

The impact of banking liquidity on commercial Profitability- Bank of Baghdad: A Case Study for the period (2007-2023).

Researcher Ruqaya Hamz, AssIst. Prof. Dr. NasSr Hammood Maznan AlenzY Saleh Abdul Hussein

bus149.ruqaya.hamza@student.uobabylon.edu.iq

naseralezezy@yahoo.com

university of Babylon / college of Administration and Economics

ARTICLE INFO

Received: 18 Dec 2024

Revised: 10 Feb 2025

Accepted: 28 Feb 2025

ABSTRACT

The research aims to identify the role of banking liquidity in commercial profitability with the Bank of Baghdad as a case study and to ascertain the nature of the correlation between the variables under investigation, whether it is an inverse or a direct relationship. Accordingly, the liquidity indicators of the Bank of Baghdad were analyzed for the period (2007-2023). A hypothesis was developed stating that there is a significant negative impact of banking liquidity on profitability. To prove the research hypothesis, the standard model was described, with (cash to total assets ratio) as an independent variable, while commercial profitability was the dependent variable. The results indicate that the level of liquidity plays a vital role in enhancing the competitiveness of banks, as it enables them to meet customer needs and exploit investment opportunities. The study also showed that effective liquidity management helps improve returns, which positively impacts profitability, as well as adapting to changing economic conditions and the necessity of innovation in financial services to ensure sustainable profitability. The research reached a number of conclusions, most notably that banks with high levels of liquidity are better able to invest in business opportunities effectively, which contributes to enhancing their profitability. Banks that enjoy high flexibility and the ability to adapt to economic changes are more successful in achieving profitability.

Keywords: Bank liquidity, Commercial profitability, Bank of Baghdad, financial analysis

INTRODUCTION

Commercial banks are financial institutions that play an important role in the banking sector in particular and the financial system in general. The prominent role of banks is evident in their role as the primary financiers of economic projects. Therefore, Through their management implementing a financial strategy suitable for their existing circumstances, they may contribute to the national economy and preserve its stability. Iraqi commercial banks represent a fundamental pillar in the financial system, as they can serve the national economy as a whole, Adequate liquidity must be secured for bank management to survive and continue.

1.Importance of the Research:

The crucial role that the banking industry plays in the economy is what makes the study so important. This relates to directing liquidity towards various investments and providing banking services, which contributes to enhancing economic growth. In addition, study variables such as banking liquidity efficiency in banking work and carry great importance in determining the nature of the relationship between them, as well as knowing the impact of banking liquidity and investment efficiency on profitability. It is also necessary to understand the amount and nature of banking liquidity possessed by commercial banks, in addition to monitoring their financial suitability. Finally, it is necessary to know the policies for employing banking liquidity, whether credit or investment, and their impact on the financial solvency of commercial banks.

2. Research problem:

The research problem aims to measure and demonstrate the impact of bank liquidity on the study variables. Therefore, bank liquidity is an important tool used by monetary policy to achieve economic stability The research

problem can be explained as follows:

1. Is there a relationship and impact of bank liquidity on the profitability of commercial banks?
2. Do Iraqi banks prefer to maintain liquidity or profitability?

3. Research Objectives:

The research aims to achieve a set of objectives as follows:

1. Bank liquidity and profitability can be identified in terms of concept, importance, and how they can be measured.
2. We show the impact of bank liquidity on the profitability of commercial banks.
3. Analyze bank liquidity indicators for Iraqi commercial banks.
4. Analyze profitability indicators for Iraqi commercial banks.
5. Measure and analyze bank liquidity indicators and their impact on the profitability of commercial banks using standard models used according to the (Eviews10) system.

4. Research Hypothesis:

The research is based on a basic hypothesis, which is:

(There is a negative moral impact of bank liquidity during the research period)

5. Research Limits:

The spatial limits: were represented by the selection of the Bank of Baghdad.

The temporal limits: expanded the study period from 2007 to 2023 using yearly data taken from the financial statements and market reports of the firms that are listed on the Iraq Stock Exchange.

6. Research Methodology:

After reviewing previous research, the inductive approach will be used through inferences and presenting the theoretical framework of the research variables in detail, including terms and concepts. In addition, the quantitative analysis method will be adopted, using the standard approach to demonstrate the impact of banking liquidity indicators and investment efficiency on the profitability of Iraqi commercial banks.

First requirement: The conceptual framework for banking liquidity and profitability

First: Definition of banking liquidity:

Banking liquidity is defined as indicating the ease and speed of converting assets into cash. The development of assets that can be swiftly and profitably turned into cash is necessary to create money that appeals to lenders. (Al-Asadi, 2005:3)

Second: The Importance of Banking Liquidity:

Banking liquidity is considered an essential element in banks' performance. It is necessary to meet depositor withdrawals, meet customer credit requests, and bank registrations. It is also necessary to exploit available investment opportunities, given that bank liquidity needs are ongoing and indispensable for the continuity of bank operations and risk avoidance (Kazem, 2020: 348). Due to the importance of bank liquidity, banks pay greater attention to it compared to other intermediary financial institutions, such as specialized banks and insurance companies. This is due to two main reasons: (Kazar, 2023: 125)

1. The ratio of cash liabilities to total resources is very high.
2. A large portion of liabilities consists of short-term obligations.

Third: Types of

Banking Liquidity:

First: Cash liquidity: refers to the funds directly available at the bank and include (Al-Qaisi, 2023:750)

- Cash in national and foreign currencies.
- Deposits with other banks and the Central Bank.
- Amounts due for collection.

Second: Quasi-cash liquidity: Quasi-cash liquidity refers to assets that can be easily converted into cash, whether through disbursement, sale, or mortgage. These assets include treasury bills, discounted bills, and securities such as stocks and bonds. These assets are considered investments that aim to enhance liquidity, as they are characterized by being short-term and allow the possibility of selling them when needed.

Fourth: Banking Liquidity Indicators

There are several indicators of bank liquidity, the most important of which are (Fahd, 2015: 63):

1. Cash to Total Assets Ratio: This ratio calculates a commercial bank's proportion of liquid assets to total assets. An increase in this percentage indicates that the bank has underutilized cash holdings, which lowers the anticipated ultimate return. The commercial bank is exposed to several dangers, including financing and withdrawal risk, if the ratio falls below its normal rates. The following equation is used to extract it:

$[\text{Cash} \div \text{Total Assets}] \times 100\%$ is the cash to total assets ratio.

2. Ratio of current deposits to savings and time deposits: This ratio allows the commercial bank to determine its liquid cash reserves in light of the size of current deposits, which represent the most common type of deposits in terms of withdrawals, deposits, and continuous fluctuations. When this ratio rises, the commercial bank's demand for liquid balances rises as well, and vice versa. The following formula is used to compute it:

Ratio of current deposits to savings and time deposits= $[\text{Total current deposits} \div \text{Total savings and time deposits}] \times 100\%$

3. Cash ratio: With the money it has on hand and its balances with other banks, this ratio shows how well the bank can pay its debts. Excessive increases or decreases in this ratio must be avoided. The following formula is used to compute it:

Cash ratio = $[\text{Cash} \div \text{Total deposits}] \times 100\%$

Fifth: Definition of Profitability:

Defined (Al-Zubaidi, 2011:203) it as the profit ratio compared to the operating elements within the bank. Profitability is an important indicator for evaluating performance, as it reflects the efficiency of management in the bank's operational performance.

Sixth: The Importance of Profitability in Commercial Banks:

Achieving profitability is considered the primary goal of commercial banks, as these banks need to use available funds effectively while reducing expenses and costs. The importance of profitability is evident through the following points: (Daham, Koki ,2024: 210)

- 1. Capital Development:** Profitability is a means of capital development, which encourages investors to subscribe to bank shares when capital is increased.
- 2. Investor Confidence:** Both bank management and investors are concerned with the bank's ability to generate profits, as investors seek competitive returns compared to other banks, and lenders consider profitability an indicator of a bank's ability to repay debts.
- 3. Risk Management:** Profitability helps deal with the various risks facing banks, such as credit risk, theft, and interest rate risk.

Seventh: Profitability Indicators in Commercial Banks

It is necessary to have methods and indicators that help investors evaluate a commercial bank's ability to achieve

profitability. A group of metrics known as profitability indicators are used to gauge this capacity, with the following being the most crucial: (Al-Najjar,2006:39)

1. $[\text{Profit margin} \div \text{total assets}] \times 100\%$ is the profit margin ratio.

On the other hand, profit margin is equal to $[\text{interest paid minus interest received}]$. The net return from interest produced by the bank's assets is gauged by this ratio. Increasing it entails raising the commercial bank's profit margin or the assets' capacity to produce profits, and vice versa.

2. $[\text{Net profits after taxes} \div \text{equity}] \times 100\%$ is the return on equity ratio.

One of the most crucial metrics for assessing how effectively money is being used is this ratio, which the commercial bank always strives to raise in proportion to the magnitude of the risks assumed by the bank's shareholders. The net profit (return) attained by each equity unit is shown by this ratio.

3. $[\text{Net profit after taxes} \div \text{paid-in capital}] \times 100\%$ is the rate of return on paid-in capital.

The proportion of each unit of paid-in capital in the profits realized after taxes is shown by this rate. An indication of the evolution of the return on invested capital may be obtained by comparing this rate across several time periods.

Eighth: The Relationship between Bank Liquidity and Commercial Profitability

The relationship between profitability and liquidity in commercial banks is inverse, as investing any part of the bank's resources negatively affects the level of available liquidity. Therefore, bank management is responsible for achieving a balance between profitability objectives and liquidity needs. Management must ensure that there is a sufficient amount of liquidity in available assets, in addition to achieving an appropriate return from investment instruments, especially loans, which are considered the most profitable in banks. However, loans have a low level of liquidity compared to other types of investments, which usually provide greater liquidity but with a lower profitability rate. (Kanaan,2012:97)

Second requirement: Analysis of banking liquidity and profitability indicators for Bank of Baghdad data

First: The cash to total assets ratio for Bank of Baghdad

The cash to total assets ratio for Bank of Baghdad was calculated for the period (2007-2023) as shown

Cash to total assets ratio = $[\text{Cash} \div \text{Total assets}] \times 100\%$

Table (1) Cash to total assets ratio for Bank of Baghda

Billion dinars

Cash Total Assets Ratio%	Total Assets	Cash	Years
44.24	363.724	160.942	2007
37.70	542.911	204.708	2008
59.54	802.194	477.684	2009
59.49	961.062	571.822	2010
52.25	875.267	457.387	2011
62.46	1300.654	812.391	2012
57.49	1764.904	1014.698	2013
54.30	1827.505	992.409	2014
56.20	1549.536	870.879	2015
68.15	1200.424	818.186	2016
68.71	1090.152	749.133	2017
70.82	1113.538	788.700	2018
60.95	1132.744	690.513	2019
72.86	1419.528	1034.330	2020
57.65	1539.808	887.817	2021
50.37	1724.199	868.537	2022

71.14	2748.497	1955.518	2023
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Source: Prepared by the researcher based on the annual reports published

in the Iraq Stock Exchange for the period (2007-2023)

Through the data in Table (1), we note that the ratio of cash to total assets of the Bank of Baghdad for the period (2007-2008) witnessed a noticeable decrease from (44.24%) to (37.70%), which may be due to an increase in investments or a decrease in banking liquidity as a result of the economic crises. The ratio increased during the period (2009-2011) to (59.54%), reaching (52.25%) in 2009 and stabilized around (in 2011). This improvement reflects the restoration of confidence in the economy after the global financial crisis. The ratio increased in 2012, reaching its highest level of (62.46%), indicating the Bank of Baghdad's strategy to maintain a large amount of cash liquidity. During the period (2013-2015), we notice a gradual decline with some stability in 2015, as the ratio reached (57.49%) in 2013 and (54.30%) in 2014. In 2015, the ratio reached (56.20%), indicating an increase in investments (or loans). The ratio increased during 2016, reaching (68.15%), a significant increase, perhaps due to the increased demand for cash liquidity or hedging against economic risks. The cash ratio to total assets witnessed a continuous increase. During the period (2017-2018), it reached (68.71%-70.82%), which may indicate a strong banking policy in liquidity management. In (2019), a noticeable decline to (60.95%).

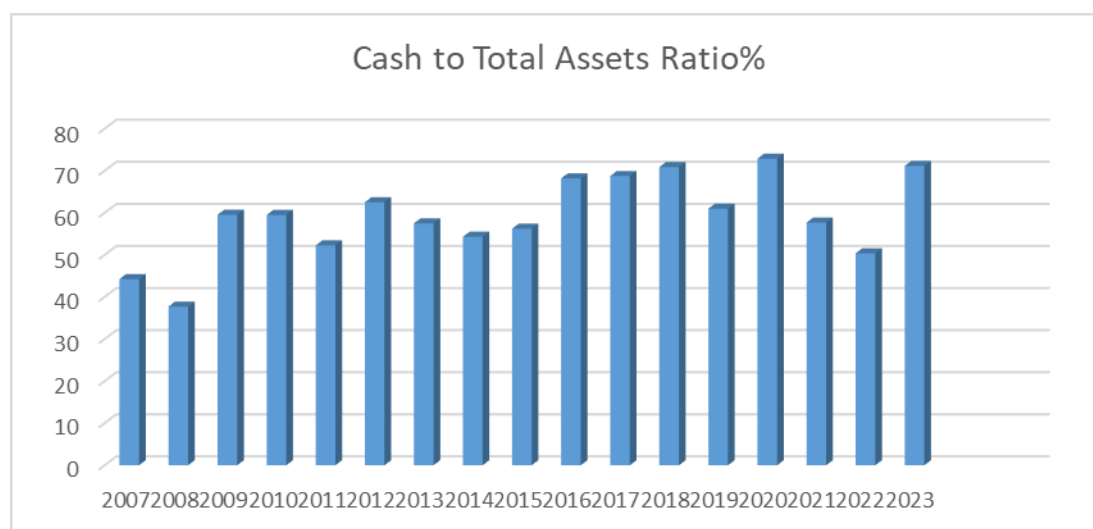


Figure (1) The ratio of cash to total assets of the Bank of Baghdad for the period (2007-2023)

We note from the figure that the ratio of cash to total assets of the bank fluctuated between high and low during the period, and recorded the highest percentage of increase during the year (2020), reaching (72.86%), and the lowest percentage in the year (2008), reaching (37.70%).

Second: Rate of return on paid-up capital for the Bank of Baghdad

For the years 2007–2023, the Bank of Baghdad's rate of return on paid-up capital was determined as follows.

Rate of return on paid-up capital= [net profit after tax ÷ Paid-up capital] × 100%

Table 2. The evolution of the Bank of Baghdad's rate of return on paid-up capital. A billion dinars

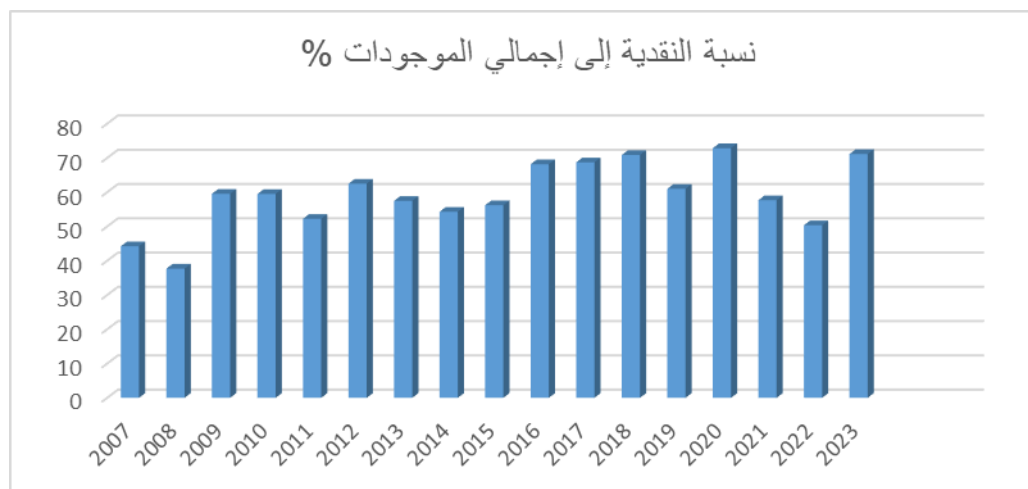
Rate of return on paid-up capital%	Paid-up capital	Net profit after Tax	Years
37.29	52.973	19.753	2007
30.60	70.000	21.417	2008
18.59	85.000	15.802	2009
13.67	100.000	13.669	2010
18.56	112.900	20.958	2011
14.34	175.000	25.099	2012
12.83	250.000	32.066	2013

11.11	250.000	27.780	2014
22.87	250.000	5.716	2015
8.09	250.000	20.245	2016
24.49	250.000	6.122	2017
16.61	250.000	4.152	2018
29.19	250.000	7.298	2019
8.08	250.000	20.200	2020
11.99	250.000	29.980	2021
21.26	250.000	53.154	2022
5.19	300.000	155.781	2023

Source: Prepared by the researcher based on the annual reports published

in the Iraq Stock Exchange for the period (2007-2023)

Through the data in Table (2), we note that the rate of return on the paid-up capital of the Bank of Baghdad rose in the year (2007) to reach (37.29%). This increase may be due to strong growth in the Iraqi economy after a period of relative stability, which led to an increase in lending and returns. During the period (2008-2010) we notice a decrease in the rate of return on paid-up capital, as it reached (30.60%) in 2008, (18.59%) in 2009, and (13.67%) in 2010. This may be due to the impact of the global financial crisis in 2008, which affected many banks in the world, including Iraq. In addition, there may be internal problems in the bank's management or an increase in operating expenses. In 2011, we notice a slight improvement due to a gradual recovery in the economy, as the rate of return on paid-up capital (18.56%) and during the period (2012-2014) there was a continuous decline reached (14.34%) in 2012, in 2013 as it reached (12.83%), and (11.11%) in 2014. This may be a result of the deterioration of the security and economic conditions in Iraq, which negatively affected the bank's ability to achieve profitability. In 2015, (2015) witnessed an increase that may be due to changes in financial policies or lending strategies. There may also have been an improvement in economic conditions, as the rate of return on paid-up capital reached (22.87%).



During the period (2017-2019), there was a significant increase in the rate of return on paid-up capital, indicating a significant improvement in the bank's financial performance due to the stability of conditions or the improvement of the business environment, as it reached (24.49%) in 2017, (16.61%) in 2018, and (29.19%) in 2019. A sharp decline in (2020) may be a result of the effects of the Covid-19 pandemic on the global Iraqi economy, as it reached (8.08%). During the period (2021-2022), there was relative stability, but the rate is still unstable and reached (11.99-21.26%)

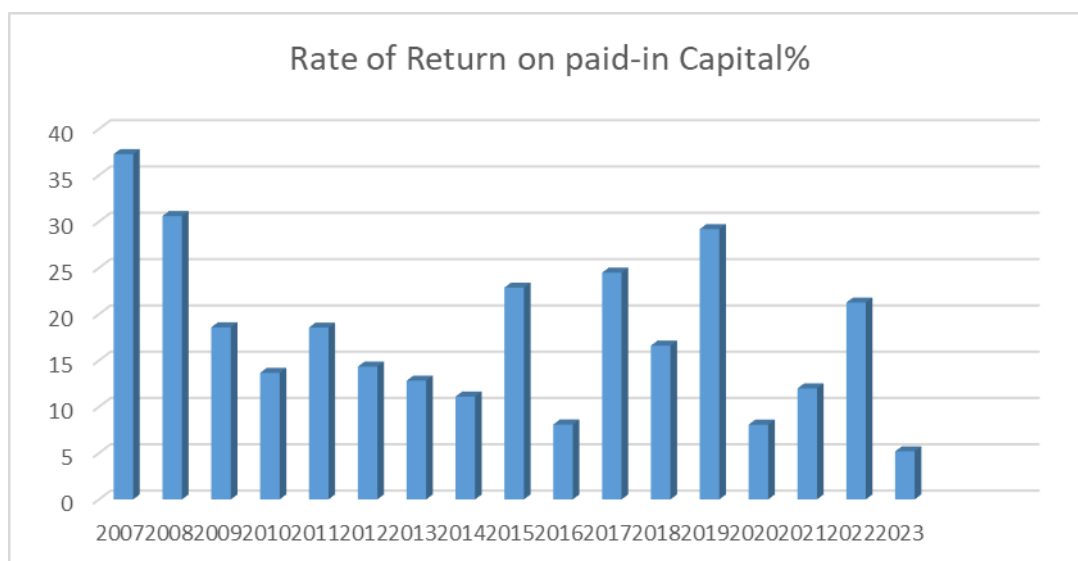


Figure (2) The development of the rate of return on paid-up capital of the Bank of Baghdad for the period (2007-2023)

We note from the figure that the rate of return on paid-up capital of the bank fluctuated between high and low during the period, and recorded the highest rate of increase in the year (2007), reaching (37.29%), and the lowest rate in the year (2023), reaching (5.19%).

The third requirement: Measuring the impact of banking liquidity indicators on the profitability of the Bank of Baghdad for the period (2007-2023)

In light of the aforementioned theoretical and analytical concepts about banking liquidity and profitability and the reality of each in the Iraqi economy, the special model can be written according to the following formula:

$$y = \alpha + \beta_1 x_1 + e_i$$

$$BP = \beta_0 + \beta_1 CTAR_i + e_i$$

Adhan:

BP: Dependent variable (commercial profitability)

β_0 : Constant term for the parameter

β_1 : Marginal slope for each parameter of the independent variables
variable: Cash to total assets ratio

CTAR: The first independent

e_i : Random error

First: The relationship between the independent variables and the dependent variable according to economic theory.

Economic theory will be used to determine the kind of link and impact between the independent variables (CTAR) and the dependent variable (BP), as seen below:

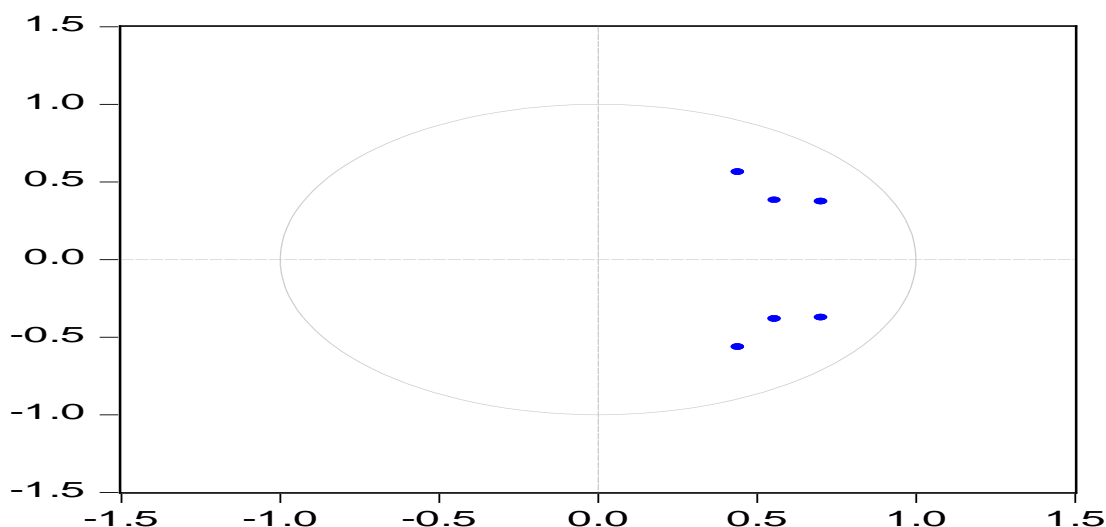
The relationship between bank liquidity, the cash-to-total-assets ratio, and commercial profitability (the rate of return on paid-up capital).

The relationship between the cash-to-total-assets ratio and commercial profitability is an inverse relationship in some cases, as maintaining high levels of liquidity can negatively affect profitability.

Second: The stability test of the model as a whole for the data of the Baghdad Bank

Because every root is located within the circle's bounds, the graphic shows that the model is stable overall.

Inverse Roots of AR Characteristic Polynomial



The diffusion form of the overall model stability test for the Bank of Baghdad's variables

Source: Prepared by the researcher based on the results of the program(Eviews)

Third: Determining the optimal lag period for Baghdad Bank Data

The Views program's findings show that, depending on the criteria, the standard model's ideal lag period is two time periods (Akaike Schwarz, Hannan Quinn).

Testing the number of optimal deceleration periods for the standard model of the Bank of Baghdad

VAR Lag Order Selection Criteria						
Endogenous variables: BP CTAR RRI						
Exogenous variables: C						
Date: 01\10\25 Time: 11:23						
Sample: 2007S1 2023S1						
Included observations: 31						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-291.9909	NA	36978.94	19.03167	19.17044	19.07690
1	-252.1033	69.48158	5062.572	17.03892	17.59401	17.21987
2	-232.3730	30.55006*	2583.174*	16.34665*	17.31806*	16.66330*
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						

AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Fourth: Vector Error Correction Model (VECM) Baghdad Bank Results of the variable (BP) for the current year:

According to the findings, the estimated value of the adjustment coefficient for the error correction limit reached (-0.408), but because the value of (Prob.=0.076) is higher than (0.05), it is not significant.

A one-unit change in the previous year will result in an increase of (0.441) units in the current year, with a computed value of (t) of (2.955). This indicates a direct link between the BP variable from the previous year and the BP variable from the current year. After then, the connection between the BP variable from the second year and the current year became inverse, with the computed value of (t) reaching -4.742 and the parameter estimate reaching -0.695. A one-unit change in the previous year's (CTAR) variable will result in a decrease of (-0.038) in the current year's (BP) variable, with a computed value of (t) of (-0.237). This indicates that the relationship between the previous year's (CTAR) and current year's (BP) variables is inverse. With a determined value of (t) of -2.234 and a parameter estimate of (-0.384), the connection between the second year's (CTAR) and current year's (BP) variables is likewise inverse. The table's results show that there is a direct relationship between the (RRI) variable for the previous year and the (BP) variable for the current year; an increase of one unit in the (RRI) variable for the previous year will result in an increase of 0.198 in the (BP) for the current year; the calculated value of (t) is (0.961); in contrast, there is an inverse relationship between the (RRI) variable for the second year and the (BP) variable for the current year; the parameter estimate is (-0.644), and the calculated value of (t) is (-2.983). The coefficient of determination R^2 was roughly 0.78, the corrected coefficient of determination (Adj) was roughly 0.71, both of which are high percentages, and the sum of the squared errors was (194.292), a very high number that suggests the VECM model is not appropriate for the type of data under study.

Test results(VECM) for Bank of Baghdad

Vector Error Correction Estimates		
Date: 01/12/25 Time: 14:03		
Sample (adjusted): 2008S2 2023S1		
Included observations:30 after adjustments		
Standard errors in () & t-statistics in []		
Error Correction	D(BP)	D(CTAR)
CointEq1	-0.408740	0.399509
	(0.07630)	(0.07925)
	[-5.35707]	[5.04141]
D(BP(-1))	0.441310	-0.002255
	(0.14934)	(0.15510)

	[2.95511]	[-0.01454]
D(BP(-2))	-0.695276	0.241133
	(0.14661)	(0.15227)
	[-4.74237]	[1.58358]
D(CTAR(-1))	-0.038268	0.555234
	(0.16139)	(0.16762)
	[-0.23712]	[3.31243]
D(CTAR(-2))	-0.384370	-0.0137533
	(0.17200)	(0.17864)
	[-2.23470]	[-0.76988]
C	-1.063196	1.039382
	(0.55774)	(0.57928)
	[-1.90624]	[1.79426]
R-squared	0.786904	0.753450
Adj. R-squared	0.719100	0.675003
Sum sq.resids	194.2923	209.5865

CONCLUSIONS:

1. The study showed that banks with high levels of liquidity are better able to invest in business opportunities effectively, which contributes to enhancing their profitability. Baghdad Bank recorded the highest increase during the year 2020.
2. The financial analysis of banks contributes to evaluating their performance through indicators. These indicators help understand how liquidity is managed and investment strategies are developed, which directly impacts their profitability and operational efficiency.
3. The results showed that banks with high liquidity are able to adapt to economic changes more quickly, making it easier for them to exploit investment opportunities. The general economic environment in Iraq plays an important role in determining how liquidity and investment efficiency affect profitability, as political and economic conditions affect bank performance.
4. There is an inverse relationship between liquidity levels and profitability in banks. When liquidity levels increase, banks tend to reduce their investments in high-yielding assets, leading to a decrease in total returns. Therefore, it can be said that maintaining large amounts of liquidity can hinder the achievement of high profits.
5. The standard and statistical results showed variations in the relationships between variables across the Bank of Baghdad, reflecting the impact of varying economic and administrative factors. The use of the Variable Error Correction Model (VECM) helped understand the long-term and short-term dynamics between liquidity, investment efficiency, and profitability.
6. The study demonstrated that banks that are highly flexible and able to adapt to economic changes are more successful in achieving profitability, as they can exploit opportunities and deal with risks effectively. Therefore, banks are required to develop flexible strategies that are compatible with changing economic conditions to ensure

sustainable profitability.

RECOMMENDATIONS:

1. Commercial banks should develop effective liquidity management strategies, such as the use of financial analysis tools and liquidity forecasting, to ensure a balance between maintaining sufficient levels of liquidity and exploiting the necessary investment opportunities to meet customer needs and enhance profitability.
2. Commercial banks should focus on improving investment efficiency through a careful evaluation of investment projects, for example, conducting comprehensive feasibility studies and risk analysis to ensure effective resource allocation.
3. Providing training programs for employees in the areas of liquidity management and investment efficiency to ensure improved performance and increased ability to make sound financial decisions.

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