



TECHNICAL JOURNAL OF MANAGEMENT SCIENCES

Journal homepage: <http://tjms.mtu.edu.iq>



RESEARCH ARTICLE - FINANCIAL MANAGEMENT

Influence of Ownership Structure on the Profitability of Commercial Banks in a Sample of Commercial Banks Listed on the Iraq Stock Exchange

Zainab Hamid Kati Al-Harishawi ¹, Faten Zoghlami ^{2*}

¹ Institute of Higher Commercial Studies of Sousse, University of Sousse, Sousse, Tunisia

² Finance, MOCFINE, ISCAE, Université de la Manouba, Tunisia, Tunisia

* Corresponding author E-mail: faten.zoghlami@iscae.uma.tn

Article Info.	Abstract
<i>Article history:</i> Received 24 July 2024 Accepted 04 May 2025 Publishing 30 June 2025	This research is specifically conducted to inspect the influence of ownership structure and board features on the profitability of samples of Iraqi private sector banks, which are listed on the Iraq Stock Exchange for the period between 2011 to 2020. A number of hypothesis are designed to observe the impact of ownership structure on the performance of commercial banks. Specifically, the influences of a set of independent variables including the ownership concentration (major shareholders), institutional ownership and managerial ownership is evaluated on the profitability of selected banks. Using the Q-Tobin ratio, the results demonstrate a negative correlation between the ownership concentration and the bank's profitability. However, the institutional ownership has remarkably influenced the return on assets, return on equity, and product expansion. Managerial ownership has an encouraging influence on return on assets but a negative influence on profitability specified by the Q-Tobin ratio. Furthermore, the board characteristics including the size of bank, leverage ratio, revenue growth rate, asset growth rate, and bank age, are all ascertained to have an impact on the bank's profitability. These outcomes propose that ownership structure plays a critical role in shaping bank performance, and policymakers should make intensive efforts to enhance the institutional ownership and optimise ownership concentration to augment bank efficiency and profitability.

This is an open-access article under the CC BY 4.0 license (<http://creativecommons.org/licenses/by/4.0/>)

Publisher: Middle Technical University

Keywords: Ownership Structure; Bank Profitability; Institutional Ownership; Managerial Ownership; Board Characteristics.

1. Introduction

The concept of ownership construction has been conversed commonly since 1932 due to its vital part in accomplishing the objectives of the company. This includes the main objective for investors, increasing profitability besides the immense growth in the companies, the diversities of their products, activities, and the facilities that it offers. This resulted in a significant focus on giving decision-making responsibilities to a capable management team. Apparently, this would accomplish the strategic path of profit maximization through the differences of its financial products [1].

Ownership structure shows the concept of the complications of company stock and their assets' size. It is considered as the primary variable that impacts the company outcomes. Two types of ownership structures can be distinguished, concentrated ownership and dispersed ownership. The concentrated ownership denotes to the ownership of the company is in control of few shareholders. Whereas, the dispersed ownership is when there are a lot of shareholders as each one of them holds a small number of shares [2].

Theoretically, the analysis of ownership structure and investigating of its influence on banks' profitability can help the stakeholders to recognize chief drivers of financial performance. Thus, the consequences would enhance the management practices and corporate governance besides providing new perspectives to increase the level of commercial banks and communicate with other banks in advanced countries. The strength of researching about ownership structure and board features in banking sector lies in its obvious impacts on various sides of the bank's performance. This would positively influence various stakeholders that are in banks for instance board participants and bank employees at distinct levels as well as external entities like other financial organizations, labor unions, researchers, and different governmental and regulatory authorities [3].

Referring to the above conceptual facts, it is vital to research the impact of ownership construction components on the bank's profitability that are template on the Iraq Stock Exchange. Accordingly, this research intends to evaluate the consequence of ownership structure on bank profitability in commercial banks that are listed on the Iraq Stock Exchange. The ownership structure is exemplified by institutional ownership,

ownership concentration, and managerial ownership. To conduct this research, the influence of ownership construction and board features on bank profitability would be measured through:

- Acknowledging the influence of ownership construction on the profitability of Iraqi commercial banks.
- Acknowledging the influence of board features on the bank's productivity, and defining the level of implementation of ownership structure mechanisms in Iraqi commercial banks registered on the Iraq Stock Exchange.

Specifically, the key terms of ownership structure would be under a thorough analysis. These include:

- Acknowledging the effect of ownership concentration on bank profitability.
- Acknowledging the effect of institutional ownership concerning bank profitability.
- Acknowledging the effect of managerial ownership concerning profitability of banks.
- Determine the contribution of ownership structure on the variety of banking produces, with aims to clarify the effect of ownership concentration on the different products of banking.

2. Theoretical Side

2.1. Ownership structure

The idea of applying the rules of good ownership construction has a significant impact, especially commercial banks that are itemized on the Iraq Stock Exchange. Thus, it constitutes as an important element in the evaluation of banks. Furthermore, it reassures investors, which leads to gaining the trust of market participants [4]

With the outcome of the conducted study that was done by Berle and Means [5] it signaled the beginning of the interest in the ownership structure. The study was focused on the influence of the separation of ownership from management on the performance of companies. The researchers illustrated that large companies in the United States are possessed by a large number of shareholders but are accomplished by qualified managers who own only a small percentage of the company's shares. However, it was under the assumption of the conflict of interest between owners and managers. According to the agency theory, the nature of shareholders is determined by three types. The first one being managerial shareholders, who have the rights to control management. The second is financial shareholders, who are investors in the company. The third one is institutional shareholders or Institutional ownership, who are large institutional investors like mutual funds, pension funds, etc. [6].

The importance of the ownership structure in commercial banks is highlighted. Specifically, the concentrated ownership structure, where the capital is owned by the proprietors, has a distinctive importance. International financial and banking circles have shown great interest in this area, which is reflected in what the Basel Committee has stipulated - that the relationship between the capital of the owners and the assets should not be less than 8% as a minimum [7, 8]. The investors aim to increase the efficiency of capital in banks in order to face the risks in the activities practiced by the bank.

Ownership rights are categorized as a human right for natural persons with respect to their assets. The right to private property is hardly generally recognized, and it is usually deeply restricted in terms of the ownership of property by legal companies.

2.2. Profitability of banks

The modern economic system is in need of financial institutions that contribute in supporting investment projects. That is by increasing the turnover of capital, which accelerates the growth process in the country. This profitability articulates the element that measures the institution's ability to generate surplus in relation to the invested amount over a certain period [6]. The profitability of banks is also a distinct measure of the performance of the business entity, as it shows the efficiency and effectiveness of the managers' use of resources. Therefore, profitability is one of the fundamental indicators of good financial health and the efficiency of the business entity's management of its operating activities. It shows its ability to achieve satisfactory profits and returns [4].

Profitability is one of the things in which banks try to achieve to attract investors, increase their competitiveness, improve their financial solvency, and enhance customer trust in them. The idea of profits ability is seen in the concept of profitability, which differs from the concept of profit. That is because profit is an absolute concept, while profitability is a relative concept. Furthermore, profitability has two parts: "profit" and "ability". This means, profit denotes to the total income realised through business activities over a specific period. On the other hand, "ability" refers to the company's ability to make profits and indicates its financial and operational performance strength.

Profitability is considered as a vital indicator in evaluating the performance of an institution or bank, and it is the primary goal that all institutions or banks strive to achieve. For investors, managements and lenders, profitability ratios are an area of interest. Hence, investors search for profitable investments to direct their funds, management can validate the achievement of their policies through profitability, and lenders feel safer when lending to projects that generate more income than those that do not achieve profits.

Each profitability ratio can attribute the profit to either sales, assets, or capital. Profitability is considered one of the most important financial sources for generating cash.

Profit has several key concepts, including [9]:

- The Accounting Concept: Its purpose to increase the total revenues over total costs over a certain period of time. Also, it signifies the difference between the realized revenues and their cost.
- The Economic Concept: It refers to the positive difference between the price of goods and services and the cost of their production.
- The Financial Concept: It is the profit that is not less than the level of profits that have been achieved in similar businesses, which are exposed to the same degree of risk. For this to be achieved, revenues must be collected at the lowest costs and risks, and invested in a way that enables them to achieve satisfactory returns.
- The Operational Concept: It is achieved when the realized revenues are greater than the expended expenses or costs.

As the objective of commercial banks is to maximise the wealth of the owners, the banks' profitability can be measured utilising several pointers. This can be via whichever through the association between profits and sales, or via the association between profits and investments that paid to achieving them. The investments referred to here are the value of the assets or the equity.

First: The Return on Equity (ROE) ratio is calculated using the following formula:

$$ROE = \frac{\text{Net Profit Before and Tax}}{\text{Equity}} \times 100 \quad (1)$$

Second: The Return on Assets (ROA) ratio can be estimated using this correlation:

$$ROA = \frac{\text{Net Profit After Tax}}{\text{Total Assets}} \times 100 \quad (2)$$

Third: Tobin's Q (Tobins Q) ratio

James Tobin, an economist, introduced the Tobin's Q ratio indicator for the first time (Abdullah, 2020). It was considered as an indicator for predicting the future profitability of an investment. It is a measure of the market value to the true value, which can be used to demonstrate the efficiency of management in achieving profitability. Therefore, it can be considered as one of the best measures of a company's performance compared to other accounting measures. Tobin's Q (Tobins Q) ratio can be estimated using the following formula:

$$\text{Tobin's Q} = \frac{\text{Market Value of the Firm}}{\text{Replacement Cost of the Firm's Assets}} \quad (3)$$

2.3. Connection between ownership structure and bank profitability

Despite the variations in their mechanisms, methods, and operating principles, banks are generally striving to achieve similar objectives. These objectives include maximizing profitability while maintaining a certain level of liquidity. Hence, banks aim through deposits, loans, or speculation, and by investing available funds through various investment instruments to attain profit. It has been illustrated that profitability is a shared goal for depositors, shareholders, and regulatory authorities, driving banks to enhance it. When achieving these objectives, it ensures the bank's ongoing survival and operation. Producing profits is the primary objective for shareholders to accumulate their wealth. It serves as a vital source of confidence for depositors and clients. Moreover, profitability is an essential indicator that aids in bank management assess its efficiency in utilizing available resources. Lastly, it is an interest to regulatory bodies as it reflects the bank's performance and enhances capital adequacy.

Profits are vital for facing risks, ensuring the survival of the bank and securing future capital growth. This is achieved through continuous reinvestment, which is considered one of the means of self-financing. Therefore, the profits that are invested directly are one of the ways to increase capital and encourage capital owners to subscribe to the bank's shares to inevitably upgrade their own capital. Profitable returns increase the shareholders' trust in the bank. Plus, profits are a performance measurement tool, which makes them a tool for judging the ownership structure. On the other hand, when customers, achieve profits, it makes them increase their investments and wealth, as well as their confidence in dealing with the owners of deposits in banks.

Investors are the common factor between the ownership construction and the banks' profitability. Thus, impacting the investors is an important factor for both ideas. It has been advocated that the ownership structure affects the various aspects of institutions, but it is affected by the manners of investors, as for the profitability of banks is concerned with attracting investors. For this profitability to be achieved, the efficiency of employees and staff must be increased through a suitable environment besides the incentives and rewards provided by the management, which are influenced by the ownership structure. The ownership structure also controls the way in which the investors' funds that are consumed and stored. Generally, it is well known that agency costs increase from the separation of management from ownership, which has created many problems. That includes managers making decisions to serve their personal interests only rather than the general interests of the company and shareholders. This means, there must be ways to reduce the costs of agency in the administrative ownership structure. One of them is to encourage managers to own shares in the institution or bank. It has been shown that this would increase the alignment of interests between the management and shareholders. As a result, there would be lower monitoring costs, which leads to improved company performance, mitigates opportunistic management behavior, and makes them have decisions that increase the company's value and attract investors, and overall leading to increased profits [10].

The representation of equity ownership structure refers to the size of the shareholdings and their identities as it is the main factor, which impacts the financial results and profitability. Meaning, it can be conveyed by mentioning the different types of equity structures. The first one is concentrated equity ownership structure. By this, the equity ownership is in control of a small number of shareholders. Second type is discrete equity ownership structure, which advocates that the equity ownership is in control of a large amount of shareholders. That is where each one of the shareholders has a small number of shares and their ownership that is no more than 5% of the shares of the company [11].

The company makes use of capital as a financial resource for achieving profits and increasing the profitability of banks. There are numerous factors which are seen as capital needs in the situation, for instance the size of the company, the degree of capital intensity and the length of the working capital cycle. It has been demonstrated that each institution, in addition to banks, need capital to purchase fixed assets and meet working capital requirements. Due to the idea that the ownership structure is impacted by financing structure, it also affects the increase of profitability of banks [12]. This includes a set of sources and resources. Often, managers seek to obtain the best mix of internal and external financing sources, which enhance the value and profitability of the company's performance and reduce the total cost of the institution's capital to the minimum. This means, when choosing the appropriate choice of the financing structure, it will increase the company's profitability [13]. Some researchers have shown that the management of the institution is impacted by the composition of the ownership structure. Despite the fact that the agency theory separates ownership and management, the management decisions are largely related to the nature of the ownership construction. Both of them have an effect on earnings management within banks, as earnings management needs many means used to influence bank profitability to reach the required profit.

3. Research Methodology: Study Problem and Hypotheses

The main issue that is addressed in the study is clearly seen in trying to recognize the impact of ownership construction on the productivity of banks in a sample of banks itemized on the Iraq Stock Exchange. This issue is clearly defined via the main question:

- Is there an impact with statistically significance at a significance level ($0.05 \geq \alpha$) of ownership structure on the banks' profitability? As a result, this leads to the upcoming sub-questions:
- ✓ Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of ownership construction on the profitability of banks measured by return on assets ratio? This leads to the following questions:
 - Is there an ownership concentration influence (major shareholders) on the successfulness of banks measured by return on assets ratio?
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of institutional ownership concerning the banks' financial terms measured by return on assets ratio?
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of managerial ownership on the banks' profitability stated by return on assets ratio?
- ✓ Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of ownership construction on the banks' profitability measured by return on equity ratio? This leads to the following questions:
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of ownership concentration on the bank's cost-effectiveness calculate by return on equity ratio?
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of institutional ownership on the cost-effectiveness of banks calculated by return on equity ratio?
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of managerial ownership on the banks' profitability dignified by return on equity ratio?
- ✓ Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of ownership structure on the banks' profitability specified by the Q-Tobin ratio? This leads to the following questions:
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of ownership concentration on the banks' cost-effectiveness calculated by the Q-Tobin ratio?
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of institutional ownership on the banks' cost-effectiveness calculated by the Q-Tobin ratio?
 - Is there a statistically significant influence at a significance level ($0.05 \geq \alpha$) of managerial ownership on the banks' profitability specified by the Q-Tobin ratio?

4. Practical Side: The Iraqi Banking Sector

In the modern economic system, the banking sector is seen as one of the vital divisions. Thus, it has occupied the first place due to its significant role in mobilizing savings and financing investments, plus being the link between sources of financing and investors.

4.1. Study variables

The ownership structure has been represented as the independent variable. This is because the ownership construction has an influence on the banks' profitability in the Iraqi commercial banks registered on the Iraq Stock Exchange. Specifically, the current research considers the three variables to evaluate the ownership construction (concentration of ownership, ownership of institution, and managerial ownership). In this aspect, the dependent variables represent the profitability of bank and the diversity of financial yields. Specifically, the dependent variables included:

The first variable is bank profitability as the researcher depended on three variables to calculate profitability (return on assets ratio, return on equity ratio, and Tobin's Q ratio). It also consists of control variables that are size of bank, financial leverage ratio, asset growth rate, revenue growth rate, and age of the bank.

The key independent variables of ownership structure items are thoroughly described below:

- Ownership Concentration (Major Shareholders): for ownership concentration to be measured, the return on assets ratio was used, in line with many studies such instance.
- Institutional Ownership (IOWN): For institutional ownership to be measured, the return on equity ratio was used, in accordance with many studies.
- Managerial Ownership: For managerial ownership to be measured, the return on equity ratio was used, in accordance with many studies.

Also, another set of the independent variables are thoroughly discussed below:

- Bank's Asset Size: The total resources and capabilities available to the bank, which have an impact on the bank's activities and operations as it represents the total value of assets at the end of the year.
- Leverage Ratio: Measures the financial structure of the bank, through which the efficiency of the bank's policy is revealed, in addition to disclosing its financial solvency and ability to meet long-term obligations.
- Revenue Growth Rate: It mentions to the percentage change in a particular variable over a specific period, giving investors an idea of the profitability of the company's business.
- Asset Growth Rate: The rate of return on assets (investment), that depends on the interaction between the company's business results. It includes (net profit margin = net profit / sales), and the ability of the assets to generate revenue (asset turnover rate = sales / total assets).
- Bank Age: Considered one of the internal determinants of commercial banks, where banks with longer ages have a good reputation and indicate public trust compared to newer banks. It is also considered an indicator of their ability to survive and continue operations.

4.2. Study hypothesis

Main hypothesis HO1: There is an impact of ownership construction on the banks' effectiveness. Therefore, the upcoming hypotheses emerge:

- First sub-hypothesis HO1.1: There is an influence of ownership on the profitability of the bank as calculated using return on assets ratio. The following hypotheses emerge:
- First sub-hypothesis HO1.1.1: There is an impact of ownership concentration on effectiveness of the bank as determined by return on assets ratio).
- Second sub-hypothesis HO1.1.2: There is an influence of institutional ownership on bank profitability as determined by return on assets ratio.
- Third sub-hypothesis HO1.1.3: There is an effect of managerial ownership on bank profitability as determined by return on assets ratio.
- Second sub-hypothesis HO1.2: There is an impact of ownership structure on bank profitability as determined by return on equity ratio. The following hypotheses emerge:
- First sub-hypothesis HO1.2.1: There is an impact of ownership concentration (major shareholders) on bank profitability as determined sing return on equity ratio.
- Second sub-hypothesis HO1.2.2: There is an impact of institutional ownership on bank profitability as determined using return on equity ratio.
- Third sub-hypothesis HO1.2.3: There is an influence of managerial ownership on bank profitability as determined using return on equity ratio.
- Third main hypothesis HO3: There is an influence of ownership structure on bank effectiveness as determined using Tobin's Q ratio. The following hypotheses emerge:
- First sub-hypothesis HO1.3.1: There is an impact of ownership concentration on the profitability of bank as determined by Tobin's Q ratio.
- Second sub-hypothesis HO1.3.2: There is an impact of institutional ownership on the profitability of the bank as determined by Tobin's Q ratio.
- Third sub-hypothesis HO1.3.3: There is an influence of managerial ownership on bank profitability as calculated by Tobin's Q ratio.

4.3. Regression model

The linear regression model was utilised to clarify the connection among the independent and dependent variables as mathematically represented in the following simple regression model.

$$ROA_{t,i} = \beta + \beta_1 OWCO_{t,i} + \beta_2 OWIN_{t,i} + \beta_3 AP_{t,i} + \beta_4 SIZE_{t,i} + \beta_5 LEV_{t,i} + \beta_6 SG_{t,i} + \beta_7 AG_{t,i} + \beta_8 Age_{t,i} + \beta_9 Year + \beta_{10} Firm + \varepsilon_{t,i}$$

$ROA_{t,i}$ is the Return on Assets ratio which is defined as,

$$ROA_{t,i} = \frac{\text{Net Profit before Taxes}}{\text{Total Assets}} \times 100 \quad (4)$$

$OWCO_{t,i}$ is the ownership concentration (major shareholders) that is defined as,

$OWCO_{t,i}$ = Shareholders owning above 5% of the shares of the company

$OWIN_{t,i}$ is the institutional ownership which is defined as,

$$OWIN_{t,i} = \frac{\text{Number of shares owned by institutions}}{\text{Total shares}} \quad (5)$$

$$ROE_{t,i} = \beta + \beta_1 OWCO_{t,i} + \beta_2 OWIN_{t,i} + \beta_3 AP_{t,i} + \beta_4 SIZE_{t,i} + \beta_5 LEV_{t,i} + \beta_6 SG_{t,i} + \beta_7 AG_{t,i} + \beta_8 Age_{t,i} + \beta_9 Year + \beta_{10} Firm + \varepsilon_{t,i}$$

$ROE_{t,i}$ is the Return on Equity ratio which is defined as,

$$ROE_{t,i} = \frac{\text{Net Profit before Taxes}}{\text{Shareholders' Equity}} \times 100$$

$AP_{t,i}$ is the Managerial Ownership which is well-defined as,

$$AP_{t,i} = \frac{\text{Number of shares owned by Board of Directors and Executive Management}}{\text{Total shares}} \quad (6)$$

$SIZE_{t,i}$ is the firm size which is defined as,

$SIZE_{t,i}$ = Natural logarithm of the company's assets

$LEV_{t,i}$ is the financial leverage ratio which is defined as

$LEV_{t,i} = \text{Total Liabilities} / \text{Total Assets}$

$SG_{t,i}$ is the revenue growth rate which is defined as,

$$SG_{t,i} = \frac{(\text{Current Year Revenue} - \text{Previous Year Revenue})}{\text{Previous Year Revenue}} \quad (7)$$

$AG_{t,i}$ is the asset growth rate which is defined as,

$$AG_{t,i} = \frac{(\text{Current Year Total Assets} - \text{Previous Year Total Assets})}{\text{Previous Year Total Assets}} \quad (8)$$

$Age_{t,i}$ is the firm age which is defined as,

Firm Age = Current Year – Year of Establishment

Year and Firm are the year effect, and the firm effect, respectively.

$$TobinsQ_{t,i} = \beta + \beta_1 OWCO_{t,i} + \beta_2 OWIN_{t,i} + \beta_3 AP_{t,i} + \beta_4 SIZE_{t,i} + \beta_5 LEV_{t,i} + \beta_6 SG_{t,i} + \beta_7 AG_{t,i} + \beta_8 Age_{t,i} + \beta_9 Year + \beta_{10} Firm + \varepsilon_{t,i}$$

$TobinsQ_{t,i}$ is the Tobin's Q ratio that can be justified by the following correlation,

$$\text{Tobin's Q} = \frac{\text{Market Value}}{\text{Book Value}} \times 100 \quad (9)$$

4.4. Study population and samples

This research has encompassed all the commercial and private banks in Iraq Stock Exchange for the period of 10 years between 2011-and 2020. Accordingly, the research has dealt with the analysis of the actual data of 15 listed commercial banks in the Iraq Stock Exchange. Specifically, these banks are relied on the company guide where the financial reports are issued under the regulations of the Iraq Stock Exchange. This in turn would resolute the exclusion of other commercial banks in Iraq which are not registered in the Iraq Stock Exchange until the end of 2021, or suspended in the market due to not available data.

4.5. Statistical methods and data processing

The research utilised (E-Views) programming to process and analyse the data. The following statistical measures and tests were accordingly appraised:

- To describe the study variables, percentages, frequencies, arithmetic means, and standard deviations were measured.
- To testify the phenomenon of multiple correlation, the linear correlation coefficient was used.
- To testify the stability of the data, the UNIT ROOT test was used.
- To estimate the study model, the Levin-Lin-Chu (LLC) test was utilised.
- To examine the influence of independent variable on the dependent variables, linear regression analysis was used.

5. Descriptive Analysis, Statistical Analysis, and Hypothesis Testing

5.1. Analysis of dependent variables

The dependent variable of the current research is the bank profitability that is expressed by the return on assets ratio, the return on equity ratio and Tobin's Q ratio. Table 1 depicts an analysis of bank profitability of the banks that are itemised on the Iraqi Stock Exchange during the period (2011-2020). Specifically, the overall mean of the considered banks is 2.1%, with the overall standard deviation is 1%. The highest mean is assured in Ashur Bank of 4%, while the lowest mean is assured in Al-Shamal Bank of 0.4%. The highest value of the mean is ascertained in Al-Ittihad Bank of 10.7%, while the lowest value of the mean is presented in Al-Shamal Bank of -3.8%.

Table 2 illustrates an analysis of the bank profitability dependent variable dignified by the return on equity ratio for those banks registered on the Iraqi Stock Exchange during the period (2011-2020). The overall mean of the banks is 5.5%, with an overall standard deviation of 2.9%. The highest mean is elaborated in Baghdad Bank of 9%, while the lowest mean is presented Sumer Bank of 1.3%. The highest value of the mean is 25% which is given by Al-Shamal Bank, while the lowest value of the mean is demonstrated in Al-Shamal Bank of -7.4%.

Table 3 illustrates an analysis of the bank profitability dependent variable that is dignified by Tobin's Q ratio for those banks itemized in the Iraqi Stock Exchange during the period (2011-2020). The overall mean value of the whole banks is 76.9%, with an overall standard deviation of 29%. The uppermost mean value is registered in Al-Ittihan Bank of 126.7%, while the lowermost mean value is registered in Babel Bank of 43.3%. The maximum mean value is located in Al-Ittihan Bank of 360%, while the minimum mean value is identified in Al-Ittihad Bank of 0%.

5.2. Analysis of independent variable

The independent variable for this research is identified as the ownership structure, which includes a number of indicators including the ownership concentration, institutional ownership, and managerial ownership. The following sections demonstrate the critical analysis of these indicators for those banks itemized in the Iraqi Stock Exchange during the period (2011-2020).

5.2.1. Ownership concentration (major shareholders)

Table 4 illustrates a specific statistical description of the ownership concentration indicator for the associated banks. The overall mean for the whole banks is 38%, with an overall standard deviation of 8.4%. The uppermost mean value is registered in Al-Ittihad Bank of 82%, while the lowermost mean value is registered in Al-Khaleej Bank of 11.4%. In this aspect, the maximum mean value is referred to Al-Ittihad Bank of 87% if compared to the minimum mean value of 0% that is belonging to Baghdad Bank.

Table 1. Descriptive statistics of the bank profitability based on the return on assets ratio

No.	Bank Name	Mean	Maximum	Minimum	Standard Deviation
1	Commercial Bank	0.031	0.065	0.015	0.015
2	Ashur Bank	0.040	0.074	0.012	0.018
3	Investment Bank of Iraq	0.024	0.062	0.000	0.022
4	Gulf commercial Bank	0.027	0.086	-0.007	0.031
5	North Bank for Finance and Investment	0.004	0.046	-0.038	0.033
6	United Bank for investment	0.025	0.079	-0.033	0.036
7	Iraqi Middle East investment Bank	0.013	0.035	-0.003	0.015
8	Al-Mansour Bank For investment	0.021	0.038	0.006	0.011
9	Al-Mosul Bank	0.022	0.081	-0.001	0.025
10	Babylon	0.016	0.026	0.004	0.006
11	Bank of Baghdad	0.016	0.029	0.005	0.007
12	Sumer commercial Bank	0.009	0.017	0.002	0.005
13	National Bank of Iraq	0.022	0.054	-0.011	0.018
14	Credit Bank of Iraq	0.018	0.045	-0.010	0.017
15	Union Bank of Iraq	0.021	0.107	0.000	0.032
	All Banks	0.021	0.107	-0.038	0.010

Table 2. Descriptive statistics of bank profitability based on the return on equity ratio

No.	Bank Name	Mean	Maximum	Minimum	Standard Deviation
1	Commercial Bank	0.055	0.131	0.024	0.033
2	Ashur Bank	0.066	0.118	0.021	0.031
3	Investment Bank of Iraq	0.058	0.169	0.000	0.054
4	Gulf commercial Bank	0.073	0.244	-0.013	0.083
5	North Bank for Finance and Investment	0.061	0.250	-0.074	0.118
6	United Bank for investment	0.058	0.199	-0.055	0.081
7	Iraqi Middle East investment Bank	0.051	0.157	-0.007	0.063
8	Al-Mansour Bank For investment	0.067	0.107	0.028	0.023
9	Al-Mosul Bank	0.048	0.174	-0.001	0.060
10	Babylon	0.029	0.054	0.006	0.015
11	Bank of Baghdad	0.090	0.179	0.020	0.050
12	Sumer commercial Bank	0.013	0.026	0.003	0.007
13	National Bank of Iraq	0.051	0.118	-0.022	0.042
14	Credit Bank of Iraq	0.048	0.144	-0.017	0.050
15	Union Bank of Iraq	0.058	0.246	0.001	0.083
	All Banks	0.055	0.250	-0.074	0.029

Table 3. Descriptive statistics of bank profitability based on the Tobin's Q ratio

No.	Bank Name	Mean	Maximum	Minimum	Standard Deviation
1	Commercial Bank	0.687	1.270	0.410	0.324
2	Ashur Bank	0.542	0.990	0.230	0.301
3	Investment Bank of Iraq	0.641	1.010	0.230	0.309
4	Gulf commercial Bank	0.598	1.150	0.140	0.382
5	North Bank for Finance and Investment	1.045	2.540	0.110	0.954
6	United Bank for investment	0.756	2.690	0.070	0.843
7	Iraqi Middle East investment Bank	0.721	1.920	0.100	0.644
8	Al-Mansour Bank For investment	0.957	1.740	0.580	0.347
9	Al-Mosul Bank	0.539	1.350	0.140	0.385
10	Babylon	0.433	0.810	0.110	0.247
11	Bank of Baghdad	1.257	3.480	0.290	0.954
12	Sumer commercial Bank	0.840	1.020	0.400	0.202
13	National Bank of Iraq	0.671	0.920	0.340	0.208
14	Credit Bank of Iraq	1.267	3.600	0.400	1.060
15	Union Bank of Iraq	0.574	1.350	0.000	0.477
	All Banks	0.769	3.600	0.000	0.290

Table 4. Descriptive statistics of ownership concentration indicator for the associated banks

No.	Bank Name	Mean	Maximum	Minimum	Standard Deviation
1	Commercial Bank	0.000	0.000	0.000	0.000
2	Ashur Bank	0.646	0.755	0.546	0.059
3	Investment Bank of Iraq	0.000	0.000	0.000	0.000
4	Gulf commercial Bank	0.114	0.114	0.114	0.000
5	North Bank for Finance and Investment	0.582	0.658	0.502	0.059
6	United Bank for investment	0.658	0.717	0.445	0.080
7	Iraqi Middle East investment Bank	0.356	0.493	0.127	0.131
8	Al-Mansour Bank For investment	0.058	0.086	0.055	0.009
9	Al-Mosul Bank	0.307	0.520	0.170	0.162
10	Babylon	0.140	0.140	0.140	0.000
11	Bank of Baghdad	0.000	0.000	0.000	0.000
12	Sumer commercial Bank	0.414	0.858	0.100	0.298
13	National Bank of Iraq	0.088	0.194	0.050	0.059
14	Credit Bank of Iraq	0.000	0.000	0.000	0.000
15	Union Bank of Iraq	0.820	0.870	0.772	0.040
	All Banks	0.380	0.870	0.000	0.084

5.2.2. Institutional ownership

Table 5 depicts a clear analysis of the Institutional Ownership variable in the banks that are registered on the Iraqi Stock Exchange during the period (2011-2020). The overall mean of the related banks and the standard deviation are 39.2%, and 3.4%, respectively. The uppermost mean value is assured in Al-Ittiman Bank of 91%, while the lowermost mean value is registered in Al-Sharq Al-Awsat Bank of 8.7%. The highest value is 91% in Al-Ittiman Bank, while the lowest value is 0% in Al-Shamal Bank.

Table 5. Descriptive statistics of institutional ownership indicator for the associated banks

No.	Bank Name	Mean	Maximum	Minimum	Standard Deviation
1	Commercial Bank	0.638	0.750	0.547	0.096
2	Ashur Bank	0.196	0.270	0.086	0.061
3	Investment Bank of Iraq	0.000	0.000	0.000	0.000
4	Gulf commercial Bank	0.130	0.148	0.095	0.025
5	North Bank for Finance and Investment	0.000	0.000	0.000	0.000
6	United Bank for investment	0.090	0.167	0.054	0.040
7	Iraqi Middle East investment Bank	0.087	0.172	0.060	0.041
8	Al-Mansour Bank For investment	0.497	0.542	0.231	0.090
9	Al-Mosul Bank	0.095	0.095	0.095	0.000
10	Babylon	0.000	0.000	0.000	0.000
11	Bank of Baghdad	0.518	0.518	0.518	0.000
12	Sumer commercial Bank	0.000	0.000	0.000	0.000
13	National Bank of Iraq	0.761	0.792	0.724	0.020
14	Credit Bank of Iraq	0.910	0.910	0.910	0.000
15	Union Bank of Iraq	0.000	0.000	0.000	0.000
	All Banks	0.392	0.910	0.000	0.034

5.2.3. Managerial ownership

Table 6 shows a clear analysis of the Managerial Ownership variable in the banks that are itemized on the Iraqi Stock Exchange during the period (2011-2020). The mean is 29.1%, with a standard deviation of 3.2%. The uppermost mean is in Al-Ittiman Bank of 85.3%, while the lowest mean is in Baghdad Bank of 0.6%. The highest mean value is 91.6% in Al-Ittiman Bank, while the lowest mean value is 0% in Al-Istithmar Bank.

Table 6. Descriptive statistics of managerial ownership indicator for the associated banks

No.	Bank Name	Mean	Maximum	Minimum	Standard Deviation
1	Commercial Bank	0.695	0.750	0.596	0.054
2	Ashur Bank	0.172	0.396	0.009	0.110
3	Investment Bank of Iraq	0.000	0.000	0.000	0.000
4	Gulf commercial Bank	0.051	0.129	0.000	0.049
5	North Bank for Finance and Investment	0.214	0.313	0.167	0.056
6	United Bank for investment	0.083	0.199	0.001	0.066
7	Iraqi Middle East investment Bank	0.025	0.113	0.000	0.047
8	Al-Mansour Bank For investment	0.570	0.619	0.312	0.088
9	Al-Mosul Bank	0.232	0.303	0.153	0.064
10	Babylon	0.160	0.160	0.160	0.000
11	Bank of Baghdad	0.006	0.007	0.003	0.001
12	Sumer commercial Bank	0.168	0.315	0.100	0.081
13	National Bank of Iraq	0.674	0.794	0.620	0.068
14	Credit Bank of Iraq	0.853	0.916	0.804	0.052
15	Union Bank of Iraq	0.164	0.164	0.164	0.000
	All Banks	0.291	0.916	0.000	0.032

5.3. Analysis of independent variables

The independent variables consist of the bank size, financial leverage ratio, sales and asset growth rate, and bank age for the considered period between 2011 to 2020. The analytical data for all these variables are shown in Table 7. Table 7 specially shows the mean, median, standard deviation, and minimum and maximum values for all the independent variables. Table 7 demonstrates that the average profitability based on the Tobin's Q ratio, return on assets ratio (ROA), and return on equity ratio (ROE) is 0.695, 0.024, and 0.058, respectively, besides the standard deviations of 0.246, 0.024, and 0.054, respectively.

The banking product diversity is 22.545, with a standard deviation of 0.799 for the product diversity.

The mean values of the ownership construction variables are Ownership concentration of 0.359, Institutional ownership of 0.314, and Managerial ownership of 0.323, besides 0.278, 0.267, and 0.268 of the standard deviations, respectively.

It can also be realised that the average Managerial ownership under study is relatively close to the study, where it reached 0.320. It was also noted that the average ownership concentration is lower compared to the study of [Reference], where it reached 39.74. Similarly, the average institutional ownership is lower compared to previous studies, where it reached 8.34 and 7.96.

5.4. Testing the Correlation Coefficients between Research Variables

The correlation coefficient identifies the degree of linear association between two variables. Table 8 depicts the correlation matrix for the considered independent variables included in the study. The correlation matrix specifies the pairwise correlations between all the variables. Each cell in the Table represents the correlation coefficient between two specific variables.

Table 8 indicates that the correlation coefficients between the independent variables are less than (± 0.80), proposing the nonappearance of a multi-collinearity problem among the independent variables.

Table 7. Descriptive statistics of the independent variables

Variable	Mean	Medium	Maximum	Minimum	Standard Deviation
Return on Assets ratio (ROA)	0.024	0.022	0.079	-0.033	0.024
Return on Equity ratio (ROE)	0.058	0.057	0.199	-0.055	0.054
Tobin's Q ratio	0.695	0.595	0.952	-0.009	0.246
Banking product diversity (IIS)	0.604	0.654	24.175	20.915	0.799
Ownership concentration (OWCO)	0.359	0.431	0.755	0.05	0.278
Institutional ownership (OWIN.)	0.314	0.197	0.794	0.0	0.267
Managerial ownership (AP)	0.323	0.232	0.792	0.054	0.268
SIZE	27.078	27.087	28.08	25.855	0.474
Leverage Ratio (LEV)	0.542	0.534	0.81	0.293	0.147
Revenue growth rate (SG)	0.131	0.061	2.402	-0.536	0.518
Asset growth rate (AG)	0.156	0.099	0.936	-0.28	0.264
AGE	16.792	17	27	6	6.24

Table 8. Correlation coefficient between two specific variables

Correlation	IIS	OWCO	OWIN	AP	SIZE	LEV	SG	AG	AGE
ROA									
Prob.									
ROE									
Prob.									
TOBINS_Q									
Prob.									
IIS	1.000								
Prob.	----								
OWCO	-0.356	1.000							
Prob.	0.013	----							
OWIN	0.288	-0.766	1.000						
Prob.	0.047	0.000	----						
AP	0.303	-0.787	0.291	1.000					
Prob.	0.036	0.000	0.000	----					
SIZE	0.574	-0.378	0.169	0.144	1.000				
Prob.	0.000	0.008	0.251	0.328	----				
LEV	0.614	-0.582	0.313	0.356	0.755	1.000			
Prob.	0.000	0.000	0.031	0.013	0.000	----			
SG	0.000	-0.072	0.099	0.143	-0.222	0.036	1.000		
Prob.	0.999	0.628	0.504	0.332	0.130	0.809	----		
AG	0.037	-0.279	0.337	0.399	-0.275	0.090	0.505	1.000	
Prob.	0.802	0.055	0.019	0.005	0.059	0.542	0.000	----	
AGE	0.017	0.096	-0.110	-0.288	0.255	0.104	-0.111	-0.377	1.000
Prob.	0.907	0.518	0.457	0.047	0.081	0.482	0.453	0.008	----

5.5. Testing Data Stationarity (Stability) for Study Variables

The stationarity of time series denotes to the dependability of the mean and variance of the series values over time. Furthermore, the auto-covariance between two time periods should be contingent only on the time lag and not on the actual time at which the auto-covariance is dignified.

The unit root test is deployed to signify whether the study variables are stationary using the Levin-Lin-Chu (LLC) test. If these variables comprise a unit root, they need to be differenced to make them stationary. Non-stationary variables can prime to overstated values of R², F, and T, resulting in confusing results and incorrect interpretations.

Table 9 depicts the findings of the data stationarity test for the research independent variables utilizing the Levin-Lin-Chu (LLC) test. The results signpost that all the time series data utilised in the research are stationary over time. The p-values for the variables are lesser than 0.05, and therefore this implies the absence of a unit root and the stationarity of the time series.

Table 9. Results of the unit root test for the independent variables

Variable	Statistic	Prob.
IIS	-2.960	0.002
AP	-18.364	0.000
OWCO	-4.410	0.000
OWIN	-22.880	0.000
SIZE	-10.878	0.000
LEV	-9.656	0.000
SG	-6.535	0.000
AG	-50.128	0.004

5.6. Analysis the Main Hypothesis and its Sub-hypotheses

Table 10 depicts the statistical analysis for the model's significance. The F-statistic's p-value is 0.00 (i.e., less than 0.05). This indicates the validity of the model and assures the reliability of the associated results. The R-squared is 0.495, that signifies that the independent variables elucidate 50% of the variation in the dependent variable. Furthermore, the adjusted R-squared of 0.391 would suggest that the independent variables can affect the dependent variable by more than 39%. Also, Table 7 discloses that all variance inflation factor (VIF) values are lesser than 10, that further specifies the absence of multi-collinearity among the independent variables.

Table 10. Statistical analysis for the model's significance

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variance inflation factor (VIF)
C	5.801	2.434	2.383	0.022	-
OWCO	0.173	0.150	1.148	0.258	3.189
OWIN	0.505	0.203	2.482	0.018	6.098
AP	-0.691	0.260	-2.662	0.011	8.775
SIZE	-0.193	0.093	-2.081	0.044	3.209
LEV	-0.037	0.261	-0.141	0.888	2.825
SG	0.061	0.045	1.372	0.178	1.264
AG	0.034	0.125	0.274	0.785	1.972
AGE	0.002	0.005	0.349	0.729	1.777
R-squared	0.495	Adjusted R-squared			0.391
F-statistic	4.769	Prob(F-statistic)			0.000

5.7. Interpretation of Sub-hypothesis Results

- Sub-hypothesis HO1.1: Referring to the outcomes of Table 10, the results demonstrate that the p-value (Prob.) for the independent variable dignified by the "ownership's concentration" indicator is larger than 0.05, which is 0.258. Accordingly, this specifies which there is no important influence of ownership concentration on the bank effectiveness.
- Sub-hypothesis HO1.2: The results display that the p-value for the ownership construction estimated by the institutional ownership indicator is lesser than 0.05, which is 0.018. This elucidates a remarkable effect of institutional ownership on the bank effectiveness.
- Sub-hypothesis HO1.3: The results indicate that the p-value for the ownership construction calculated by the managerial ownership indicator is 0.011 (lesser than 0.05), Indeed, this is an indication of a remarkable effect of managerial ownership the bank effectiveness.

6. Conclusion

According to the theoretical and descriptive analyses that were conducted on the commercial banks registered on the Iraq Stock Exchange during the period between 2011-and 2020, the following findings can be ascertained:

- The determinants of ownership structure can be distinguished in the two main dimensions including the ownership concentration, and the identity of the shareholders.
- Amongst the remaining variables, the ownership concentration has a vital undesirable effect only on profitability calculated by the Q-Tobin ratio.
- The institutional ownership has an encouraging impact on return on assets ratio, return on equity ratio, and the diversity of banking products.
- The managerial ownership has a constructive impact on bank profitability dignified by the return on assets ratio, while it has an undesirable effect on profitability specified by Q-Tobin ratio.

7. Recommendations for further research

Referring to the associated results of the current research, the following recommendations can be made:

- The regulators and supervisors of Iraqi banks pay much more consideration to the sensitivity of bank demonstration and product diversification to the impact of ownership structure.
- It is very important for the owners and management of commercial banks to study the ownership structure. Thus, it has clear influence on different aspects of the bank and the performance of it. That is, if it is financial or non-financial, profitability, and product divergence.
- Management of commercial banks should be directed to work on improving a complementary developmental relationship between banking profitability and the diversity of financial products. That is based on the employment and utilisation of the bank's funds and depositors' funds in financing and investment aspects that benefit the community, the bank, and the customers.
- Increasing managerial ownership to document the alliance of interests between owners and managers, which would make the managers have an interest in the success and continuity of the bank, according to the assumption of convergence of interests, which would motivate them to diversify the financial products offered by the bank.
- Forming a special fund (portfolio) supplied by interested banks to discourse the drop in stock prices in the Iraq Stock Exchange and adding a new banking management for investment in order to upsurge bank profitability.

References

- [1] D. A. Rosalina and N. Nugraha, "The effects of ownership structure on bank profitability," in Proc. 1st Int. Conf. Econ. Bus. Entrep. Finance (ICEBEF 2018), Atlantis Press, 2019, pp. 42–46.
- [2] S. Thomsen and T. Pedersen, "Ownership structure and economic performance in the largest European companies," *Strategic Management Journal*, vol. 21, no. 6, pp. 689–705, 2000.
- [3] M. A. Zaid, S. T. Abuhijleh, and M. C. Pucheta-Martínez, "Ownership structure, stakeholder engagement, and corporate social responsibility policies: The moderating effect of board independence," *Corporate Social Responsibility and Environmental Management*, vol. 27, no. 3, pp. 1344–1360, 2020.
- [4] P. L. Ho, G. Tower, and G. Taylor, "Corporate governance, ownership structure and voluntary disclosure: Evidence from listed firms in Malaysia," *Afro-Asian Journal of Finance and Accounting*, vol. 3, no. 4, pp. 319–340, 2013.
- [5] A. Berle and G. Means, *The Modern Corporation and Private Property*. New York: The Macmillan Company, 1932.
- [6] W. Hsu, M. Chen, T. Wang, and S. Sun, "Coping strategies in Chinese social context," *Asian Journal of Social Psychology*, vol. 11, no. 2, pp. 150–162, 2015.
- [7] O. M. Al-Hares, N. M. AbuGhazaleh, and A. M. El-Galfy, "Financial performance and compliance with Basel III capital standards: Conventional vs. Islamic banks," *Journal of Applied Business Research*, vol. 29, no. 4, pp. 1031–1048, 2013.
- [8] T. N. L. Le, M. A. Nasir, and T. L. D. Huynh, "Capital requirements and banks performance under Basel-III: A comparative analysis of Australian and British banks," *Quarterly Review of Economics and Finance*, vol. 87, pp. 146–157, 2023.
- [9] H. Nakhaei, N. I. N. B. Hamid, M. B. A. Anuar, and K. Nakhaei, "Performance evaluation using accounting variables (net profit and operational profit) and economic measures," *International Journal of e-Education, e-Business, e-Management and e-Learning*, vol. 2, no. 5, pp. 443–447, 2012.
- [10] M. Hayat, Y. Yu, W. Man, and K. Jebran, "Impact of managerial and institutional ownership on capital structure: A comparison between China & USA," *European Journal of Business and Management*, vol. 10, no. 24, pp. 69–80, 2018.
- [11] A. H. Choi, "Concentrated ownership and long-term shareholder value," *Harvard Business Law Review*, vol. 53, no. 8, pp. 53–99, 2018.
- [12] B. Biswas, "The relation between capital structure and profitability of some selected companies in Indian ceramic industry," *IUP Journal of Accounting Research and Audit Practices*, vol. 18, no. 3, pp. 7–21, 2019.
- [13] H. Ayuba, A. J. A. Bambale, M. A. Ibrahim, and S. A. Sulaiman, "Effects of financial performance, capital structure, and firm size on firms' value of insurance companies in Nigeria," *Journal of Finance, Accounting and Management*, vol. 10, no. 1, pp. 1–16, 2019.