums in insurance premiums, which led to the leakage of its money abroad. In 1950, and under Law No. 56 of 1950, the first Iraqi insurance company was established with a 100% Iraqi capital is the Iraqi National Insurance Company, which specialized at the beginning of its work in insurance on the property, state funds, and imports, with a capital of one million Iraqi dinars (Bouran, 2018, p. 201).

2. CHAPTER TWO: FINANCIAL PERFORMANCE EVALUATION

The study of performance in general and financial performance, in particular, is one of the most important aspects addressed by researchers and writers in the field of financial management, and since financial performance is one of the basic components of the bank, whatever resources are available to the bank that it cannot exploit without having an efficient and developed management. This administration cannot know the results it has achieved and the opportunities it has missed except by evaluating its performance, particularly its financial performance, since the performance evaluation provides reliable and accurate information that it can use to make sound decisions and determine the bank's plans.

The second chapter includes the concept of financial analysis, its importance, and desired objectives, in addition to accounting documents, which are among the most important internal data sources necessary for financial analysis. It also includes the important financial ratios related to financial analysis, performance evaluation, and decision-making .

2.1. The Concept of Financial Performance

Performance evaluation is one of the main components of the supervisory process, where the actual performance of the banking system's activity is compare with the financial indicators, as well as a comparison between the actual performance of banking institutions with the financial indicators of the banking sector in general. The comparison between several years for the same banks can also be used in order to identify deviations from Predetermined goals, not to mention identifying the centers responsible for them, knowing their causes and trying to avoid them in the future, to judge the efficiency of operation and management to achieve the desired goals as well as achieving profitability, growth, and development of banking institutions in general (Salem, 2013, p. 96).

In this regard, financial performance evaluation represents an integrated system that compares the actual results of the selected or elected indicators with the corresponding target indicators, or those that reflect performance in previous periods

or performance in similar economic units taking historical and structural conditions into account., or with indicators Extrapolated their rates according to the average results of a group of economic units, taking into account the convergence of the sizes of these units (Fahad, 2009, P. 27). Since financial performance reflects a narrow idea of the bank's performance and is the primary supporter of its activities, it adds to the availability of financial resources and provides it with various investment choices. (Aguinis, 2019, p.p. 7-8). The concept of financial performance is the mirror that reflects the bank's real financial situation. It expresses its ability to exploit the available financial resources to achieve goals and maximize the bank's value in the financial market (Mukumbi et al., 2020, p. 166).

The performance evaluation process is reflected in indicators that measure the company's success and development. So that these indicators become criteria by which they can estimate the extent to which they achieve their goals. When determining the appropriate criteria or indicators to judge performance, they should be few but of significance and importance, provided that they meet the following conditions (Al-Hinnawi, 2009, p. 64):

- The standard should be a valid measure of the bank's resources' effectiveness.
- The criterion should be sensitive to change in performance to reflect the extent of the strength and direction of this change. In the opposite corner, it must have the property of motivating to change the level of performance.
- The standard allows comparing the bank's current performance with its performance in previous periods, as well as comparing this performance with the performance of other banks.
- Performance indicators are selected based on a sound understanding and clear identification of the bank's objectives and functions.
- When setting performance standards, it is necessary to examine and analyze the accounting data to exclude the influence of factors outside the bank's control.

Financial analysis using financial ratios is considered one of the most widely used methods for evaluating the performance of banks. Some even believe that financial analysis is the main management for evaluating performance, whether at the project level or at the national level. Because the financial analysis process precedes the decision-making process, it serves the evaluation, control, and follow-up processes.

It represents the starting point when thinking about the future. The function of financial analysis includes the interpretation of accounting data and its use in evaluating the business of companies and banks, showing their performance, and identifying their financial conditions and positions.

2.1.1. Principles of Financial Performance

The performance evaluation process does not take place unless there are general grounds. Which we must take into account (Hajjam, 2016, p.21), including:

- The evaluation process should be simple to understand.
- Continuing the evaluation process is not limited to a certain period but to successive periods to make comparisons and extracts that benefit the bank in the future.
- The evaluation process is accompanied by auxiliary systems for financial and accounting control.
- The wage system must be used in conjunction with the evaluation system because it is a powerful motivator for employees to increase their activity and efficiency over performance.
- When conducting the evaluation process, the various activities of banks must not be separated from each other because a bank is an integrated unit, and its interests and activities cannot be separated into parts. Rather, there is homogeneity and interdependence of interests to achieve its goal.
- Stabilization ensures coherence, balance, and integration between the various activities of the bank, as well as their interaction among them.
- The performance appraisal process must adhere to the incentive system, which identifies positive and negative motives, making it in the performers' best interests to carry them out efficiently.

Therefore, for the bank to achieve its goals, it must follow certain stages and principles to lay the foundations that enable it to compare the actual performance with the established and required goals. This requires the effectiveness of implementing the performance follow-up process and the necessity of having a device specialized in monitoring and controlling the actual performance.

2.1.2. The Significance of Financial Performance

Commercial banks are specifically among the main pillars at the economic level for any country in the world. In addition, when there is an imbalance in these banks, successive disturbances will occur in all the different activities within the economic system. This is because banking activity is distinguished from the activity of other institutions by the multiplicity and diversity of products (banking products) as well as characterized by renewal and continuous change, both at the level of the surrounding environment in terms of dealers, new competitors, new capital markets, or at the level of internal. Therefore, evaluating the performance of commercial banks is an essential process for the bank's continuation in its activities, as well as enhancing its ability to meet the continuing challenges. The process of evaluating the financial performance of commercial banks has prominent and great importance in many different aspects and levels that can be highlighted in the following (Fahd, 2009, p. 29):

- The evaluation of the financial performance of the banks demonstrates their ability to carry out the predetermined objectives by comparing the actual results to the desired results, identifying deviations, and proposing the necessary treatments for them, which improves the performance of commercial banks by encouraging them to remain in business and continue their operations.
- The outcomes of the bank's actual performance from one period to the next assist in illustrating the bank's development on its journey, for the better or worse.
- An evaluation of the performance of the bank's strategic position within the context of its operating environment identifies the priorities and cases of change required to enhance the bank's strategic position.
- Reviewing a bank's financial performance aids in determining whether the bank's established aims and plans are consistent with its competitive environment.
- A financial performance review gives a comprehensive picture of the Bank's performance at its many administrative levels, determining its position in the national economy and the procedures for its improvement.

- An evaluation of financial performance reveals the efficient allocation and utilization of the Bank's available resources.
- An evaluation of financial performance contributes to achieving the plan's objectives and developing a solid and efficient system of communication and incentives.
- The performance evaluation reveals the extent of the bank’s contribution to the country's economic and social development process, that is, the amount of benefit and interest achieved by its services at the level of the economy and society (Alam et al., 2021, p. 13).
- The performance evaluation also helps create a kind of competition between the departments in the bank by comparing the performance of these departments to determine who needs improvements. The main objective is to improve the bank's financial performance level (Matar & Eneizan, 2018, p. 3).
- Through the financial performance, it is ensured that coordination and harmonization are achieved between the various activities of the bank, such as marketing and financing activities, and others, to avoid financial waste (Na & Fadaee, 2016, p. 1).

It is noted from the preceding that the process of evaluating financial performance is not only important for shareholders and management but also researchers, financial writers, and economists. They need to understand the factors that affect the performance of the financial bank and to know the health of the financial system in the country since the performance evaluation process measures these systems' health.

2.1.3. The Objectives of Financial Performance

Financial statement analysis reveals important facts related to management performance and company efficiency. In general, the objectives of the analysis are to comprehend the information contained in the financial statements to understand the company's strengths and weaknesses, as well as to forecast the company's prospects, allowing analysts to make decisions about operating the company and increasing investment in it (Khan, 2007, p. 177).

In general, the financial analysis aims to achieve the following objectives :

- Understanding the financial reality of the organization.
- Determining the institution's capacity to service its debts and its borrowing capacity.
- Evaluate the implemented financial and operational policies
- Judging the efficiency of the administration.
- Knowing the performance trajectory of the institution.
- Evaluate the viability of investing in the organization.
- Utilize the available data when making judgments on monitoring and evaluation.
- Knowing the company's position in its sector (Akl, 2010, p. 239).
- Follow-up on the bank’s specific objectives, which requires following up on the implementation of the specific objectives in quantity and quality within the decree-law plan. It's based on the data and information that's currently accessible on how well a particular performance is doing.
- Measuring the extent of the bank's success through its endeavor to continue its activity to achieve its objectives and the availability of information to various levels and other parties outside the bank.
- Detecting deficiencies and weaknesses in the bank's activity and conducting a comprehensive analysis of them with a statement of their causes to develop the necessary solutions and correct them, and working to find errors in the future.
- Providing data and statistical information on bank performance evaluation results to the supervisory bodies facilitates their work. It enables them to carry out the continuous comprehensive follow-up of the bank’s activity to ensure the best and most harmonious achievement.
- Providing a database and information on the bank's performance contributes to developing policies, studies, and future research that improve performance patterns and increase efficiency (Alaa et al., 2011, p. 77).

2.1.4. Stages of Financial Performance

The financial performance evaluation process includes several successive stages that can be clarified as follows (Mersili et al., 2018, p.p. 100-101):

The First Stage is collecting data and statistical information required by the performance appraisal process to calculate the ratios or indicators used in the

evaluation. These data and statistics include data for several years and the various activities practiced by the bank.

The Second Stage: The stage of analyzing and studying statistical data and information and indicating its accuracy and validity. Calculation of the ratios or indicators necessary for the process of evaluating the financial performance of the Commercial Bank.

The Third Stage: The stage of conducting the evaluation process using ratios or indicators based on the available data for the various activities and operations included in the Commercial Bank's performance.

The Fourth Stage: The stage of analyzing the evaluation results and indicating the degree of success or failure associated with the commercial bank's performance, as well as identifying and identifying the deviations that occurred in the commercial bank's activity, explaining the reasons for those deviations, and developing the necessary solutions to address those deviations to ensure the bank's optimal performance.

The Fifth Stage: It is the stage of following up the corrective operations for the deviations that occurred in the bank's activity and providing the necessary or encouraging conditions to achieve the required performance and benefit from the evaluation results and not repeat mistakes in the future.

2.1.5. Factors of Financial Performance

The Determinants affecting the financial performance of banks can be classified into:

External Determinants: They are a set of external variables facing the banks and affecting their financial performance. The institution's management cannot control them but can only anticipate the future results of these variables and try to give plans to confront them from their effects. These factors include (Kabli, 2017, p. 90):

- Scientific and technological changes are affecting the quality of services.
- Laws and instructions apply to institutions by the state and the laws of the market.
- The state's financial and economic policies.

Internal Determinants: These Determinants are related to the management of the same bank. By controlling it, it can achieve a competitive advantage over other banks by achieving the largest returns (Sudkhan, 2021, p.56). The most important of these influencing Determinants are the following:

- The volume of assets, liabilities, and equity in the bank: The increase in the volume of assets owned by the bank indicates a higher volume of equity in it, as well as its high ability to attract deposits, that is, the bank's ability to achieve diversification opportunities in its sources of financing, and this, leads to improving the bank's financial performance. Increasing property rights means increasing the volume of funds available to the bank, increasing its ability to invest these funds, and expanding the granting of medium- and long-term credit. The volume of deposited funds increases on the one hand and the volume of loans granted on the other, thus increasing the bank's ability to employ these funds and achieve greater returns, thus increasing the rate of return on assets and the return on property rights.
- The efficiency of the bank's management in investing funds: the bank's financial performance improves when the management is at a high degree of efficiency by investing the available funds in assets that produce an appropriate return and at acceptable levels of risk. It aligns with the bank's basic policy and achieves its objectives. It should be noted that the efficiency of money management leads to the efficiency of its use in controlling and controlling the costs of funding sources, whether internal or external sources, as well as the bank's operational expenses. On the contrary, it leads to many failures in the performance of the commercial bank.

Administrative Success: Administrative success means the relationships between individuals working in the bank. As the bank consists of several departments, and each department is concerned with performing certain functions, it is normal for the members of each department to have close relationships. Still, these relationships do not necessarily affect the bank's financial performance. Nevertheless, the issue of managerial success includes three points of view, all of which seek to clarify the relationship between administrative success and financial performance in the bank, and they are as follows:

- Administrative success improves the financial performance of the bank.
- Administrative success does not affect the bank's financial performance.
- Administrative success leads to many negative deviations in the bank's financial performance.

2.1.6. Standards of Evaluating Financial Performance

Financial ratios do not mean anything in themselves, so comparing them with other standards or ratios is necessary. This comparison will shed light on each ratio of the ratios extracted, whether high or low. There are four main criteria for financial performance that can be stated as follows:

Historical Standards: It means comparing the current performance with the previous performance, and these standards measure the degree of improvement or decline in the institution's performance. The application of these criteria necessitates their careful selection and the absence of variables that alter comparabilities, such as activity expansion or the introduction of new methodologies. As well as excluding the impact of other variables such as inflation, for example. These criteria are derived from the bank's performance in the past, as its internal financial penetration enables the calculation of financial indicators from the financial statements of previous years to monitor performance by the senior and financial management and to reveal weaknesses and strengths in the bank in order to be addressed, and about The strength to be supported and imputed compared to those years (or one year of them, the base year, or the average number of past years) (Sattar, 2012, p. 111).

Sectoral (Industrial) Standards: The financial analyst benefits more from sectoral standards in monitoring performance, and these standards represent a good basis for comparing the performance of the facility and following it up periodically, especially since the concerned facility is similar in many characteristics with the sectoral activity with which it is compared, despite the presence of high differences between The establishments subject to comparison in the same sector, in terms of the group of products, production capacity utilization rates, degree of geographical separation, etc. (Talib et al.,2011, p. 74).

Targeted Standards: These are standards that the bank's management works to achieve through its strategies, policies, plans, and parallels. What is expected to be

achieved within a specific time is the ratios set by the Central Bank and which banks are required to abide by, such as naming loans to deposits and other required ratios.

Absolute Standards: They are the prevailing and recognized standards in financial analysis that can be used regardless of the type of institution, industry, and prevailing circumstances. International standards are prepared and published gradually, and the relevant percentage in a particular institution is measured (Sabah et al.,2008, p. 33).

2.2. Financial Statements

2.2.1. The Concept of Financial Statements

Financial reports are a unified system of data on the property, financial position of the company, and the results of its activities. Financial statements are prepared based on financial accounting data by the established models for a particular financial reporting date. It follows from this definition that the data reflected in the financial statements is essentially a special type of account extracted from the current accounting of summary data on the state and performance of the company for a given period (Osadchy et al., 2018, p. 341). According to the Accounting Standards, financial statements are structured financial presentations and transactions undertaken in an organization. The main financial statements are the means used by accounting to collect, process, and present economic information. Financial statements provide information on the position and financial changes as a very important basis for managerial decisions (Hasanaj et al., 2019, p.19). A corporate annual report contains four basic financial statements (Fraser et al., 2016, p.8):

- The balance sheet or statement of financial status displays the firm's assets, liabilities, and shareholders' equity on a specific date, such as the end of a quarter or year.
- The income or earnings statement provides the results of operations for the accounting period, including sales, expenses, net profit or loss, and net profit or loss per share.
- The statement of shareholders' equity reconciles the opening and closing balances of all accounts that appear in the portion of the balance sheet titled stockholders' equity. Some companies compile a statement of retained earnings, which is typically coupled with the income statement and reconciles

the retained earnings account's beginning and closing balances. The stockholders' equity statement will typically be include as a footnote disclosure for companies utilizing the second format.

- The statement of cash flows provides information regarding cash inflows and outflows resulting from operating, financing, and investing activities for a given accounting period.

According to the standard of AIS, financial statements should normally cover one year and should be accompanied by comparative information for the previous year. Thus, companies should normally produce two of each statement plus the related notes at the end of each reporting period. In practice, virtually all companies satisfy this requirement by showing the equivalent figures for the previous year in a separate column in the current year's statements. Comparative narrative information should also be provided if needed for a better grasp of current period results – for example, as background to an ongoing legal dispute (Atrill et al. 2016, p. 171).

2.2.2. Types of Financial Statements

2.2.2.1. The Balance Sheet

A balance sheet, called the statement of condition or financial position, provides valuable information about a business firm, particularly when examined over several years and evaluated about the other financial statements. A prerequisite to learning what the balance sheet can teach us, however, is a fundamental understanding of the accounts in the statement and the relationship of each account to the financial statements as a whole (Fraser, 2016, P. 63)

The balance sheet can be presente in two alternative formats (Scagnelli et al., 2018, p. 21), the account format (a table with two sides), or a list format (vertical), where liabilities are subtracted from assets to display the Equity amount. The company's assets are its resources (objects, claims, and other rights). These assets reflect potential future revenue opportunities for the company. The sources contributing to the company's assets are listed on the balance sheet's right side. There are two primary sources of capital: liabilities (amounts owing to creditors) and owners' equity.

The fact that total assets must equal total liabilities plus owners' equity gives this statement its moniker "balance sheet." It is an alternate form of the fundamental accounting equation:

ASSETS = LIABILITIES + OWNERS' EQUITY

Unless there has been an error in recording the transactions, this equivalence always exists. However, the economic significance of this equation can be appreciated by rewriting it as:

INVESTING ACTIVITIES = FINANCING ACTIVITIES

Because cash may originate from creditors or owners, the balance sheet equation can also be expressed as:

INVESTMENTS = SHAREHOLDERS FINANCING + CREDITORS FINANCING

To demonstrate that the equity of the owners is a residual claim. the same equation can also be expressed as follows:

NET EQUITY = ASSETS – LIABILITIES

The balance sheet is a wonderful invention. However, it has two primary drawbacks. First, while it is very useful in theory to summarize the values of an organization's assets, these values are often elusive in practice. Second, many things have value and can be interpreted by the average person, at least, as assets. However, it is impossible to allocate a specific value to each of them and be recorded on the balance sheet. Everyone recognizes the value of a company's human capital - the skills and creativity of its employees - but no one has devised a way to value it accurately enough to reflect it on the balance sheet. Accountants do not go to the opposite extreme of excluding all intangible assets from the balance sheet, but the line between permitted and prohibited is inevitably arbitrary (Fridson et al., 2022, p. 33). The assets in a balance sheet have some essential characteristics (Bhimani, 2022, P.72) :

- An asset has a current or probable future economic benefit. That means it could result in cash inflows, or a reduction in cash outflows, for the business. An asset might create monetary value when used in the business's operations, such as when it is hired or sold.

- An economic resource only counts as an asset if the business has exclusive rights over that resource.
- Transactions or events giving rise to a business's right to economic resources must have already occurred. Transactions or other events expected to occur in the future cannot create assets today.

according to (Alexander et al., 2020, p. 101), IAS 1 states that an asset should be classified as current when it:

- is expected to be realized, sold, or consumed within the entity's operating cycle.
- It is held primarily for trading.
- It is expected to be realized within one tear of the balance sheet date.
- Is cash or a cash equivalent that is not restricted in its use.

2.2.2.2. The Income Statement

The income statement includes several other indicators of profitability. Gross profit (also called gross margin) is the difference between sales and cost (also called the cost of goods sold). It indicates how well a company can cover the costs of its products. This indicator is unsuitable for service and technology companies, where production costs make up a small part of the total costs. Profit from operations indicates the difference between sales and all operating costs and expenses. It usually excludes financing costs (interest) and taxes. As the name implies, earnings before taxes represent profits from continuing operations before the provision for income tax. Earnings from continuing operations are income from a company's continuing business after interest and taxes. Also called earnings before unusual items and discontinued operations (Subramanyam, 2008, p. 20).

The income statement can be prepared based on two concepts of income. Operating income is the concept according to which recurring items and items are presented during the financial period and according to which non-recurring and unusual items unrelated to the activity are closely related, such as stopping production or distribution lines and correcting errors. Accounting and changing accounting policies. The concept of comprehensive income presents and discloses these items in detail within what is known as extraordinary items. Extraordinary things are considered items that are not expected to occur and be repeated in the future. thus, they

are not usually subject to the institution's will and during which it is impossible to measure the efficiency of this management, as is the case with recurring and operational activities. (Radwan, 2006, p. 286).

There are several activities included in the income statement, which are as follows (Abdi Dufera, 2010, p. 20):

Net Interest Income: Total interest revenue less total interest expense equals net interest income on a tax-equivalent basis. The link between net interest income and total assets is an important analytical tool in analyzing a bank's ability to create profits by managing interest-earning assets and interest-bearing obligations.

Non-Interest Income: All other sources of income from credit activities, service charges on deposits, profits or losses, commissions and fees on assets held in a trading account, foreign exchange trading gains or losses, loans and guarantees, securities derivative services, and other activities outside the Balance Sheet are included in non-interest income. As a result of the impact of deregulation on permissible financial services, the proportional importance of various income classes has increased for many banks.

Other Expenses: To arrive at pre-tax operating income, three other categories of expenses are subtracted from adjusted operating income. Salaries and employee perks, spending for buildings and fixed assets (after subtracting rental income), and other non-interest operating expenses are all examples of indirect expenses. The year-to-date amount assigned to loan reserves and lease losses is the provision for loan and lease losses (on the balance sheet). Unexpected losses should be recorded in the balance sheet reserves account. To calculate pre-tax operating income on a tax-equivalent basis, gains or losses from the sale, exchange, redemption, or withdrawal of securities other than those held in trading accounts are deducted from pre-tax operating income. Gains and losses in security can be a significant part of evaluating a bank's success. The analyst must understand that the bank can impact the operating profit for some time through these securities transactions.

Income Tax Expense: Income tax includes the total of discretionary federal, state, local, and foreign income taxes (if applicable) on operating income (including securities gains and losses).

Net Income: Income taxes are deducted from pre-tax operating income to arrive at net operating income. Any unusual items, defined as unusual transactions that are not expecte to recur, are deducted/added after-tax to determine net income.

2.2.2.3. The Statement of Cash Flows

It is a financial statement that summarizes the cash inflows and outflows of the institution during a period, and its objective is to inform users of how and the reason for the change in the cash of the institution during a period of time. The list is rich in useful information and consists of three main categories: operational, investment, and financing operations (Al Ramahi, 2013, p. 343).

The current version of the financial statement that traces the flow of funds in and out of the firm, the statement of cash flows, became necessary for issuers with fiscal years ending after July 15, 1988, under the Statement of Financial Accounting Standards (SFAS) 95. The split of cash flows from operating activities, investing activities, and financing activities in the statement. The statement of changes in financial position, the predecessor to the statement of cash flows, was originally required in 1971 under Accounting Principles Board (APB) opinion 19. Before 1971, financial analysts had to make do with only the balance sheet and the income statement, dating back to the introduction of double-entry bookkeeping in Italy in the fifteenth century. Anyone with a sense of history will undoubtedly infer that the cash flow statement's introduction is predicated on remarkable new analytical insights. Such a conclusion is well-founded. The benefits of a cash flow statement are analogous to the flaws of an income statement and, more specifically, the concept of profit. Profit has become such a pliable quantity throughout time, easily increased or reduced to suit management's needs, that it is often useless as the basis for a fair comparison across enterprises (Fridson et al., 2022, p. 87).

In general, the statement of cash flows is not prepared from the trial balance after adjustments, as is the case with the statement of financial position or the income statement, but rather from three sources, which are as follows (Lutfi, 2006, p. 288):

- A comparative financial status statement after the current fiscal period and at the end of the preceding fiscal period gives information on assets, liabilities, and equity from the start to the end of the current period.

- A current period income statement to assist in determining the amount of cash generated or utilized during the period.
- Data from the ledger on chosen operations was gathered to provide more detailed information on how cash was created or utilized during the time.

The following are the steps for preparing the cash flow statement (Al Ramahi, 2014, p. 343):

- Determine the net cash change (increase or decrease).
- Determine the net cash flow generated by operating operations.
- Determining the net cash flow generated by investing operations.
- Determine the net cash flow generated by financing activities.
- Determining net cash flow by adding the outcomes of operating, investing, and financing activities.
- In a separate schedule, submit a report on any important non-cash activities for investing and financing.

2.2.2.4. Statement of Shareholders' Equity

Ascertainment exposes it to various risks, including credit, market, and operational risks. In non-banking economic establishments (industrial, commercial, and service establishments), the primary goal is to finance the necessary buildings, machinery, and equipment and purchase them for the project in production processes, followed by protecting the rights of short- and long-term creditors. Secondary, Protecting creditors' funds from loss or damage caused by the bank's operations is a fundamental goal of shareholders' rights, which are represented in the role of shareholders in banks. Because banks operate in a highly secretive environment, protecting depositors' money is critical to the long-term health and stability of the institutions themselves and the financial system as a whole. Banking shareholders' rights act as a protective barrier, preventing the bank from suffering unexpected losses. It may be exposed to shareholders' rights play a secondary role in financing the purchase of fixed assets, and thus shareholders' rights are assumed. The bank must be fully paid and ready to be disposed of when needed. (Nouri, 2018, p. 70).

Shareholder equity is primarily comprised of two components:

- invested (paid-in) capital

- retained earnings.

The cash obtained by the company after issuing its stock to investors is referred to as invested capital. As a result, a business is formed (or incorporated) on the date its original equity capital is signed and paid by the founder shareholders. Following equity capital is often issued with two components: share value (or par value) and premium price (or additional paid-in capital).

Retained earnings are the sums of earlier profits the corporation has reinvested in the business and are not distributed to shareholders as dividends. Normal shares, often known as "common stocks," are used to establish a company's equity capital. In addition to common stock, the corporation frequently issues "preferred stock," which has a dividend claim priority over common shares. Furthermore, if the company's assets were liquidated and ceased to exist, preferred shareholders' claims would be met before any assets were given to common stockholders (Scagnelli et al., 2018, p. 83).

2.2.3. Users of Financial Statements

Several organizations would be interested in the same financial statements created and released by a corporation (Lessambo, 2018, P .21):

Investors And Financial Analysts: Investors require the information to determine the entity's intrinsic value and whether to buy, hold, or sell its shares. Equity research analysts use financial statements to study earnings projections and price targets.

Employee Groups: Employees and their representatives want to know about their employers' solvency and profitability to make career decisions, estimate their negotiating power, and set a target wage for themselves.

Lenders: Information that allows lenders to determine whether their loans and the interest generated on them will be paid on time is of interest to them.

Suppliers And Other Trade Creditors: Information that allows them to determine if sums owed to them will be paid on time and whether demand from the company will increase, drop, or remain steady is important to suppliers and other trade creditors.

Governments And Their Agencies: Financial accounting information is important to governments and their agencies for various reasons. Tax-collecting bodies, such as the

IRS in the United States, are interested in computing the taxable income of tax-paying entities and determining their tax liability. Antitrust regulators, such as the Federal Trade Commission, are interested in determining if a company is monopolizing its market. Governments are interested in efficient resource allocation and require financial accounting information from many sectors and businesses to make decisions about federal and state budget allocation, among other things. Calculating national income, employment, and other indicators is important to statistics bureaus.

The Public: The institution affects the public in several ways, such as contributing to the progress of the national economy by creating new job opportunities and supporting suppliers and local people, and thus the public has an interest in knowing the financial position of the institution (Zain, 2015, P. 28).

Customers: Customers are interested in information about the organization's continuity and its products or services.

2.3. Financial Ratio

2.3.1. Fundamentals of Financial Ratio Analysis

There are many bases that the analyst should follow to evaluate performance, tighten control over the evaluation process, and keep it within the framework that achieves the desired goal, the most important of which are:

1. **A Clear Definition of The Objectives of Financial Analysis**: Since the main objective of financial analysis with ratios is to understand the data contained in the financial statements and financial reports, to form a base of information that helps the decision-maker in his work, whose role is concentrate in reducing the amount of accounting data to a few expressive set of relevant indicators, it is necessary to specify the objective of the financial analysis to allow choosing a modest size of the accounting ratios in a manner sufficient to provide the required information. (Aql, 2010, p. 306)

2. **Doing The Fitting of The Ratio in a Logical Way:** because the fitting of the ratio in a way that reflects certain economic relations and is used in an appropriate and prepared manner on common bases that reflect the functional relations between each numerator and denominator is useful in studying and analyzing the relationship with

indicators and ensuring the achievement of the desired goal (Al-Shawara, 2013, p. 298)

3. **The Correct Interpretation of Financial Ratios**: there are often no specific limits for the most appropriate and unsuitable situation for each ratio, but there are acceptable limits, and therefore high ratios are not always good and low ratios are not always bad, for example, increasing liquidity over acceptable limits is good, But on the other hand, it means disruption of resources by not investing them in other activities and low profitability, as well as the case with increasing winds beyond acceptable limits, which is also a good thing on the surface, but on the other hand, it may mean an increase in forwarding sales and a decrease in liquidity, which led to the emergence of standard ratios Which, by comparing the actual ratios with them, we can judge the soundness of the financial performance of the company under analysis. (Al-Shawara, 2013, p. 298).

2.3.2. The Importance of Financial Ratios

Financial ratios are important because they assist analysts in obtaining important information about the institution's management and its strengths and weaknesses, such as the composition of assets and liabilities, the level of indebtedness, liquidity, and profitability, as well as being simple to calculate. Accordingly, it helps to make sound decisions and control.

It is noted that the numerous combinations of the fractional relations that can be found mean that it is possible to calculate a large number of financial ratios, so it is usual to choose a limited number of them according to the available data on the one hand, and according to the purpose of the analysis on the other hand (Al-yammein, 2009, p.39).

The importance of financial ratios is summarized in the following aspects(Al-Khatib, 2010, p.54):

- Determining the extent of the facility's ability to meet current obligations.
- Measuring the degree of the establishment's growth and detecting weaknesses and strengths.
- Providing the data and information necessary for decision-making, policy formulation, and the preparation of estimated budgets.
- Measuring the overall effectiveness of the facility and its level of performance.

- Measuring the effectiveness obtained by the facility by exploiting its various assets to achieve profitability.

To achieve these aspects, the following financial ratios must be available:

- That financial ratio can detect and measure strengths and weaknesses.
- The financial ratios should have clear indications through which the financial ratios can be compare.
- The previous or the general average of the financial ratios in an industry.

Some defects occur in the financial ratios, as the financial ratios depend on the financial statements, which are the statement of financial position and the statement of income. If the financial statements are not correct and prepared under generally accepted accounting principles, there is no benefit for the financial ratios (Sophie, 2019, p. 33), as follows:

- The most important criticism of financial ratios is that we find the defects of financial ratios in the difficulty of explaining the change that occurs because ratios are calculated by dividing two numbers. In this scenario, deducing the reason for the ratio's growth or decrease from the result is tricky, as the expression can be in the denominator, numerator, or both.
- The analysis of financial ratios and indicators represents an integrated process of overlapping parts with each other.
- Production activity is related to supply while selling activity is related to demand, and these two forces influence the market.
- The production activity's degree of efficiency is measured by the growth in sales revenue and its relationship to costs and sales of various costs.
- The increase in net sales revenue by a greater percentage of the money invested in assets is achieved when the best utilization of production capacity.

2.3.3. Types of Financial Analysis to Evaluate Financial Performance

The financial analyst has access to various analysis tools, but no single tool can be used for all purposes of analysis. However, the analyst can select a suitable analysis tool based on the goal of the analysis. The analyst may use more than one analytical tool to reach meaningful implications about the subject of the analysis. In general, there are two main tools of analysis (Haddad, 2010: pp. 58-60):

Vertical Analysis: To arrive at meaningful importance, the vertical analysis incorporates the ratio of any number in the financial statements to another important number in the financial statements. On the assets side of the statement of financial status, an individual asset might be assigned to the total assets. As for the income statement, all items are ascribed to the net sales figure to achieve a relevant level of importance. In every instance, the meaning and relevance of the extracted percentage are incomplete unless it is compared to a certain standard or scale. This criterion may be the same ratio as in previous years, or the ratio could be compared to the ratio of all companies in the same industry or the so-called industry standard. Stability characterizes vertical analysis, used to analyze the performance of banks and as a planning and management tool, especially when compared to a certain metric or norm.

Horizontal Analysis: This study entails monitoring the behavior of a specific item of the financial statements over time, i.e., determining the degree of stability or decline in this item. This study is dynamic and aids in uncovering qualitative aspects of accounting and financial variables. The tendency of a given financial statement variable to increase or decrease, as well as the degree of stability or volatility of this variable from one financial period to the next, are examples. For investment objectives, the analyst is interested in the level of earnings and the extent of Earnings Stability and Earnings Trend. These qualitative features of profits can be retrieved by evaluating the time series, whereas the vertical analysis does not show such qualities. Despite the significance of horizontal analysis, some restrictions must be considered to minimize the likelihood of drawing incorrect findings, the most notable of which are:

- Inadequacy of the benchmark: the base year selected as a standard has extremely low or large earnings.
- Using absolute values for accounting variables may produce misleading findings that do not correspond to the economic significance of the change in this variable.
- The percentage change may display extreme figures if the base year is extremely low or high.
- A negative value in the base year results in an inaccurate rate of change that is not proportional to the actual change.

2.3.4. Financial Ratios Used in Evaluating Financial Performance

2.3.4.1. Liquidity Ratios

Given the importance of liquidity for the bank, especially compared to other institutions, liquidity ratios are one of the most important financial ratios used to evaluate financial performance in commercial banks. The flows of cash balances to and from the bank are huge compared to its capital, so liquidity ratios are one of the most important financial ratios used to evaluate financial performance in commercial banks. (Dang, 2020, p.2). The possibility of predicting the size and timing of the cash flow from the bank is very difficult, knowing that the bulk of its resources is subject to this flow. The importance of liquidity lies in the bank's permanent need to respond to requests for money withdrawal by the parties dealing with the bank, whether they are depositors or borrowers (Alali, 2020, p.105). Liquidity is a relative concept that expresses the relationship between cash and assets that convert into cash and the obligations to be fulfilled on the due date (Nikolaou et al. 2009, p.11). Iraqi commercial banks are distinguished by the importance of liquidity from the rest of the non-financial institutions through harmonizing short- and medium-term financial reserves (Salman, 2013, p.123).

Liquidity ratios are used to assess the institution's credit position, as these ratios depend on the ability of the institution's current assets to keep pace with the maturity of short-term debts. Analyzing the institution's liquidity is an important indicator for assessing its financial performance. And its ability to meet its immediate obligations and outstanding financial debts by determining the amount of liquid cash available to it and assets convertible into cash in a short period and with the least possible loss compared to its purchase cost. Liquidity is a tool to know the institution's ability to meet its current obligations with its current assets. Liquidity is the main focus of every financial policy. It can lead to the institution's liquidation if it cannot meet its immediate debts even if it achieves high profits in the long term (Al-yammein, 2009, p.42).

Liquidity Measurement Ratios: Despite the importance of liquidity for the bank, the higher the liquid assets in it, the lower the bank's return due to the lack of optimal employment of these resources. This means that the lack of liquidity or excessive liquidity both reflect negatively on the bank, hence the role of efficient management in

reconciling an appropriate degree of liquidity and achieving an acceptable profit simultaneously. Therefore this represents a permanent challenge for any commercial bank (Hong et al., 2020, p.3). Liquidity ratios help lenders determine a bank's financial ability and ability to meet its short-term obligations. If the liquidity ratios rise, there is an increased probability that the bank will be able to pay its obligations to the lenders. Therefore, the objective of the liquidity ratios is not clear when applying the TOPSIS method to these ratios. Accordingly, and based on previous literature, the goal of using liquidity ratios is to maximize them. Among the most important ratios for measuring liquidity are the following:

Cash Balance Ratio: The cash balance ratio indicates the amount of cash in the fund and cash in the Central Bank, as well as other balances represented by gold coins and foreign currencies and the extent of their ability to meet the bank's financial obligations to be paid on time. And the high percentage of cash balance in the bank means a rise in its ability to pay its obligations on the agreed dates. Still, this rise may reflect negatively on the bank's income due to not investing this money in investments that can generate financial returns for the bank. It is calculate according to the following equation:

$$\text{cash balance} = \frac{Cash\ in\ hand + cash\ with\ the\ Central\ Bank\ and\ other\ banks}{\text{Total } deposits} \text{ x } 100\%$$

Requirement Liquidity Ratio: This ratio indicates that commercial banks keep a percentage of the money as a deposit with the Central Bank out of the value of the amounts available to them, without interest. The higher the legal reserve ratio, the higher the bank's ability to meet its obligations, especially in unusual circumstances where cash balances deposited in commercial banks cannot pay these obligations. It is calculated according to the following equation:

$$\text{Requirement Liquidity Ratio} = \frac{Balances\ with\ the\ Central\ Bank.}{\text{Total } deposits} \text{ X } 100\%$$

Current Ratio: This ratio refers to measuring the ability of banks to meet their due obligations and their components, and this ratio consists of current assets to current liabilities, which is considered one of the most objective ratios in use to assess the adequacy of liquidity and is either cash assets or cash equivalents. It is measured according to the following equation:

$$\text{Current ratio} = \frac{Current\ assets}{\text{Current liabilities}} \text{ X } 100\%$$

Cash to Total Assets Ratio: This ratio measures the ratio of liquid assets in a bank to its total assets. Its high indicates its ability to face sudden withdrawals, while its decrease means that it may be exposed to many risks, including the inability to face withdrawal requests and others. It is calculated according to the following equation:

$$\text{Cash to Total Assets Ratio} = \frac{\text{Liquid Assets}}{\text{Total Assets}} \text{ X } 100\%$$

2.3.4.2. Profitability Ratios

One of the primary goals that banks and banking institutions seek is to achieve the largest rate of profitability, which is considered the outcome of many operations and decisions related to all aspects of the activity. For this reason, several profitability measures are used because any specific measure may greatly affect a certain aspect of the activity. Or with specific policies, so it is necessary to measure all activity profits and net profit to distinguish between the results of production and operating policies and financial decisions (Lutfi, 2006, p.370).

Commercial banks are working to achieve the goal of profitability through two decisions (Sudkhan, 2021, p.62):

- **Financing Decision**: It is the decision related to the composition of liabilities, that is, how the bank obtains the financial resources necessary for financing investment in its assets. The impact of the financing decision on profitability is reflected through the best arrangement of financing sources represented by property rights, deposits, and creditors in a manner that achieves the best possible return for the bank.
- **Investment Decision:** The decision related to the composition of assets, that is, how the bank uses the financial resources available to acquire various assets. And then, the impact of the investment decision on profitability appears through the optimal distribution of the financial resources available to the bank on its various assets in a way that achieves a balance in investing each item of its assets without any increase that leads to disruption of these resources and no shortage that leads to missing opportunities in order to achieve future financial returns and without sacrificing liquidity.

Profitability Measurement Ratios: Profitability is one of the bank's most important objectives, which enables the bank to achieve growth and continuity. Among the most important profitability ratios are the following:

Return On Assets Ratio (ROA): This ratio indicates the bank's profitability with its total assets. It measures the management's efficiency in using assets to generate profits. It's known as the return on investment, mostly determined by the size of the assets utilized to invest. Thus, it compares banks and institutions in similar sectors to determine the profits from investing assets. As the liabilities consist of total liabilities (deposits) and capital, and these funds are used to finance the bank's investments and activities (assets), the high this percentage indicates the efficiency of the investment and operational management policies, and the percentage of return on investment measures it by applying the following equation:

$$\text{Return on assets ratio} = \frac{\text{Net Profit and Loss for the Period}}{\text{Total Assets}} \text{ X } 100\%$$

Return On Equity Ratio (ROE): This ratio measures the return the shareholders obtain from investing their money with the bank and taking the risk. Its rise means the efficiency of the operational and financial policy used by the bank's management to achieve the best possible return for shareholders. Calculating the rate of return on equity is of great importance from the shareholders' point of view to evaluate the bank's profitability in terms of the suitability of the return with the risks they bear. Measures it by applying the following equation:

$$\text{Return on Equity ratio} = \frac{\text{Net Profit and Loss for the Period}}{\text{Shareholder's Equity}} \text{ X } 100\%$$

Return On Deposits Ratio: This ratio refers to the share of each invested dinar of depositors' money from the net profits achieved in various investment fields. Therefore, it reflects the bank's management's success in employing depositors' money to generate profits from these funds. measures it by applying the following equation:

$$\text{Return on Equity ratio} = \frac{\text{net profit after tax}}{\text{Total } deposits} \text{ X } 100\%$$

Common Earnings Per Share: It measures the return earned on each common stock from the bank's net profit after interest and taxes. is calculated according to the following equation:

$$\text{Common Earnings Per Share} = \frac{\text{net income}}{\text{The number of ordinary shares issued and traded by the bank}} \text{ X } 100\%$$

Net Profit And Loss For The Period To Paid-In Capital: This ratio indicates the amount of profit or loss for the bank from the paid-up capital measured by applying the following equation:

$$\text{Net profit and loss for the period to paid-in capital} = \frac{\text{Net Profit and Loss for the Period}}{\text{Paid in Capital}} \text{ X } 100\%$$

Ratio Of Interests Earned To Interests Maturity: This ratio compares the interest rate received by the bank when granting loans to the interest rate paid by the bank on loans obtained from the central bank and other banks, and its rise indicates a growth in the bank's income volume. measures it by applying the following equation:

$$\text{The ratio of Interests Earned to Interests Maturity} = \frac{\text{Earned benefits}}{accrued \text{ benefits}} \text{ X } 100\%$$

2.3.4.3. Capital Adequacy Ratios

Capital plays an important role in achieving safety for depositors. A fall in revenues equals a greater decrease in profits, and those profits may even turn into losses that devour capital and extend to depositors' cash. This function is significant since banks are among the most sensitive business enterprises to financial leverage hazards. Capital plays an important role in achieving safety for depositors. The significance of this role stems from the fact that banks are among the most vulnerable types of business establishments to financial leverage risks, which means that a decrease in revenues results in a greater decrease in profits, and those profits may even turn into losses that devour capital and extend to depositors' money (Alameed, 2011, p.18).

Measuring Capital Adequacy Ratios :Among the most important ratios of capital adequacy measurement are the following:

Shareholder's Equity To Total Assets: The ratio of equity to assets indicates the extent to which the bank has relied on equity in financing assets. measures it by applying the following equation:

$$\text{Shareholder's Equity to total Assets} = \frac{\text{Shareholder's Equity}}{\text{Total Assets}} \text{ X } 100\%$$

Shareholders' Equity To Deposits: This ratio measures the extent to which shareholders' equity depends on the bank's number of deposits. measures it by applying the following equation:

$$\text{Shareholder's Equity to Deposits} = \frac{\text{Shareholder's Equity}}{\text{Deposit + Non-Deposit Sources}} \text{ X } 100\%$$

The Ratio of Doubtful Debts: The ratio of doubtful debts is an indicator of the health of the national economy, the soundness of the credit policies adopted, and the solvency of borrowers. These ratios are usually high in the event of unstable political conditions that affect the borrowers' business and results. As well as the customer's response to emerging crises. The general economic conditions also have a significant impact on this percentage. This percentage also rises in the event of sudden and sharp changes in the exchange and interest rates and loosening of the central bank's supervisory grip on the banking system.

2.3.4.4. Activity Ratios

It measures the efficiency of a bank's management in allocating financial resources to various current and fixed assets, as well as its efficiency in using assets to produce the greatest amount of goods and services possible, resulting in the greatest amount of sales and profits possible. It is referred to as asset management ratios or findings by some. These ratios are based on the balance between net sales and various forms of assets, such as inventories, debtors, and fixed assets, as well as the detection of any imbalances in this balance and taking the required steps to correct them (Al-Shawara, 2013, p.306).

Activity Measurement Ratios: Among the most important activity measurement ratios are the following:

Asset Turnover Ratio: This ratio shows how active the assets are and their ability to generate sales using the organization's total assets. measures it by applying the following equation:

$$\text{Asset Turnover Ratio} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

Fixed Asset Turnover Ratio: This ratio is an indicator of the efficiency in managing this type of bank's assets, which means it measures the efficiency of the fixed assets

and their ability to generate revenues for the bank. Increasing this rate means increasing the usage capacity of fixed assets and increasing their contribution to increasing the current activity of the bank. Measures it by applying the following equation:

$$\text{Fixed Asset Turnover Ratio} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

Current Asset Turnover Ratio: This ratio indicates the efficiency in managing this asset and generating sales from it. measures it by applying the following equation:

$$\text{Current Asset Turnover Ratio} = \frac{\text{Net Sales}}{\text{Current Assets}}$$

Accounts Receivable Turnover Ratio: This ratio indicates the appropriateness of the size of the investment in receivables. It thus sheds light on the appropriateness of credit policy and collection policy. measures it by applying the following equation:

$$\text{Accounts receivable turnover ratio} = \frac{\text{net future sales}}{\text{average net receivables}}$$

Average Collection Period: This ratio measures customers' speed in paying their dues to the project. A low percentage may be evidence of the efficiency and activity of the collection department, and it may also indicate a strict credit policy measures it by applying the following equation:

$$\text{Average Collection Period} = \frac{\text{Number of Days in a Year}}{\text{Accounts Receivable Turnover}}$$

2.3.4.5. Asset Quality Ratios

The process of assessing the quality of assets depends on the credibility of the capital rates and the reliability of the indicators of the quality and quality of assets. Also, the risk of insolvency in banks comes mostly from the quality of the assets and the difficulty of their liquidation. Therefore, the importance of monitoring indicators that indicate the quality of assets comes here. Asset quality indicators must consider the credit risk involved in off-balance-sheet operations such as agencies, mortgages, and derivatives trading (Al-Farra, 2008, p.77).

Measurement of Asset Quality Ratios: Among the most important ratios for measuring the quality of assets are the following:

Weighted Classification Ratio: This ratio measures the volume of provisions for bad debts from shareholders' equity and provisions. The larger this ratio, it indicates:

- The volume of provision for bad debts to shareholders' equity is large and sufficient.
- Provisions for bad debts are sufficient to meet the risks.
- The possibility of writing off bad debts is relatively low.
- A rational credit policy.

measures it by applying the following equation:

$$\text{Weighted Classification Ratio} = \frac{\text{Allocations}}{\text{Allocations} + \text{Shareholders' Equity}} \text{ X } 100\%$$

Total Loans and Receivables to Total Assets: This ratio measures the size of total loans and Receivables to total assets. measures it by applying the following equation:

$$\text{Total Loans and Receivables to Total Assets} = \frac{\text{Total Loans and Receivables}}{\text{Total Assets}} \text{ X } 100\%$$

Permanent Assets to Total Assets: This ratio measures the volume of permanent assets to total assets. measures it by applying the following equation:

$$\text{Permanent Assets to Total Assets} = \frac{\text{Permanent Assets}}{\text{Total Assets}} \text{ X } 100\%$$

3. CHAPTER THREE: EVALUATING THE FINANCIAL PERFORMANCE OF IRAQI COMMERCIAL BANKS BY TOPSIS METHOD

In this chapter, the financial performance of Iraqi commercial banks is evaluated according to the financial ratios extracted from the annual financial statements, using the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) method for evaluating financial performance.

3.1. Methodology

Decision-making is the decisions that deeply affect the organization's future through the response and compatibility between these decisions and the organization's requirements (Rosenzweig, 2013, p.p. 20-24). Or that decision that represents the general and comprehensive moves used in guiding and directing the main actions of the organization, which is the comprehensive and long-term plan that works to achieve the specified goals (Al-Kaabi, 2017, p. 45). In addition, (Todd McElroy et al., 2020) study, which aimed to study thinking about decisions through the relationship between the decision-maker and the problem are faced, where the study indicated that decisions differ in terms of the degree of complexity and personality traits of the person taking them, where studies conflicted in terms of Some of them are of the opinion that more thinking about the features of the alternative should lead to a better decision. However, others point out that more thinking may also lead to focusing on other aspects that are far from the decision and thus lead to less ideal results. In complex tasks but does not affect simple decisions.

The issue of decision-making is of great importance in decision-making for most of the implementing organizations in developed countries. Some organizations may experience financial losses or a decrease in expected profits during implementation due to the weakness of the organizational structure. Or the failure to adopt the ideal organizational structure capable of providing the necessary data and information that assist the various administrative levels in monitoring and controlling project performance. As a result, there has been great interest in developing multi-criteria decision-making methods, including our thesis, which focuses on providing The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) in evaluating financial performance in banks.

3.2. Technique for Order Preference by Similarity to Ideal Solution (Topsis) Method

Technique for order of preference by similarity to ideal solution (TOPSIS) method for Yoon and Ching Lai Hwang created Multiple-Criteria Decision Making (MCDM) in 1981. (Yoon, 1988, p. 1). Yun developed more improvements to this approach in 1987 (Ki Yun, 1987, p. 3), and further developments by Huang, Lai, and Liu in 1993 (Hwang, 1993, p. 8). The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) is determined by the selected alternative, which should have the shortest good geometric path from the positive ideal solution (PIS) and the longest good geometric path from the negative ideal solution (NIS). The total of all potential values for each trait is defined as a perfect positive solution. Negative perfect solutions, on the other hand, are defined as the sum of all conceivable values for each characteristic. TOPSIS is frequently used for two reasons: the concept is straightforward and straightforward, and it can quantify the general execution of decision options in a straightforward scientific framework. For all firms, banks, and other organizations entering an increasingly competitive market, the TOPSIS approach has become a significant way of performance appraisal. That is why studies on this method are being conducted in many areas, and its importance is increasing daily. This method does not contain difficult mathematical algorithms.

On the contrary, it is used with simple calculations. For this reason, companies, banks, and other organizations in every field can use this method. The basic mindset of this method consists of positive and negative ideal solutions.

Now the basic steps for the TOPSIS method are as follows:

Step 1: Creating the Decision Matrix.

In the beginning, the matrix is represented in the form of actual data mentioned, representing the alternatives, and the matrix contains the columns representing the criteria specified in the decision-making process. And the initial matrix can be illustrated below:

$$D = \begin{bmatrix} d_{11} & d_{12} & \dots & d_{1m} \\ d_{21} & d_{22} & \dots & d_{2m} \\ . & . & . & . \\ . & . & . & . \\ d_{n1} & d_{n2} & \dots & d_{nm} \end{bmatrix}$$

Step 2: Creating the Normalized Matrix

In this step, each decision matrix (d.11,d.12,d.1m) is squared, the values in the columns are summed separately, the square root of the grand sum of each column is taken, and the normalized matrix (R) is found at the end. The normalized matrix is shown below.

$$R = \begin{bmatrix} r_{11} & r_{12} & \dots & r_{1m} \\ r_{21} & r_{22} & \dots & r_{2m} \\ . & . & \dots & . \\ . & . & \dots & . \\ r_{n1} & r_{n2} & \dots & r_{nm} \end{bmatrix}$$

(R) Matrix is found with this formula: $r_{ij} = \frac{d}{\sqrt{\sum_{k=1}^{n} d_{kj}}}$ i=1, 2, …, n, j=1, 2, …, m

Step 3: Creating the Weighted Normalized Matrix

Weight values of criteria are evaluate first (w_i, i=1,2,.....,m) are found, and w_i R It creates the V matrix by multiplying each element in the columns of the R matrix.

$$V = \begin{bmatrix} w_1 r_{11} & w_2 r_{12} & \dots & w_m r_{1m} \\ w_1 r_{21} & w_2 r_{22} & \dots & w_m r_{2m} \\ . & . & \dots & . \\ . & . & \dots & . \\ . & . & . & . \\ w_1 r_{n1} & w_2 r_{n2} & \dots & w_m r_{nm} \end{bmatrix} = \begin{bmatrix} v_{11} & v_{12} & \dots & v_{1m} \\ v_{21} & v_{22} & \dots & v_{2m} \\ . & . & \dots & . \\ . & . & \dots & . \\ . & . & . & . \\ v_{n1} & v_{n2} & \dots & v_{nm} \end{bmatrix}$$

Weight values of criteria are found with this formula $W_i = \frac{1}{the\ number\ of\ ratios}$

Weighted Normalized Matrix is found with this formula: $v_{ij} = w_i \times r_{ij}$, $j = 1,2,\dots,m$, $i = 1,2,\dots,n$

Step 4: Determination of Positive (A+) and Negative (A-) ideal solutions

The best (A+) and worst (A-) values for each row in the weighted normalized matrix are calculated with the following formulas:

$$A^* = \{v_1^*, v_2^*, \dots . v_i^*\} = \left\{ (\underset{j}{Max} v_{ij} | i \in I'), \quad (\underset{j}{Min} v_{ij} | i \in I'') \right\}$$

$$A^- = \{v_1^-, v_2^-, \dots . v_i^-\} = \left\{ (\underset{j}{Min} v_{ij} | i \in I'), \quad (\underset{j}{Max} v_{ij} | i \in I'') \right\}$$

Where I' is associated with the benefit criteria and $I^{"}$ is associated with the cost criteria.

Step 5: Calculation of the separation measure

Determining the distance values from the Positive Ideal (D^+) and Negative Ideal solution points (D^-). By taking the maximum ideal solution values and the minimum ideal solution values found in the fourth step, the distance value between these solution values is found by the formula shown below:

$$D_j^* = \sqrt{\sum_{i=1}^{n}(v_{ij} - v^*)^2}\ , j=1,2,.....,m$$

$$D_j^- = \sqrt{\sum_{i=1}^{n}(v_{ij} - v^-)^2}\ , j=1,2,.....,m$$

Step 6: Calculate closeness based on an ideal solution

The closeness of each option based on the ideal solution is represented by C^* and calculated by the formula below:

$$C_j^* = \frac{D_j^-}{D_j^+ + D_j^-} \qquad j=1,2,.....,m$$

C^* is a value between 0 and 1 ($0 \leq C^* \leq 1$). $C^*=1$, it is understood that the option is at the positive ideal solution point, and if $C^*=0$ the option is at the negative ideal solution point.

In the end, ranking the preference order according to the descending order of C^*

$$\textbf{Percentage of } C^* = \frac{analyzed\ the\ bank's\ closeness\ to\ the\ ideal\ solution\ value}{the\ sum\ of\ \ closeness\ to\ the\ ideal\ solution\ values\ of\ all\ analyzed\ banks}$$

3.3. The Financial Data and Ratios Used in the Analysis

In this thesis, twelve commercial banks listed on the Iraq Stock Exchange for a period of five years between 2016 to 2020 are examined, as shown in the following table:

Table 1: Commercial banks listed in the Iraq Stock Exchange, the study sample

Banks	Year Of Establishment	Incorporation Capital
Bank of Baghdad	1992	100MIQD=4.7MUSD
Commercial Bank of Iraq	1992	150 MIQD=7.1MUSD
Gulf Commercial Bank	1999	600 MIQD=0.3MUSD
Investment Bank of Iraq	1993	100MIQD=1.3MUSD
National Bank of Iraq	1995	400 MIQD=0.2MUSD
Iraqi Middle East Bank for Investment	1993	400 MIQD=5.4MUSD
Trans Iraq Bank	2006	56.5BIQD=38MUSD
Ashur International Bank for Investment	2005	25 BIQD=17MUSD
Summer Commercial Bank	1999	400 MIQD=0.2MUSD
Union Bank of Iraq	1994	1000 MIQD=2.1MUSD
credit bank of Iraq	1998	200 MIQD=0.1MUSD
Al-Mansour Investment Bank	2005	55 BIQD=37MUSD

Table 1: Prepared by the researcher based on the published reports of the commercial banks mentioned.

From the beginning, we must point out that this study is to evaluate the financial performance of the research sample based on the data contained in its financial statements. However, this does not necessarily reflect the entirety of the financial performance because the financial statements do not reflect the day-to-day swings of the financial position but simply the situation at the end of the year. The financial ratios used in the analysis were obtained from the Iraqi commercial banks' financial statements. The sample of banks was selected by obtaining their financial reports published in public. The financial statements of the banks have been downloaded from the official website of the Iraq Stock Exchange. Where the profit ratios, asset quality ratios, liquidity ratios, and capital efficiency ratios came from the

annual financial reports of Iraqi commercial banks. Thus, the ratios of financial ratios that have been selected from the financial reports are well known in the analysis process. The results of the activity of Iraqi commercial banks between 2016 and 2020 were examined, and the results of the activity of banks for these years were compared. In this research, these data of financial reports were converted into ratios, and these ratios were compared with the TOPSIS method.

Table 2: Evaluation Criteria

criteria	**How it was found**	**How It Is Shown in Tables**	**Max/ Min**
Capital Adequacy Ratios	Shareholder's Equity / Total Assets	Ratio 1	MAX
	Shareholder's Equity / (Deposit + Non-Deposit Sources	Ratio 2	MAX
Liquidity ratios	Liquid Assets / Deposit and Non-Deposit Funds	Ratio 3	MAX
	Liquid Assets / Total Assets	Ratio 4	MAX
profitability ratios	(ROA): Net Profit and Loss for the Period/Total Assets	Ratio 5	MAX
	(ROE): Net Profit and Loss for the Period/Shareholder's Equity	Ratio 6	MAX
	Net Profit and Loss for the Period/Paid in Capital	Ratio 7	MAX
Asset Quality Ratios	Total Loans and Receivables / Total Assets	Ratio 8	MAX
	Permanent Assets / Total Assets	Ratio 9	MIN

The study identified nine criteria to measure financial performance: capital adequacy ratios, liquidity ratios, profitability ratios, and asset quality ratios. Among these criteria, Ratio 9 (Permanent Assets/Total Assets) criteria are identified as cost (minimum) criteria and other criteria as benefit (maximum) criteria. Then, equal weights are given to each of the nine criteria because ratios are equally important in this thesis, and no linguistic variables are used. Therefore, the total weights must be one, where the equal weight of each one is defined as 0.11. Finally, the TOPSIS approach is used to determine a ranking of organizations based on their total performance.

3.4. Application of TOPSIS Method

Step 1: Creating The Decision Matrix For 2020

The decision matrix prepared according to the data obtained from the financial reports of twelve Iraqi commercial banks for 2020 is presente in Table 3 Of the nine criteria in Table 3, ratio 9 is the cost criteria, and the other criteria are the benefit criteria.

Table 3: Financial Ratio Data Extracted from the Financial Reports of Iraqi Commercial Banks for 2020

BANKS	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.1960	0.2675	0.7856	0.5941	0.0142	0.0725	0.0808	0.0993	0.0394
Commercial Bank of Iraq	0.4988	1.1287	1.4743	0.6510	0.0575	0.1152	0.1418	0.0305	0.0051
Gulf Commercial Bank	0.4056	1.7056	1.3000	0.4588	-2.8917	-4.8086	0.0000	0.2490	0.0764
Investment Bank of Iraq	0.4642	0.9851	1.3371	0.6252	0.0082	0.0176	0.0187	0.2417	0.0262
National Bank of Iraq	0.3440	0.7344	1.0550	0.5256	0.0222	0.0645	0.0793	0.3550	0.0201
Iraqi Middle East Bank for Investment	0.4089	0.9925	1.1917	0.4900	-0.0324	-0.0079	-0.0084	0.1314	0.1453
Trans Iraq Bank	0.7844	5.2549	3.4510	0.5146	0.0087	0.0111	0.0113	0.2632	0.0076
Ashur International Bank for Investment	0.5772	2.4159	3.6991	0.8837	0.0317	0.0549	0.0601	0.0528	0.0401
Summer Commercial Bank	0.7892	4.8519	4.6296	0.7508	0.0032	0.0041	0.0043	0.1381	0.0870
Union Bank of Iraq	0.5375	2.9886	0.4886	0.0878	0.0017	0.0032	0.0034	0.7347	0.0483
credit bank of Iraq	0.5570	1.3502	2.3640	0.9734	-0.0065	-0.0117	-0.0137	0.0140	0.0190
Al-Mansour Investment Bank	0.2223	0.2964	1.1606	0.8702	0.0040	0.0220	0.0252	0.0792	0.0222

Step 2: Creating the normalized decision matrix for 2020

We used the formula to find the normalized decision matrix $r_{ij}=\frac{d}{\sqrt{\sum_{k=1}^{n} d_{kj}}}$

Elements of R normalized decision matrix

Table 4: Normalizing the Decision Matrix for 2020

BANKS	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.1100	0.0310	0.0990	0.2601	0.0049	0.0151	0.4148	0.1040	0.1921
Commercial Bank of Iraq	0.2801	0.1307	0.1857	0.2850	0.0199	0.0239	0.7281	0.0319	0.0249
Gulf Commercial Bank	0.2277	0.1975	0.1638	0.2009	-0.9996	-0.9994	0.0000	0.2608	0.3727
Investment Bank of Iraq	0.2606	0.1141	0.1685	0.2737	0.0028	0.0037	0.0959	0.2531	0.1278
National Bank of Iraq	0.1931	0.0850	0.1329	0.2301	0.0077	0.0134	0.4071	0.3717	0.0980
Iraqi Middle East Bank for Investment	0.2295	0.1149	0.1501	0.2145	-0.0112	-0.0016	-0.0430	0.1376	0.7086
Trans Iraq Bank	0.4404	0.6085	0.4348	0.2253	0.0030	0.0023	0.0580	0.2756	0.0371
Ashur International Bank for Investment	0.3241	0.2797	0.4660	0.3869	0.0110	0.0114	0.3086	0.0553	0.1956
Summer Commercial Bank	0.4431	0.5618	0.5833	0.3287	0.0011	0.0008	0.0219	0.1447	0.4244
Union Bank of Iraq	0.3018	0.3461	0.0616	0.0384	0.0006	0.0007	0.0174	0.7694	0.2356
credit bank of Iraq	0.3127	0.1563	0.2978	0.4262	-0.0022	-0.0024	-0.0703	0.0147	0.0925
Al-Mansour Investment Bank	0.1248	0.0343	0.1462	0.3810	0.0014	0.0046	0.1294	0.0829	0.1083

Step 3: Creating The Weighted Normalized Decision Matrix For 2020

In this step, the weight values of the evaluation factors were multiplie by the normalized matrix calculated in the previous step, and the weighted matrix was forme. We used the formula to find the Weighted Normalized Decision Matrix $v_{ij} = w_i \times r_{ij}$

Table 5: Weighted Normalized Decision Matrix for 2020

BANKS	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.0122	0.0034	0.0110	0.0289	0.0005	0.0017	0.0461	0.0116	0.0213
Commercial Bank of Iraq	0.0311	0.0145	0.0206	0.0317	0.0022	0.0027	0.0809	0.0035	0.0028
Gulf Commercial Bank	0.0253	0.0219	0.0182	0.0223	-0.1111	-0.1110	0.0000	0.0290	0.0414
Investment Bank of Iraq	0.0290	0.0127	0.0187	0.0304	0.0003	0.0004	0.0107	0.0281	0.0142
National Bank of Iraq	0.0215	0.0094	0.0148	0.0256	0.0009	0.0015	0.0452	0.0413	0.0109
Iraqi Middle East Bank for Investment	0.0255	0.0128	0.0167	0.0238	-0.0012	-0.0002	-0.0048	0.0153	0.0787
Trans Iraq Bank	0.0489	0.0676	0.0483	0.0250	0.0003	0.0003	0.0064	0.0306	0.0041
Ashur International Bank for Investment	0.0360	0.0311	0.0518	0.0430	0.0012	0.0013	0.0343	0.0061	0.0217
Summer Commercial Bank	0.0492	0.0624	0.0648	0.0365	0.0001	0.0001	0.0024	0.0161	0.0471
Union Bank of Iraq	0.0335	0.0384	0.0068	0.0043	0.0001	0.0001	0.0019	0.0855	0.0262
credit bank of Iraq	0.0347	0.0174	0.0331	0.0474	-0.0002	-0.0003	-0.0078	0.0016	0.0103
Al-Mansour Investment Bank	0.0139	0.0038	0.0162	0.0423	0.0002	0.0005	0.0144	0.0092	0.0120

Step 4: Identifying Positive And Negative Ideal Solutions For 2020

To obtain the positive and negative ideal solutions, we must first determine the largest ratio values for all banks in each column, which indicate the ideal solution.

Table 6: Positive and Negative Ideal Solutions for 2020

	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Positive Ideal Solution A+	0.0492	0.0676	0.0648	0.0474	0.0022	0.0027	0.0809	0.0855	0.0787
Negative Ideal Solution A-	0.0122	0.0034	0.0068	0.0043	-0.1111	-0.1110	-0.0078	0.0016	0.0028

Step 5: The Distance Values Related to the Positive and Negative Ideal Solution Values Were Determine for 2020

To find the distance between Positive and Negative Ideal Solutions, we used the distance calculation formula

$$D_j^* = \sqrt{\sum_{i=1}^{n}(v_{ij} - v^*)^2}\ ,\ j = 1,2,.....,m \qquad D_j^- = \sqrt{\sum_{i=1}^{n}(v_{ij} - v^-)^2}\ ,\ j = 1,2,.....,m$$

Table 7: Positive and Negative Distance Values for 2020

BANKS	A+	A-
Bank of Baghdad	0.1367	0.1707
Commercial Bank of Iraq	0.1335	0.1872
Gulf Commercial Bank	0.2058	0.0572
Investment Bank of Iraq	0.1350	0.1649
National Bank of Iraq	0.1223	0.1740
Iraqi Middle East Bank for Investment	0.1368	0.1762
Trans Iraq Bank	0.1221	0.1829
Ashur International Bank for Investment	0.1158	0.1795
Summer Commercial Bank	0.1101	0.1904
Union Bank of Iraq	0.1238	0.1845
credit bank of Iraq	0.1528	0.1669
Al-Mansour Investment Bank	0.1497	0.1643

Step 6: Calculation of the Closeness Coefficients for the Ideal Solution

This step used distances related to positive and negative ideal solution values, and the best decision option was determined. The following formula finds this step

$$C_j^* = \frac{D_j^-}{D_j^+ + D_j^-}$$

Table 8: Closeness to Ideal Solution For 2020

BANKS	A+	A-	C*
Bank of Baghdad	0.1367	0.1707	0.5552
Commercial Bank of Iraq	0.1335	0.1872	0.5837
Gulf Commercial Bank	0.2058	0.0572	0.2174
Investment Bank of Iraq	0.1350	0.1649	0.5498
National Bank of Iraq	0.1223	0.1740	0.5872
Iraqi Middle East Bank for Investment	0.1368	0.1762	0.5629
Trans Iraq Bank	0.1221	0.1829	0.5998
Ashur International Bank for Investment	0.1158	0.1795	0.6078
Summer Commercial Bank	0.1101	0.1904	0.6335
Union Bank of Iraq	0.1238	0.1845	0.5985
credit bank of Iraq	0.1528	0.1669	0.5221
Al-Mansour Investment Bank	0.1497	0.1643	0.5233

Table 9: Ranking by TOPSIS for 2020

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Summer Commercial Bank**	0.6335	0.096848	9.684767
2	**Ashur International Bank for Investment**	0.6078	0.092919	9.291873
3	**Trans Iraq Bank**	0.5998	0.091696	9.169571
4	**Union Bank of Iraq**	0.5985	0.091497	9.149697
5	**National Bank of Iraq**	0.5872	0.089769	8.976946
6	**Commercial Bank of Iraq**	0.5837	0.089234	8.923439
7	**Iraqi Middle East Bank for Investment**	0.5629	0.086055	8.605455
8	**Bank of Baghdad**	0.5552	0.084877	8.487739
9	**Investment Bank of Iraq**	0.5498	0.084052	8.405186
10	**Al-Mansour Investment Bank**	0.5233	0.080001	8.000061
11	**credit bank of Iraq**	0.5221	0.079817	7.981716
12	**Gulf Commercial Bank**	0.2174	0.033235	3.323549
TOTAL		6.5412	100%	100

Table 9 shows the financial performance according to the TOPSIS method for the 12 Iraqi commercial banks in this thesis for the year 2020, where Summer Commercial Bank ranked first with a value of c* (0.6335) with the highest C score (9.684767), Then followed by Ashur Bank with a value of (0.6078) and ranking index scores (9.291873), followed by Trans Iraq Bank with a value of c* (0.5998) and ranking index scores (9.169571). The evaluation shows that the lowest-rated banks are Al-Mansour Investment Bank with a value of c* (0.5233) and ranking index scores (8.000061), and credit bank of Iraq with a value of c* (0.5221) and ranking index scores (7.981716), and Gulf Commercial Bank with a value of c* (0.2174) and ranking index scores (3.323549).

Table 10: Closeness to Ideal Solution For 2019.

BANKS	A+	A-	C*
Bank of Baghdad	0.21471	0.085041	0.283705
Commercial Bank of Iraq	0.215931	0.087475	0.28831
Gulf Commercial Bank	0.214955	0.060393	0.219333
Investment Bank of Iraq	0.159016	0.15571	0.494748
National Bank of Iraq	0.211848	0.098301	0.316948
Iraqi Middle East Bank for Investment	0.175862	0.104065	0.371758
Trans Iraq Bank	0.206086	0.100242	0.327237
Ashur International Bank for Investment	0.211515	0.081434	0.27798
Summer Commercial Bank	0.19727	0.110335	0.358691
Union Bank of Iraq	0.209447	0.101376	0.326153
credit bank of Iraq	0.230558	0.05464	0.191586
Al-Mansour Investment Bank	0.194022	0.137978	0.415596

Table 11: Ranking by TOPSIS for 2019

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Investment Bank of Iraq**	0.4947	0.1277	12.777
2	**Al-Mansour Investment Bank**	0.4155	0.1073	10.733
3	**Iraqi Middle East Bank for Investment**	0.3717	0.0960	9.6010
4	**Summer Commercial Bank**	0.3586	0.0926	9.2636
5	**Trans Iraq Bank**	0.3272	0.0845	8.4512
6	**Union Bank of Iraq**	0.3261	0.0842	8.4232
7	**National Bank of Iraq**	0.3169	0.0818	8.1855
8	**Commercial Bank of Iraq**	0.28831	0.0744	7.4459
9	**Bank of Baghdad**	0.28370	0.07327	7.3270
10	**Ashur International Bank for Investment**	0.27798	0.0717	7.1791
11	**Gulf Commercial Bank**	0.2193	0.0566	5.6645
12	**credit bank of Iraq**	0.19158	0.0494	4.9479
TOTAL		3.872045	100%	100

Table 11 shows the financial performance according to the TOPSIS method for the 12 Iraqi commercial banks in this thesis for the year 2019, where Investment Bank of Iraq ranked first with a value of c* (0.494748) with the highest C score (12.77743), Then followed by Al-Mansour Investment Bank with a value of c* (0.415596) and ranking index scores (10.73324), followed by Iraqi Middle East Bank for Investment with a value of c* (0.371758) and ranking index scores (9.601076). The evaluation shows that the lowest-rated banks are Ashur Bank with a value of c* (0.27798) and ranking index scores (7.179152), and Gulf Commercial Bank with a value of c* (0.219333) and ranking index scores (5.664526), and credit bank of Iraq with a value of c* (0.191586) and ranking index scores (4.947928).

Table 12: Closeness to Ideal Solution For 2018

BANKS	A+	A-	C*
Bank of Baghdad	0.255903	0.032266	0.11196902
Commercial Bank of Iraq	0.255557	0.042764	0.14334894
Gulf Commercial Bank	0.246169	0.058107	0.19096807
Investment Bank of Iraq	0.225494	0.116899	0.34141761
National Bank of Iraq	0.254358	0.036132	0.12438294
Iraqi Middle East Bank for Investment	0.250533	0.073863	0.22769393
Trans Iraq Bank	0.227555	0.127173	0.35850849
Ashur International Bank for Investment	0.251628	0.050042	0.16588325
Summer Commercial Bank	0.23836	0.068992	0.22447227
Union Bank of Iraq	0.178035	0.185684	0.51051499
credit bank of Iraq	0.250221	0.055608	0.1818271
Al-Mansour Investment Bank	0.237559	0.111677	0.31977517

Table 13: Ranking by TOPSIS for 2018

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Union Bank of Iraq**	0.510515	0.175993	17.59934
2	**Trans Iraq Bank**	0.358508	0.123591	12.35912
3	**Investment Bank of Iraq**	0.341418	0.117699	11.76993
4	**Al-Mansour Investment Bank**	0.319775	0.110238	11.02383
5	**Summer Commercial Bank**	0.224472	0.077384	7.73839
6	**Iraqi Middle East Bank for Investment**	0.227694	0.078495	7.849453
7	**Gulf Commercial Bank**	0.190968	0.065834	6.583377
8	**credit bank of Iraq**	0.181827	0.062683	6.268253
9	**Ashur International Bank for Investment**	0.165883	0.057186	5.71861
10	**Commercial Bank of Iraq**	0.143349	0.049418	4.941769
11	**National Bank of Iraq**	0.124383	0.042879	4.287941
12	**Bank of Baghdad**	0.111969	0.0386	3.859987
TOTAL		2.900762	100%	100

Table 13 shows the financial performance according to the TOPSIS method for the 12 Iraqi commercial banks in this thesis for the year 2018, where Union Bank of Iraq ranked first with a value of c* (0.510515) with the highest C score (17.59934), Then followed by Trans Iraq Bank with a value of c* (0.358508) and ranking index scores (12.35912), followed by Investment Bank of Iraq with a value of c* (0.341418) and ranking index scores (11.76993). The evaluation shows that the lowest-rated banks are Commercial Bank of Iraq with a value of c* (0.143349) and ranking index scores (4.941769), and National Bank of Iraq with a value of c* (0.124383) and ranking index scores (4.287941), and Bank of Baghdad with a value of c* (0.111969) and ranking index scores (3.859987).

Table 14: Closeness to Ideal Solution For 2017

BANKS	A+	A-	C*
Bank of Baghdad	0.198052	0.117389	0.372142
Commercial Bank of Iraq	0.205597	0.115342	0.359389
Gulf Commercial Bank	0.184364	0.124789	0.403648
Investment Bank of Iraq	0.189449	0.122337	0.392375
National Bank of Iraq	0.193661	0.118603	0.379816
Iraqi Middle East Bank for Investment	0.228607	0.090218	0.28297
Trans Iraq Bank	0.174276	0.1549	0.470569
Ashur International Bank for Investment	0.189033	0.126195	0.400329
Summer Commercial Bank	0.177385	0.13657	0.434999
Union Bank of Iraq	0.106516	0.221472	0.675244
credit bank of Iraq	0.202732	0.117658	0.367234
Al-Mansour Investment Bank	0.203488	0.116213	0.363505

Table 15: Ranking by TOPSIS for 2017

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Union Bank of Iraq**	0.675244	0.137742	13.77425
2	**Trans Iraq Bank**	0.470569	0.095991	9.5991
3	**Summer Commercial Bank**	0.434999	0.088735	8.87351
4	**Gulf Commercial Bank**	0.403648	0.08234	8.233984
5	**Ashur International Bank for Investment**	0.400329	0.081663	8.16628
6	**Investment Bank of Iraq**	0.392375	0.08004	8.004027
7	**National Bank of Iraq**	0.379816	0.077478	7.747837
8	**Bank of Baghdad**	0.372142	0.075913	7.591295
9	**credit bank of Iraq**	0.367234	0.074912	7.491177
10	**Al-Mansour Investment Bank**	0.363505	0.074151	7.41511
11	**Commercial Bank of Iraq**	0.359389	0.073311	7.331148
12	**Iraqi Middle East Bank for Investment**	0.28297	0.057723	5.772283
TOTAL		4.90222	100%	100

Table 15 shows the financial performance according to the TOPSIS method for the 12 Iraqi commercial banks in this thesis for the year 2017, where Union Bank of Iraq ranked first with a value of c* (0.675244) with the highest C score (13.77425), Then followed by Trans Iraq Bank with a value of c* (0.470569) and ranking index scores (9.5991), followed by Summer Commercial Bank with a value of c* (0.434999) and ranking index scores (8.87351). The evaluation shows that the lowest-rated banks are Al-Mansour Investment Bank with a value of c* (0.363505) and ranking index scores (7.41511), and Commercial Bank of Iraq with a value of c* (0.359389) and ranking index scores (7.331148), and Iraqi Middle East Bank for Investment with a value of c* (0.28297) and ranking index scores (5.772283).

Table 16: Closeness to Ideal Solution For 2016

BANKS	A+	A-	C*
Bank of Baghdad	0.247175	0.02608	0.095441986
Commercial Bank of Iraq	0.230363	0.111605	0.326360946
Gulf Commercial Bank	0.242043	0.048134	0.165878068
Investment Bank of Iraq	0.240134	0.039953	0.142644964
National Bank of Iraq	0.2372	0.043454	0.154831216
Iraqi Middle East Bank for Investment	0.229963	0.097433	0.297599849
Trans Iraq Bank	0.230899	0.071591	0.236672287
Ashur International Bank for Investment	0.239119	0.054586	0.185853152
Summer Commercial Bank	0.231914	0.093512	0.287352578
Union Bank of Iraq	0.136874	0.209961	0.605362781
credit bank of Iraq	0.25571	0.033491	0.11580527
Al-Mansour Investment Bank	0.24453	0.033859	0.121624777

Table 17: Ranking by TOPSIS for 2016

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Union Bank of Iraq**	0.605363	0.221305	22.13046
2	**Commercial Bank of Iraq**	0.326361	0.119309	11.93089
3	**Iraqi Middle East Bank for Investment**	0.2976	0.108795	10.87946
4	**Summer Commercial Bank**	0.287353	0.105048	10.50485
5	**Trans Iraq Bank**	0.236672	0.086521	8.652112
6	**Ashur International Bank for Investment**	0.185853	0.067943	6.794299
7	**Gulf Commercial Bank**	0.165878	0.060641	6.064063
8	**National Bank of Iraq**	0.154831	0.056602	5.660219
9	**Investment Bank of Iraq**	0.142645	0.052147	5.214722
10	**Al-Mansour Investment Bank**	0.121625	0.044463	4.44628
11	**credit bank of Iraq**	0.115805	0.042335	4.233534
12	**Bank of Baghdad**	0.095442	0.034891	3.489106
TOTAL		2.735428	100%	100

Table 17 shows the financial performance according to the TOPSIS method for the 12 Iraqi commercial banks in this thesis for the year 2016, where Union Bank of Iraq ranked first with a value of c* (0.605363) with the highest C score (22.13046), Then followed by Commercial Bank of Iraq with a value of c* (0.326361) and ranking index scores (11.93089), followed by Iraqi Middle East Bank for Investment with a value of c* (0.2976) and ranking index scores (10.87946). The evaluation shows that the lowest-rated banks are Al-Mansour Investment Bank with a value of c* (0.121625) and ranking index scores (4.44628), and credit bank of Iraq with a value of c* (0.115805) and ranking index scores (4.233534), and Bank of Baghdad with a value of c* (0.095442) and ranking index scores (3.489106).

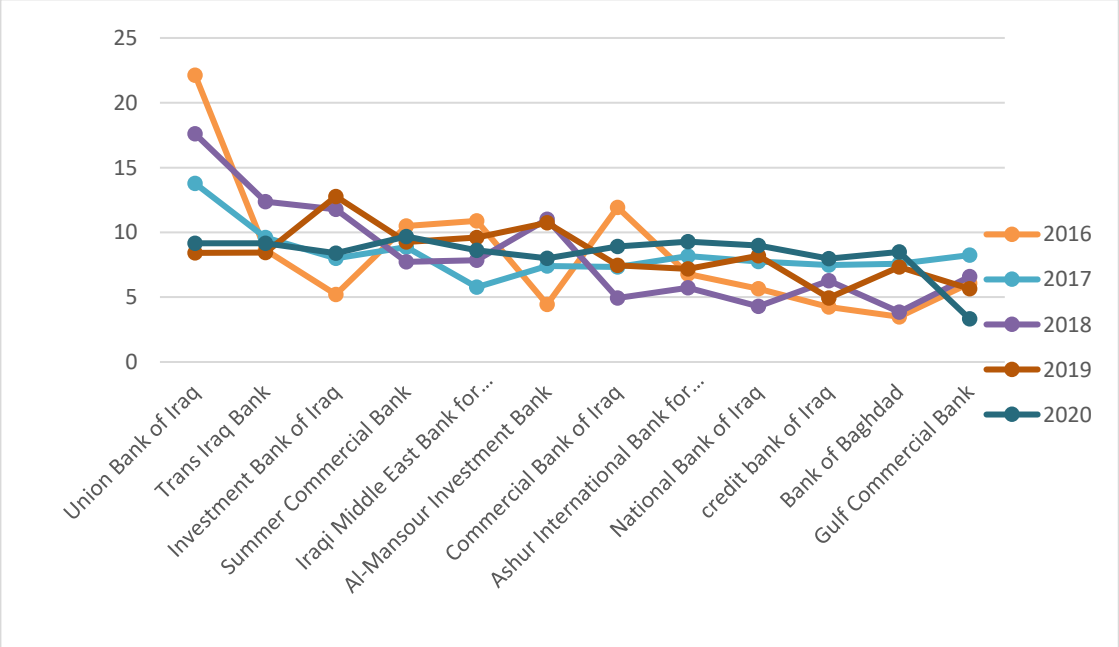
Table 18: The Financial Performance Index of Iraqi Commercial Banks for the Period (2016-2020)

Rank	Banks	2016	2017	2018	2019	2020	TOTAL
1	**Union Bank of Iraq**	22.13046	13.77425	17.59934	8.423275	9.149697	71.07702
2	**Trans Iraq Bank**	8.652112	9.5991	12.35912	8.451271	9.169571	48.23117
3	**Investment Bank of Iraq**	5.214722	8.004027	11.76993	12.77743	8.405186	46.1713
4	**Summer Commercial Bank**	10.50485	8.87351	7.73839	9.263606	9.684767	46.06512
5	**Iraqi Middle East Bank for Investment**	10.87946	5.772283	7.849453	9.601076	8.605455	42.70773
6	**Al-Mansour Investment Bank**	4.44628	7.41511	11.02383	10.73324	8.000061	41.61853
7	**Commercial Bank of Iraq**	11.93089	7.331148	4.941769	7.445936	8.923439	40.57318
8	**Ashur International Bank for Investment**	6.794299	8.16628	5.71861	7.179152	9.291873	37.15021
9	**National Bank of Iraq**	5.660219	7.747837	4.287941	8.185545	8.976946	34.85849
10	**credit bank of Iraq**	4.233534	7.491177	6.268253	4.947928	7.981716	30.92261
11	**Bank of Baghdad**	3.489106	7.591295	3.859987	7.327007	8.487739	30.75513
12	**Gulf Commercial Bank**	6.064063	8.233984	6.583377	5.664526	3.323549	29.8695
THRESHOLD VALUE 41.6							

As Table 18 shows, the banks with the most successful financial performance according to the TOPSIS Method evaluation are Union Bank of Iraq, Trans Iraq Bank, and Investment Bank of Iraq. At the same time, the banks with the least successful financial performance are the credit bank of Iraq, Bank of Baghdad, and Gulf Commercial Bank.

The Threshold value can be used to express the standard value of satisfactory financial performance. Financially successful banks have a ranking index score over a Threshold number and vice versa (Bayramolu & Başarr, 2016). For Iraqi commercial banks studied in this thesis from 2016 to 2020, the threshold value of total ranking index points is 41.6. Based on the data shown above, we can conclude that banks with a rating greater than the threshold value of 41.6 are more successful than banks that do not receive this value. And that the banks that achieved the threshold value (the most successful) are Union Bank of Iraq, Trans Iraq Bank, Investment Bank of Iraq, Summer Commercial Bank, Iraqi Middle East Bank for Investment, and Al-Mansour Investment Bank. At the same time, the banks that did not achieve the threshold value (the least successful) are Commercial Bank of Iraq, Ashur International Bank for Investment, National Bank of Iraq, credit bank of Iraq, Bank of Baghdad, and Gulf Commercial Bank.

Figure 9: The Financial Performance Index Of Iraqi Commercial Banks For The Period (2016-2020)



CONCLUSION

Commercial banks are an important part of economic growth because they can be used as a part of a country's financial policy to help it reach its development goals. This role was clear in many developed and developing countries. Due to multiple reasons, such as the security and economic conditions that Iraq experienced during the previous periods, these banks could not fully achieve their objectives in the required manner. The Iraqi banking sector consists of two main parts, the Central Bank of Iraq and the other part is the commercial banks and other banks operating within the Iraqi banking sector in addition to banking institutions. These banks and banking institutions are directly under the supervision of the Central Bank of Iraq. The Iraqi banking system consists of 72 banks during the year 2020. All of these banks are subject to the supervision of the Central Bank of Iraq. For this reason, banks can only be established with the permission of the Central Bank.

The objective of this study is to evaluate the financial performance of commercial banks operating in the Iraqi banking sector between the years 2016 to 2020, using the TOPSIS method, which is one of the multi-criteria decision-making methods.

According to the Threshold value of the total ranking index, the most successful and least successful banks have been rated. The banks that evaluate a rating higher than the threshold value of 41.6 are more successful than those that did not achieve this value. And that the banks that achieved the threshold value (the most successful) are Union Bank of Iraq, Trans Iraq Bank, Investment Bank of Iraq, Summer Commercial Bank, Iraqi Middle East Bank for Investment, and Al-Mansour Investment Bank. At the same time, the banks that did not achieve the threshold value (the least successful) are the Commercial Bank of Iraq, Ashur International Bank for Investment, National Bank of Iraq, credit bank of Iraq, Bank of Baghdad, and Gulf Commercial Bank.

The Iraqi economy is one of the oil economies that suffer from an imbalance in the production structure largely dependent on the oil sector. As a result, the Iraqi

economy is a unilateral quarterly economy dependent on the production and export of oil. Continuous fluctuations characterize this essential commodity due to the factors affecting the international oil market. As a result of the price shocks observed in the global oil markets, the oil rent revenues are unstable. As a result, the Iraqi economy suffers from fluctuations in government revenues through the instability of the largest volume of funding for government expenditures. This, in turn, leads to an irregular relationship between the policy agreement and its objectives and functions. Reflected by limiting the effectiveness of this policy in achieving economic growth and stability in various sectors, including the banking sector, and consequently, the role played by the Iraqi banking sector reflects the situation determined by the movement of the economy, which determined the dimensions of banking activity in light of intertwined trends witnessed by the Iraqi economy, and this sector is similar to other sectors. The economy was affected by the country's diverse conditions, which significantly impacted the sector's reality, the type of a banker's activities, services, and banking operations, as well as the extent of his proficiency in carrying out his most fundamental responsibilities. The banking industry in Iraq has also been related to numerous economic, social, and political events in the country, which have significantly impacted the structure and activities of this sector.

Consequently, this affected the financial performance of Iraqi commercial banks and the Iraqi banking sector. As a result of the study, some suggestions for the banking sector can be presented. Minimum annual performance analyses should be made to ensure adequate supervision and surveillance in banks. The banks should determine what they can do when facing obstacles such as crisis, bankruptcy, and liquidity shortage.

Based on the results, we recommend that researchers conduct studies to examine the financial performance of Iraqi commercial banks in the coming years and improve the banking performance of various banks within the Iraqi banking sector and other banking institutions.

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THE APPENDICES

In the appendices, banks' financial performance in 2016-2019 with the TOPSIS method is shown step by step. Out of 9 criteria used to measure the financial performance of banks, one is cost (Min) and eight benefits (Max).

APPENDIX 1: Showing the Financial Performances of the Banks for 2019 in Steps

Step 1: Creating the Decision Matrix:

Table 19 shows the decision matrix that was prepared according to the data obtained from the financial reports of 12 Iraqi commercial banks for the year 2019.

Table 19: Decision Matrix for 2019

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.2410	0.3178	0.6410	0.4867	0.0064	0.0266	0.0292	0.1316	0.0442
Commercial Bank of Iraq	0.6055	1.5311	1.1430	0.4499	0.0146	0.0241	0.0262	0.0253	0.0069
Gulf Commercial Bank	0.5585	1.2644	0.9250	0.4080	-0.0071	-0.0128	-0.0131	0.2622	0.0746
Investment Bank of Iraq	0.4919	0.9665	0.6550	0.3327	3.2494	6.6057	0.0001	0.2755	0.0339
National Bank of Iraq	0.4058	0.6827	0.4260	0.2532	0.0144	0.0355	0.0365	0.2674	0.0268
Iraqi Middle East Bank for Investment	0.4061	0.8641	0.8130	0.4818	1.1953	2.9435	0.0003	0.1429	0.1413
Trans Iraq Bank	0.7701	3.3375	2.2160	0.5087	0.0038	0.0050	0.0050	0.2486	0.0116
Ashur International Bank for Investment	0.6288	1.7006	0.8630	0.3208	0.0113	0.0181	0.0188	0.0216	0.0578
Summer Commercial Bank	0.7146	3.3250	2.5640	0.5914	0.0029	0.0037	0.0040	0.2171	0.0828
Union Bank of Iraq	0.5476	1.0100	0.0180	0.0090	0.0034	0.0062	0.0065	0.7599	0.0493
credit bank of Iraq	0.5686	1.3200	1.7960	0.7739	-0.0098	-0.0172	-0.0204	0.0153	0.0153
Al-Mansour Investment Bank	0.1910	0.2360	0.9940	8.0082	0.0050	0.0265	0.0296	0.0769	0.0204

Step 2: Creating the Normalized Matrix

Table 20 shows the normalized decision matrix for 2019.

Table 20: Normalized Decision Matrix for 2019

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.1294	0.0544	0.1423	0.0597	0.0018	0.0037	0.4227	0.1352	0.2134
Commercial Bank of Iraq	0.3252	0.2622	0.2538	0.0552	0.0042	0.0033	0.3796	0.0260	0.0333
Gulf Commercial Bank	0.3000	0.2165	0.2054	0.0501	-0.0021	-0.0018	-0.1897	0.2694	0.3605
Investment Bank of Iraq	0.2642	0.1655	0.1454	0.0408	0.9385	0.9134	0.0009	0.2830	0.1638
National Bank of Iraq	0.2179	0.1169	0.0946	0.0311	0.0042	0.0049	0.5281	0.2747	0.1295
Iraqi Middle East Bank for Investment	0.2181	0.1480	0.1805	0.0591	0.3452	0.4070	0.0045	0.1468	0.6830
Trans Iraq Bank	0.4136	0.5716	0.4920	0.0624	0.0011	0.0007	0.0726	0.2553	0.0559
Ashur International Bank for Investment	0.3377	0.2912	0.1916	0.0393	0.0033	0.0025	0.2718	0.0222	0.2793
Summer Commercial Bank	0.3838	0.5694	0.5692	0.0725	0.0008	0.0005	0.0584	0.2231	0.4002
Union Bank of Iraq	0.2941	0.1730	0.0040	0.0011	0.0010	0.0009	0.0935	0.7807	0.2381
credit bank of Iraq	0.3054	0.2261	0.3987	0.0949	-0.0028	-0.0024	-0.2954	0.0157	0.0740
Al-Mansour Investment Bank	0.1026	0.0404	0.2207	0.9824	0.0014	0.0037	0.4286	0.0790	0.0986

Step 3: Creating the Weighted Normalized Matrix

Table 21 shows the weighted normalized decision matrix for 2019.

Table 21: Weighted Normalized Decision Matrix for 2019

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.0144	0.0060	0.0158	0.0066	0.0002	0.0004	0.0470	0.0150	0.0237
Commercial Bank of Iraq	0.0361	0.0291	0.0282	0.0061	0.0005	0.0004	0.0422	0.0029	0.0037
Gulf Commercial Bank	0.0333	0.0241	0.0228	0.0056	-0.0002	-0.0002	-0.0211	0.0299	0.0401
Investment Bank of Iraq	0.0294	0.0184	0.0162	0.0045	0.1043	0.1015	0.0001	0.0314	0.0182
National Bank of Iraq	0.0242	0.0130	0.0105	0.0035	0.0005	0.0005	0.0587	0.0305	0.0144
Iraqi Middle East Bank for Investment	0.0242	0.0164	0.0201	0.0066	0.0384	0.0452	0.0005	0.0163	0.0759
Trans Iraq Bank	0.0459	0.0635	0.0547	0.0069	0.0001	0.0001	0.0081	0.0284	0.0062
Ashur International Bank for Investment	0.0375	0.0324	0.0213	0.0044	0.0004	0.0003	0.0302	0.0025	0.0310
Summer Commercial Bank	0.0426	0.0633	0.0632	0.0081	0.0001	0.0001	0.0065	0.0248	0.0445
Union Bank of Iraq	0.0327	0.0192	0.0004	0.0001	0.0001	0.0001	0.0104	0.0867	0.0264
credit bank of Iraq	0.0339	0.0251	0.0443	0.0105	-0.0003	-0.0003	-0.0328	0.0017	0.0082
Al-Mansour Investment Bank	0.0114	0.0045	0.0245	0.1091	0.0002	0.0004	0.0476	0.0088	0.0110

Step 4: Determination of Positive (A+) and Negative (A-) Ideal Solutions

Table 22 shows the degree of closeness to the positive and negative ideal solutions for 2019.

Table 22: Positive and Negative Ideal Solutions for 2019

	Ratio1	**Ratio2**	**Ratio3**	**Ratio4**	**Ratio5**	**Ratio6**	**Ratio7**	**Ratio8**	**Ratio9**
Positive Ideal Solution A+	0.0459	0.0635	0.0632	0.1091	0.1043	0.1015	0.0587	0.0867	0.0759
Negative Ideal Solution A-	0.0114	0.0045	0.0004	0.0001	-0.0003	-0.0003	-0.0328	0.0017	0.0037

Step 5: Calculation of positive and negative distance values.

Table 23 shows positive and negative distance values for 2019.

Table 23: Positive and Negative Distance Values for 2019

BANKS	**A+**	**A-**	**C***
Bank of Baghdad	0.21471	0.085041	0.283705
Commercial Bank of Iraq	0.215931	0.087475	0.28831
Gulf Commercial Bank	0.214955	0.060393	0.219333
Investment Bank of Iraq	0.159016	0.15571	0.494748
National Bank of Iraq	0.211848	0.098301	0.316948
Iraqi Middle East Bank for Investment	0.175862	0.104065	0.371758
Trans Iraq Bank	0.206086	0.100242	0.327237
Ashur International Bank for Investment	0.211515	0.081434	0.27798
Summer Commercial Bank	0.19727	0.110335	0.358691
Union Bank of Iraq	0.209447	0.101376	0.326153
credit bank of Iraq	0.230558	0.05464	0.191586
Al-Mansour Investment Bank	0.194022	0.137978	0.415596

Step 6: Calculate closeness based on the ideal solution

Table 24: Banks' Success Ranking for 2019

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Investment Bank of Iraq**	0.494748	0.127774	12.77743
2	**Al-Mansour Investment Bank**	0.415596	0.107332	10.73324
3	**Iraqi Middle East Bank for Investment**	0.371758	0.096011	9.601076
4	**Summer Commercial Bank**	0.358691	0.092636	9.263606
5	**Trans Iraq Bank**	0.327237	0.084513	8.451271
6	**Union Bank of Iraq**	0.326153	0.084233	8.423275
7	**National Bank of Iraq**	0.316948	0.081855	8.185545
8	**Commercial Bank of Iraq**	0.28831	0.074459	7.445936
9	**Bank of Baghdad**	0.283705	0.07327	7.327007
10	**Ashur International Bank for Investment**	0.27798	0.071792	7.179152
11	**Gulf Commercial Bank**	0.219333	0.056645	5.664526
12	**credit bank of Iraq**	0.191586	0.049479	4.947928
TOTAL		3.872045	100%	100

APPENDIX 2: Showing the Financial Performances of the Banks for 2018 in Steps

Step 1: Creating the Decision Matrix:

Table 25 shows the decision matrix prepared according to the data obtained from the financial reports of 12 Iraqi commercial banks for the year 2018.

Table 25: Decision Matrix for 2018.

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.2390	0.3144	0.7220	0.5498	0.0037	0.0156	0.0166	0.1447	0.0377
Commercial Bank of Iraq	0.6396	1.7688	0.9060	0.3265	0.0245	0.0382	0.0435	0.0269	0.0038
Gulf Commercial Bank	0.5438	1.1939	0.7360	0.3356	0.0010	0.0019	0.0020	0.2024	0.0727
Investment Bank of Iraq	0.4663	0.8762	0.8020	0.4267	5.5835	0.0012	0.0013	0.2322	0.0313
National Bank of Iraq	0.4910	0.9625	0.7690	0.3912	-0.0152	-0.0152	-0.0319	0.1450	0.0284
Iraqi Middle East Bank for Investment	0.3340	0.5009	0.8730	0.5813	-0.0029	-0.0078	-0.0092	0.1175	0.1163
Trans Iraq Bank	0.8323	5.0649	3.6010	0.5933	0.0198	0.0237	0.0246	0.2905	0.0244
Ashur International Bank for Investment	0.5742	1.3467	0.9210	0.3919	0.0101	0.0176	0.0189	0.0107	0.0600
Summer Commercial Bank	0.6554	1.9007	1.5430	0.5306	0.0022	0.0034	0.0036	0.1907	0.0657
Union Bank of Iraq	0.4758	1.4360	0.0320	0.0132	1.2211	2.5660	2.6581	0.6843	0.0436
credit bank of Iraq	0.6299	1.7011	1.8540	0.6861	0.0112	0.0179	0.0224	0.0161	0.0084
Al-Mansour Investment Bank	0.1896	0.2370	0.9750	7.8710	0.0121	0.0640	0.0760	0.0785	0.0185

Step 2: Creating the Normalized Matrix

Table 26 shows the normalized decision matrix for 2018.

Table 26: Normalized Decision Matrix for 2018

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.1288	0.0481	0.1460	0.0685	0.0007	0.0061	0.0062	0.1674	0.2082
Commercial Bank of Iraq	0.3447	0.2707	0.1832	0.0407	0.0043	0.0149	0.0163	0.0311	0.0210
Gulf Commercial Bank	0.2930	0.1827	0.1488	0.0418	0.0002	0.0007	0.0007	0.2342	0.4010
Investment Bank of Iraq	0.2513	0.1341	0.1621	0.0532	0.9769	0.0005	0.0005	0.2687	0.1727
National Bank of Iraq	0.2646	0.1473	0.1555	0.0487	-0.0027	-0.0059	-0.0120	0.1678	0.1569
Iraqi Middle East Bank for Investment	0.1800	0.0767	0.1765	0.0724	-0.0005	-0.0030	-0.0035	0.1360	0.6415
Trans Iraq Bank	0.4485	0.7752	0.7280	0.0739	0.0035	0.0092	0.0092	0.3361	0.1346
Ashur International Bank for Investment	0.3094	0.2061	0.1862	0.0488	0.0018	0.0069	0.0071	0.0124	0.3308
Summer Commercial Bank	0.3532	0.2909	0.3120	0.0661	0.0004	0.0013	0.0014	0.2207	0.3625
Union Bank of Iraq	0.2564	0.2198	0.0065	0.0016	0.2136	0.9994	0.9993	0.7918	0.2406
credit bank of Iraq	0.3395	0.2604	0.3748	0.0855	0.0020	0.0070	0.0084	0.0186	0.0464
Al-Mansour Investment Bank	0.1022	0.0363	0.1971	0.9808	0.0021	0.0249	0.0286	0.0909	0.1021

Step 3: Creating the Weighted Normalized Matrix

Table 27 shows the weighted normalized decision matrix for 2018.

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.0143	0.0053	0.0162	0.0076	0.0001	0.0007	0.0007	0.0186	0.0231
Commercial Bank of Iraq	0.0383	0.0301	0.0203	0.0045	0.0005	0.0017	0.0018	0.0035	0.0023
Gulf Commercial Bank	0.0326	0.0203	0.0165	0.0046	0.0000	0.0001	0.0001	0.0260	0.0445
Investment Bank of Iraq	0.0279	0.0149	0.0180	0.0059	0.1085	0.0001	0.0001	0.0298	0.0192
National Bank of Iraq	0.0294	0.0164	0.0173	0.0054	-0.0003	-0.0007	-0.0013	0.0186	0.0174
Iraqi Middle East Bank for Investment	0.0200	0.0085	0.0196	0.0080	-0.0001	-0.0003	-0.0004	0.0151	0.0713
Trans Iraq Bank	0.0498	0.0861	0.0809	0.0082	0.0004	0.0010	0.0010	0.0373	0.0150
Ashur International Bank for Investment	0.0344	0.0229	0.0207	0.0054	0.0002	0.0008	0.0008	0.0014	0.0368
Summer Commercial Bank	0.0392	0.0323	0.0347	0.0073	0.0000	0.0001	0.0002	0.0245	0.0403
Union Bank of Iraq	0.0285	0.0244	0.0007	0.0002	0.0237	0.1110	0.1110	0.0880	0.0267
credit bank of Iraq	0.0377	0.0289	0.0416	0.0095	0.0002	0.0008	0.0009	0.0021	0.0051
Al-Mansour Investment Bank	0.0114	0.0040	0.0219	0.1090	0.0002	0.0028	0.0032	0.0101	0.0113

Table 27: Weighted Normalized Decision Matrix for 2018.

Step 4: Determination of Positive (A+) and Negative (A-) ideal solutions

Table 28 shows the degree of closeness to the positive and negative ideal solutions for 2018.

Table 28: Positive and Negative Ideal Solutions for 2018.

	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Positive Ideal Solution A+	0.0498	0.0861	0.0809	0.1090	0.1085	0.1110	0.1110	0.0880	0.0713
Negative Ideal Solution A-	0.0114	0.0040	0.0007	0.0002	-0.0003	-0.0007	-0.0013	0.0014	0.0023

Step 5: Calculation of positive and negative distance values.

Table 29 shows positive and negative distance values for 2018.

Table 29: Positive and Negative Distance Values for 2018.

BANKS	A+	A-	C*
Bank of Baghdad	0.255903	0.032266	0.11196902
Commercial Bank of Iraq	0.255557	0.042764	0.14334894
Gulf Commercial Bank	0.246169	0.058107	0.19096807
Investment Bank of Iraq	0.225494	0.116899	0.34141761
National Bank of Iraq	0.254358	0.036132	0.12438294
Iraqi Middle East Bank for Investment	0.250533	0.073863	0.22769393
Trans Iraq Bank	0.227555	0.127173	0.35850849
Ashur International Bank for Investment	0.251628	0.050042	0.16588325
Summer Commercial Bank	0.23836	0.068992	0.22447227
Union Bank of Iraq	0.178035	0.185684	0.51051499
credit bank of Iraq	0.250221	0.055608	0.1818271
Al-Mansour Investment Bank	0.237559	0.111677	0.31977517

Step 6: Calculate closeness based on the ideal solution

Table 30: Banks' Success Ranking for 2018.

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Union Bank of Iraq**	0.510515	0.175993	17.59934
2	**Trans Iraq Bank**	0.358508	0.123591	12.35912
3	**Investment Bank of Iraq**	0.341418	0.117699	11.76993
4	**Al-Mansour Investment Bank**	0.319775	0.110238	11.02383
5	**Summer Commercial Bank**	0.224472	0.077384	7.73839
6	**Iraqi Middle East Bank for Investment**	0.227694	0.078495	7.849453
7	**Gulf Commercial Bank**	0.190968	0.065834	6.583377
8	**credit bank of Iraq**	0.181827	0.062683	6.268253
9	**Ashur International Bank for Investment**	0.165883	0.057186	5.71861
10	**Commercial Bank of Iraq**	0.143349	0.049418	4.941769
11	**National Bank of Iraq**	0.124383	0.042879	4.287941
12	**Bank of Baghdad**	0.111969	0.0386	3.859987
TOTAL		2.900762	100%	100

APPENDIX 3: Showing the Financial Performances of the Banks for 2017 in Steps

Step 1: Creating the Decision Matrix:

Table 31 shows the decision matrix that was prepared according to the data obtained from the financial reports of 12 Iraqi commercial banks for 2017.

Table 31: Decision Matrix for 2017

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.2440	0.3155	0.6120	0.4633	0.0056	0.0230	0.0244	0.1550	0.0431
Commercial Bank of Iraq	0.6335	1.7321	0.4950	0.1815	0.0218	0.0344	0.0402	0.0253	0.0036
Gulf Commercial Bank	0.5319	1.1348	0.7140	0.3333	0.0070	0.0132	0.0141	0.3383	0.0530
Investment Bank of Iraq	0.4935	0.9965	1.0560	0.5323	0.0070	0.0141	0.0160	0.2059	0.0349
National Bank of Iraq	0.4736	0.8991	0.8530	0.4478	0.0047	0.0100	0.0114	0.2225	0.0231
Iraqi Middle East Bank for Investment	0.3621	0.5660	0.8601	0.5481	-7.7734	-0.0021	-0.0023	0.1336	0.1217
Trans Iraq Bank	0.7893	3.7231	2.5210	0.5328	0.0291	0.0369	0.0388	0.3153	0.0281
Ashur International Bank for Investment	0.7072	2.4181	1.1270	0.3271	0.0359	0.0507	0.0539	0.0267	0.0405
Summer Commercial Bank	0.6856	2.1885	1.7750	0.5564	0.0010	0.0015	0.0016	0.2410	0.0479
Union Bank of Iraq	0.4427	1.3438	0.1830	0.0784	1.6529	3.7330	3.8661	0.6638	0.0340
credit bank of Iraq	0.6618	1.9565	0.7210	0.2437	0.0141	0.0213	0.0268	0.0174	0.0061
Al-Mansour Investment Bank	0.2203	0.2827	0.8060	0.5341	0.0098	0.0448	0.0520	0.0881	0.0198

Step 2: Creating the Normalized Matrix

Table 32 shows the normalized decision matrix for 2017.

Table 32: Normalized Decision Matrix for 2017

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.1283	0.0521	0.1545	0.3128	0.0007	0.0062	0.0063	0.1676	0.2598
Commercial Bank of Iraq	0.3330	0.2858	0.1250	0.1225	0.0027	0.0092	0.0104	0.0273	0.0217
Gulf Commercial Bank	0.2796	0.1873	0.1802	0.2250	0.0009	0.0035	0.0036	0.3657	0.3194
Investment Bank of Iraq	0.2594	0.1644	0.2666	0.3593	0.0009	0.0038	0.0041	0.2226	0.2103
National Bank of Iraq	0.2490	0.1484	0.2153	0.3023	0.0006	0.0027	0.0030	0.2405	0.1389
Iraqi Middle East Bank for Investment	0.1904	0.0934	0.2171	0.3700	-0.9781	-0.0006	-0.0006	0.1444	0.7331
Trans Iraq Bank	0.4149	0.6144	0.6364	0.3597	0.0037	0.0099	0.0100	0.3409	0.1695
Ashur International Bank for Investment	0.3718	0.3990	0.2845	0.2208	0.0045	0.0136	0.0139	0.0288	0.2441
Summer Commercial Bank	0.3604	0.3612	0.4481	0.3756	0.0001	0.0004	0.0004	0.2605	0.2887
Union Bank of Iraq	0.2327	0.2218	0.0462	0.0529	0.2080	0.9997	0.9996	0.7175	0.2046
credit bank of Iraq	0.3479	0.3229	0.1820	0.1645	0.0018	0.0057	0.0069	0.0188	0.0367
Al-Mansour Investment Bank	0.1158	0.0466	0.2035	0.3606	0.0012	0.0120	0.0134	0.0953	0.1190

Step 3: Creating the Weighted Normalized Matrix

Table 33 shows the weighted normalized decision matrix for 2017.

Table 33: Weighted Normalized Decision Matrix for 2017.

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.0143	0.0058	0.0172	0.0347	0.0001	0.0007	0.0007	0.0186	0.0289
Commercial Bank of Iraq	0.0370	0.0318	0.0139	0.0136	0.0003	0.0010	0.0012	0.0030	0.0024
Gulf Commercial Bank	0.0311	0.0208	0.0200	0.0250	0.0001	0.0004	0.0004	0.0406	0.0355
Investment Bank of Iraq	0.0288	0.0183	0.0296	0.0399	0.0001	0.0004	0.0005	0.0247	0.0234
National Bank of Iraq	0.0277	0.0165	0.0239	0.0336	0.0001	0.0003	0.0003	0.0267	0.0154
Iraqi Middle East Bank for Investment	0.0211	0.0104	0.0241	0.0411	-0.1087	-0.0001	-0.0001	0.0160	0.0815
Trans Iraq Bank	0.0461	0.0683	0.0707	0.0400	0.0004	0.0011	0.0011	0.0379	0.0188
Ashur International Bank for Investment	0.0413	0.0443	0.0316	0.0245	0.0005	0.0015	0.0015	0.0032	0.0271
Summer Commercial Bank	0.0400	0.0401	0.0498	0.0417	0.0000	0.0000	0.0000	0.0289	0.0321
Union Bank of Iraq	0.0259	0.0246	0.0051	0.0059	0.0231	0.1111	0.1111	0.0797	0.0227
credit bank of Iraq	0.0387	0.0359	0.0202	0.0183	0.0002	0.0006	0.0008	0.0021	0.0041
Al-Mansour Investment Bank	0.0129	0.0052	0.0226	0.0401	0.0001	0.0013	0.0015	0.0106	0.0132

Step 4: Determination of Positive (A+) and Negative (A-) ideal solutions

Table 34 shows the degree of closeness to the positive and negative ideal solutions for 2017.

Table 34: Positive and Negative Ideal Solutions for 2017

	Ratio1	**Ratio2**	**Ratio3**	**Ratio4**	**Ratio5**	**Ratio6**	**Ratio7**	**Ratio8**	**Ratio9**
Positive Ideal Solution A+	0.0461	0.0683	0.0707	0.0417	0.0231	0.1111	0.1111	0.0797	0.0815
Negative Ideal Solution A-	0.0129	0.0052	0.0051	0.0059	-0.1087	-0.0001	-0.0001	0.0021	0.0024

Step 5: Calculation of positive and negative distance values.

Table 35 shows positive and negative distance values for 2017.

Table 35: Positive and Negative Distance Values for 2017.

BANKS	**A+**	**A-**	**C***
Bank of Baghdad	0.198052	0.117389	0.372142
Commercial Bank of Iraq	0.205597	0.115342	0.359389
Gulf Commercial Bank	0.184364	0.124789	0.403648
Investment Bank of Iraq	0.189449	0.122337	0.392375
National Bank of Iraq	0.193661	0.118603	0.379816
Iraqi Middle East Bank for Investment	0.228607	0.090218	0.28297
Trans Iraq Bank	0.174276	0.1549	0.470569
Ashur International Bank for Investment	0.189033	0.126195	0.400329
Summer Commercial Bank	0.177385	0.13657	0.434999
Union Bank of Iraq	0.106516	0.221472	0.675244
credit bank of Iraq	0.202732	0.117658	0.367234
Al-Mansour Investment Bank	0.203488	0.116213	0.363505

Step 6: Calculate closeness based on the ideal solution

Table 36: Banks' Success Ranking for 2017.

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Union Bank of Iraq**	0.675244	0.137742	13.77425
2	**Trans Iraq Bank**	0.470569	0.095991	9.5991
3	**Summer Commercial Bank**	0.434999	0.088735	8.87351
4	**Gulf Commercial Bank**	0.403648	0.08234	8.233984
5	**Ashur International Bank for Investment**	0.400329	0.081663	8.16628
6	**Investment Bank of Iraq**	0.392375	0.08004	8.004027
7	**National Bank of Iraq**	0.379816	0.077478	7.747837
8	**Bank of Baghdad**	0.372142	0.075913	7.591295
9	**credit bank of Iraq**	0.367234	0.074912	7.491177
10	**Al-Mansour Investment Bank**	0.363505	0.074151	7.41511
11	**Commercial Bank of Iraq**	0.359389	0.073311	7.331148
12	**Iraqi Middle East Bank for Investment**	0.28297	0.057723	5.772283
TOTAL		4.90222	100%	100

APPENDIX 4: Showing the Financial Performances of the Banks for 2016 in Steps

Step 1: Creating the Decision Matrix:

Table 37 shows the decision matrix that was prepared according to the data obtained from the financial reports of 12 Iraqi commercial banks for 2016.

Table 37: Decision Matrix for 2016

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.2350	0.3075	0.5910	0.4508	0.0166	0.0707	0.0800	0.1625	0.0258
Commercial Bank of Iraq	0.6652	1.9929	0.7240	4.1471	0.0178	0.0268	0.0303	0.0234	0.0035
Gulf Commercial Bank	0.3962	0.6550	0.3420	0.2045	0.0073	0.0185	0.0195	0.3578	0.0411
Investment Bank of Iraq	0.5015	1.0034	0.9881	0.4922	0.0176	0.0351	0.0407	0.1785	0.0267
National Bank of Iraq	0.4817	0.9863	1.0620	0.5329	0.0406	0.0816	0.0940	0.2145	0.0289
Iraqi Middle East Bank for Investment	0.4293	0.7535	0.7780	0.4439	0.0186	0.0432	0.0470	0.1785	0.1469
Trans Iraq Bank	0.6637	1.9856	1.4720	0.4916	0.0362	0.0544	0.0570	0.3774	0.0240
Ashur International Bank for Investment	0.6600	1.9385	1.1020	0.3743	0.0393	0.0584	0.0590	0.0241	0.0398
Summer Commercial Bank	0.7594	3.1560	2.1070	0.5043	0.0085	0.0113	0.0120	0.3077	0.0199
Union Bank of Iraq	0.4182	1.3437	1.0640	0.0949	3.2545	7.7817	8.0563	0.6806	0.0318
credit bank of Iraq	0.5976	1.5323	0.2930	0.1146	0.0097	0.0162	0.0199	0.0057	0.0055
Al-Mansour Investment Bank	0.2599	0.3517	1.1040	0.8143	0.0115	0.0418	0.0480	0.1033	0.0199

Step 2: Creating the Normalized Matrix

Table 38 shows the normalized decision matrix for 2016.

Table 38: Normalized Decision Matrix for 2016

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.1279	0.0571	0.1582	0.1021	0.0051	0.0091	0.0099	0.1645	0.1504
Commercial Bank of Iraq	0.3621	0.3702	0.1938	0.9394	0.0055	0.0034	0.0038	0.0237	0.0204
Gulf Commercial Bank	0.2156	0.1217	0.0915	0.0463	0.0022	0.0024	0.0024	0.3621	0.2395
Investment Bank of Iraq	0.2730	0.1864	0.2645	0.1115	0.0054	0.0045	0.0051	0.1807	0.1553
National Bank of Iraq	0.2622	0.1832	0.2843	0.1207	0.0125	0.0105	0.0117	0.2171	0.1682
Iraqi Middle East Bank for Investment	0.2337	0.1400	0.2082	0.1006	0.0057	0.0055	0.0058	0.1807	0.8554
Trans Iraq Bank	0.3613	0.3688	0.3940	0.1114	0.0111	0.0070	0.0071	0.3820	0.1397
Ashur International Bank for Investment	0.3593	0.3601	0.2950	0.0848	0.0121	0.0075	0.0073	0.0244	0.2317
Summer Commercial Bank	0.4134	0.5863	0.5640	0.1142	0.0026	0.0014	0.0015	0.3114	0.1161
Union Bank of Iraq	0.2276	0.2496	0.2848	0.0215	0.9997	0.9998	0.9998	0.6888	0.1850
credit bank of Iraq	0.3253	0.2846	0.0784	0.0260	0.0030	0.0021	0.0025	0.0057	0.0317
Al-Mansour Investment Bank	0.1415	0.0653	0.2955	0.1845	0.0035	0.0054	0.0060	0.1045	0.1160

Step 3: Creating the Weighted Normalized Matrix

Table 39 shows the weighted normalized decision matrix for 2016.

Table 39: Weighted Normalized Decision Matrix for 2016

Banks	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Bank of Baghdad	0.0142	0.0063	0.0176	0.0113	0.0006	0.0010	0.0011	0.0183	0.0167
Commercial Bank of Iraq	0.0402	0.0411	0.0215	0.1044	0.0006	0.0004	0.0004	0.0026	0.0023
Gulf Commercial Bank	0.0240	0.0135	0.0102	0.0051	0.0002	0.0003	0.0003	0.0402	0.0266
Investment Bank of Iraq	0.0303	0.0207	0.0294	0.0124	0.0006	0.0005	0.0006	0.0201	0.0173
National Bank of Iraq	0.0291	0.0204	0.0316	0.0134	0.0014	0.0012	0.0013	0.0241	0.0187
Iraqi Middle East Bank for Investment	0.0260	0.0155	0.0231	0.0112	0.0006	0.0006	0.0006	0.0201	0.0950
Trans Iraq Bank	0.0401	0.0410	0.0438	0.0124	0.0012	0.0008	0.0008	0.0424	0.0155
Ashur International Bank for Investment	0.0399	0.0400	0.0328	0.0094	0.0013	0.0008	0.0008	0.0027	0.0257
Summer Commercial Bank	0.0459	0.0651	0.0627	0.0127	0.0003	0.0002	0.0002	0.0346	0.0129
Union Bank of Iraq	0.0253	0.0277	0.0316	0.0024	0.1111	0.1111	0.1111	0.0765	0.0206
credit bank of Iraq	0.0361	0.0316	0.0087	0.0029	0.0003	0.0002	0.0003	0.0006	0.0035
Al-Mansour Investment Bank	0.0157	0.0073	0.0328	0.0205	0.0004	0.0006	0.0007	0.0116	0.0129

Step 4: Determination of Positive (A+) and Negative (A-) ideal solutions

Table 40 shows the degree of closeness to the positive and negative ideal solutions for 2016.

Table 40: Positive and Negative Ideal Solutions for 2016

	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9
Positive Ideal Solution A+	0.0459	0.0651	0.0627	0.1044	0.1111	0.1111	0.1111	0.0765	0.0950
Negative Ideal Solution A-	0.0142	0.0063	0.0087	0.0024	0.0002	0.0002	0.0002	0.0006	0.0023

Step 5: Calculation of positive and negative distance values.

Table 41 shows positive and negative distance values for 2016.

Table 41: Positive and Negative Distance Values for 2016.

BANKS	A+	A-	C*
Bank of Baghdad	0.247175	0.02608	0.095441986
Commercial Bank of Iraq	0.230363	0.111605	0.326360946
Gulf Commercial Bank	0.242043	0.048134	0.165878068
Investment Bank of Iraq	0.240134	0.039953	0.142644964
National Bank of Iraq	0.2372	0.043454	0.154831216
Iraqi Middle East Bank for Investment	0.229963	0.097433	0.297599849
Trans Iraq Bank	0.230899	0.071591	0.236672287
Ashur International Bank for Investment	0.239119	0.054586	0.185853152
Summer Commercial Bank	0.231914	0.093512	0.287352578
Union Bank of Iraq	0.136874	0.209961	0.605362781
credit bank of Iraq	0.25571	0.033491	0.11580527
Al-Mansour Investment Bank	0.24453	0.033859	0.121624777

Step 6: Calculate closeness based on the ideal solution.

Table 42: Banks' Success Ranking for 2016.

Rank	BANKS	C*	Percentage of C*	Ranking Index Scores
1	**Union Bank of Iraq**	0.605363	0.221305	22.13046
2	**Commercial Bank of Iraq**	0.326361	0.119309	11.93089
3	**Iraqi Middle East Bank for Investment**	0.2976	0.108795	10.87946
4	**Summer Commercial Bank**	0.287353	0.105048	10.50485
5	**Trans Iraq Bank**	0.236672	0.086521	8.652112
6	**Ashur International Bank for Investment**	0.185853	0.067943	6.794299
7	**Gulf Commercial Bank**	0.165878	0.060641	6.064063
8	**National Bank of Iraq**	0.154831	0.056602	5.660219
9	**Investment Bank of Iraq**	0.142645	0.052147	5.214722
10	**Al-Mansour Investment Bank**	0.121625	0.044463	4.44628
11	**credit bank of Iraq**	0.115805	0.042335	4.233534
12	**Bank of Baghdad**	0.095442	0.034891	3.489106
TOTAL		2.735428	100%	100

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CURRICULUM VITAE

My name is Ali Fadhil JIRJEES. Born in Diyala in (1993). I completed my BA. in the Department of Banking and Finance in (2017) at the College of Administration and Economics - Iraqia University in Iraq. And completed my Msc. in the Department of Finance and Banking in (2022) at the College of Administration and Economics - karabük University in Türkiye.