

## Financial Flexibility, Cash holdings and liquidity: An Empirical Study

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**ABSTRACT:** The study aims to uncover the extent to which private commercial banks practice financial flexibility through their impact on cash liquidity and financial flexibility indicators (debt-equity ratio, cash flow, and public debt susceptibility) as an explanatory variable, and cash liquidity as a dependent variable and for its indicators (cash balance ratio, liquidity ratio) Legal, employment ratio (investment). In order to achieve the objectives of the study and answer the questions, the study was selected in the Iraqi private banking sector and the sample was applied to (10) banks using the data published on the website of the Iraq Stock Exchange. A detailed analysis (statistically and financially) of these two variables ((financial flexibility and cash liquidity)) was carried out in light of the data obtained for the study sample represented by the Iraq Stock Exchange for (10) from commercial banks affiliated with the Iraqi private sector according to specific inspection conditions, and for the period. (From 1/1/2019 to 12/31/2019), and by using many financial and statistical methods, the study concluded with a number of conclusions, perhaps the most important of which is the existence of a positive and moral correlation between indicators of financial flexibility and indicators of cash liquidity, as well as the existence of an impact relationship for indicators Financial flexibility on cash liquidity indicators, some of which are consistent with the study hypotheses, and some contradict them. The study came out with a number of recommendations, perhaps the most important of which is the necessity for bank administrations to characterize their financial plans for the issue of flexibility and its relevance to the formation of cash liquidity that would fulfill its obligations towards customers dealing with it and also work to face emergency conditions for it. Therefore, the banks 'reliance on financial flexibility indicators provides them with accurate insights about the optimal use of deposits that they can invest in in a way that generates cash assets for them.

**Keywords:** financial flexibility, banking sector, cash holding, liquidity, financial decisions

### Introduction

Globalization and modernization have inflicted risks and uncertainty in the business environment, which necessitated that companies be strategically, technically, operationally, and financially flexible, as external shocks constantly harm organizations, which affects their profitability and flows, including cash liquidity. Financial flexibility is a weapon to deal with these shocks, as financial flexibility plays a large and important role in solving most of the financing problems facing business organizations and is considered a powerful tool that controls financial leverage decisions, and it is the missing crucial link in capital structure theories (M. Ali, Hameedi, & Almagtome, 2019). Financial flexibility with which organizations can enhance their level of financial leverage in response to the ongoing and ongoing changes in their dynamic environment, and thus it raises the organization's ability to meet the required need for liquidity based on what happens between liquid assets and volatile liabilities, as is the case in the work of banks, where liquidity is It has importance by achieving the goals of the organizations as well as achieving profitability, as liquidity is a rescue boat in turbulent times. Especially since financial flexibility and cash flow are two interrelated goals for business organizations through which they can achieve the budget for financial operations. Hence, financial flexibility and cash liquidity are the lifeblood of banks, and in light of this came the subject of the study (financial flexibility and its impact on cash liquidity), whose contents included four topics (M. N. Ali, Almagtome, & Hameedi, 2019). The first topic included the theoretical aspect of both financial flexibility and cash liquidity and the relationship between them, while the second topic included Some of the previous studies and the scientific methodology of the study, while the applied and analytical framework of the data belonged to the third topic, and finally, the fourth topic had a role in showing the conclusions and recommendations that were reached to achieve the objectives of the study.

### Concept of financial flexibility

The concept of financial flexibility is related primarily to factors affecting capital structure decisions (Graham & Harvey, 2001: 98). Financial flexibility is the possibility of business enterprises to take advantage of or address unexpected things in order to access their financing and restructure them at low costs to avoid financial distress when facing shocks. Negativity, allows them to finance investment projects, and obtain profitable opportunities that will maximize the value of their enterprises (Chua, 2012: 11). Both (Rahimi & Mosavi, 2016: 212) state that it is the

ability of business establishments to restructure their financial resources, with the aim of obtaining the lowest possible costs to achieve the value of the company. capital. It can also help avoid the costs associated with financial crises, should they occur (HAMEEDI, AL-FATLAWI, ALI, & ALMAGTOME, 2021). Financial flexibility means the degree of ability and speed that the company can provide from its necessary resources for investment, as well as to recover the returns to increase the value of the company, in other words, its ability to reallocate its cash flows due to bonds and shareholders over time, in order to create a long-term value with less risk. (Pendar, Tayar & Karimeh, 2019: 134).

**1. The Importance Of Financial Flexibility**

Financial flexibility is receiving increasing attention among researchers, as it was one of the most important determinants of capital structure decisions for financial managers (Graham & Harvey, 2001: 213). Financial flexibility is one of the necessary requirements in order to deal with uncertainties and differences in both The internal and external financial environments in order to show the company's ability to access its financing, restructure its capital, and work to reduce costs in order to avoid financial distress in the face of shocks and to finance investment activities (Byon, 2011: 1-2). Financial flexibility is the main driver behind corporate financial policies that they actively adapt to fund affirmative action projects (Bonaime, Hankis & Harford, 2014: 4).

**The Indicators of Financial Flexibility**

Financial flexibility cannot be measured directly, as business organizations work to create financial flexibility for them by various means, and there is a term (reserve borrowing power), which indirectly refers to their financial flexibility, through which these organizations can access capital markets Money with external flexibility, easily if it maintains sufficient reserves (Bilyay-Erdogan, 2020: 4). In line with the research requirements, my measure of financial flexibility, according to what was mentioned by Daniel et al., 2008: 165) was relied on by the leverage ratio. Finance, and (Ayaydin et al., 2013: 1) for the scale (capacity of public debt and cash flow) as they are among the most important measures adopted in showing financial flexibility indicators:

**A. Leverage ratio**

The financial leverage is a measure of the extent to which the company uses property rights and debts to finance its assets, (Abubakar, 2015: 762), so the financial leverage is measured by a set of financial ratios, as they are used in the analysis of financial statements, especially in banks, as these ratios are the most used tools. In its balance sheet, it helps in evaluating the financing structures of business organizations at a certain time in terms of its dependence on sources of financing, whether external or internal. Among these ratios is the ratio of debt to equity and is used to judge the extent to which business organizations, including banks, use financial leverage. Brigham & Ehrhardt, 2010: 716), as it represents a measure of the amount of debt that business organizations use to finance their assets related to the amount represented in shareholders' equity. The financial leverage can be measured through the ratio of public debt to equity and through the following equation (Saunders& Cornett, 2012: 393):

$$\frac{\text{Long-term} + \text{Current liabilities}}{\text{Property right}}$$

**B. Net cash flow:**

Chua, (2012) affirms that the relationship between cash flow and the increase in investment costs is due to the sources of internal and external funds, in other words, due to the specific restrictions of capital due to the disparity of information, which results in legalizing cases of resorting to external sources of financing and then It leads to a preference for internal financing. Net cash flow can be measured by the following equation (Zhang, Zhao & Jian, 2020: 14):

$$\frac{\text{Cash flow}}{\text{Findings Total}}$$

**C. Capacity of Public Debt**

Financial flexibility represents the firm's ability to maintain a debt ratio. Therefore, the company's debt capacity is defined as the minimum debt-holding ratio at a specific and targeted level, and the distance between the company's debt capacity and the debt-to-debt ratio is called (temporary debt storage), and it indicates the amount of additional debt that the company can issue and explain the company's financial position after Investment and Finance (Yasir & Alabassi, 2020 :), and the capacity of public debt can be measured through the following equation (Rose, 1991: 141):

$$\frac{\text{loans and predecessor}}{\text{Deposits and the like}}$$

**Concept of cash flow**

Despite the prevalence of the concept of liquidity in the literature of financial management and because it appears simple in the concept, there is no unified and comprehensive definition for it, as researchers and practitioners did not agree on a specific definition of liquidity because they had dealt with it in several ways, as both defined it (Bresley & Brighan, 2011: 193). On the basis that it is the ability of the asset to convert into cash in the short term, coupled with the recovery of the cost of the original investment of that asset, they have made it easier to convert to cash at the price that covers the original investment amount, indicating the greater liquidity of that existing, taking into account the difference in the degree of liquidity depending on the characteristics of commercial markets trading in them. (Khoramin et al., 2014: 10).

**The importance of cash flow**

The importance of liquidity has increased in recent years, as a result of the development in various financial transactions, as liquidity has great importance and benefits for all dealers in the financial markets as it makes investors resemble market participants because they will be able to buy and sell shares quickly and easily at the lowest costs (Wuyts, 2007: 258). ). Liquidity is important at the systemic level, as is the priority in coordinating different policies, taking macro-prudential tools, and evaluating them in the impact on the banking sector and the real economy (Nitescu et al., 2020: 166). Business organizations are financially more flexible if they maintain more liquidity and have fewer maturing debts within a year (Fahlenbrach, Rageth & Stulz, 2020: 6-7).

**Financial indicators of cash flow**

The measure of liquidity within any financial organization is subject to two main criteria:

**First:** The institution must be sure that adequate financing is low-cost and available in a short time.

**Second:** Liquidity management also needs to comply with the requirements of profitability or the requirements of financial stability issues ((Njerekai et al., 2020: 25).

Among the most important and prominent of those ratios adopted in the work of banks are (Esin, 2015: 110):

**A. Cash balance ratio**

This percentage means the ability of business organizations to maintain their cash balances to meet their financial obligations that are due on their liabilities payable on time. Where the banks for the above loan, (Amagtome & Alnajjar, 2020). The capacity of public debt can be measured through the following equation (Rose, 1991: 41):

• Cash balance ratio =

$$\frac{\text{Findings tangible assets}}{\text{Findings Total}}$$

**B. Legal Liquidity Ratio:**

This ratio means the ability of business organizations to maintain their primary and secondary reserves to fulfill their obligations owed by the bank in various circumstances, and the capacity of the public debt can be measured through the following equation (Rose, 1991: 141):

• Legal liquidity ratio =

$$\frac{\text{Primary precautions + secondary precautions}}{\text{Deposits and the like}}$$

**C. Employment (investment) ratio**

This ratio means the ability of business organizations, including banks, to employ their money obtained from deposits to meet customers' needs for loans and advances, and the capacity of public debt can be measured through the following equation:

• Employment (investment) ratio =

$$\frac{\text{loans and predecessor}}{\text{Deposits and the like}}$$

**The Relationship Of Financial Flexibility With Cash Liquidity**

Business organizations can support their activities in a consistent and coordinated manner in order to be able to fulfill the expectations and desires of stakeholders when they have a continuous cash flow, and in return, these organizations are required to have sufficient cash liquidity to regularly distribute the salaries of their employees, as well as distribute profits to shareholders, pay taxes and insurance premiums on time, and pay debts (A. Almagtome, Khaghaany, & Önce, 2020). Uninterrupted credit and interest on loans and basic payments, in addition to their confrontation with the common problem of the most important business organizations in bearing the risk of bankruptcy, is their failure to achieve liquidity and financial flexibility (Esin, 2015: 110). The relationship between financial flexibility and cash liquidity lies in the complexity of the concept of financial flexibility, as it is closely related to the flexibility of the company, which requires the departments of business organizations to determine their financial flexibility when managing their financing, and in implementing their strategies. As well as the complexity of its relationship with the flexibility of the organization, therefore, more research should be conducted that deals with the intertwining of factors related to financial flexibility and its change over time with various other aspects of the organization (Choudhry & Mizerka, 2018: 47).

Also, there is a negative bi-causal relationship, which indicates that banks may reduce the composition of liquidity with increasing capital, and when liquidity formation increases, banks will reduce capital ratios (Lee, Martin, Hsieh & Yu, 2020). The liquidity coverage ratio requires banks to maintain high-quality liquid assets that can be easily converted into cash within one day and without decrease, as it enhances flexibility in facing liquidity risks over a longer period of time up to a year.

## **Data and Methodology**

### **A. Research problem**

Many business organizations with different activities, including banks, face multiple environmental changes, whether internal or external, that make them follow strategies that adapt to their capabilities and capabilities, leading to a variation in their capital structure accordingly, which affects negatively or positively on their cash flows represented by liquidity as a result of employment Its assets with investment projects, and the costs and expenses it spends in order to obtain revenues. It strives to achieve a state of financial stability after being exposed to financial risks, so it must possess sufficient financial flexibility in order to make optimal use of its sources that achieve acceptable cash liquidity. The problem of the study is specifically reflected in answering the following questions:

*Does financial flexibility have an impact on cash liquidity through their indicators?*

### **B. The importance of the study**

The importance of the study stems from the importance of its topic and as follows:

1. The importance of the study emerges for banks to show whether financial flexibility gives new opportunities to manage these banks, to express their ability and capabilities to achieve new cash liquidity.
2. The study intended to find out the sources of both financial flexibility and cash liquidity, and how to seize opportunities by banks to take advantage of them.
3. It deals with deposits that lead business organizations to pay attention to both financial flexibility and cash flow.

### **C. Objectives of the study**

As a guide to the study problem and its questions, the main objective of the study is to verify the impact relationship between financial flexibility and cash liquidity, and more specifically, the study has sought to achieve a number of objectives, namely:

1. Knowing whether the characteristics that characterize business organizations such as financial flexibility achieve cash liquidity?
2. Determining the most prominent indicators of financial flexibility in commercial banks, the study sample.
3. Examining the effect of financial flexibility on cash liquidity at the level of the surveyed banks.
4. Knowing whether the indicators of financial flexibility are the same as the indicators of monetary liquidity? Or is it different?

### **D. The study hypotheses**

The current study was launched after defining its problem, importance, and objectives through the main hypothesis, which was formulated to serve as temporary solutions to the problem, which were subsequently tested in order to identify the extent of its suitability for the study and these hypotheses are:

Main hypothesis: There is a correlation relationship between the financial flexibility represented by its indicators (financial leverage (FL), net cash flow (NCF), and the capacity of public debt (PDC), and the cash liquidity represented by its indicators (cash balance ratio (CBR), statutory liquidity ratio (LLR)). ), And Employment Ratio (IR).

## **The Results**

### **First: Financial analysis of the study variables**

In this topic, the financial equations will be used in processing the data for the sample of the study, and then showing and discussing the results of the financial analysis, and the extent of banks' reliance on employing the indicators of each of the study variables, financial flexibility and cash liquidity. For the purposes of the analysis, the banks of the study sample have been coded and as indicated in Table (3-1) as follows:

#	Bank Name	code
.1	Iraqi Commercial Bank	<b>B1</b>
.2	Bank of Baghdad	<b>B2</b>
.3	The Iraqi Middle East Bank for Investment	<b>B3</b>
.4	Iraqi Investment Bank	<b>B4</b>
.5	United Investment Bank	<b>B5</b>
.6	The National Bank of Iraq	<b>B6</b>
.7	Sumer Commercial Bank	<b>B7</b>
.8	Gulf Commercial Bank	<b>B8</b>
.9	Mosul Bank	<b>B9</b>
.10	Kurdistan Bank	<b>B10</b>

A. Financial analysis of the financial flexibility variable according to its indicators

- Analyzing the results of the Debt to Total Equity Ratio (DER) indicator

Table (2-3) below shows that the general rate obtained by the sector for the aforementioned index was (11,365). When comparing the ratios obtained by the researched banks, it was found that the ratio of debt to equity of the bank (B2) reached (28.76) with a standard deviation of (25.38). Where the rate exceeded the achieved rate at the level of the surveyed banks, followed by a bank (B3) at a rate of (13.12) with a standard deviation of (10.79), while the lowest rate was for the bank (B1) with a rate of (3.54) and a standard deviation (2.88). When observing all the data for the surveyed banks, they were distributed naturally because the level of significance was greater than (0.05), where the results of the (Jarque-Bear) test ranged between (0.173) and (0.60), as is evident in the following table (32):

Table (2). The ratio of debt to total shows the right of ownership of the banks surveyed

	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>	<b>B8</b>	<b>B9</b>	<b>B10</b>	<b>The overall rate</b>
<b>Mean</b>	3.54	28.76	13.12	6.164	20	5.135	4.49	14.8	6.565	11.06	11.365
<b>Median</b>	4.65	30.46	16.45	6.527	13.5	2.263	1.83	11.4	5.961	11.47	
<b>Maximum</b>	6.83	63.56	26.14	13.84	84.9	15.48	25.7	25	12.41	26.94	
<b>Minimum</b>	0.01	0.045	0.015	0.001	8.77	0.012	0	8.21	3.528	0.003	
<b>Std. Dev.</b>	2.88	25.38	10.79	5.399	21.7	6.073	7.43	6.03	2.606	10.86	9.913
<b>Skewness</b>	-0.41	0.01-	-0.347	-0.07	2.77	0.757	2.35	0.32	1.244	0.271	
<b>Kurtosis</b>	1.37	1.508	1.383	1.435	2.85	1.938	7.4	1.52	2.575	1.55	
<b>Jarque-Bera</b>	1.53	1.02	1.419	1.13	2.7	1.567	2.9	1.2	2.99	1.099	
<b>Probability</b>	0.47	0.6	0.492	0.568	0.173	0.457	0.295	0.55	0.224	0.577	

In order to show the mean values and standard deviation (Std. Dev) of the bank, the study sample for the time series from (2009) to (2019) depending on the results of (Eviews), Table (3) has shown the following those values:

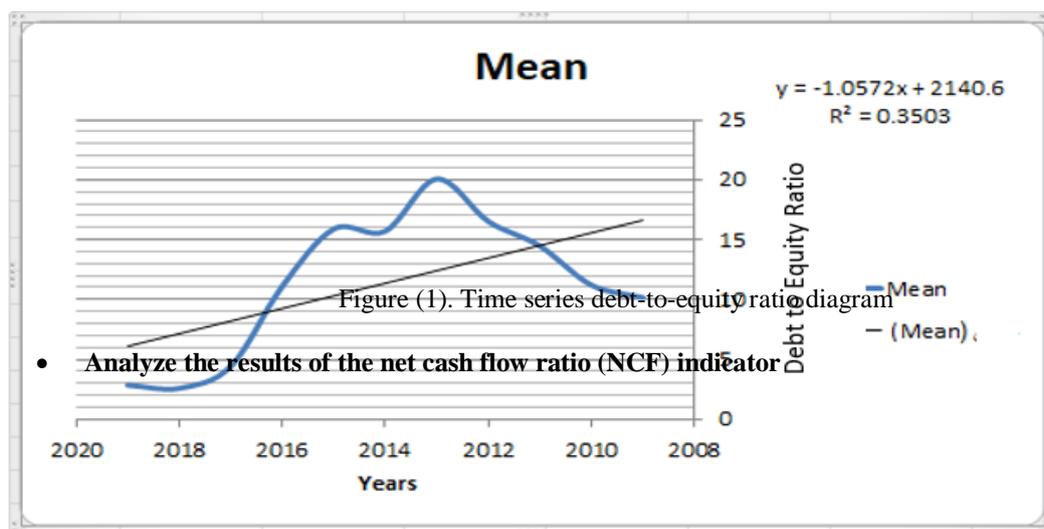
Table (3). The arithmetic mean and standard deviation of the study sample banks according to their time series

<b>Year</b>	<b>Mean</b>	<b>Std. Dev.</b>
2009	10.1627	8.6155
2010	11.2149	10.0668
2011	14.4755	9.3118
2012	16.5277	12.6754
2013	20.0748	16.0028
2014	15.7125	17.5980
2015	15.8877	14.4025
2016	11.1052	26.6941

2017	4.418	8.4301
2018	2.585	4.2820
2019	2.8491	4.8215
<b>Average</b>	<b>11.365</b>	<b>9.913</b>

Source: The researcher's reliance on the results of (Eviews)

From table (3) above, it was found that the same indicator reached the arithmetic mean for the year (2009) which is (10.1627), which is below the rate achieved at the level of the time series, and with a standard deviation of (8.6155). (11.2149), which is close to the general average, and with a standard deviation of (10.0668), while the percentage began to rise above the average for the years (2011, 2012, 2013, 2014, 2015), with a standard deviation greater than the general standard deviation, but in (2016) it started The percentage decreases, which means that the banks of the study sample have begun to realize the need to reduce dependence on public debt, and the levels of ownership rights must be strengthened, and this has been evident for the years (2017, 2018, 2019) respectively, that those rates achieved at the level of the mentioned indicator have decreased very much compared to the years. The previous one, which is shown in Figure (3), shows the chart for the same indicator and the time series.



- Analyze the results of the net cash flow ratio (NCF) indicator

The following table (4) showed that the general rate obtained by the sector for the aforementioned index amounted to (0.251). When comparing the ratios obtained by the researched banks, it was found that the average net cash flow of (B10) bank reached (0.3871) with a standard deviation of (0.4477), where it exceeded the achieved rate at the level of the studied banks, followed by the bank ((B7) at a rate of (0.36) with a standard deviation of (0.26), while the lowest rate was for the bank (B8) at a rate of (0.11) and with a standard deviation (0.07). Distributed normally, because the level of significance was greater than (0.05), where the results of the (Jarque-Bear) test ranged between (0.188) and (0.73), as is evident in Table (4).

Table (4). The ratio of net cash flow to the surveyed banks

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	The overall rate
<b>Mean</b>	0.2	0.208273	0.161	0.287	0.16	0.352	0.36	0.11	0.287	0.3871	0.251
<b>Median</b>	0.16	0.131	0.055	0.139	0.13	0.321	0.28	0.11	0.25	0.043	
<b>Maximum</b>	0.5	0.497	0.593	0.743	0.57	0.718	0.73	0.27	0.652	0.953	
<b>Minimum</b>	0.03	0.012	0.005	0.008	0.02	0.017	0.05	0	0.083	0.001	
<b>Std. Dev.</b>	0.13	0.169105	0.203	0.307	0.14	0.255	0.26	0.07	0.174	0.4477	0.216
<b>Skewness</b>	1.01	0.674042	1.346	0.528	2.44	0.093	0.34	0.58	0.754	0.4323	
<b>Kurtosis</b>	2.58	2.082258	2.23	1.528	2.96	1.532	1.46	2.95	2.64	1.2908	
<b>Jarque-Bera</b>	2.03	1.218974	2.344	1.505	2.2	1.004	1.3	0.62	1.101	1.6815	
<b>Probability</b>	0.36	0.54363	0.188	0.471	0.293	0.605	0.52	0.73	0.577	0.4313	

Source: The researcher's reliance on the results of (EViews)

In order to show the mean number and the standard deviation (Std. Dev.) For the banks of the study sample for the same time series from (2009) to (2019) depending on the results of (EViews), the following table (5) showed those values:

Table (5). The arithmetic mean and standard deviation of the study sample banks according to their time series

Year	Mean	Std. Dev.
2009	0.1906	0.1654
2010	0.103	0.0970
2011	0.1175	0.1045
2012	0.2064	0.1383
2013	0.144	0.0699
2014	0.1457	0.1925
2015	0.0854	0.0640
2016	0.454	0.2650
2017	0.4292	0.3141
2018	0.5146	0.2802
2019	0.3733	0.3074
<b>Average</b>	<b>0.251</b>	<b>0.216</b>

Source: The researcher's reliance on the results of (Eviews)

From table (5) above, it was found that the index itself reached the arithmetic mean for (2009) is (0.1906), which is below the rate achieved at the level of the time series and with a standard deviation of (0.1654), and in (2010) the mentioned percentage decreased slightly to reach (0.103), which is less than the general average and a standard deviation of (0.0970), and the rate did not improve as it continued below the general average and ranges for years (2011, 2012, 2013, 2014, 2015), respectively, and with a standard deviation without the general standard deviation. This means that the banks in the study sample did not follow a fixed policy in maintaining the net cash flow ratio is sufficient, but they worked to change their policy towards this indicator, and this has been evident for the years (2016, 2017, 2018, 2019) that the achieved rate has suddenly increased to reach To (0.454, 0.4292, 0.5146, 0.3733), respectively, which is a very high rate compared to previous years, which is shown by Figure (2) following, which shows the graph of the same indicator and the time series.

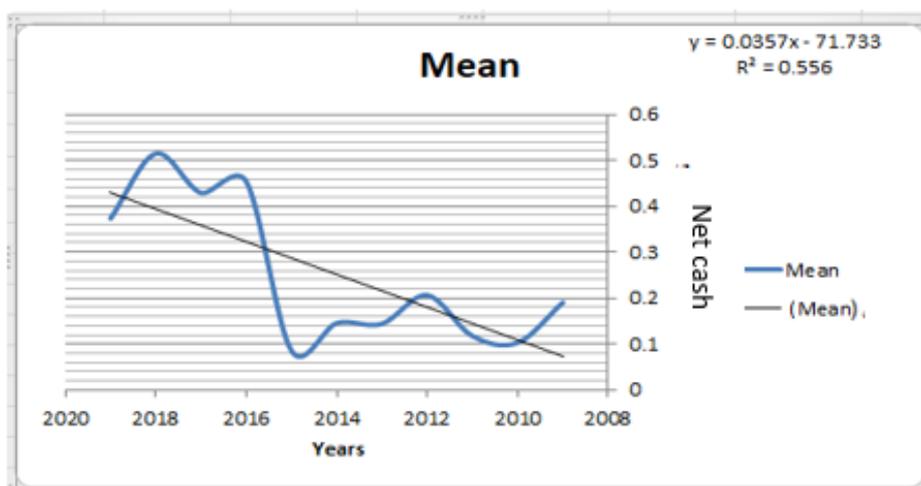


Figure (2). Chart of net cash flow ratio for the time series

• **Analysis of the results of the Public Debt Capacity Ratio (BDC)**

The following table (3-6) showed that the general rate obtained by the sector for the aforementioned index reached (0.073), and when comparing the ratios obtained by the researched banks, it was found that the ratio of public debt capacity of (B4) bank reached (0.133) with a standard deviation of ( 0.22) as it exceeded the achieved rate at the level of the studied banks, followed by Bank (B3) at a rate of (0.113) with a standard deviation of (0.052), while the lowest percentage was from the share of the bank (B9) at a rate of (0.04) and with a standard deviation (0.046). When observing all the data for the surveyed banks, they were distributed normally because the level of significance

was greater than (0.05), where the results of the (Jarque-Bear) test ranged between (0.05) and (0.768), as is evident in Table (6):

Table (6). The ratio of the public debt capacity of the surveyed banks

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	overall rate
Mean	0.01	0.069364	0.115	0.133	0.07	0.072	0.06	0.09	0.04	0.068	0.073
Median	0.01	0.033	0.113	0.036	0.09	0.025	0.06	0.06	0.017	0.037	
Maximum	0.04	0.443	0.201	0.585	0.11	0.284	0.08	0.21	0.133	0.418	
Minimum	0	0.018	0.001	0.027	0.02	0.016	0.02	0.02	0.01	0.004	
Std. Dev.	0.01	0.124059	0.052	0.22	0.04	0.102	0.02	0.06	0.046	0.117298	0.079
Skewness	2.31	2.834347	-0.469	1.648	-0.6	1.631	-0.82	0.95	1.491	2.737595	
Kurtosis	2.14	2.0611	2.519	2.722	1.72	2.707	2.57	2.31	2.45	2.743505	
Jarque-Bera	2.6	2.56588	0.527	2.221	1.41	2.108	1.38	1.89	2.169	2.85921	
Probability	0.076	0.074	0.768	0.073	0.5	0.078	0.5	0.39	0.124	0.055	

In order to show the mean values and the standard deviation (Std.Dev.) For the banks of the study sample for the same time series from (2009) to (2019) depending on the results of (Eviews), the following table (7) showed those values:

Table (7). The arithmetic mean and standard deviation of the study sample banks according to their time series

Year	Mean	Std. Dev.
2009	0.0426	0.026
2010	0.0411	0.030
2011	0.0787	0.122
2012	0.0411	0.027
2013	0.0416	0.032
2014	0.0501	0.041
2015	0.0559	0.042
2016	0.07	0.075
2017	0.0602	0.064
2018	0.1384	0.177
2019	0.1811	0.193
<b>Average</b>	<b>0.073</b>	<b>0.079</b>

Source: The researcher's reliance on the results of (Eviews)

From table (7) above, it was found that the index itself reached its arithmetic mean for the year (2009) which is (0.0426), which is below the rate achieved at the level of the time series and with a standard deviation of (0.026). Slight to reach (0.0411), which is less than the general average and with a standard deviation of (0.030), while the percentage increased above the general rate for the year (2011) to reach (0.0787) and with a standard deviation of (0.122), and then the rate decreased and ranges for years (2012, 2013, 2014, 2015) and with standard deviations below the general standard deviation, which means that the banks of the study sample did not follow a fixed policy in maintaining an adequate debt capacity ratio, but they worked to change their policy towards this indicator and this is clearly evident for the years (2018, 2019) The fact that the achieved rate increased suddenly to (0.1384 and 0.1811), respectively, which is a very high rate compared to previous years, which is explained in Figure 3 below, which shows the graph of the same indicator and the time series.

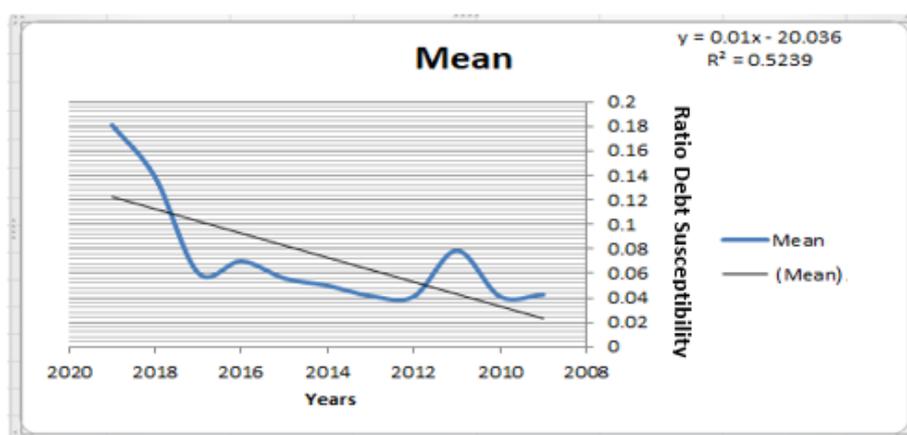


Figure (3). Graphic of public debt capacity ratio for the same time series

## B. Financial analysis of the cash liquidity variable according to its indicators

### Analyze the results of the Cash Balance Index (CBR)

The following table (8) showed that the general rate obtained by the sector for the aforementioned index (1.145) and when comparing the ratios obtained by the researched banks, it was found that the cash balance ratio of the bank (B7) reached (1.972) with a standard deviation of (0.754), as it exceeded the achieved rate. At the level of the banks studied, followed by a bank (B3) at a rate of (1.807) and a standard deviation of (3.300), while the lowest percentage was from the bank's share (B5) at a rate of (0.412) and a standard deviation of (0.350). When observing all the data for the surveyed banks, they were normally distributed because the level of significance was greater than (0.05), where the results of the (Jarque-Bera) test ranged between (0.072) and (0.952), as is evident in Table (8).

Table (8). The percentage of the cash balance of the surveyed banks

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	overall rate
Mean	1.049	1.293	1.807	0.724	0.412	1.109	1.972	0.650	1.089	1.346	1.145
Median	1.076	0.722	0.786	0.822	0.384	1.164	1.820	0.614	1.184	1.447	
Maximum	2.315	6.865	11.710	1.502	1.269	2.070	3.307	1.113	1.557	2.426	
Minimum	0.001	0.654	0.011	0.001	0.058	0.064	0.760	0.309	0.524	0.097	
Std. Dev.	0.698	1.850	3.300	0.593	0.350	0.586	0.754	0.252	0.355	0.618	0.936
Skewness	0.328	2.834	2.795	-0.103	1.341	-0.483	0.148	0.273	-0.065	-0.230	
Kurtosis	2.325	2.059	2.934	1.511	2.298	2.806	2.154	2.058	1.668	2.050	
Jarque-Bera	0.406	2.553	2.465	1.035	2.996	0.445	0.368	0.544	0.821	0.098	
Probability	0.816	0.072	0.081	0.596	0.131	0.800	0.832	0.762	0.663	0.952	

Source: The researcher's reliance on the results of (Eviews)

In order to show the mean values and the standard deviation (Std.Dev.) For the banks of the study sample for the same time series from (2009) to (2019) depending on the results of (Eviews), the following table (9) showed those values:

Table (9). The arithmetic mean and standard deviation of the study sample banks according to their time series

Year	Mean	Std. Dev.
2009	0.842	0.3745
2010	0.823	0.3191
2011	0.932	0.3916
2012	0.972	0.4906
2013	1.102	0.5134
2014	0.938	0.7515
2015	1.014	0.7414
2016	1.309	0.8260
2017	1.122	0.6920
2018	0.9	0.8050
2019	2.643	3.8046
<b>Average</b>	<b>1.145</b>	<b>0.936</b>

Source: The researcher's reliance on the results of (Eviews)

From table (9) above, it was found that the index itself reached its arithmetic mean for the year (2009) which is (0.842), which is below the rate achieved at the level of the time series and with a standard deviation of (0.3745). Slight to reach (0.823), which is less than the general average and with a standard deviation of (0.3191). While the percentage started to rise and ranges from the years (2011, 2012, 2013, 2014, 2015) with a standard deviation below the general standard deviation, and in (2018) the percentage began to decrease, which means that the banks of the study sample did not follow a fixed policy in maintaining the cash balance ratio. Sufficient and this discrepancy appeared clearly for the year (2019), as the achieved rate increased suddenly to (2,643), which is a very high rate compared to previous years, which is shown in Figure (4), which shows the chart of the indicator throughout the time series:

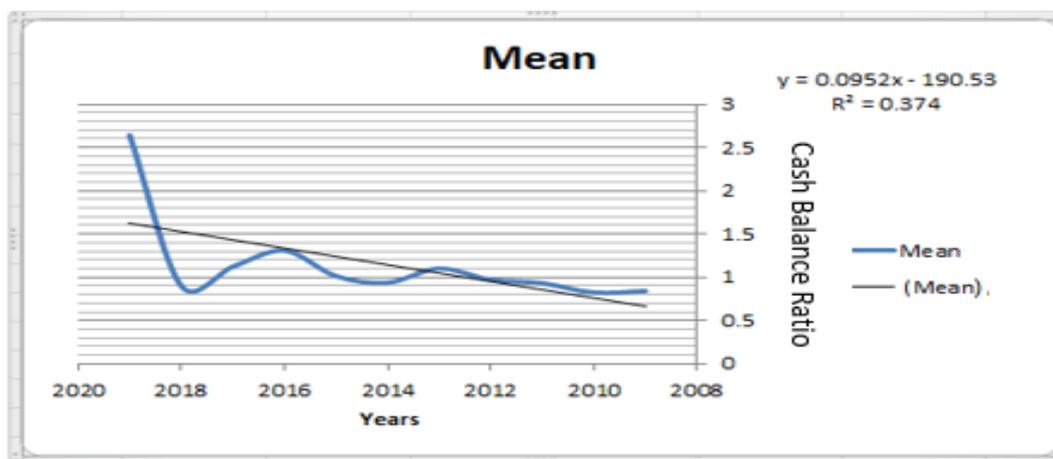


Figure (4). Cash balance ratio chart for the same time series

• **Analysis of the results of the Legal Liquidity Ratio (LLR) indicator**

The following table (10) showed that the general rate obtained by the sector for the aforementioned index is (0.288). When comparing the ratios obtained by the researched banks, it was found that the legal liquidity ratio of the bank (B5) reached (0.78) with a standard deviation of (0.38), as it exceeded the achieved rate at the level of the researched banks, followed by a bank (B1) at a rate of (0.36) and a standard deviation of ( 0.28), while the lowest percentage was from the bank's share (B3) with a rate of (0.06) and a standard deviation (0.044). When observing all the data for the surveyed banks, they were normally distributed because the level of significance was greater than (0.05), where the results of the (Jarque-Bear) test ranged between (0.062) and (0.598). And as is clear in Table (10).

Table (10). The legal liquidity ratio of the surveyed banks

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	overall rate
Mean	0.36	0.211727	0.06	0.171	0.78	0.073	0.13	0.08	0.163	0.356818	0.238
Median	0.28	0.028	0.061	0.111	1	0.046	0.12	0.07	0.088	0.232	
Maximum	1.09	2.062	0.159	0.96	1	0.353	0.32	0.17	0.853	1.705	
Minimum	0.11	0.018	0	0	0.18	0	0.07	0.04	0.023	0.099	
Std. Dev.	0.28	0.613704	0.044	0.266	0.38	0.095	0.07	0.04	0.234	0.458261	0.248
Skewness	1.68	2.845408	0.714	2.67	-1.02	2.595	2.1	0.88	2.642	2.605675	
Kurtosis	2.51	2.097831	2.454	2.547	2.04	2.293	2.66	2.98	2.368	2.273667	
Jarque-Bera	2.07	2.88575	1.029	2.18	2.33	2.19	2.2	1.43	2.08	2.19446	
Probability	0.134	0.081	0.598	0.092	0.31	0.066	0.062	0.49	0.067	0.193	

Source: The researcher's reliance on the results of (Eviews)

In order to show the mean values and the standard deviation (Std.Dev.) For the banks of the study sample for the same time series from (2009) to (2019) depending on the results of (Eviews), Table (11) has shown the following for those values:

Table (11). The arithmetic mean and standard deviation of the study sample banks according to their time series

Year	Mean	Std. Dev.
2009	0.2042	0.297
2010	0.2023	0.304
2011	0.2131	0.297
2012	0.4826	0.560
2013	0.2424	0.297
2014	0.2793	0.350
2015	0.2092	0.290
2016	0.2993	0.407
2017	0.1054	0.120
2018	0.0875	0.077
2019	0.2959	0.625
<b>Average</b>	<b>0.238</b>	<b>0.248</b>

From table (11) above, it has been shown that the same index has reached its arithmetic mean for the years (2009, 2010) is (0.2042 and 0.2023) respectively, that is, very close to the average achieved at the level of the time series and with two standard deviations higher than the general deviation. (2011) the sample took a slight increase to reach (0.2131), which is less than the general rate and a standard deviation of (0.297), but in (2012) the percentage suddenly increased to (0.4826), which is the highest rate achieved at the level of the time series. The surveyed researcher, however, took the percentage to decrease and ranges to be either higher or below the general rate for other previous years, which means that the banks of the study sample did not follow a fixed policy in maintaining a fixed legal liquidity ratio and this is due to the difference in the size of deposits between banks, which is explained in Figure (5) The following shows the chart of the same indicator and the time series.

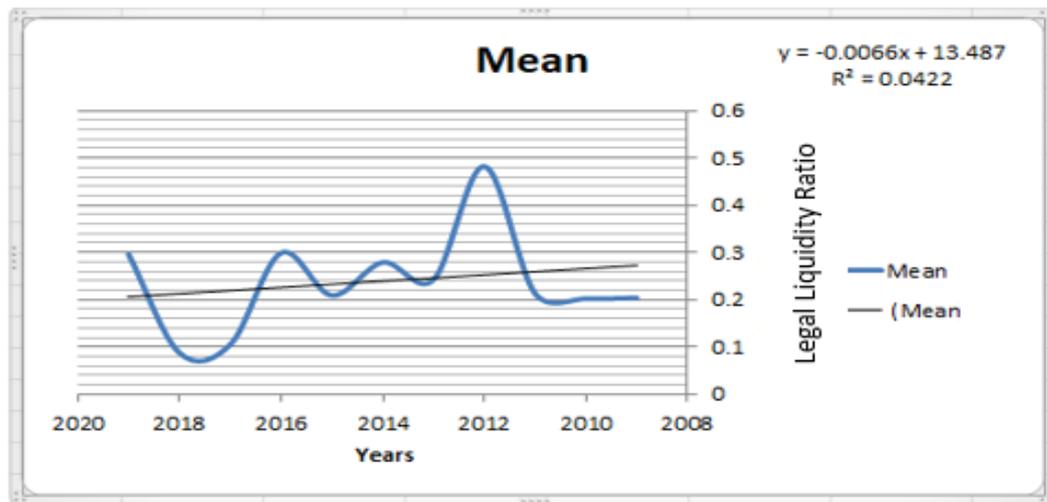


Figure (5). Graph of the legal liquidity ratio for the time series

• **Analyzing the results of the Employment (Investment) Ratio (IR) indicator**

The following table (12) showed that the general rate obtained by the sector for the aforementioned index was (0.475). When comparing the ratios obtained by the researched banks, it was found that the employment (investment) ratio of the bank (B5) reached (1.885) with a standard deviation of (1.256), as it exceeded the achieved rate at the level of the researched banks, followed by the bank (B9) at a rate of (0.642) with a standard deviation It was (0.757), while the lowest percentage was from the bank's share (B10) with a rate of (0.030) and a standard deviation (0.089).

Table (12). The percentage of employment (investment) of the surveyed banks

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	overall rate
Mean	0.338	0.336	0.286	0.123	1.885	0.339	0.490	0.283	0.642	0.030	0.475
Median	0.077	0.204	0.320	0.001	1.539	0.407	0.001	0.186	0.425	0.001	

Maximum	1.605	1.866	0.525	0.620	4.937	0.689	1.524	0.685	2.311	0.297	
Minimum	0.004	0.117	0.000	0.000	0.472	0.000	0.001	0.000	0.001	0.000	
Std. Dev.	0.503	0.510	0.170	0.234	1.256	0.279	0.586	0.280	0.757	0.089	0.466
Skewness	1.647	2.800	-0.582	1.515	1.381	-0.071	0.452	0.294	1.312	2.804	
Kurtosis	2.648	2.946	2.260	2.497	2.236	1.492	1.608	1.434	2.406	2.950	
Jarque-Bera	2.216	2.579	0.873	2.320	2.196	1.051	1.264	1.283	2.233	2.646	
Probability	0.145	0.121	0.646	0.115	0.123	0.591	0.532	0.527	0.199	0.163	

Source: The researcher's reliance on the results of (EViews)

In order to show the mean values and the standard deviation (Std. Dev.) For the banks of the study sample for the same time series from (2009) to (2019) depending on the results of (EViews), the following table (13) showed those values:

Table (13). The arithmetic means and standard deviation of the study sample banks according to their time series.

Year	Mean	Std. Dev.
2009	0.3068	0.234
2010	0.3324	0.310
2011	0.3634	0.319
2012	0.3946	0.504
2013	0.3574	0.473
2014	0.6357	0.908
2015	0.542	0.631
2016	0.5708	0.794
2017	0.566	1.007
2018	0.3102	0.502
2019	0.8485	1.566
<b>Average</b>	<b>0.475</b>	<b>0.466</b>

Source: The researcher's reliance on the results of (EViews)

From the table (13) above, it was found that the index itself reached its arithmetic mean for the year (2009) is (0.3068), which is below the rate achieved at the level of the time series and with a standard deviation of (0.234), and in the years (2010, 2011, 2012) the percentage was taken The aforementioned increase has ranged between (0.33 - 0.39), which is below the general average, while the percentage began to rise above the general average for the years (2014, 2015, 2016, 2017) with standard deviations exceeding the general standard deviation, while the percentage began to decrease in (2018). To reach (0.3102), which means that the banks of the study sample did not rely on a clear policy of adopting the proportion of employment (investment), and this is what Figure (6) shows, which shows the graph of the same indicator and time series:

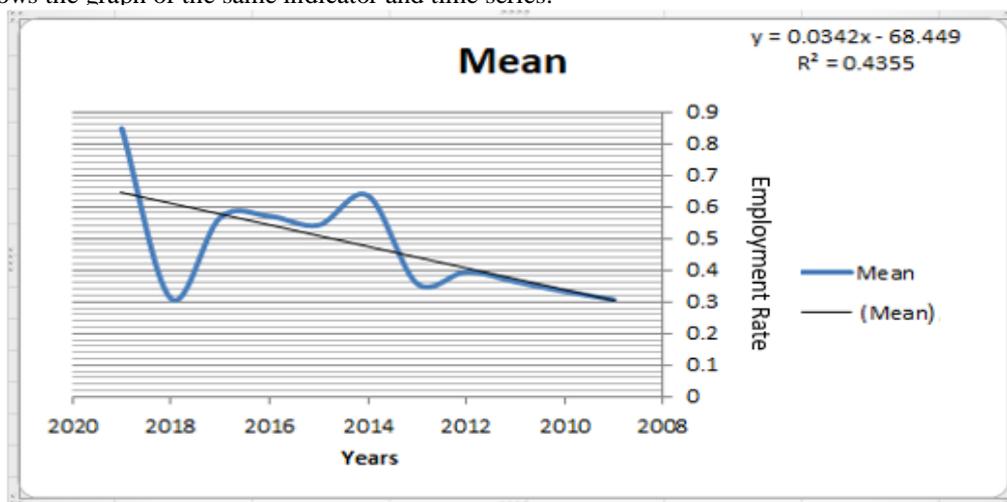


Figure (6). Employment (investment) ratio diagram for the same time series

Second: Analyzing the influence relationships of the study variables and testing the hypotheses related to it

The impact of financial flexibility will be tested with its indicators (financial leverage, cash flow ratio, debt viability) in liquidity indicators (cash balance ratio, legal liquidity ratio, employment ratio). As the effect hypotheses will be tested through the method of multiple regression according to the statistical program (Eviews v.). The program provides analysis of data by the method of sectional analysis (banks) and temporal analysis (time series) in a method called (Panel), which will show the impact factor, the determining factor, and the level of significance that is imposed. The researcher is (0.05) and if the hypothesis is recorded less than it, the hypothesis is accepted and vice versa. The fixed effect differentiation will also be recognized at the level of banks, as they are arranged from the top to the lowest, and the fixed effect differentiation at the level of time periods is also recognized. The results of the test are as follows:

**The main hypothesis tests**

The study assumed its main hypothesis which states (the existence of a significant and positive impact of financial flexibility represented by its indicators: financial leverage (FL), net cash flow ratio (NCF), and public debt capacity (PDC), in the cash liquidity represented by its indicators: the cash balance ratio. (CBR), Legal Liquidity Ratio (LLR), Employment (Investment) Ratio (IR)). And its sub-hypotheses. The following table (15) presents two parts: The first part shows the amount of effect, the determination coefficient, and the level of significance of the value (T) to test the significance of the effect and the level of significance of the value (F) to test the significance of the determination to identify the quality of the model by the method of cross-sectional and temporal analysis, and the second part: The analytical discriminatory test Sectional (banks) and time (time series) to identify the differentiation between banks in the amount of impact on the level of banks and then on the level of time periods.

Table (15). Examining the impact of financial flexibility indicators on the cash balance ratio

decision	level of Prob. morale	t-Statistic	Std. Error	Coefficient	Dependent Index	Independent indicators
Acceptable	0.000	203.043	0.002	0.347	CBR	FL
Acceptable	0.000	17.590	0.016	0.278	CBR	NCF
Acceptable	0.000	27.434	0.011	0.297	CBR	PDC
<b>Method: Pooled Least Squares</b>					0.347	(C) Constant
<b><math>TDC = (0.347) + (0.347)FL + (0.278)MFR + (0.297)NCF</math></b>					0.56	Determination coefficient (R <sup>2</sup> )
					5.994	F-statistic
					0.000	Level of (F) spirits
<b>Fixed Effects (Period)</b>			<b>Fixed Effects (Cross)</b>			
	Arrangement	Coefficient	(Period)	Arrangement	Coefficient	(Cross) Banks
	6	-0.08	2009—C	7	-0.10	B1—C
	11	-0.17	2010—C	4	0.02	B2—C
	9	-0.13	2011—C	6	-0.05	B3—C
	5	-0.04	2012—C	4	0.02	B4—C
	7	-0.09	2013—C	8	-0.08	B5—C
	8	-0.10	2014—C	3	0.08	B6—C
	10	-0.16	2015—C	2	0.10	B7—C
	1	0.21	2016—C	9	-0.13	B8—C
	4	0.15	2017—C	5	0.01	B9—C
	2	0.24	2018—C	1	0.14	B10—C
	3	0.17	2019—C			

Source: prepared by the researcher based on the outputs of (Eviews)

It is noticed from the table (15) above that the coefficient of determination (R2) had reached (0.56) and the level of significance (0.000). This indicates the variation shown by the indicators of financial flexibility in the cash flow ratio (CBR), which confirms the quality of the model between the independent indicators and the dependent

indicator. And the accuracy of the results he proves. On the other hand, the discriminatory effect of the fixed at the level of banks has shown that the Kurdistan Bank, which carries the symbol (B10), appears in the first order because it obtained a high value from the estimates of (0.14), which distinguished it in the effect of a greater percentage than the rest of the banks. At the level of the time periods examined, it has been shown that the year (2018) appeared in the first order as it obtained a high value of (0.24), which distinguished it in impact by a greater percentage than the rest of the periods.

Table (16). Test the effect of indicators of financial flexibility on the legal liquidity ratio

Decision	level of Prob. morale	t-Statistic	Std. Error	Coefficient	Dependent Index	Independent indicators
رفض	0.369	0.903	0.003	0.002	LLR	FL
قبول	0.000	12.090	0.024	0.292	LLR	NCF
قبول	0.000	6.319	0.132	0.835	LLR	PDC
<b>Method: Pooled Least Squares</b>					<b>0.099</b>	<b>(C) Constant</b>
<b>LLR = (0.099) + (0.002)FL + (0.292)NFR + 835NCF</b>					<b>0.52</b>	<b>Determination coefficient (R<sup>2</sup>)</b>
					<b>4.157</b>	<b>F-statistic</b>
					<b>0.000</b>	<b>Level of (F) spirits</b>
<b>Fixed Effects (Period)</b>			<b>Fixed Effects (Cross)</b>			
	<b>Arrangement</b>	<b>Coefficient</b>	<b>(Period)</b>	<b>Arrangement</b>	<b>Coefficient</b>	<b>(Cross) Banks</b>
	5	0.02	2009--C	2	0.17	B1—C
	5	0.02	2010--C	4	0.01	B2—C
	6	0.01	2011--C	10	-0.27	B3—C
	1	0.30	2012--C	6	-0.09	B4—C
	4	0.05	2013--C	1	0.63	B5—C
	2	0.09	2014--C	8	-0.18	B6—C
	6	0.01	2015--C	9	-0.19	B7—C
	3	0.05	2016--C	7	-0.12	B8—C
	7	-0.14	2017--C	5	-0.05	B9—C
	9	-0.20	2018--C	3	0.10	B10—C
	8	-0.19	2019--C			

**Source: prepared by the researcher based on the outputs of (Eviews)**

It is noticeable in Table (16) above that the coefficient of determination (R2) had reached (0.52) and the level of significance (0.000). This indicates the variation shown by the indicators of financial flexibility, in the legal liquidity ratio (LLR), which confirms the quality of the model between the independent indicators and the index. The follower and the accuracy of the results it proves. On the other hand, the discriminatory effect of the constant at the level of banks has shown that the United Investment Bank, which carries the symbol (B5), appears in the first order, as it obtained a high value from the estimates of (0.63), which distinguished it in the effect by a greater percentage than the rest of the banks, as for the discriminatory effect For the constant at the level of the time periods studied, it showed that the year (2012) appeared in the first order as it obtained a high value of (0.30), which distinguished it in the effect by a greater percentage than the rest of the periods.

Table No. (17) Examining the impact of financial flexibility indicators on the employment rate

Decision	level of Prob. morale	t-Statistic	Std. Error	Coefficient	Dependent Index	Independent indicators
قبول	0.000	60.902	0.005	0.331	IR	FL

قبول	0.000	5.513	0.050	0.277	<b>IR</b>	<b>NCF</b>
قبول	0.000	14.152	0.017	0.241	<b>IR</b>	<b>PDC</b>
<b>Method: Pooled Least Squares</b>					<b>0.50</b>	<b>(C) Constant</b>
<b><math>IR = (0.50) + (0.33)FL + (0.277)MFR + (0.24)NCF</math></b>					<b>0.51</b>	<b>Determination coefficient (R<sup>2</sup>)</b>
					<b>4.067</b>	<b>F-statistic</b>
					<b>0.000</b>	<b>Level of (F) spirits</b>
<b>Fixed Effects (Period)</b>			<b>Fixed Effects (Cross)</b>			
	<b>Arrangement</b>	<b>Coefficient</b>	<b>(Period)</b>	<b>Arrangement</b>	<b>Coefficient</b>	<b>(Cross) Banks</b>
	<b>10</b>	-0.17	<b>2009--C</b>	<b>5</b>	-0.16	<b>B1—C</b>
	<b>9</b>	-0.14	<b>2010--C</b>	<b>4</b>	-0.08	<b>B2—C</b>
	<b>8</b>	-0.10	<b>2011--C</b>	<b>7</b>	-0.19	<b>B3—C</b>
	<b>6</b>	-0.06	<b>2012--C</b>	<b>8</b>	-0.38	<b>B4—C</b>
	<b>7</b>	-0.08	<b>2013--C</b>	<b>1</b>	1.44	<b>B5—C</b>
	<b>2</b>	0.18	<b>2014--C</b>	<b>5</b>	-0.16	<b>B6—C</b>
	<b>4</b>	0.08	<b>2015--C</b>	<b>3</b>	-0.01	<b>B7—C</b>
	<b>3</b>	0.09	<b>2016--C</b>	<b>6</b>	-0.18	<b>B8—C</b>
	<b>5</b>	0.07	<b>2017--C</b>	<b>2</b>	0.15	<b>B9—C</b>
	<b>11</b>	-0.20	<b>2018--C</b>	<b>9</b>	-0.45	<b>B10--C</b>
	<b>1</b>	0.33	<b>2019--C</b>			
<b>Source: prepared by the researcher based on the outputs of (Eviews)</b>						

It is noticeable from table (17) above that the coefficient of determination (R<sup>2</sup>) had reached (0.51) and the level of significance (0.000). This indicates the variation shown by the indicators of financial flexibility, in the employment rate, and this indicates the quality of the model between the independent indicators and the dependent indicator and the accuracy of the results. Come prove it. On the other hand, the fixed discriminatory effect on the level of banks showed that the United Investment Bank, which carries the symbol ((B5) appears in the first order, which obtained a high value of the estimates of (1.44), which distinguished it in the effect by a greater percentage than the rest of the banks, as for the discriminatory effect. For the constant at the level of time periods, it showed that the year (2019) appeared in the first order, which obtained a high value of (0.33), which distinguished it in the impact of a greater percentage than the rest of the periods.

### Conclusions and Discussion

The analytical results of the significant and positive impact relations showed for financial flexibility and its indicators in cash liquidity, as the challenge coefficient (R<sup>2</sup>) for indicators of financial flexibility with a significant level (0.000), which indicates the clear disparity in each of the indicators of monetary liquidity, and this also appeared to the discriminatory effect. The constant at the level of the banks in terms of arranging them among themselves according to the degrees of influence, as well as their clear appearance on the fixed discriminatory effect at the level of the time periods studied, which made them also rank among them according to the degrees of influence. Not significant at the level of significance (0.05) as is the case in the effect of financial leverage (FL) on the legal liquidity ratio (LLR), and this is not inconsistent with the acceptance of the main hypothesis. The use of indicators of financial flexibility in the work of banks has always affected the formation of their monetary policy through their own indicators. This marked an important turning point in their monetary policy and its great influence on its various activities, and its relentless pursuit of survival and growth in the business environment, and the degrees of that influence differed according to the indicators. Which were covered by the study, which requires banks to follow the following things:

A. Banks should, after realizing the fact that financial leverage has an effect on the cash balance ratio, must work on increasing interest in the financial leverage index because its effect has become positive and moral on what it achieves on the cash balance ratio.

B. The necessity for bank managements to take into account when developing their plans and what is achieved from their net cash flows, to take into account the employment of those flows to support and increase the percentage of their cash balance.

- C. It is imperative that bank administrations, upon taking on the public debt, must act with full wisdom and awareness since it affects the cash balance they maintain that helps them in their financial structure.
- D. The banks' administrations should not give a wide space for their plans to follow the leverage for their activities, as they do not affect the primary and secondary reserves they have in terms of their legal liquidity.
- E. It is imperative that bank administrations put in place a tight work mechanism to take advantage of their cash flows in employing their investments in various activities.
- F. Work more seriously to increase the revenues and benefits obtained from advances and loans in active investment in projects that generate more profitability and financial stability, thus leading to better growth in the future.
- G. It is imperative for bank administrations to work seriously to make the most of the net cash flows achieved by them, to benefit from them in showing their ability to do what they plan for the current and future phases.
- H. It is required that bank administration, and because of what the results of the analysis have produced, from the impact of their capacity for public debt on their legal liquidity, to maintain in a balanced manner between the debt they need to finance their banking activities, and what they require to maintain a legal liquidity ratio.

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