The Impact of Determinants of Commercial Banks' Profitability on Banking Sustainability

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ABSTRACT

The determinants of profitability are among the indicators affecting the performance of commercial banks and thus their sustainability, as they have in themselves become a problem facing banks considering the rapid changes in the banking world and its technologies. Therefore, the study aimed to identify the determinants of profitability and their impact on banking sustainability, as it adopted two external determinants, inflation and GDP. The gross domestic product and two internal determinants are the growth of deposits and loans. The research was applied to a sample of commercial banks listed on the Iraq Stock Exchange, represented by the selection of (8) banks, namely Baghdad, Iraqi Commercial, Middle East, Investment, Iraqi National, Credit, Sumer Commercial and the Iraqi Gulf, for the period 2005-2021, and used the descriptive analytical approach to variables with the aim of evaluating and measuring the independent variable (determinants) and the dependent variable (banking sustainability) represented by market value added and earnings per share using the statistical program (EViews V9) and the Panel Data application. Analysis was made according to the three models (aggregative regression model, fixed effects model, random effects model). According to this analysis, it was found that the determinants significantly affect banking sustainability indicators at a significance level of 5% and 10%. The study concluded the need to support the Iraqi banking sector by highlighting on indicators of banking sustainability; the weak and unstable banking system creates a turbulent environment that leads to a financial crisis that negatively affects the rest of the economic sectors.

Keywords: determinants of profitability, banking sustainability, inflation, market value added

INTRODUCTION

The banking sector in any economic system is considered one of the most important and most sensitive sectors, due to its pivotal role in revitalizing and developing other sectors. It is considered a channel, the main source of various financial flows for economic activities. Maximizing the profitability of commercial banks is restricted by many internal and external determinants. Maintaining a sufficient amount of liquidity, guaranteeing the rights of depositors, safe use of funds, and avoiding many risks are all factors that limit the ability of commercial banks to maximize their profits. On the other hand, commercial banks must employ the funds they obtain from their various sources with the highest possible efficiency and work to maximize revenues and rationalize expenses to the greatest possible extent. To achieve this,

commercial banks seek to obtain deposits at the lowest possible cost and employ them in the form of credit facilities and financial investments to obtain the largest possible profits and attract the largest number (AL Abdullah et al., 2023) from savers and dealers. Profitability is an indicator of the performance of commercial banks. Stable and profitable banking operations have the ability to withstand negative shocks from economic conditions and contributing to the stability of the banking system and achieving banking sustainability, and then contributing to the stability of the financial system and judging its efficiency and effectiveness in its use of its resources as an important indicator for all depositors, creditors and shareholders. There are also many forms of standard models that can be used in measuring and analyzing the factors determining profitability in commercial banks, and among the models are the modern standard that can be used in this field is panel data regression models, which have recently gained great interest, especially in economic and financial studies, because they take into account the effect of time change and the effect of the difference between the economic units in the research sample. The study was divided into four sections, the first of which included the scientific methodology, while the second section dealt with the determinants of banking profitability and sustainability, while the third section included the practical aspect, while the last section included conclusions and recommendations.

THE INTERNAL AND EXTERNAL DETERMINANTS OF BANKING PROFITABILITY AND SUSTAINABILITY

Internal Determinants

Achieving their goals related to maximizing their profitability, commercial banks face many factors whose impact on profitability varies. The determinants of profitability include the bank's own characteristics, as the internal determinants refer to the factors that emerged from banking operations related to the balance sheet and the profit and loss account (Raza et al., 2021). The internal determinants of the bank's profitability can be defined as those factors that are affected by the bank's management decisions and objective (Ramadan et al., 2011: 181). Therefore, local banks must adopt international banking standards regarding determining the size of credit, the size of deposits, classification of assets, and capital adequacy. The most important indicators of internal determinants are as follows (Sarwar, 2018).

Deposit growth

Deposits are the main source of funds for commercial banks. In general, it depends on it in a way it is the largest in financing its investments, and it is also one of the lowest funding sources cost, and may be defined as law. The Iraqi banker said the deposit was a cash amount paid to a person, whether he was registered in the account. The record is for the person who received it. The amount is subject to payment. The deposit or transferring it to another account with interest or a premium or without interest or a premium upon request or at a time and conditions agreed upon by the depositor and the bank (Banking Law Al-Iraqiya, 2004). An increase in the volume of deposits leads to an increase in the ability of commercial banks to grant financing, and thus an increase in their profitability rates. When using the effect of deposits on the profitability of commercial banks, some studies have concluded that the volume of deposits in general has a positive impact on the rates of deposits. The profitability of commercial banks, as some studies differentiated between the effect of the increase in the size of deposits in general, and the increase in the size of specific types of deposits. Accordingly, it was found that the increase in the size of deposits in general could negatively affect the profitability of commercial banks. The positive effect is specific to investment deposits (Suppia & Arshad, 2019). The growth rate of deposits can be measured through the following equation:

$$Deposit\ growth\ rate = \frac{Deposits\ for\ the\ current\ year - Deposits\ of\ the\ previous\ year}{Deposits\ of\ the\ previous\ year} \quad (1)$$

Loan growth

The process of granting loans and credit facilities, or what is known as (cash credit), is one of the most important aspects of using commercial banks' funds resources and the largest percentage in their total profitable assets. The revenue generated from them represents the main source of revenues for any bank, no matter how diverse and numerous the sources of revenues from other banking operations are. Loans contribute to the profitability of banks. However, an increase in loans can lead to increased costs of funds, leading to a negative correlation between profitability and loans. Moreover, lending activities in banks are sensitive to economic conditions and during periods of slowdown (Hasan et al., 2021). It is expected that a number of borrowers will default on loans, which will affect the profitability of banks and thus the ability to bank sustainability (Al-Harbi, 2019). Loans to total assets are an indicator to measure the bank's performance and profitability. This ratio is also used as a measure of both the bank's credit risk and lending allocation. As for credit risk, a bank with a higher lending ratio is less prepared for unexpected liquidity emergencies. Therefore, the higher the ratio, the greater the bank's exposure to credit risk, relative to a provision of loans. There is a positive relationship between the loan ratio and the bank's profitability, as a higher ratio tends to mean that the bank has more information to determine how to distribute its loans, and specialization in lending reduces bank research costs and mediation costs, and thus improves the bank's profitability (Zhang, 2011). It is calculated according to the following equation:

$$Credit\ growth\ rate = \frac{Credit\ for\ the\ current\ year - Credit\ for\ the\ previous\ year}{Credit\ for\ the\ previous\ year} \qquad (2)$$

External Determinants

There are many external determinants, the most important of which are the gross domestic product rate, the annual inflation rate, the annual interest rate, and the exchange rate, and they are part of the economic indicators that can control banking activities related to banking sustainability. External determinants are not directly related to bank management activities, but are the product of the social, economic, and legal environment that affects the operation and performance of the banking industry (Al Jafari-Alcham, 2014). The variables that can be linked to the banking sector are called specific industrial variables. In this study, we can focus on the most prominent economic determinants that can be measured and know the extent of their relationship and impact on banking sustainability, which are the gross domestic product rate and the annual inflation rate (Hasanov et al., 2018).

Inflation rate

It is one of the macroeconomic variables that reflects the level of business risks faced by the banking industry, as moderate inflation stimulates the banking industry and economic development and thus increases and maximizes the profitability of banks (Bui & Doana, 2020). It has a direct impact on profitability in terms of labor efficiency and indirect effect in terms of volatility asset prices and interest rates (Kosmidou, 2008).

Jamel and Mansour (2018) believe that an increase in the inflation rate leads to an increase in interest rates on loans and thus improve the profitability of banks, although in the event of an increase in interest rates on loans, the risk of delaying payment doubles, because the increase in inflation rates affects the individuals' budget. And companies, which negatively affects liquidity and reduces the ability to settle debt obligations, and thus inflation will have a negative relationship with the level of banks' profitability Its impact on the performance of banks depends on whether inflation occurs Inflation rates are expected If the inflation rate is appropriately predicted by the monetary and regulatory authorities of banks, the banking sector's revenues can grow faster than operating costs, thus obtaining greater profits (Flayyih & Hasan, 2023),

$$as\ inflation = annual\ consumer\ prices \qquad (3)$$

Gross Domestic Product

Gross domestic product is one of the most important economic indicators that express economic activity in the economy and its development path (Constantin & Gabriela, 2017). Gross domestic product represents a unified measure among countries, as decision makers rely on it to determine whether there is a need to take action. To reduce inflation, or to achieve economic stability or growth, GDP is the most widely used indicator of economic performance, which refers to the total market value of final products and services created by the population of a country within a certain period of time (usually one year). The balance is the total value of the social product after deducting the value of the intermediate product, that is, the final production for the period and the total value of wealth. The main functions of GDP are to measure the size of economic power and the level of poverty in the country, to analyze the size of the economy and its potential growth in a country (Ngepah et al., 2022). The researcher in this study relied on fixed figures for the GDP according to the annual reports published by the Central Bank of Iraq Central Statistical Organization, for the period (2005-2021).

$$GDP = \text{annual growth rate of the GDP} \qquad (4)$$

Banking Sustainability

Banking sustainability concept

Looking back, the banking industry has been known to be slow-moving with clear hierarchical structures, low levels of transparency, as well as being bad at adapting to external changes. However, there are significant societal changes currently working to change the way the world works, and even at the same time as the banking industry is known to be slow-moving and hesitant, it is logical to believe that changes will occur in this industry as well, with several factors pointing to this trend such as innovation in the banking industry and in particular innovation with sustainability incentives (Hasan, 2022).

This change is linked to new regulations and legislation. For example, legislation stops the bank's monopoly to some extent on individual financial data, providing opportunities for new players to compete in the industry and likely to challenge the status quo (Nikolausson & Edin, 2012). The pertinent question to ask is how new regulations will affect the shape of the banking industry. Could new regulations open the way for new, more transparent and innovative companies, force banks to be more innovative to compete, or will banks use their financial advantage to focus on profits rather than innovations. Since the industry plays an important role in society as a whole, as well as the business world, it is expected that the industry will not continue to prioritize shareholder wealth but will have to respond to social pressures. Banking sustainability is defined as how to design, build and implement banking work related to banking culture, and it seeks innovation and excellence in the field of business and operation, as well as its role in social responsibility and customer focus (Stankeviciene, 2014). It is also defined as the desire to volunteer for stakeholders in positive social, environmental and economic actions.

It has been shown through studies that sustainable innovation focuses on internal operations, as it is more involved in the daily operations of the bank by redesigning Internal regulations and original business incentives where Banks' participation in sustainable innovation is limited to the factors within the bank that influence decision-making, while excluding external pressures related to regulations, legislation, and pressures from various external parties (Rinkus, 2015).

Banking sustainability challenges

There are many problems and challenges that hinder progress towards sustainability and sustainable development. The challenges are often linked to a number of criteria represented in the need for global coordination, connection to decision-makers and influence. Overcoming these primary challenges is linked to expectations of future environmental conditions and their

consequences for people. There are several challenges to sustainability (Jain & Sharma, 2023; Sartori et al., 2014):

a. Lack of technological infrastructure: The banking environment in Iraq suffers from a lack of modern technological infrastructure, such as fast internet networks and electrical stability. To meet this challenge, the government and banking sector must invest in developing technological infrastructure to ensure the availability of fast and reliable communications.

b. Security and privacy challenges: Security and privacy are one of the main challenges for financial technology adoption in Iraq. Banks and financial institutions must take stringent measures to protect customer data and address cyber threats.

c. Financial Awareness and Education: There is a need to enhance financial awareness and education among the public about the benefits and uses of financial technology. This can be done through awareness campaigns and training programs targeting customers and banking staff.

d. Limited legislation and regulations: The Iraqi banking environment lacks a regulatory framework and laws that fully support the application of financial technology. The government and financial institutions must work together to develop appropriate legislation and policies to enable the safe and effective use of financial technology.

Banking sustainability indicators

Studies varied in the use of indicators, some of which used accounting-based indicators such as return on assets (ROA) and return on equity (ROE), and others used market-based indicators such as return per share (EPS) and return on investment (ROI). Some researchers have indicated that accounting-based indicators are less complex because they indicate what is actually happening in the bank, and they are the best in terms of prediction. Banking sustainability compared to market-based indicators, and that studies that used financial indicators to measure the economic dimension are more commonly used in the long term (Moftv, 2017). The economic measure of the bank can be known through the economic value as well as the financial benefits that the bank provides to society and institutions (Rittner & Wirkus, 2016). Accordingly, banking sustainability requires from an economic perspective that the current economic activity does not bear an inappropriate burden with the capabilities of generations. In the future, since banking sustainability is exclusively concerned with environmental assets as part of natural and industrial capital, it must also include an analysis to reduce to a minimum social costs to meet the standards for protecting environmental assets. Based on the above, we will adopt the following indicators to measure banking sustainability (Witjaksana, 2019).

Market Value Added Index: The added market value is an investment tool that represents the difference between the company's market value and its book value. If the company's market value is greater than the value of the invested capital, this means that the company creates value for shareholders and vice versa, and it is calculated as in the following equation (Thenmozhi, 2000):

$$Added\ market\ value = \text{Market value} - \text{Book value} \qquad (5)$$

Return on share: It is the amount or percentage of profits achieved from the investment or the equivalent of each investment made by the investor. It expresses the ability of assets to achieve income expressed as a return percentage, and this "ratio reveals the company's profitability in its operating and non-operating operations, or it is the profit or loss resulting from the investment." During a specific period of time, it is calculated from the following equation (Morelli, 2011):

$$Earnings\ per\ share = \frac{Net\ profit\ after\ tax}{Number\ of\ Shares} \qquad (6)$$

RESEARCH METHODOLOGY

Research Problem

During the study period, the Iraqi economy was exposed to multiple economic shocks represented by the state's general budget deficit resulting from the decline in oil prices, as well as the military operations against ISIS, and the resulting repercussions that were reflected in the results of the work of all economic sectors, especially the Iraqi banking sector. Accordingly, from the above, the problem of the study can be formulated with the following questions:

A. What is the relationship between banking sustainability and the internal determinants of commercial banks' profitability represented by (the volume of deposits and the volume of loans)?

B. What is the relationship between banking sustainability and the external determinants of banks' profitability represented by (lending interest rates and inflation)?

Research Hypothesis

Considering the research problem, the following hypotheses can be formulated:

A. The existence of a direct or inverse significant correlation with statistical significance between internal and external determinants and banking sustainability in Iraqi commercial banks.

B. Banking sustainability is determined by a set of internal and external determinants of the profitability of commercial banks, represented by the size of deposits, loans, interest rates, and inflation.

Research Objectives

This study seeks to achieve a number of objectives Researching the reasons for low and high profits Iraqi commercial banks, as well as identifying the determinants of these profits and the reasons for the differences in their percentages between the same banks and identifying possible treatments to limit those reasons in a way that ensures their increase and achieves banking sustainability.

Methodology Search

To achieve the research objectives and test the hypotheses, the research was based on the combination of:

A. Descriptive analytical approach within the framework of economic theories.

B. It is a quantitative standard for measuring and analyzing The internal and external determinants of the profitability of Iraqi commercial banks and their impact on banking sustainability for the period from (2005-2021) using the statistical program (E views V9) and applying panel data analysis according to the three models (aggregate regression model, fixed effects model, random effects model).

Society and Research Sample

The research population was represented by Iraqi banks listed on the Iraq Stock Exchange, while the research sample included (8) banks for the period from (2005-2021).

RESULTS AND DISCUSSION

Analyzing the Financial Statements for Indicators of Internal Determinants

Internal determinants are among the most important factors affecting the profitability and sustainability of commercial banks. They are called internal because the bank's management is the one that controls them and develops appropriate solutions when any defect occurs that

would affect the bank and thus sustainability. We will discuss the most important of these variables as follows:

Analysis of the growth rate of deposits in Iraqi banks, the study sample

Deposit growth means the average increase in the bank's total deposits at the end of the fiscal year as shown in the balance sheets included in the banks' annual reports that is, the annual growth rate for the fiscal year as of December 31, which is another measure of loan growth. This ratio was found by dividing an amount for each current year subtracted from the previous year by the previous year, and when following the deposit growth rate, the results of its application are in Table (1), where we notice a difference in the averages at the level of one bank and for each sample of banks, and this difference and fluctuation is one of the indicators of the imbalance that led to fluctuation in the level of deposit growth as a result of instability The economic conditions of the country.

Table 1: Analysis of the growth rate of deposits in Iraqi banks, study sample

Year	Baghdad	Commercial The Iraqi	The Middle East	Investment	Al-Ahly Iraqi	Credit	Sumer Commercial	Commercial gulf	Average
2005	-	-	-	-	-	-	-	-	-
2006	-0.94%	-9.86%	-15.93%	39.37%	-52.19%	72.70%	174.45%	148.93%	44.57%
2007	2.29%	23.74%	48.87%	-35.83%	45.41%	-17.64%	1.60%	98.08%	20.81%
2008	60.37%	-1.74%	24.53%	31.47%	83.16%	-16.79%	19.53%	54.45%	31.87%
2009	68.69%	-1.94%	7.47%	20.55%	8.10%	5.21%	40.03%	27.13%	21.91%
2010	21.46%	-5.98%	3.10%	13.67%	31.24%	101.61%	63.80%	4.12%	29.13%
2011	-12.56%	4.86%	6.01%	30.28%	47.46%	-41.11%	-1.41%	12.48%	5.75%
2012	43.63%	31.19%	25.25%	8.42%	95.47%	30.31%	103.60%	21.55%	44.93%
2013	25.98%	-13.72%	-11.85%	51.99%	93.34%	12.92%	14.17%	62.31%	29.39%
2014	9.14%	29.13%	-35.11%	-10.23%	-12.91%	-16.48%	2.02%	10.71%	-2.97%
2015	-37.11%	-25.88%	-7.07%	4.99%	-27.76%	-48.10%	12.62%	-10.57%	-17.36%
2016	-6.69%	31.85%	-20.39%	0.84%	-14.08%	12.85%	-21.35%	14.45%	-0.32%
2017	-12.19%	14.42%	28.86%	-3.15%	23.88%	-19.58%	32.67%	-37.78%	3.39%
2018	13.43%	-0.12%	32.25%	-3.02%	2.74%	12.62%	-10.05%	-12.37%	4.44%
2019	2.11%	8.97%	-36.85%	-11.58%	32.01%	28.33%	-22.36%	-13.46%	-1.60%
2020	33.65%	86.03%	-1.80%	27.52%	66.96%	4.39%	-12.92%	-10.32%	24.19%
2021	7.84%	-41.46%	4.74%	-8.55%	173.77%	-26.85%	-11.80%	13.39%	13.88%
Average	13.70%	8.09%	3.26%	9.80%	37.29%	5.90%	24.04%	23.94%	15.75%
MAX	68.69%	86.03%	48.87%	51.99%	173.77%	101.61%	174.45%	148.93%	44.93%
MIN	-37.11%	-41.46%	-36.85%	-35.83%	-52.19%	-48.10%	-22.36%	-37.78%	-17.36%

Prepared by the researcher based on the reports of the Securities Commission for the period (2005-2021).

We note from Table (1) that there is a discrepancy in the growth of bank deposits for the commercial banks in the study sample, as the highest growth of deposits was for the Sumer Commercial Bank in 2006, when it reached (174.45%). The reason for the high volume of deposits is due to the high customer confidence in the bank as well as the management success. which helps the bank attract the largest possible amount of deposits, and the increase in their volume reflects the increase in the volume of liquidity it has and is considered a good indicator for the bank, as it protects the bank from the possibility of it being exposed to liquidity risks on the one hand, and on the other hand, the increase in deposits with commercial banks is a negative indicator, Instead of investing their money in projects, individuals prefer to invest it in banks, which will negatively affect local investments. The lowest deposit growth rate was for the National Bank of Iraq in 2006, when it reached (52.19%). This decline came due to the decline in the deposit attraction policy of the National Bank of Iraq in that year, while the highest arithmetic mean for the deposit growth rate was for the National Bank of Iraq, which

reached (37.29%), and the lowest percentage was for the Middle East Bank, which reached (3.26%).

In terms of the industrial standard, the highest accounting average was in 2006, reaching 44.57%. This indicates the policy followed by the banks in attracting more deposits in that year, while the lowest accounting average was in 2015, reaching (17.36%), which is an indication of The weak ability of banks to attract deposits due to the political and security conditions that the country is going through, which led to a decrease in deposits.

Loan growth rate for Iraqi banks, the study sample

The process of granting loans in commercial banks the second basic function after the function of accepting deposits, as loans are considered the basic resource on which the bank depends to obtain its revenues . As well as being It represents the largest part of its uses, so commercial banks pay attention to loans In particular , the loans granted by commercial banks increase the cash in circulation and their participation in economic activity. Table (2) shows the average loans granted to Iraqi commercial banks for the period from (2005-2021).

Table 2: Analysis of the loan growth rate for Iraqi banks, sample of the study

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

Prepared by the researcher based on the reports of the Securities Commission for the period (2005-2021).

The table reveals varying loan growth rates among the commercial banks studied. Credit Bank witnessed the highest surge in 2015, skyrocketing to 440.72% due to a significant increase in lending that year. Conversely, Commercial Bank of Iraq experienced the lowest growth rate of -94.60% in 2010, likely attributed to the country's unstable conditions, prompting a conservative lending approach.

National Bank of Iraq boasted the highest average loan growth rate at 52.69%, while Bank of Baghdad trailed behind at 10.06%. Interestingly, the industry standard hit its lowest annual average of -19.93% in 2016. This dip could be explained by numerous factors, such as heightened lending risk, inadequate collateral, exorbitant collateral valuations, and the lack of

institutions to thoroughly vet loan applicants, fearing the loans may turn non-performing and become irrecoverable.

Notably, all banks except Commercial Bank of Iraq witnessed a decline in loan volumes during this period. However, 2009 witnessed the highest average at 134.10%, primarily driven by increased lending activities among the studied commercial banks, barring Commercial Bank. This spike can be attributed to the reduction in overall loan volumes in 2009 coupled with higher interest rates on loans compared to deposit rates.

Analysis of financial statements for indicators of external determinants

Table 3: Indicators of external determinants of the banks in the study sample

Year	Inflation	Local production
2005	36.96	73,533,598.60
2006	53.2	95,587,954.80
2007	0.5	111,455,813.40
2008	2.7	157,026,061.60
2009	2.8-	130,643,200.40
2010	2.4	162,064,565.50
2011	5.6	217,327,107.40
2012	6.1	254,225,490.70
2013	1.9	273,587,529.20
2014	2.2	266,332,655.10
2015	1.4	194,680,971.80
2016	0.5	196,924,141.70
2017	0.2	221,665,709.50
2018	0.4	268,918,874.00
2019	-0.2	276,157,867.60
2020	0.6	215,661,516.50
2021	6	301,152,818.80
Average	7.52875	200,996,816.27
MAX	53.2	301,152,818.80
MIN	-0.2	73,533,598.60

Prepared by the researcher based on the reports of the Securities Commission for the period (2005-2021).

We notice from Table (3), which represents the realistic analysis of the published financial data of the inflation index ratios, that there is a clear difference between the ratios, represented by the annual inflation rate of the Iraqi economy and according to the time series extending from 2005 - 2021, and it appears from the table above that the lowest rate of the inflation index for the industry standard is in In the year 2019, it reached (-0.2), and the ratio took a fluctuating path of decline and increase from the year 2008 - 2021 and a noticeable decrease in the year 2019, and all of them were lower than the general average for the sector, This indicates a decrease in the ratio and has positive signs which was (7.5287).

The economic sector has begun to recover from the financial crisis, so striving to maintain a low level of inflation rate due to its direct impact on the profitability of the banking sector as it is the most important part of banking activity, as high inflation rates cause a decrease in the value of the returns that investors obtain from their financial investments, as inflation indicates... There is a major economic imbalance in the country, as the lower the inflation rate is less than one, the better by improving the living situation of individuals, moving the wheel of the economy, and increasing banking opportunities include granting various loans at all

terms and attracting deposits of all types. As for the highest rate of inflation index in 2006, it reached (53.2) was higher than the general average for the sector, which is (7.52875). This means that the higher this percentage negatively affects the ability of the economic sector to control the excessive rise in the general level of prices, which is represented by the rise in the prices of consumer goods and services in the market. The Iraqi economy is on an increasing path with the decline in the purchasing power of the national currency and the increasing incidence of instability in exchange rates, which leads to a decline in the real incomes of individuals with the rise in wages and interest rates received from bank loans, which contributes to the inability of borrowers to repay their loans on time. It will be due along with the interest resulting from it, and this is a negative indicator of banking sustainability. Table (3) also shows that the lowest percentage of the gross domestic product index was in 2005, when it reached by (73,533,598.60). The ratio took a fluctuating path of decrease and increase from the year (2005-2010), which was less than the general average of the economic sector, which amounts to (200,996,816.27). This indicates that the economic sector is unstable and suffers from financial turmoil and recession. Economically, the highest percentage of the gross domestic product index was recorded in 2021, when it reached (301,152,818.80), which is higher than the general average. This is clear evidence that the higher this percentage, the more it has a positive impact on banking sustainability and the economy as a whole

Financial Analysis of Banking Sustainability Indicators
Market value added index
The data in Table (4) showed that the Bank of Baghdad achieved the highest percentage of the added market value index in the year 2005, which amounted to (283,107,031,796) thousand, and its lowest value was in the year 2019, which amounted to (198,641,424,000). The reason for this is due to the decline in the market value of the share compared to the increase in the book value of the right. Ownership, the average annual value reached (19,209,347,816) thousand. As for the bank commercial register the highest percentage was in 2005 and amounted to (-137,338,581,000) thousand, while the lowest percentage was for the year 2020 and amounted to (-197,754,629,000) thousand, while the annual average was (-62,672,425,766). The Iraqi Middle East Investment Bank achieved the highest percentage in 2009, amounting to (67,452,785,285) thousand. This is because the market value of the shares was greater than the book value of the ownership right, while the market value of the shares was smaller than the book value of the property right to achieve the lowest added market value in 2013, as it amounted to (355,779,595,209) thousand, and the annual average reached (-84,979,229,305) thousand. The data showed that the Investment Bank achieved the highest value in 2005, reaching (66,813,135,211) thousand, and the lowest value. In 2008, it amounted to (-431,075,068,000) thousand, which indicates a decline in the share price while the book value of the share remained constant, as a result of the bank maintaining high liquidity, which led to a decrease in the market value below the book value, with an annual average of (-89,272,830,807). As we see in Table (4), the National Bank recorded the highest percentage in the year 2005, which amounted to (71,645,983,156) thousand, which indicates that the bank was achieving profits, while the lowest percentage was in the year 2018, which reached (-172,849,745,000) thousand as a result of the decline in the bank's share price while the book value of the share remained almost constant. Due to the surplus cash liquidity, the average amounted to (-55,429,443,537). The highest percentage for the Credit Bank of Iraq was (437,777,847,178) thousand in the year 2005, while the lowest percentage was recorded in 2018, amounting to (-213,498,305,000) due to the increase in cash liquidity, which in turn affects the bank's profitability and thus the market value decreased compared to the book value, with an average of (32,514,901,290). As for Sumer Commercial Bank, it achieved the highest value in the year 2005, which amounted to (16,684,564,868), while the lowest value was in

2021, which amounted to (-220,882,600,000) thousand, due to the increase in cash liquidity, which in turn affects profitability. The bank's market value consequently decreased compared to its book value, and the annual average reached (-45,346,507,023). Table (4) showed that Khaleej Commercial Bank achieved the highest value in the year 2005, amounting to (58,436,080,497) thousand, and the lowest value was in the year 2020, amounting to (-265,172,111,451) due to the high cash liquidity that affects the bank's profitability and thus the decrease in the market value compared to the book value. In general, banks were not successful in supplementing shareholders' wealth for reasons related to market activity as well as the activity of the banks themselves.

Table 4: Soviet value added index for commercial banks, the study sample

Year	Baghdad	Iraqi commercial	The Middle East	Investment	Al-Ahly Iraqi	Credit	Sumer Commercial	Commercial gulf	Average
2005	283,107,031,796	137,338,581,000	59,640,488,456	66,813,135,211	71,645,983,156	437,777,847,178	16,684,564,868	58,436,080,497	283,107,031,796
2006	46,457,258,932	14,223,430,773	12,817,189,258	7,490,346,000	-111,121,841	228,790,620,416	1,744,322,601	4,570,411,629	46,457,258,932
2007	88,110,093,014	15,695,992,737	27,050,976,293	-275,358,000	-1,695,512,000	102,124,244,413	-7,970,938,912	5,084,339,000	88,110,093,014
2008	60,658,062,002	1,946,911,879	26,459,874,344	-431,075,068,000	-8,580,598,000	106,430,136,325	-27,139,253,897	-4,800,279,006	60,658,062,002
2009	99,080,428,000	2,849,354,936	67,452,785,285	18,117,557,000	-8,271,970,000	177,087,363,613	-14,248,650,910	30,799,042,895	99,080,428,000
2010	60,212,085,000	-11,138,893,067	-11,498,352,240	-25,959,196,000	-12,413,474,000	109,906,540,000	-19,047,952,183	-12,257,282,453	60,212,085,000
2011	253,272,160,000	-8,184,629,395	54,100,620,849	-22,107,674,000	-20,416,986,000	208,034,513,000	-23,999,841,000	-60,624,056,284	253,272,160,000
2012	-4,032,848,000	-16,200,259,288	31,253,807,672	-17,557,667,000	-70,660,445,000	59,452,517,000	-40,414,512,000	-35,782,009,846	-4,032,848,000
2013	69,237,586,000	-58,579,178,046	-355,779,595,209	-36,006,658,000	-43,839,898,837	164,420,633,000	-9,182,702,000	-16,484,100,291	69,237,586,000
2014	95,080,802,000	119,385,241,180	-157,074,411,660	-33,749,256,000	-38,386,979,914	-27,671,143,000	-10,507,823,000	-75,974,012,631	95,080,802,000
2015	24,011,627,000	-171,701,298,497	-149,467,572,232	-111,262,187,000	-122,896,326,552	-154,309,851,000	-26,210,198,000	-168,625,505,884	24,011,627,000
2016	-55,321,705,000	-161,941,053,000	-164,593,538,000	-139,792,736,000	-163,971,224,000	-119,315,200,000	-42,139,192,000	-182,733,784,273	-55,321,705,000
2017	-124,442,042,000	-169,058,698,000	-173,651,000,000	-178,082,676,000	-168,219,322,000	-145,456,738,000	-42,513,283,000	-203,887,340,766	-124,442,042,000
2018	-194,242,720,000	-166,458,246,000	-234,967,533,000	-213,101,619,368	-172,849,745,000	-213,498,305,000	-220,882,600,000	-257,472,925,906	-194,242,720,000
2019	-198,641,424,000	-156,929,254,000	-242,290,296,000	-193,126,478,492	-104,141,507,000	-189,626,650,000	-141,967,762,000	-264,709,058,201	-198,641,424,000
2020	-175,935,852,000	-197,754,629,000	-233,891,189,000	-207,774,449,718	-77,483,051,000	-191,199,445,000	-162,925,705,000	-265,172,111,451	-175,935,852,000
2021	-51,629,878	-154,129,878	-209,153,000	-188,138,358	-8,362,149	-193,761,016	-169,092,957	-209,325,776	-51,629,878
Average	19,209,347,816	-62,672,425,766	-84,979,229,305	-89,272,830,807	-55,429,443,537	32,514,901,290	-45,346,507,023	-85,284,818,750	19,209,347,816
MAX	283,107,031,796	137,338,581,000	67,452,785,285	66,813,135,211	71,645,983,156	437,777,847,178	16,684,564,868	58,436,080,497	283,107,031,796
MIN	-198,641,424,000	-197,754,629,000	-355,779,595,209	-431,075,068,000	-172,849,745,000	-213,498,305,000	-220,882,600,000	-265,172,111,451	-198,641,424,000

Prepared by the researcher based on the reports of the Securities Commission for the period (2005-2021).

Return on share ratio index for commercial banks in the study sample

Earnings per share is one of the most important elements in evaluating the financial position of the bank, as it shows us the share per share One of the net profit after interest and tax, and the return is compared with the standard rate, which is (0.380) dinars annually.

When examining Table (5), we notice that the sample banks achieved an average return for the period amounting to (0.140) dinars. It is less than the standard ratio, and the reason is due to weak stock market activity, as well as news information about the activity of listed companies, and their clear impact on the instability of economic conditions. We note that the

highest ratio recorded by the Investment Bank, which amounted to (3.6903), but it recorded the lowest ratio in 2019, which amounted to (0.0001). While the second highest return ratio was recorded by Gulf Commercial Bank in 2021, which reached (2.0151), while its lowest return ratio in 2020 was (0.000), and the Middle East Bank came in third place, as its ratio was (0.6957) in 2005 and the lowest percentage in 2021 reached (0.00116).

Table 5: Return on share ratio index for commercial banks in the study sample

Year	Baghdad	Iraqi commercial	The Middle East	Investment	Al-Ahly Iraqi	Credit	Sumer Commercial	Commercial gulf	Average
2005	0.0347	0.0246	0.6957	0.1992	0.0632	0.2207	0.0566	0.1265	0.1776
2006	0.1587	0.0179	0.1909	0.0008	0.0297	0.4863	0.0508	0.1093	0.1305
2007	0.3729	0.0253	0.4662	0.2726	0.0634	0.3833	0.0671	0.2135	0.2330
2008	0.3060	0.0292	0.3322	0.2155	0.1254	0.2456	0.0192	0.6045	0.2347
2009	0.1859	0.0639	0.2129	0.0912	0.0117	0.0893	0.0879	0.1595	0.1128
2010	0.1367	0.2211	0.1307	0.1187	0.0228	0.0818	0.0070	0.1083	0.1034
2011	0.1856	0.0718	0.1845	0.0992	0.0250	0.1573	0.0025	0.1119	0.1047
2012	0.1434	0.1322	0.1619	0.0138	0.1542	0.2295	0.0092	0.2968	0.1426
2013	0.1283	0.0592	0.1392	0.1729	0.0913	0.0769	0.0071	0.1898	0.1081
2014	0.1111	0.0369	0.0144	0.1155	0.0282	0.0538	0.0079	0.1205	0.0610
2015	0.0229	0.0290	0.0217	0.0700	0.0092	0.0466	0.0144	0.0329	0.0308
2016	0.0810	0.0303	0.0518	0.0407	0.0940	0.0199	0.0150	0.0196	0.0440
2017	0.0245	0.0402	0.0194	0.0160	0.0119	0.0268	0.0016	0.0141	0.0193
2018	0.0166	0.0435	0.0135	0.0014	0.0317	0.0224	0.0036	0.0020	0.0168
2019	0.0292	0.0261	0.0114	0.0001	0.0367	0.0205	0.0040	0.0131	0.0176
2020	0.0808	0.1418	0.0048	0.0187	0.0796	0.0137	0.0043	0.0000	0.0430
2021	0.1199	0.05204	0.00116	3.6903	0.1045	0.0198	0.467	2.0151	0.8087
Average	0.1258	0.0615	0.1560	0.3021	0.0578	0.1291	0.0485	0.2434	0.1405
MAX	0.3729	0.2211	0.6957	3.6903	0.1542	0.4863	0.4670	2.0151	3.6903
MIN	0.0166	0.0179	0.00116	0.0001	0.0092	0.0137	0.0016	0.0000	0.0000

Prepared by the researcher based on the reports of the Securities Commission for the period (2005-2021).

Statistical Analysis and Hypothesis Testing

The current research employs panel data analysis, which examines multiple observations or phenomena across different time periods. These are referred to as cross-sectional units, providing an expanded sample size and increased degrees of freedom. This approach helps reduce correlation among explanatory variables, thus improving the efficiency of statistical estimates.

The study period spans 17 years (2005-2021), with the sample comprising banks listed on the Iraqi Stock Exchange: Bank of Baghdad, Commercial Bank of Iraq, Middle East Bank, Investment Bank, National Bank of Iraq, Credit Bank, Sumer Commercial Bank, and Gulf Commercial Bank. Statistical analysis using EViews 12 software is conducted to build and estimate economic models, analyzing the relationship between independent variables (determinants of commercial bank profitability) and the dependent variable (banking sustainability).The main hypothesis states: "There is no significant effect of the determinants of commercial banks' profitability on banking sustainability." Two sub-hypotheses stem from this overarching hypothesis: The key aspects involve utilizing panel data spanning nearly two decades, focusing on Iraqi banks' profitability determinants and their impact on banking sustainability through rigorous statistical modeling and hypothesis testing.

The first sub-hypothesis: There is no significant effect of the determinants of commercial banks' profitability on the market value added.

Table 6 reveals the impact of bank profitability determinants on market value added (Y1) across 8 banks over the period 2005-2021, with a total of 128 observations using the Panel Regression model. To explore this relationship, three distinct statistical models were employed: Pooled Regression Model, Fixed Effects Model, and Random Effects Model. We will now compare these methods to identify the most appropriate approach, aiding in the validation of the second sub-hypothesis. The F-test will be utilized to facilitate this model comparison. Allow me to elaborate on each model: The key aspects involve leveraging panel data spanning over 15 years to quantify how factors influencing bank profitability affect the market value added metric. To ensure robustness, multiple panel regression techniques are being evaluated through statistical testing to determine the optimal modeling strategy for substantiating the research hypothesis.-

Pooled Regression Model

The estimated model proved statistically significant, as evidenced by the F-test probability value of 9.736014 at a 0.000001 significance level, well below the 10% threshold. Several determinants of bank profitability displayed significant effects based on their probability values at the 10% level. However, inflation proved insignificant with probability values of 0.4601 and 0.7185, exceeding the 10% significance level.

The coefficient of determination (R-squared) stood at 0.240478, indicating that the model accounts for 24.04% of the variation in market value added, based on the aggregated OLS regression model. The remaining variation is attributable to other factors not incorporated within this regression specification.

In essence, the model demonstrated overall statistical robustness, with most profitability determinants exhibiting significant impacts, barring inflation. Nevertheless, the model's explanatory power was modest, leaving room for additional factors to further explain fluctuations in the market value added metric.

Fixed Effects Model

An examination of Table 6 reveals that the estimated model proved statistically significant, as indicated by the F-test probability value of 6.109342 at a 0.00000 significance level, well below the conventional 10% threshold. Moreover, several determinants of bank profitability exhibited significant effects based on their probability values at the 10% significance level.

Notably, inflation emerged as a significant factor influencing market value added, according to the fixed effects model (LSDV). However, the model's explanatory power was limited, with the remaining variation attributable to other factors not accounted for in the regression specification. In essence, while the overall model demonstrated statistical robustness, with most profitability determinants exhibiting notable impacts, its explanatory power was modest. This suggests that additional variables and modeling approaches may be necessary to comprehensively capture the dynamics influencing market value added in the context of bank profitability determinants.

Effects Model Random

It is clear from Table 6 below that the estimated model was significant according to the probability value of the F test (Prob F-statistic), amounting to (11.28443), which is at a significance level of (0.000000), that is, less than the significance level (10%). Also, the external determinants had their value. Significant at 10%, which are inflation Its Prob value is not significant, as the (Prob) value for the deposit growth rate and the loan growth rate reached (0.3326) (0.6145) respectively, which is higher than the significance level (10%). In addition, the value of the explanation coefficient (R-square) is (0.268457), meaning that the model explains 26.84% of its effect on market value added according to the random effects model (EGLS), and the rest of the percentage is explained by other factors not included in the regression model.

Table 6: The effect of banks' profitability determinants on market value added

Market value added indicators	Pooled Regression Model				Fixed Effects Model				*Random Effects Model*			
Indicators of market value added Y	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	*Prob*
Constant	2.18E+10	4.45E+10	0.490705	0.6245	2.09E+10	4.19E+10	0.499380	0.6185	2.11E+10	4.53E+10	0.466921	*0.6414*
X 1 deposit growth rate	1.90E+10	2.56E+10	0.741079	0.4601	2.57E+10	2.50E+10	1.030936	0.3047	2.41E+10	2.48E+10	0.972803	*0.3326*
Loan growth rate x2	5.43E+09	1.50E+10	0.361244	0.7185	7.81E+09	1.44E+10	0.543550	0.5878	7.23E+09	1.43E+10	0.504937	*0.6145*
Inflation X3	2.45E+09	2.45E+09	2.804194	0.0059	2.43E+09	8.23E+08	2.951680	0.0038	2.43E+09	8.23E+08	2.959256	*0.0037*
GDP x4	-469.0637	189.6327	-2.473539	0.0147	-470.6226	178.2998	-2.639501	0.0094	-470.2403	178.2977	-2.637388	*0.0094*
R-square	0.240478				0.366822				*0.268457*			
R-squared Adj.	0.215779				0.306779				*0.244667*			
F-statistic	9.736014				6.109342				*11.28443*			
Prob (F-statistic)	0.000001				0.000000				*0.000000*			

Source: Prepared by the researcher based on (E views V.12)

Despite the results achieved above, it is necessary to use selection methods between these models to indicate which is most appropriate for the variables and the research sample according to the Hausman test. It is clear that the Chi-Sq statistical value. Statistic was (0.00000) and is significant at the level of (10%) and with a degree of freedom (4), which depends on the number of determinants of commercial banks' profitability, meaning that the random effects model is the appropriate model when compared to fixed effects, and Table (7) shows this.

Table 7: Hausman test results

Test type	Test value	Prob.	df
Hausman test	0.000000	1.0000	4

Source: Prepared by the researcher based on (Eviews V.12)

Therefore, the appropriate model for regression of the three models according to this hypothesis is the random model due to the lack of significance of the Hausman test, which means rejecting the sub-hypothesis, meaning that there is an effect of the determinants of banks' profitability on the added market value.

The regression equation extracted from Table (6) under the Random Effects Model test is as follows:

$$Y = 2.11E+10 + 2.41E+10 X1 + 7.23E+09 X2 + 2.43E+09 X3 - 470.2403 X4$$

The regression equation shows that there is a direct effect of the deposit growth rate X1, the loan growth rate X2, and inflation X3, meaning there is an increase in the deposit growth rate X1, loan growth rate, X2, and inflation, X3. By one unit, the added market value increases by (7.23E+09, 2.41E+10, 2.11E+10) Respectively, while the effect of GDP x4 on market value added was negative when output increased GDP by one unit reduces the market value added by (470.2403).

The second sub-hypothesis: There is no significant effect of the determinants of commercial banks' profitability on earnings per share Y2.

When seeing Table (8), we notice the effect of the determinants of bank profitability on earnings per share Y2 for 8 banks for the period (2005-2021), as the number of views reached (128) views using the (Panel Regression) model. Panel data was used by applying three statistical models: :- (Pooled Regression Model), (Fixed Effects Model), and (Random Effects Model) Comparison between these methods will be done in order to rely on the best method, and to arrive at For this purpose, the F-test will be used to compare the models to prove the second sub-hypothesis. The models will be explained as follows:

Pooled Regression Model

An analysis of Table 8 reveals that the estimated model proved statistically significant, as evidenced by the F-test probability value of 2.541274 at a 0.043114 significance level, well below the 10% threshold. Among the profitability determinants examined, gross domestic product (GDP) emerged as a significant factor influencing earnings per share at the 10% level.

However, the model's explanatory power was relatively modest, with the coefficient of determination (R-squared) standing at 0.076335. This indicates that the model accounts for only 7.6% of the variation in the earnings per share ratio, based on the aggregated OLS regression specification. The remaining variation is attributable to other factors not incorporated within this particular regression model. In essence, while the overall model demonstrated statistical significance and GDP emerged as a key determinant of earnings per share, its explanatory power was limited. This suggests that additional variables and modeling techniques may be necessary to comprehensively capture the dynamics influencing earnings per share in the context of bank profitability determinants.

Fixed Effects Model

An examination of Table 8 reveals the estimated model's statistical significance, as indicated by the F-test probability value of 2.096477 at a 0.025725 significance level, well below the conventional 10% threshold. Among the determinants analyzed, deposit growth rate emerged as a significant internal factor, with a probability value of 0.0748. Notably, GDP also exhibited a notable influence on earnings per share at the 10% significance level, while the loan growth rate proved insignificant. Furthermore, the coefficient of determination (R-squared) stood at 0.165835, suggesting that the fixed effects model (LSDV) accounted for 16.58% of the variation in earnings per share. However, the remaining variation can be attributed to other factors not incorporated within this regression specification. In essence, the model demonstrated overall statistical robustness, with deposit growth rate and GDP emerging as key determinants of earnings per share. Nevertheless, its explanatory power was modest, indicating that additional variables and modeling techniques may be necessary to comprehensively capture the dynamics influencing this profitability metric within the context of the determinants examined.

Random Effects Model

Table 8 showcases the estimated model's statistical significance, evident from the F-test probability value of 2.647542 at a 0.036565 significance level, comfortably below the 10% threshold. Among the determinants explored, gross domestic product (GDP) stood out as the sole significant factor impacting earnings per share at the 10% level. However, it's important to note that the model's explanatory power was relatively modest. The coefficient of determination (R-squared) registered at 0.079274, indicating that the random effects model (EGLS) accounted for merely 7.92% of the variation in earnings per share. The remaining variance can be attributed to other factors not incorporated within this specific regression model. While the model demonstrated overall statistical robustness, with GDP emerging as a key driver of earnings per share, its modest explanatory power suggests that additional variables and modeling techniques may be necessary to comprehensively capture the intricate

dynamics influencing this crucial profitability metric within the context of the determinants under examination.

Table 8: The effect of banks' profitability determinants on earnings per share

Y2 earnings per share	Pooled Regression Model				Fixed Effects Model				Random Effects Model			
	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	Prob
Constant	1.200069	0.052093	23.03692	0.0000	1.197476	0.050988	23.48535	0.0000	1.199537	0.051340	23.36441	0.0000
X1 deposit growth	0.036107	0.030013	1.203053	0.2313	0.054682	0.030417	1.797765	0.0748	0.039918	0.029589	1.349082	0.1798
x2 loan growth rate	-0.012587	0.017585	-0.715781	0.4755	-0.005911	0.017511	-0.337577	0.7363	-0.011216	0.017273	-0.649336	0.5173
Inflation x3	-5.25E-05	0.001024	-0.051249	0.9592	-0.000120	0.001002	-0.119530	0.9051	-6.63E-05	0.001002	-0.066153	0.9474
GDP x 4 _	-4.83E-10	2.22E-10	-2.175631	0.0315	-4.87E-10	2.17E-10	-2.243258	0.0268	-4.84E-10	2.17E-10	-2.227381	0.0277
R-square	0.076335				0.165835				0.079274			
R-squared Adj.	0.046297				0.086733				0.049331			
F-statistic	2.541274				2.096477				2.647542			
Prob (F-statistic)	0.043114				0.025725				0.036565			

Sample: 2007 – 2021 Cross-sections included: 5 Total panel (balanced) observations:75

Source: Researcher counter based on (Eviews V.12)

Despite the results achieved above, it is necessary to use selection methods between these models to indicate which is most appropriate for the variables and the research sample according to the Hausman test. It is clear that the Chi-Sq statistical value. Statistic was (0.572487) and is not significant at the level of (10%) and with a degree of freedom (4), meaning that the random effects model is the appropriate model when compared to fixed effects, and Table (9) shows this.

Table 9: Hausman test results

df	Prob.	Test value	Test type
4	0.9661	0.572487	*Hausman test*

Source: Prepared by the researcher based on (Eviews V.12)

Based on the hypothesis evaluation, the random effects model emerges as the most appropriate regression approach among the three models examined. This is due to the lack of statistical significance observed in the Hausman test, leading to the rejection of the sub-hypothesis. Consequently, it can be concluded that the determinants of bank profitability exert an influence on earnings per share (Y2). The regression equation derived from Table 8, under the Random Effects Model test, is presented as follows:

In essence, the rigorous model evaluation process has identified the random effects model as the most suitable for capturing the relationship between bank profitability determinants and earnings per share. This regression equation quantifies the extent to which these determinants impact this crucial profitability metric, providing valuable insights for further analysis and decision-making.

$$Y = 1.199537 + 0.039918X1 - 0.011216X2 - 6.63E-05X3 - 4.84E-10X4$$

The regression equation indicates a direct effect of the deposit growth rate X1. In earnings per share, when the deposit growth rate increases by one unit, earnings per share increase by (0.039918). Also, the effect of loan growth rate x2 and inflation x3 and GDP X4 had an opposite effect on earnings per share, i.e. it increased the loan growth rate X2 Or inflation x3 or GDP x4 by one unit, the earnings per share decrease (0.011216, 6.63E-05, (4.84E-10) respectively.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

In this section, we review the most important conclusions while clarifying the most important indicators on which the study was based, after presenting the most important intellectual and scientific contributions of the researchers and based on the theoretical and applied aspects of the study, a number of conclusions were reached, which are as follows:

1) The study showed that internal and external determinants directly affect banking sustainability, which works to raise the efficiency of the Iraqi banks sampled in the study and reflects positively on their financial strength and support banking sustainability, thus influencing the movement of the economic wheel.

2) The results showed that the Iraqi banks sample of the study increased their interest in the determinants of internal and external profitability It contributes to its success and increases confidence factors For shareholders and those dealing with banks, which represents one of the most important main objectives of all banks and is necessary for their sustainability and survival in the competitive market, as it is considered a standard for evaluating their financial performance.

3) The financial results showed that the rates of the growth of deposits and loans has a positive impact on banking sustainability. This leads to increasing the confidence of depositors and enhancing the banks' reputation and financial position, as Sumer Bank achieved the highest ratio in 2006, followed by the National Bank of Iraq in 2021. As for loans, the Credit Bank achieved the highest ratio in 2015, followed by Sumer Bank, which led to an increase in banks' liquidity. Its ability to absorb losses without affecting bank deposits and at the same time contributed to the continuity of its profitability at acceptable rates.

4) Showed that the gross domestic product is affected by all economic and political conditions, whether they rise or fall, and this in turn is reflected in the average annual per capita income, and that its growth is linked to a strong positive relationship with the profitability of banks.

5) The statistical results of the study showed that external and internal determinants of profitability have a direct significant impact on banking sustainability, as inflation indicators and the growth of deposits and loans had a positive impact on the added market value, while the gross domestic product had a negative impact on the added market value, and the deposit growth index had an impact. Positive in earnings per share, while indicators of loan growth, inflation, and gross domestic product had a negative impact on earnings per share.

6) The results of the study showed that the banking sustainability of the Iraqi banks in the study sample resulted in a strong and cohesive banking system by providing a stable and appropriate environment for creating profitable financial investments, which in turn reflects positively on other sectors in the country.

Recommendations

In this section, we review the most important recommendations that can be used to address the weaknesses and deficiencies within the Iraqi banking system and work to support and strengthen the strengths within the banking sector to ensure the ability to confront financial shocks and thus maintain banking sustainability. A set of recommendations emerged for the study as follows:

1) The need for Iraqi banks to study the internal and external determinants of bank profitability that affect banking sustainability, especially after repeated financial crises and unstable economic conditions.

2) The need to support the Iraqi banking sector by highlighting indicators Sustainability Banking. The weak and unstable banking system creates a turbulent environment that creates a financial crisis that negatively affects the rest of the economic sectors.

3) The need for Iraqi banks to work on increasing the attraction of all types of bank deposits by enhancing the confidence of depositors and shareholders and retaining deposits for the longest possible period with banks by providing lucrative returns to them. The longer the retention period, the higher the banks' profitability through their investment.

4) The necessity of effective guidance by the Iraqi banks, sample of the study, to follow a conservative policy in granting loans to reduce potential losses resulting from the borrowers' inability to pay the financial dues they owe when the due date arrives, by studying the financial position of the borrower and collecting data about him in detail to avoid non-payment cases.

5) It is necessary for monetary policy to take into account interest and exchange rates when making decisions related to them, because the rise in the general level of prices as a result of high inflation rates reduces the real incomes of individuals, which leads to a decrease in the rate of domestic product during the year and a decrease in the standard of living with a decrease in average income.

6) Supporting the banking sector by responsible authorities as it is the most sensitive economic sector to developments. The rapid changes, whether competitive or technological, in the field of banking and financial transactions witnessed by the global financial markets, are the main influence in changing the economic wheel.

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