



Available online at <http://jeasiq.uobaghdad.edu.iq>
DOI: <https://doi.org/10.33095/xq9kx205>

The Role of Bank Liquidity in Activating Investment in Iraq – An Analytical Study on the Bank of Baghdad

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Received: 3/10/2024 Accepted: 4/11/2024 Published Online First: 1 /12/ 2024



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Abstract:

Purpose: To identify the size of cash credit granted by commercial banks and to clarify the role of banking liquidity in promoting investment in Iraq for the period (2014-2023).

Theoretical Framework: The research addressed the role of banking liquidity in promoting investment for the period (2014-2023), and the problem lies in how to enhance the role of banking liquidity in stimulating investment.

Design/Methodology/Approach: The researcher relied on the deductive approach and conducted a descriptive analysis using the measurement tool (E-views 12) to measure bank liquidity in enhancing bank credit.

Results: The bank succeeded in adopting a strategy to expand its banking services locally and internationally, in line with regulatory standards and controls.

Research, practical and social results: Banking liquidity plays a pivotal role in stimulating investment in developing economies such as Iraq, as banking liquidity is a fundamental factor in the stability of financial markets. The scientific and social importance of the research is highlighted by its focus on the role of banking liquidity and its impact on investment in Iraq.

Originality/Value: The originality of the research is evident in helping economic decision-makers understand the effects of exchange rate fluctuations on the Iraqi economy and thus enabling them to make sound decisions regarding the financial policies needed to support the economy in the face of fluctuation risks. By studying banking liquidity, appropriate economic and banking policies can be identified to enhance the investment environment and reduce dependence on oil revenues.

Keywords: Banking Liquidity, Investment, Baghdad Bank.

JEL Classification : G3, G32, F2, F21.

Authors' individual contribution : Authors' individual contribution: Conceptualization — M.M.K ; Methodology — M.M.K.; Formal Analysis — J.M.M. & M.M.K.; Investigation — J.M.M. ; Data Curation — J.M.M. & M.M.K; Writing — Original Draft — M.M.K. ; Writing — Review & Editing — J.M.M.; Visualization — M.M.K.; Supervision — J.M.M. ; Project Administration — J.M.M.

Declaration of conflicting interests : The Authors declare that there is no conflict of interest

1. Introduction:

There is no doubt that liquidity is the primary function of banks to generate liquidity on both sides of the balance sheet of assets and liabilities (Al-Matari, 2023). Banks play a crucial role in supporting and financing the economy through their liquidity transfer function (Mdaghri & Oubdi, 2022). The global fiscal crisis of 2007 and 2008 revealed various shortcomings in bank liquidity management (Hsieh & Lee, 2020). The European Commission for Economic and Financial Affairs has defined liquidity as a term used in finance and economics to describe the ease of obtaining money (abd et al., 2020). The Basel Committee on Banking Liquidity defined it as the bank's ability to finance assets and meet its obligations when due without incurring any unacceptable losses (Berger & Bouwman, 2009). Liquidity also helps banks withstand economic shocks (Doan & Bui, 2021). Bank liquidity is also defined as the bank's ability to finance increases in assets and meet obligations within a short period with acceptable losses (Pham et al., 2021). (Azar, 2023) defined banking liquidity as the ability to meet short-term obligations on their due dates and to respond to credit requests. Liquidity requirements prevent banks from engaging in aggressive liquidity transfers, which could expose them to excessive liquidity risks in recessionary periods (Acosta-Smith et al., 2019). Liquidity is important for banks in general because having sufficient liquidity enables the bank to absorb future risks (N. Chen et al., 2018). Bank liquidity has become a hot topic in banking and finance since the aftermath of the global fiscal crisis in 2007-2008 (Mairafi et al., 2018). Maintaining liquidity is a prerequisite for banks since it is assumed that the risk of a liquidity shortage could have serious consequences for the banking system and the economy (Dang, 2020). Since the bank's liquidity is a function of the bank's profitability, it is worth noting that its stability depends on its performance in terms of its profitability (Matey, 2021). The importance of banking liquidity stems from its work, as these banks rely primarily on external resources (public deposits) for financing (abd et al., 2020). Since the financial crisis of 2007 and beyond, banks have generally suffered from a lack of liquidity in the wake of the subprime mortgage crisis, and in particular, banks that rely heavily on the short-term money market or the purchased money market will be more vulnerable to liquidity problems in the future (El-Chaarani, 2019). The interbank liquidity problem during the crisis highlighted the importance of maintaining liquidity, which was not emphasized before the 2007–2009 crisis (I. Chen et al., 2020). Modern financial theories have long recognized that banks exist because they perform two central economic activities: generating liquidity and transferring risk (Golubeva et al., 2019). Banking liquidity risk was also defined by Basel on Banking Risks as the risk that a bank cannot increase its funds through the assets it owns (Huong et al., 2021); (El-Massah et al., 2019). Since liquidity risks are among the most serious risks to banks, the Basel Committee on Banking Supervision has imposed regulations for the Liquidity Coverage Ratio and the Net Stable Funding Ratio (Y.-K. Chen et al., 2018). Liquidity generation can occur in a bank when it provides illiquid loans to borrowers while allowing depositors to withdraw their money at its nominal value at any time possible (Hou et al., 2018). Liquidity is created when a bank converts illiquid assets, such as business loans, into liquid liabilities, such as transaction deposits (Berger & Bouwman, 2009). According to the theory of financial intermediation, the generation of liquidity is one of the main reasons for the existence of banks, as banks work to generate liquidity in the balance sheet by financing illiquid assets (Berger & Bouwman, 2017) (Yeddou & Pourroy, 2020). Liquidity generation is calculated using the approach developed by Berger and Baumann (2009), whose three-step procedure begins by classifying bank balance sheet items as liquid, semi-liquid, or illiquid (Fidrmuc et al., 2015).

The process by which banks add funds to repay their debt obligations and extend credit to borrowers is known as “bank liquidity generation” (Vuong et al., 2023). Liquidity-generating components such as loans, deposits and off-balance sheet operations can be viewed as sources of liquidity risk for banks (Tran & Nguyen, 2024). The great development in globalization processes, the dominance of international investment relations between the countries of the world, the increase in competition for foreign direct investment, and the increase in local investment in priority industries in the economic complex have led to (Wilensky et al., 2020). Investment is all types of wealth spent over time in different sectors of the economy to meet unlimited needs (Finagina et al., 2021; Mirzaeva, 2022). The fundamental role of investment operations is linked to the fact that investment projects form the production structure. Investment plays a vital role in economic progress, and public financing policy and appropriate resource allocation accelerate economic activities (Sun et al., 2023). There are many definitions regarding the concept of investment, as it is defined according to its components as the level of addition to real capital resulting from productive activity during a specific period (Bustamante & Frésard, 2017). Investment is also known as the value of sacrificing money to obtain greater and uncertain financial value (Stephenson et al., 2021). Investment also means any type of asset that the investor owns or controls, directly or indirectly, and has the characteristics of an investment (Bischoff & Wühler, 2019). Creating a suitable investment climate is one of the important foundations for developing and implementing investment activities (Sabirov et al., 2021). Investment plays an important role at both the macro and micro levels, as it determines the future of a particular economic entity and the entire country (Tolaganova & Ochilov, 2024). Investment is one of the most crucial factors for achieving economic growth and sustainable development by directing funds towards productive projects and financial assets (Yelnikova & Kwilinski, 2020). The research addressed the study of the role of banking liquidity in activating investment and stimulating economic growth in Iraq for the years (2014-2023). The research problem lies in improving the role of banking liquidity in activating investment and determining the banking and economic policies necessary to enhance banking liquidity and stimulate a more sustainable investment environment. The importance of the research can be expressed by knowing the countries that practice banking liquidity in enhancing and activating investment levels, as well as stimulating economic growth in Iraq. The current research also contributes to describing the nature and level of the relationship between the availability of banking liquidity and its reflection in enhancing the investor's ability to finance his projects, especially considering the recent economic challenges and threats that Iraq has witnessed. Therefore, through the literature and by shedding light on the possibility of the relationship between banking liquidity and investment, the most appropriate strategies and policies for banking liquidity can be identified to raise investment attraction in Iraq. The research also provides recommendations that help the decision-making authorities in appropriate strategies to enhance the role of the banking sector in attracting and preventing the investment environment in Iraq. This helps enhance and achieve sustainable economic development and reduces Iraq's dependence on oil revenues.

2. Literature Review and Hypothesis Development:

A study by (Lartey et al., 2013) about the relationship between liquidity and profitability of listed banks in Ghana shows that the liquidity and profitability levels of listed banks declined during the period 2005-2010 due to the existence of a very weak positive relationship between liquidity and profitability of listed banks. In a study conducted by (Malallah & Hamza, 2018) that addressed measuring the impact of liquidity, credit and solvency risks on the level of banking security for the period (2005-2015), the results indicated the existence of a significant impact of the independent variables (liquidity risks), (credit risks), (solvency risks), respectively, on the degree of banking hedging, and that the explanatory power of the designed model reached 88%, which is evidence of its efficiency in expressing the impact of the banking risks studied on the degree of banking hedging.

The study's results (Mashamba, 2018) indicate that the Basel III Committee rules on the impact of liquidity on profit levels in emerging economies are consistent with liquidity management in a manner that is proportional to the coverage of this liquidity. Therefore, these rules do not have any harmful impact on banks and banking liquidity in emerging economies. While the results of the study conducted by (abd et al., 2020) showed that banking liquidity is the backbone of the banking sector, the study also sought to demonstrate the extent of the possibility of investing in banking liquidity and the role it plays in raising the level of financial suitability of banks. The results indicated that banks need more credit activity regardless of their type. The study (HELU, 2020) addressed the nature and level of the relationship between bank liquidity and profitability levels, as the results showed that any increase in cash compared to the size of deposits enhances the bank's performance. The study (Abbas & Jawad, 2023) shed light on analyzing the factors affecting the banking liquidity risks of banks registered in the Damascus Securities Exchange. The results indicated that the net revenue rate is the most closely related to the main component of profitability ratios, while the deposits-to-assets ratio is the most closely related to the main component of management quality ratios. A study conducted by (Wadi and Dhaireb, 2021) at the Bank of Baghdad dealt with the relationship between liquidity and profitability and its relationship in enhancing the banking value for the period (2016-2019). The results indicated that liquidity and profitability did not have an impact on the bank's value. A study conducted by (Alwan, 2021) examined the impact of banking financial indicators on investment banking for a sample of Iraqi private commercial banks using longitudinal data models. The results indicated an inverse relationship between (liquidity) as an independent variable and (investment) as a dependent variable. This reflects the negative impact of this variable on investments in commercial banks. In a study that addressed the evaluation of banking liquidity using financial indicators at the Middle East Bank for the period (2005-2019) conducted (Abd, 2022), the results indicated that there was a disparity and fluctuation in banking liquidity at the Middle East Bank, ranging between high and low, as a result of being affected by several internal and external factors. Excess liquidity in a way leads to a reduction in liquidity ratios at the Middle East Bank. In a study conducted by (Allah & Hammadi, 2022) on banking liquidity and its role in developing the banking sector in several commercial banks in Iraq, it became clear that there is a type of complementary relationship between the level of gross domestic product and banking liquidity of a legal nature, and that this relationship is a direct relationship. The research hypotheses can be elucidated as follows, based on those mentioned above:

There is a positive impact of bank liquidity on the volume of bank credit (investment) granted in each of (Bank of Baghdad, National Bank of Iraq, Middle East Bank)

3. Methodology:

To achieve the research objectives and prove the validity of his hypothesis, the researcher adopted the deductive approach that relies on analysis to reach the results by moving from the general principle to the specific principle in addition to the inductive approach based on theoretical foundations by employing the descriptive analysis method and using all data, parameters and measurement tool (E-views 12) to measure banking liquidity in enhancing banking credit in (Bank of Baghdad, National Bank of Iraq, Middle East Bank). The study used some statistical methods and tools and several financial indicators to analyze the study data and test the validity of the hypothesis based on the statistical program. (E-views 12). The data covers the period from 2014 to 2023, and the relationship between banking liquidity and investment in the banks under study was studied. The type of relationship between the research variables can be explained and expressed in Figure (1):

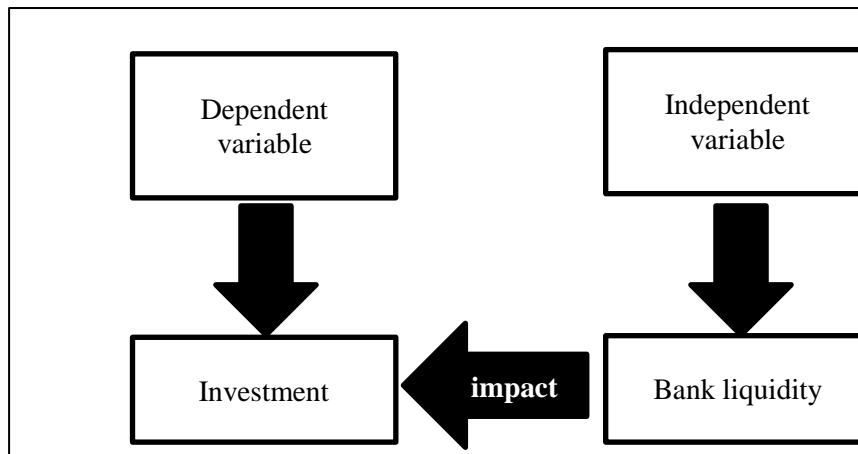


Figure 1: Hypothetical diagram of Author

3.1 The Test:

Dickey and Fuller developed the Augmented Dickey-Fuller (ADF) test to overcome the issue of autocorrelation in random error, which was not addressed by the simple Dickey-Fuller test. To achieve this, they added a suitable number of lagged difference terms to the equation. This addition helps to correct the autocorrelation present in the errors, making the test more accurate and effective in diagnosing the stationarity of the time series. Therefore, the results of this test can be more reliably used when analyzing time series data and making decisions based on those analyses:

$$\Delta Y_t = B_t + \alpha y_{t-1} + u_t$$

Let us make the unit root test equation as follows:

$$\Delta Y_t = a + B_t + \alpha(y_{t-1}) + \sum_{i=1}^m \phi_i \Delta y_{t-i} + u_t$$

Where

Y_t : time series of variable Y

ΔY_t : first difference of time series Y_t

u_t : random error term

m: length of time gaps

The Phelps-Perron (PP) test differs from the augmented Dickey-Fuller (ADF) test in how it handles the problem of autocorrelation. While the ADF test adds lag terms to the equation to deal with autocorrelation, the Phelps-Perron test relies on a nonparametric correction process without the need to add lag terms.

This test relies on two tests to demonstrate the complementary relationship between the research variables:

Trace Test (λ test)

This test is calculated according to the following formula:

$$\lambda_{test}(r) = -T \sum_{i=r+1}^n \ln(1 - \lambda r + 1)$$

the Maximum value test is calculated according to the following formula:

$$\lambda_{max}(r) = -T \ln(1 - \lambda r + 1)$$

Autoregressive Distributed Lag (ARDL).

Granger Causality Test: The Cranger causality test is based on the following two equations :

$$y_t - I + \sum_{j=1}^n F_j + x_t - j + u_t \quad y_t = a_2 + \sum_{i=1}^m B_2$$

$$x_t - 1 + \sum_{j=1}^n T_j + y_t - j + u_t \quad x_t = a_1 + \sum_{i=1}^m B_1$$

At this stage, it is necessary to accurately characterize the estimated model, as this characterization is a crucial step in formulating the standard model. The standard model includes a set of economic relationships that are expressed through equations. In these equations, the independent (explanatory) variables and the dependent (explained) variables that enter the model are specified. These variables are described below:

Bank Liquidity (BL): Bank liquidity is identified as a key indicator in the model, reflecting the availability of funds in the banks under study and their ability to provide credit.

Total Credit (CR): Represents the total credit granted by the banks in the research sample, both contractual and cash, to all individuals and companies. After identifying the dependent and independent variables, we can formulate the standard models to be estimated to achieve the research objectives and prove or disprove their hypothesis, as follows:

$$cr = f(bl)$$

$$cr = \alpha + \beta bl + u_t$$

The variables will be coded to distinguish between the standard results of the research sample bank based on their abbreviations as follows: Bank of Baghdad (bb).

4. Results:

After conducting the unit root test and confirming the stationarity of the two variables under study at different integration orders, it was found that bank credit is stationary at the level, while bank liquidity is stationary at the first difference according to the PP test. Therefore, it became possible to apply the cointegration test using the ARDL method, as this method allows the analysis of the relationship between variables even if they are integrated at different orders.

The results of Table (1) indicate that the bounds test supports the rejection of the null hypothesis and the acceptance of the alternative hypothesis, which suggests the existence of a long-term equilibrium relationship between the variables under study. This is evident from the calculated F-value of 5.173, which is higher than the upper bound critical value of 4.16 at a 5% significance level.

Table 1: Bounds Test for the Relationship Between Bank Liquidity and Bank Credit for Bank of Baghdad.

Null hypothesis: No levels relationship						
Number of cointegrating variables: 1						
Trend type: Rest. constant (Case 2)						
Sample size: 38						
Test Statistic			Value			
F-statistic			5.173517			
	10%		5%		1%	
Sample Size	I (0)	I (1)	I (0)	I (1)	I (0)	I (1)
35	3.223	3.757	3.957	4.530	5.763	6.480
40	3.210	3.730	3.937	4.523	5.593	6.333
Asymptotic	3.020	3.510	3.620	4.160	4.940	5.580

Source: Outputs of the Eviews13 Statistical Program.

Moreover, the adjusted coefficient of determination (R^2) indicates that approximately 79% of the changes in the dependent variable (CRBB) can be explained by changes in the independent variable (bl), holding other factors constant. This suggests that the model is statistically significant, as the probability value associated with the F-statistic (Prob F-statistic) is 0.00, which is far below the 5% threshold, further supporting the credibility of the results. Additionally, the results show that the model does not suffer from autocorrelation, as evidenced

by the D.W (Durbin-Watson) value of 2.29, which is greater than the R^2 value of 82%. This indicates that the model is appropriate for analysis and does not suffer from statistical issues that could affect its results.

The results of the test for the relationship between bank liquidity and bank credit in both the short and long terms indicate the existence of a relationship between the two studied variables, whether in the short or long term, and determine whether the relationship is inverse or direct. Additionally, the error correction term shows the speed at which the dependent variable adjusts to shocks or imbalances in the explanatory variable in the short term to achieve long-term equilibrium. As shown in Table (2), all short-term parameters have a significant impact on bank credit, with the probability value (Prob) for all of them being less than 5%, indicating the extent to which the dependent variable is affected by changes in the explanatory variable, represented by bank liquidity. The error correction term, as expected, is negative and statistically significant, with a value of (-0.59) and a very low significance level of (0.0000), confirming the existence of a short-term equilibrium relationship moving towards a long-term equilibrium between the two variables under study. Furthermore, the error correction term shows that approximately 59% of the short-term deviation in the value of bank credit (the dependent variable) from the previous period (t-i) is corrected in the current period (t) towards the long-term relationship when there is any change or shock in bank liquidity (the explanatory variable).

Table 2: Error Correction Term for the Relationship Between Bank Liquidity and Bank Credit for Bank of Baghdad

D(CRBB)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CRBB (-1) *	12963.79	7190.403	1.802929	0.0803
BLBB**	-0.050819	0.016437	-3.091698	0.0040
C	-3.68E-06	5.61E-06	-0.655626	0.5165
D (CRBB (-1))	-0.590206	0.113594	-5.195751	0.0000

Source: Outputs of the Eviews13 Statistical Program.

As shown in Table (3), the relationship between the two studied variables is also positive, as indicated by the sign of the long-term coefficient. Additionally, the relationship is statistically significant, with a Prob value of 0.0124, which is less than 5%. This means the null hypothesis is rejected, and the alternative hypothesis is accepted, indicating the existence of a long-term equilibrium relationship between the two variables under study.

Table 3: The Relationship Between Bank Liquidity and Bank Credit for Bank of Baghdad.

Estimation of Long-Term Parameters				
Variable *	Coefficient	Std. Error	t-Statistic	Prob.
BLBB	255097.8	96940.62	2.631486	0.0124
C	7.24E-05	0.000108	0.673524	0.5049

Source: Outputs of the Eviews13 Statistical Program.

The Granger causality test further confirms the results obtained from the cointegration test. As shown in Table (4), there is a short-term unidirectional causal relationship from bank liquidity to credit. This is supported by the Prob value, which is statistically significant as it is less than 5%. This result is acceptable and aligns with macroeconomic theory.

Table 4: Granger Causality Test Results for the Relationship Between Bank Liquidity and Bank Credit for Bank of Baghdad

Pairwise Granger Causality Tests			
Date: 08/27/24 Time: 22:50			
Sample: 2014Q1 2023Q4			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
BLBB does not Granger Cause CRBB	38	6.08975	0.0083
CRBB does not Granger Cause BLBB		0.58893	0.5606

Source: Outputs of the Eviews13 Statistical Program.

A structural stability test of the ARDL model was conducted to ensure the accuracy and validity of the results. This was done by applying the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests developed by Brown and others. If the curve for both tests fall within the critical bounds at the 5% significance level, the null hypothesis, which states that the variables under study are stable, is accepted. The results from both tests indicate the stability of the parameters in both the short and long terms for the estimated ARDL model, as the curve for both tests lie within the critical bounds and fluctuates around the zero value at the 5% significance level.

Additionally, the model does not suffer from autocorrelation issues, as evidenced by the LM test, where the Prob Chi-square (1) value is 0.26, which is greater than 5%, indicating the acceptance of the null hypothesis, suggesting no autocorrelation issue in the residuals. Furthermore, the model is free from heteroscedasticity issues, based on the ARCH (1) heteroscedasticity test, which confirms the homoscedasticity of the residuals. The Prob Chi-square (1) value is 0.70, which is greater than 5%, meaning that the null hypothesis of homoscedasticity is accepted.

5. Conclusion:

The results indicate that the bank has maintained a moderate level of liquidity in accordance with international standards set by the regulatory authorities (Central Bank of Iraq) and has sufficient liquidity to meet outgoing cash flows within a short period, even under volatile economic conditions. Despite the significant decline in the volume of deposits with foreign banks, this decline was unable to keep pace with the impact of other liquidity components on the bank's total liquidity, as the bank was able to attract more deposits by providing rapid banking solutions and services that meet the needs of all customers and companies. The bank maintained its commitment to international liquidity standards, especially the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR), achieving levels higher than those set by the Central Bank of Iraq (100%) according to international standards, even under stressful conditions. The bank adopted a strategy aimed at enhancing cooperation with major companies in various sectors, which led to an increase in the volume of banking services provided to these companies and the attraction of many new companies, which contributed to the growth of deposits. The bank focused on granting cash credits in the field of community services, while the trade, hotels and restaurants sector came in second place in terms of the volume of cash credits granted.

Authors Declaration:

Conflicts of Interest: None

-We Hereby Confirm That All The Figures and Tables In The Manuscript Are Mine and Ours. Besides, The Figures and Images, which are Not Mine, Have Been Permitted Republication and Attached to The Manuscript.

- Ethical Clearance: The Research Was Approved by The Local Ethical Committee in The University.

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