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Liquidity indicators, fund utilization efficiency, and their impact on profitability in commercial banks

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Abstract

This research discusses the relationship between liquidity measures, namely, cash liquidity and legal liquidity, the legal reserve ratio on economic fund utilization as reflected in the granting of credit facilities, investments, and deposits, and their impact on profitability amongst the selected Jordanian commercial banks (JCB) that are listed on the Amman Stock Exchange (ASE). The applied methodology adopts financial reports and statements from 12 JCB during the period starting from 2011 to 2022. Analysis of the multiple measures of the methodologies used to test these relationships was done using multiple regression analysis as the main statistical tool. Results show a significant correlation between cash liquidity and legal liquidity measures and efficiency of funds utilization in the banks under review. Yet no statistically significant relationship was found between the legal reserve ratio and fund utilization efficiency. Furthermore, the study establishes a strong relationship between fund utilization efficiency and return on assets (ROA) and between cash liquidity and legal liquidity measures and ROA. On the other hand, the legal reserve ratio had no meaningful correlation with the ROA. These findings will help the JCB to keep a good balance between liquidity management and profitability maximization. Proper allocation of the existing liquidity level in lending to credit facilities and several investment opportunities is going to generate sustainable financial returns with perpetual cash flow. Moreover, the study suggests that an informed scientific approach to adequate fund allocation would enable banks to maximize profitability with an acceptable risk profile while complying with the liquidity requirements set forth by financial regulators. Such balance is important to become compliant with the guidelines set forth by the wider financial system towards ensuring financial stability and sustainability.

Keywords: Efficiency of funds utilization, Jordanian commercial banks, Liquidity, Profitability.

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1. Introduction

The sources of financing for banks do not fall only into short-term or long-term categories but, can also vary depending on internal or external sources [1]. Profits are known for neutralizing credit and liquidity risks faced by a bank [2]. Therefore, banks should keep a certain balance of cash or liquid assets to cover their liabilities toward items like customer withdrawals or financing investments. The excess liquidity available in the banks should be invested strategically in profitable avenues to gain profit from it and to utilize the time value of the funds available [3, 4].

Liquidation can be characterized as one of the crucial factors in banks since banks should always ensure sufficient liquidity and a sound stock of liquid assets available to cater to their depositors' withdrawals [5]. Management of an excess liquidity balance to avert such probable risks can also hinder a bank from commencing certain ventures and may scupper its functions and opportunities to put its funds in areas that yield an appropriate return, which ultimately affects the profit rates and cash flows negatively [6]. The bank is entrusted with an extremely significant duty to make profitable use of deposited funds for borrowers and other investments. This Investment process has risks inherently linked to it; nonetheless, it is a necessary process for the institutions' survival and hence meeting its core objective of maximizing profit profitability within the confines of the risk management framework that drives their processes [7]. The present study will reflect the correlation between liquidity, efficient funds utilization, and profitability in Jordanian commercial banks (JCB) listed on the Amman Stock Exchange (ASE) [8].

1.1. Study Problem and Questions

Liquidity poses one of the complex challenges confronting commercial banks, as high liquidity levels generate the predicament of underutilized monetary resources within these institutions, consequently impacting profitability rates [9]. Consequently, banks face pressure from either a lack of liquidity or the availability of liquidity that cannot be optimally invested in prevailing investment opportunities under certain economic conditions, potentially affecting profitability rates [10]. Furthermore, banks' pivotal role lies in providing the necessary liquidity and financing for all economic sectors, thereby enhancing the national economy [11]. Liquidity exerts a significant influence on banks' profitability, which may be negative in the event of a mismatch between the bank's assets and liabilities, potentially exposing the bank to financial losses in numerous cases [12]. Hence, the conflict between the concepts of profitability and liquidity emerges; maintaining liquidity for safety and security may lead to a decrease in profitability rates because of retaining the largest portion of deposits, while conversely, increasing profitability by employing the largest part of liquidity may expose the bank to risks in certain circumstances and cases [3].

Therefore, banks must strike a balance between liquidity and profitability, ensuring that they do not forgo investments that could impact profits, despite the importance of maintaining liquidity to meet the bank's obligations to some extent [13]. Any decline in the profitability indicators of the banking sector not only leads to damage to the financial system of this sector and its ability to continue providing services and credit facilities but also affects numerous economic sectors that have direct and indirect links to the economies of banks, particularly credit facilities operations and the contribution of those banks to the capital of those economic sectors [14].

The research problem may be stated in key questions:

1. What is the extent to which liquidity indicators impact the efficiency of utilization of credit facilities in JCB listed on the ASE?
2. How do liquidity indicators interact with the efficiency of investment utilization in Jordanian commercial banks listed on the ASE?
3. What nature of association exists between liquidity indicators and the efficiency of deposit utilization in JCB listed on the ASE?
4. In what way is the framework for fund utilization efficiency related to the profitability of JCB listed in the ASE?
5. What is the relationship between liquidity indicators and profitability in JCB listed on the ASE?

2. Literature Review

2.1. Liquidity and its Indicators

Liquidity is a vital concept and a cornerstone in the lexicon of banks and financial markets, referring to the ability to meet a bank's obligations immediately by swiftly converting any of its assets into liquid cash without incurring losses [15]. Liquidity has been expressed in terms of liquid assets, stipulating that they are unencumbered and can be converted into cash within thirty days under specific pressures. It is assumed that banks rely on this liquidity to sustain their operations during that period Jarah, et al. [16]. Khati [17] defined liquidity as assets or securities that can be easily converted into cash. Furthermore, liquidity has been characterized in greater detail as the ability to finance the increase in assets and meet obligations when due without incurring unexpected or unplanned losses [18]. Consequently, bank management must work effectively in managing bank liquidity to ensure the institution's capability to meet cash withdrawal demands, which are typically uncertain and subject to external factors and customer requirements [7]. Banks are considered a source of liquidity, as they convert liquid liabilities into liquid assets or finance illiquid assets with liquid liabilities, thereby basing their activity on maintaining liquid assets for customers and offering them liquid liabilities [19, 20].

From the preceding definitions of liquidity, it can be deduced that liquidity encompasses all assets that can be converted into cash within a short period without incurring obligations because of their conversion. Bank liquidity is of paramount importance in the banking sector, as its availability allows the bank to invest and achieve returns that would increase the bank's profitability rates. Conversely, a lack of liquidity may expose the bank to a liquidity crisis, potentially resulting in the bank's inability to meet its obligations, whether towards investments, increasing assets, or even customer requirements, thus jeopardizing the bank's reputation. Therefore, banks must manage liquidity with great efficiency [21].

When reviewing the literature regarding the measurement of liquidity in commercial banks, three main indicators have been identified to assess liquidity in banks:

First: Cash Liquidity: The cash liquidity ratio indicates the volume of cash liquidity in banks and the extent to which these banks adhere to the standards set by the central bank, whether the source of this liquidity is internal or external. Bank management is concerned daily with the balances of ready cash (daily liquidity), with a statement of the average incoming and outgoing cash flows as expected, to demonstrate the adequacy of this liquidity in covering the bank's requirements and obligations daily [15]. Deposits and the like refer to the total assets minus equity, as an increase in this ratio indicates the bank's ability to fulfill its obligations to some extent without affecting the employment of cash in investments that would increase the bank's profitability rates, while a decrease indicates the opposite [16, 22].

Second: Legal Liquidity: Legal liquidity refers to the specified liquidity ratios according to the instructions in force in central banks, which would maintain the liquidity position in commercial banks that are subject to their supervision [23]. These banks are required to maintain liquid assets to face the risks of obligations and withdrawals [24]. Several studies, including the study of Thinh, et al. [11] indicated that the legal liquidity ratio measures the ability of primary reserves, in addition to secondary reserves, to meet the obligations due to banks under specific conditions [25].

Third: Legal Reserve: The management of bank reserves is considered one of the main tasks of the central bank. The legal reserve ratio refers to the percentage determined by the central bank, and it obliges banks to meet emergency obligations and unexpected economic events [11]. The central bank determines this percentage according to the public interest, and it is without interest. The central bank may resort at any time to change it, depending on the prevailing circumstances. In cases of inflation, the bank tends to raise the legal reserve ratio to create a state of contraction, and vice versa [26, 27].

2.2. Efficiency of Employing Funds and its Indicators

Banks have evolved to perform both traditional and non-traditional functions, such as those related to investment operations, speculation, financial derivatives, e-commerce, and information technology operations. In general, it can be stated that banks are no longer confined to their traditional operations alone but have tended to develop their investment and service operations and activities [28]. In modern financial thought, banks have been described as enterprises that play the role of an intermediary between savers and investment seekers, as they collect savings funds and redirect them again in the form of investments, loans, or project financing. These operations are termed employment or uses of funds [29].

Sanjaya [30] defined the efficiency of employing funds as the ability of banks to utilize and implement the available funds to achieve additional positive cash flows, take advantage of opportunities, and face emerging challenges. He added that managers are responsible for controlling the efficiency and effectiveness of managing these funds. The efficiency of employing funds has also been defined as the effective use of the funds available to the bank, whose source is customer deposits or capital, with investments diversified to generate income for the bank, which would raise profitability rates and reduce operational risks, thereby affecting growth and profitability [31]. From the foregoing, it can be stated that the efficiency of employing funds can be defined as the bank's ability to invest the funds obtained from deposits and the surplus deposits above the liquidity limit that must be maintained, whether determined by the central bank or those determined by the bank's management or capital adequacy instructions and employing them efficiently in investments and long and short-term financing, to achieve the ultimate goal of banks in general, which is to maximize profitability, within the limits of not exposing the bank to a liquidity crisis.

When referring to the literature on financing sources for commercial banks and the methods and areas of employing these funds, it was found that measuring and evaluating the efficiency of employing the funds used in commercial banks revolves around three main indicators, as identified by AL-Shatnawi, et al. [1] and Alshehadeh, et al. [32]:

First: The Rate of Employing Credit Facilities: The credit facilities portfolio holds a prominent position in commercial banks, as a significant portion of their income is derived from lending activities, thereby explaining why banks are inclined towards credit facilities operations due to their reflection on their financial position and business results [33]. Banking credit facilities play a fundamental role in achieving the bank's profitability rates on one hand and in facilitating the economic and social development of the national economy on the other, owing to the national economy's need for more capital [34]. Consequently, banks play a crucial role in sustainable development by employing customer deposits in the credit facilities necessary for the needs of various economic sectors and providing other banking services according to a specific credit policy from the bank's management, supervised by the central bank, all of which supports the bank's operations towards growth and stability [35]. The process of employing credit facilities has been defined as the use of funds available to the bank from its internal and external sources in loans and advances operations in their various forms and guarantees, in exchange for preserving the bank's right to recover those funds with their interest and any other dues on the specified dates [30]. In all cases, banks determine the guarantees, sureties, or undertakings in exchange for providing these credit facilities [36, 37]. The management of each bank also determines the bank's credit policy, which includes a set of foundations, standards, and conditions that are adhered to achieve the desired financial growth and provide appropriate returns to the bank at the lowest possible costs and risks [38].

Second: The Rate of Employing Investments: The investment operations carried out by banks aim to achieve numerous goals, most notably attaining an additional return that supports profitability rates, as banks work to employ a section of the surplus funds in financial and non-financial investment fields to achieve an additional return that allows them the opportunity to expand in performing new banking services and cover some of the costs they incur [39]. The bank's management is responsible for making investment decisions, which are considered highly crucial, and caution must be

exercised because they involve substantial resources, in addition to being scarce and fraught with risks, with long-term effects that the bank does not want to face if they are negative [34].

Third: The Rate of Employing Deposits: Banks accept deposits directly from savers and customers who seek fixed returns and little risk, and banks use or convert these deposits into granting loans or purchased securities, representing employment from the bank's resources or employment of deposits [35]. The deposit employment rate refers to the percentage of deposits that the bank has decided to invest, including investment in securities, compared to total deposits [40]. Deposits in commercial banks are considered one of the most important sources of external financing that provide the bank with quasi-stable and stable resources in many cases, making it easier for the bank to use them in relatively long-term employment [38]. The bank may be forced to make decisions related to deposit management under incomplete or inaccurate information, or when the movement of financial markets is unstable concerning interest rates paid to customers or withdrawal operations and procedures from those deposits [41, 42]. This would increase the risks, which may lead to a decrease in the return on them. Therefore, the bank must develop credit and investment strategies for these deposits aimed at maximizing the bank's profitability through the optimal use of these resources [43].

2.3. Profitability and Measurement of its Indicators

Banks aim to achieve their objectives to ensure long-term sustainability by securing a market position that supports their continued existence with efficiency, effectiveness, and profitability. Among these objectives, profitability stands out as a critical factor in achieving financial stability and operational success [44]. Profitability serves as a cornerstone for banks, enabling them to enhance their financial solvency, build shareholder trust, strengthen competitiveness, and attract potential investors. To maximize profits, banks focus on generating positive cash flows at minimal costs [26]. As a primary objective for profit-oriented organizations, profitability is essential for their survival and growth [45]. It also acts as a key metric for evaluating management's effectiveness in utilizing available resources, reflecting the relationship between generated profits and the investments that facilitated them [46]. Profitability represents a bank's capacity to generate income, and its analysis is vital for shareholders, as their returns are directly tied to the bank's profit performance [47]. Additionally, profitability is significant for depositors, as it helps them assess the bank's ability to return deposits on time or upon request. Furthermore, profitability serves as a critical indicator of a bank's current and future financial health [48].

Profitability is considered the net result of several policies and decisions indicating the efficiency of a bank's operating activities [49]. It is a marker of good financial health and effective management, indicating the bank's ability to produce positive cash flow and earn return, both of which meet with satisfaction in the present and foreseeable future [50]. On the other hand, profitability indicates operational efficiency which shows the best use of the existing resources [9]. Simply put, profitability focuses on a financial institution's capacity to earn from its resources and partially through its investments that must also outweigh the costs incurred within some time range. A higher level of profitability expresses a higher level of satisfaction of investors, creditors, and management with the performance of the bank [51].

Bank profitability, in its widest definition, refers to the profit- and cash earnings-generating capacity of the bank. It shows the nexus between profits and the bank's deployment as well as operating expenditure, or the nexus between profits on one side and investments that were responsible for generating them. Profitability is the key efficiency and sustainability measure of a bank which determines how efficiently it will be able to achieve its goals. Profitability: various profitability indicators are used to measure to what extent companies control their financial resources, in this research, return on assets (ROA) was supposed to be the most important [52]. ROA is the measure of how well a bank uses its assets to generate income and it is true whether the financing is in-house or not. For bank management, owners and lenders [50]. Higher ROA signifies a better efficiency of the resources used; it implies that the bank is generating relatively larger profits in proportion to its asset base. This is a capital-efficient operation in that it means better asset management, so ROA is a holistic measurement of profitability [45].

3. Study Methodology

3.1. Study Population and Sample

The study population comprised all JCBs listed on the Amman Stock Exchange, numbering 12 institutions. The entire population was selected, resulting in a comprehensive survey. The choice to include all listed commercial banks was motivated by their public trading status and the accessibility of their financial data.

3.2. Data Collection and Methodology

This study was based on the descriptive analytical methodology which was consistent with the research objectives. It consists of the collecting, describing, and discursive travaux on data. Particularly, the researcher reviewed the financial statements of the participants in the ASE within the general timeframe of 2011 until 2022. The data was sourced from the ASE website.

Proper statistical methods with multiple regression analysis being the backbone of hypothesis testing and drawing results were used to analyze this study's data. Applying multiple regression analysis allowed for a complete examination of relations among variables by controlling any external factors and showing that each variable had independent and direct effects.

The combined estimation of various regression models, along with a descriptive-analytical approach, provided a very solid methodological foundation for exploring the myriad interrelationships between liquidity, fund-use efficiency, and profitability in Jordan's banking sector. This structured approach has ensured the validity and reliability of the findings in this area of knowledge.

3.3. Study Variables and Their Measurement

Independent Variable: Liquidity Ratios (LR) and liquidity ratios are measured through the following equations: [3, 31, 39].

- Cash Liquidity Ratio (CLR) = (Cash in vault + Cash at central bank + Cash at other banks) / Deposits and the like
- Legal Liquidity Ratio (LLR) = Current Assets / Deposits and the like
- Legal Reserve Ratio (LRR) = Cash at central bank / Deposits and the like

Mediating Variables: Efficiency of Using Funds (EUF): [1, 33].

- Credit Facilities Ratio (CFR) = Total Credit Facilities / Deposits and the like
- Investment Employment Ratio (IER) = Total Investments / Deposits and the like
- Deposit Employment Ratio (DER) = (Total Credit Facilities + Investments in Securities) / Deposits and the like

Dependent Variable: Return on Assets (ROA): The ROA is considered the general measure of profitability, and this indicator is calculated through the following equation [50, 53].

ROA = Net Income after Taxes + [Interest Expense × (1- Tax Rate)] / Average Total Assets

3.4. Study Models

As for the mathematical study models that aim to measure the relationships between the independent variable, the mediating variables, and the dependent variable, the effect of the independent variable (LR) affecting the indicators (EUF) was first tested, then the effect of the mediating variable (EUF), which includes several sub-variables, on the dependent variable (ROA) was studied, according to the following models:

The First Model: Measuring the relationship of liquidity ratios to the indicators of the efficiency of employing funds

In the first model of study, liquidity ratios are an independent variable representing the relationship with indicators of funds efficiency of use in JCB listed at ASE; Dependent variable (indicators of the efficiency of using funds) EUF i, t is a composite sub-dependent variable as our dependent variable is divided into following three sub-dependent variables and hence The model is structured as:-

$$CFR_{i,t} = \alpha + \beta_1 CLR_{i,t} + \beta_1 LLR_{i,t} + \beta_1 LRR_{i,t} + \mu_{i,t}$$

$$IER_{i,t} = \alpha + \beta_1 CLR_{i,t} + \beta_1 LLR_{i,t} + + \beta_1 LRR_{i,t} + \mu_{i,t}$$

$$DER_{i,t} = \alpha + \beta_1 CLR_{i,t} + \beta_1 LLR_{i,t} + \beta_1 LRR_{i,t} + \mu_{i,t}$$

The Second Model Measuring the impact of indicators of the efficiency of employing funds on the profitability of JCB.

Following the consideration of the ROA as a dependent variable and the third step in measuring the impact of the mediating variable-the efficiency of employing funds the dependent variable is the profitability of JCB that is listed on the Amman Stock Exchange, te model to which this step applies is the following:

$$ROA_{i,t} = \alpha + \beta_1 CFR_{i,t} + \beta_2 IER_{i,t} + \beta_3 DER_{i,t} + \mu_{i,t}$$

The Third Model: Measuring the impact of liquidity ratios on the profitability of JCB.

After assessing the influence of liquidity ratios on the profitability of JCB, the next logical step assesses the actual impact of the independent variable "liquidity ratios" on the dependent variable, the profitability of JCB, according to the model below:

$$ROA_{i,t} = \alpha + \beta_1 CLR_{i,t} + \beta_1 LLR_{i,t} + \beta_1 LRR_{i,t} + \mu_{i,t}$$

4. Results

The research assumes: There does not exist a statistical relationship between liquidity ratios and the efficiency of credit facility utilization in Jordanian commercial banks. To test this hypothesis, multiple linear regression analysis examined the extent to which these liquidity ratios could explain the efficiency of credit facility utilization in those banks (results listed in Table 1).

This study shows the pivotal relationship between liquidity management and efficient use of credit facilities, which are a key function of commercial banks. The study has a twofold aim: to analyze the capacity of liquidity ratios to predict the efficiency of credit facility utilization, producing valuable input for bank managers and policymakers. Understanding this relationship better could help in designing appropriate strategies that improve credit facility operations, thus minimizing risks and enhancing the overall profitability and sustainability of the banking sector in Jordan. The analysis used powerful statistical instruments to ensure accurate and reliable results. The technique of multiple linear regression allowed all five liquidity measures to be jointly evaluated for their effects. At the same time, leverage was held constant to highlight the effect of each independent variable. Such findings are employed clearly and promptly to enrich the existing literature on liquidity management and credit facility operations in the Jordanian banking environment.

Table 1.
Multiple linear regression analysis between liquidity ratios and the efficiency of employing credit facilities.

Dependent variable	Multiple correlation coefficient R	Coefficient of determination R^2	F-value	p-value	Independent variables	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t-value	p-value
CFR	0.621	0.386	15.936	0.000	Constant	-0.361	-----	-1.932	0.057
					LLR	0.931	0.531	5.818	0.000
					CLR	-0.621	-0.389	-3.606	0.001
					LRR	0.551	0.236	2.168	*0.033

Note: * P<0.05, ** P<0.01

A moderate correlation was found between liquidity ratios and efficiency in the utilization of credit facilities in commercial banks. The values of multiple correlation coefficients were shown to be 0.621 and R^2=0.386. 38.6% of variations in credit utilization efficiency can be explained by liquidity ratios. Therefore, results show a strong correlation between liquidity ratios and credit facility utilization, F value=15.936, significant at P<0.01, leading towards rejection of the null hypothesis and accepting the alternative hypothesis that a significant relationship exists between liquidity ratios and credit utilization for commercial banks listed on the ASE in Jordan at the level of 0.05.

Results of multiple linear regression analysis suggest that cash liquidity, legal liquidity, and the legal reserve ratio should together affect or predict the efficiency of fund utilization in the case of these banks. Those with liquidity ratio management conditions emphasize the greater need to improve credit facility efficiency in commercial banks in Jordan. The correlation is moderate, however; however, frequency monitoring and balancing of the liquidity ratios should remain a primary concern of bank management to cease loss of credit facility utilization and maintain their profitability in the future.

To test the second hypothesis, "There is no statistically significant relationship at the 0.05 level between liquidity ratios and the efficiency of investment utilization in JCB," regression method analysis was conducted. The analysis was aimed at assessing how liquidity ratios forecast the efficiency of investment utilization. The summary is provided in Table 2.

The study found a moderate correlation between the liquidity ratios and the efficient use of investments in the framed commercial banks traded on the ASE in Jordan. The multiple correlation coefficient was 0.489, and the determination coefficient (R^2) was 0.239. This indicates that 23.9% of the variance in the efficiency of investment was accounted for by the liquidity ratios. This F-value of 12.108 was statistically significant at the 0.01 level, which led to the rejection of the null hypothesis and acceptance of the alternative hypothesis as there exists a statistically significant relationship at the 0.05 level between liquidity ratios and investment utilization in JCB.

The results of the multiple linear regression analysis show that cash liquidity and the legal reserve ratio significantly influence (or predict) the efficacy of fund utilization in these banks. However, legal liquidity was found not to have any statistically significant effect. According to these findings, the importance of cash liquidity and the legal reserve ratio in ensuring the effective deployment of investments in JCB cannot be understated. Accepting a moderate correlation, bank management should give priority to monitoring and optimally utilizing such liquidity indicators to improve performance on investments and guarantee earning profits in the long run.

To test the third hypothesis that "There is no statistically significant relationship at the 0.05 level between liquidity ratios and the efficient use of deposits in JCB listed on the ASE," a multiple linear regression analysis had to be performed. This analysis aimed to ascertain the measure of prediction for liquidity ratios on efficiency in the utilization of deposits, as Table 3 shows.

The study identified a strong relationship between liquidity ratios and the efficiency of deposit utilization in JCB. The absolute value of the multiple correlation coefficient was 0.790, and the coefficient of determination (R^2) was 0.679. This suggests that 67.9% of the variation in deposit utilization efficiency can be attributed to liquidity ratios. The F-value of 1812.795 was statistically significant at the 0.01 level, leading to the rejection of the null hypothesis and the acceptance of the alternative hypothesis: "There is a statistically significant relationship at the 0.05 level between liquidity ratios and deposit utilization in JCB."

Table 2.
Multiple linear regression analysis between liquidity ratios and the efficiency of employing investments.

Dependent variable	Multiple correlation coefficient R	Coefficient of determination R^2	F-value	p-value	Independent variables	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t-value	p-value
IER	0.489	0.239	12.108	0.000	Constant	0.455	----	13.251	0.000
					CLR	-0.377	-0.287	-2.406	*0.019
					LRR	-0.517	-0.268	-2.253	*0.027

Note: * P<0.05, ** P<0.01

Table 3.
Multiple linear regression analysis between liquidity ratios and the efficiency of employing deposits.

Dependent variable	Multiple correlation coefficient R	Coefficient of determination R^2	F-value	p-value	Independent variables	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t-value	p-value
DER	0.790	0.679	1812.795	0.000	Constant	-0.038	------	-1.364	0.177
					CLR	0.997	0.759	45.875	0.000
					LLR	1.048	0.727	43.933	0.000

Note: * P<0.05, ** P<0.01

The results of the multiple linear regression analysis indicate that cash liquidity and legal liquidity significantly influence (or predict) the efficiency of fund utilization in these banks. However, the legal reserve ratio was found to have no significant effect. These findings highlight the critical role of cash liquidity and legal liquidity in shaping the effective deployment of deposits in JCB. The strong correlation between these variables underscores the importance for bank management to carefully monitor and manage liquidity levels to optimize deposit utilization, ensuring sustained profitability and enhancing shareholder value.

To further explore the relationship between fund utilization efficiency and profitability, the study tested the hypothesis: "There is no statistically significant relationship at the 0.05 level between the indicators of fund utilization efficiency and profitability in JCB listed on the ASE." Multiple linear regression analysis was employed to assess the predictive power of fund utilization efficiency indicators on profitability, as detailed in Table 4.

In JCB operating in the ASE based on the performance indicators of fund utilization efficiency and returns on assets, the study found a high correlation. The multiple correlation coefficient value was +0.780 and the coefficient of determination (R^2=0.671) for the model. This means that a 67.1% variation in the rate of ROA can be explained by indicators of fund utilization efficiency. F-value of 1711. 710 was significantly $p<0.01$ so the null hypothesis may be rejected with the alternative hypothesis accepted as "at the 0.05 level statistically significant relationship exists between fund utilization efficiency indicators and profitability of JCB listed on ASE.

Multiple linear regression results of this study indicate that each of the indicators of fund utilization efficiency significantly impacts (or predicts) the ROA in these banks. These results highlight the importance of deploying funds as effectively as possible to generate profits measured by ROA within JCB. The high correlation between these variables demonstrates the necessity of bank management to carefully supervise and maximize fund utilization to continuously earn profits or unlock value by shareholders.

To further examine the relationship between liquidity ratios and profitability, the study tested the hypothesis: "There is no statistically significant relationship at the 0.05 level between liquidity ratios and profitability in JCB listed on the ASE." Multiple linear regression analysis was employed to assess the predictive power of liquidity ratios on profitability, as presented in Table 5.

The study identified a strong relationship between liquidity ratios and the rate of ROA in JCB listed on the ASE. The absolute value of the multiple correlation coefficient was 0.990, and the coefficient of determination (R^2) reached 0.979. This suggests that 97.9% of the variation in the rate of ROA can be attributed to liquidity ratios. The F-value of 1812.907 was statistically significant at the 0.01 level, leading to the rejection of the null hypothesis and the acceptance of the alternative hypothesis: "There is a statistically significant relationship at the 0.05 level between liquidity ratios and profitability in JCB listed on the ASE."

Table 4.
Multiple linear regression analysis between liquidity ratios and profitability.

Dependent variable	Multiple correlation coefficient R	Coefficient of determination R^2	F-value	p-value	Independent variables	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t-value	p-value
ROA	0.780	0.671	1711.710	0.000	Constant	0.053	-------	1.329	0.149
					CFR	3.953	0.738	40.565	0.000
					IER	2.791	0.625	43.265	0.000
					DER	1.876	0.549	38.546	0.000

Note: * P<0.05, ** P<0.01

Table 5.
Multiple linear regression analysis between liquidity ratios and profitability

Dependent variable	Multiple correlation coefficient R	Coefficient of determination R^2	F-value	p-value	Independent variables	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t-value	p-value
ROA	0.990	0.979	1812.790	0.000	Constant	-0.076	-------	-1.364	0.177
					CLR	1.994	0.759	45.875	0.000
					LRR	2.095	0.727	43.933	0.000

Note: * P<0.05, ** P<0.01

The results of the regression analysis indicate that cash liquidity and legal liquidity significantly influence (or predict) the rate of ROA in these banks. However, the reserve ratio was found to have no significant effect. These findings highlight the critical role of cash liquidity and legal liquidity in shaping profitability, as measured by ROA, for JCB. The strong correlation between these variables underscores the importance for bank management to carefully monitor and optimize liquidity levels to ensure sustained profitability and enhance shareholder value. While cash liquidity and legal liquidity are key drivers of profitability, the reserve ratio appears to have a minimal impact in this context.

5. Conclusions and Recommendations

Banks are distinct from other businesses, their function as financial intermediaries for connecting the savers with investors. Their special place gives bank management several intricate issues to handle, chief among which is to keep profitability in check. Banks should have a certain amount of liquidity to minimize risk, but increased profitability is usually obtained by investing assets in higher-yielding investments that generate returns over net operating costs. Consequently, liquidity and profitability serve as trade-off objectives. The healthy profitability of banks in the operating business (which influences customer and investor confidence) is a sine quote for continuous operations. There are a host of internal and external factors that influence bank profitability such as liquidity management and the usage of resources to maximize returns, the best example being the significant part played by. Hence, a study is undertaken in this paper to investigate the relationships among liquidity, fund utilization efficiency, and profitability is most pertinent for any stakeholder, particularly bank management as well as the owner (shareholder) and parties who have interests in the financial performance indicators that translate into bank economics.

The study results indicate a robust, statistically significant association between liquidity ratios and credit facility utilization efficiency. This is consistent with the relevant literature on Jordan, where in general all economic sectors depending heavily on bank-based credit facilities and supporting liquidity plays a critical role in effective management. Also, the results show a significant correlation between the liquidity ratios for efficiency in investment utilization. This is a reminder that banks need to manage their resources by putting them into investments such as government bonds, stocks, or affiliated companies that provide positive cash flows increasing the money-making potential.

Besides, the research found a statistical relationship between the deposit utilization efficiency in JCB (JCBs) listed on the ASE regarding liquidity ratios, particularly cash liquidity and legal liquidity. This aligns with past research showing that deposits represent the lifeblood of banking funds giving rise to investment capacity for banks. Deposits, in all forms, are among banks' most vital resources to accomplish their financial goals especially if it comes to funding loans, bonds, and stocks.

In addition, the findings have pointed to the regression from fund utilization efficiency measures to profitability (ROA). Hence, the management of banks must pay a lot of attention here to deploy financial resources very efficiently and in the direction where capital may be utilized over a sustained long term. This revolves around the distribution of liquidity across credit facilities and multiple investment avenues for effective profitability levels that are aligned with the returns and corporate goals. This is a further result of the study, which shows a strong statistical relationship between liquidity ratios with profitability (ROA). Bank management, as a result, needs to keep monitoring the level of efficiency in resource usage and place investments that ensure further growth while at the same time realizing profitability levels that are profitable to both shareholders and depositors. To secure these goals financial and asset liability management must be based on a scientific model to stabilize the two closest. It means the deployment of resources among a series of utilization operations for the highest return with acceptable risk banks and within limits prescribed by financial system leverages.

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