Al-Qadisiyah Journal for Administrative and Economic Sciences ISSN$_{Online}$: 2312-9883
QJAE, Volume 26, Issue 2 (2024) ISSN$_{Print}$: 1816-9171

Impact of the legal reserve index on monetary credit Study in the Iraqi banking sector for the period (2010-2022)

Hawraa Kadhim Jari
University of AL-Qadisiyah
Corresponding Author : Hawraa Kadhim Jari

Abstract : The legal reserve is an essential indicator of monetary policy. Therefore, we will explain its effect on the cash credit of the banking sector, and this is the goal of the study, due to its great importance in maintaining the liquidity of Iraqi banks and benefiting from their reserves in profitable and good investments. Therefore, the effect of (the independent variable, the legal reserve) was measured and analyzed on (the dependent variables), which are (total cash credit, cash credit to the private sector, and cash credit to the public sector) for the period (2010-2022). Meta-analytical and meta-analytical methods were used through the statistical program (spss).

The research has shown a significant effect of the legal reserve variable on the dependent variables, which are.(total cash credit, cash credit to the private sector, and cash credit to the public sector). This is because the legal reserve is a means of safety for depositors in banks, which contributes to increasing deposits in the banking sector, which in turn contributes to expanding the banking sector's ability to grant cash credit. Due to the relationship between the legal reserve and the total cash credit, the research recommends providing support to the banking sector to maintain banking liquidity and control the volume of credit granted. Keywords: legal reserve, total cash credit, private sector credit, government sector credit.

Introduction: Bank cash credit is a very important banking event, Most attractive to the management of intermediate financial institutions and other commercial banks, but at the same time considered one of the most sensitive economic instruments, because its adverse effects do not depend solely on the banking sector and financial institutions. It will reach the entire country's economy if it is not used better because banks make a large proportion of profits through it, and without it, they will lose their role as an intermediary financial institution. Bank credit represents the most responsible investment for the bank's management because of its multiple risks that may lead to its collapse. As far as the country's economy is concerned, it has an interrelated effect. If not correctly used, it will be a highly risky tool in the national economy Because credit in the event of excess will lead to inflationary pressures. In the event of a contraction, it will lead to a recession. Both situations have severe economic effects and cause structural imbalances that may be difficult to address, So the banking monetary credit policy has received significant attention from the monetary authority. Financial and banking institutions have set out a set of foundations and rules to be followed within the scope of credit and lending. These include imposing the legal reserve ratio as an instrument of monetary policy to control the amount of credit granted by these institutions and to maintain the liquidity necessary to meet customers' withdrawal requests in a timely manner.

Research Structure

• The problem.

The main issue of this research can be posed in the following way:

Is there an effect of the legal reserve requirement on the total bank credit in Iraq during the research period (2010 - 2022) ? Which branches into the following sub-questions:

1- Is there a statistically significant relationship between the legal reserve and bank credit for the private and government sectors in Iraq during the research ?

2- Is there an effect of the mandatory reserve requirement on the credit liquidity of the public sector in Iraq during the research ?

• The importance

The research gains significance through the legal reserve as it is an essential indicator of the monetary policy in the country, and it has a substantial and apparent impact on banking reserves. Consequently, it will effectively influence the total monetary credit of the banking sector in Iraq specifically and other countries generally.

• Objective

Clarifying the significant impact of the mandatory reserve on the total cash credit of the banking sector in Iraq, and explaining the contribution rate and growth rate of cash credit for both the government and private sectors during the research period.

- **The hypothesis**

The central hypothesis of the study is as follows :
There is no trace of the mandatory reserve in the total cash credit of the Iraqi banking sector during the research period.
It is divided into the following hypotheses:
*There is no effect of the mandatory reserve on the cash credit for the private sector in Iraq during the period (2010 - 2022).
* There is no trace of the mandatory reserve in the cash credit for the Iraqi government sector during the period (2010 – 2022).

First research : legal reserve and cash credit.

First requirement : the concept of reserves

Reserves are the first line of defense for banks and are a source of money to counter the risks and losses to which banks may be exposed, in order to enhance the confidence of the public, especially their clients, in order to strengthen and give power to the bank's financial position.
These are amounts which banks deduct from their profits year after year and which are kept in their own accounts to support the capital account and to protect their depositors. (Abdallah and Foley, 2003, 119-120)
It is also defined as profits withheld from previous years that are withheld from shareholders and consist of surplus funds or net profits, to provide support and to strengthen the financial position of banks. (carpentry, 2009, 209)
The reserve can be defined as : a sum that commercial banks and others keep in their accounts with the central bank or other accounts to provide the liquidity needed when needed and to provide support and support for capital, and to meet obligations and demands by depositors and customers.

The second requirement : The concept of legal reserves along with an explanation of the types of reserves .

Reserves are divided into two types :
A-The statutory reserve (mandatory) is a mandatory percentage imposed by law on banks. It allocates part of its annual profits to remain a bond to the head of the money and to protect the depositors' money. This ratio makes the bank's capital ever-increasing to meet the increasing activity of banks. (Demons and Limps, 2016: p. 82-83)
It is also known as the required undistributed reserve established in accordance with a law of all countries. For example, the law of France requires banks to withhold up to 10% of their annual earnings. (Alexander& Nobes 2007,230)
It is the reserve that the law requires to be held for a proportion of the annual net profit in order to support and strengthen the financial position of banks and increase their ability to meet their obligations to others.) Ramadan and Jaha, 1995 - 54)
The legal reserve can be defined as a mandatory ratio imposed by the monetary policy or the central bank of any country on banks and placed in the bank's bank account's credit balance. The central bank can change this percentage by increasing or decreasing it in accordance with the requirements of the economic situation. The purpose of this mandatory ratio is to provide the liquidity necessary to meet clients' demands that may suddenly be faced by the bank.
b. The excess (optional) reserve is part of the bank's funds that it decides to keep voluntarily in accordance with the bank's management. (Abu Hamad and Kaduri, 2005, 111). This reserve is allocated to cover unforeseen expenses or expenses, as a reserve for loan losses to compensate for the loss to which the bank may be exposed as a result of its failure to receive the amount of loans granted by it, due to borrowers ' failure to pay their debts or inability to repay loans.) Mr. Ali ' s al-Aisi, 2004, 182, or money in excess of the required reserve (legal) (Fabozzi , al.et , 2003, 38) or reserves held by banks for themselves, is insurance against the withdrawal of deposits). (Mischkin& Eakins , 2009 , 173)

Third requirement : the importance of reserves

The legal reserve is of great importance as one of the instruments of monetary policy that can be used to control the amount of cash on the market, as well as as as a tool to control the amount of credit granted. The importance of the legal reserve can be explained by the following:
1.Maintains the trust of customers and customers in the banking system.
2. Used to ensure that people ' s funds deposited in banks are protected from the risk of bankruptcy by the bank. (Pilbeam,2010,45)
3. It is an important factor in maintaining the integrity of the bank ' s competitive position and bank liquidity by fulfilling the bank ' s obligations to customers and customers on their agreed due date and upon request.

4. The confidence of monetary and regulatory authorities as well as the confidence of customers that banks are able to protect depositors ' funds and not invest them in potentially high-risk projects and activities is enhanced.(Al Husseini and Al-Douri, 2000, 95).
5- The proportion of the legal reserve is concentrated in the Central Bank. This provides central banks with an additional balance and enhances their financial position. The proportion of the reserve increases the ability of central banks to control bank credit and facilitates their last resort to lending.
6. When the legal reserve is concentrated in the Central Bank ' s open commercial bank account, it enhances public confidence, increases the strength of the banking system, and is more flexible than if it were common among large numbers of commercial banks. (Beautiful, 2003, 3)
7. The purpose of adjusting the proportion of the legal reserve annually is to offset the effect of inflation. (Rose&Hudgins,2010,371)
The central bank uses this tool according to the prevailing economic situation. The central bank reduces the ratio of the legal reserve during the recession period. The objective is to encourage commercial banks to expand credit and then to use expansionary monetary policy. When the central bank raises the ratio of the legal reserve, it will reduce the ability of commercial banks to grant credit facilities, thereby reducing the volume of loanable deposits, thereby increasing the interest rate and reducing the demand for bank borrowing. (Rose, 2002,65)

IV: Cash credit

First of all, what is bank credit?

Credit in the economy is the ability to lend, that is, to commit one side to the other, and in the modern economy, the creditor is meant to give the debtor a period of time and, at the end of this period, the debtor is obliged to pay the amount of the debt, which is considered to be an investment financing formula adopted in the banks. (Hossein and Mahmoud, 2008, p. 3)
Credit means trust, defined by the bank as a contract between the bank and the customer in which the bank undertakes to place a specified sum at its client's disposal for a specified period or period of time. (Phone and Mohammed, 2003, 77)
It is also known as a measure of the ability of a legal person to obtain the current currency (money) in exchange for the postponement of payment (cash) to a specified time in the future. (Carthaway and Naaimi, 2010, p. 5)
Bank credit is also defined: the trust that a commercial bank gives to a client and has at its disposal a sum of money or guarantees for that amount within a specified period to be agreed upon by both parties, at the end of which the borrower fulfils these obligations, and in exchange for this service the bank receives a certain return from the borrower in the form of commissions, interest, and expenses.(Zayda, 2006: 23).
Bank credit is an important and dangerous function of commercial banks, as it depends on the safety of the bank ' s assets and the strength, health and strength of its financial position. Thus, the safety of bank credit depends on the integrity and nature of the credit policies of commercial banks. Credit has been defined as the process of granting bank credit to its client and security either in good relationship with him or with the projects financed or providing other personal guarantees, which vary from person to client, an example of which is credit. (Maitah, etal., 2012) (documentary credits, current account debtor, loans, letters of guarantee)
Bank credit, through credit commissions and interest earned by the bank, is a major source of income for the bank. The more the bank is able and successful in managing credit by striking a balance between returns and risks, the more profitable the bank will be in the future. On the contrary, there are many considerations to be taken into account in the process of granting bank credit of all kinds. There are also written policies and rules that must be followed for the credit process to be effectively and efficiently managed by the bank ' s loan operations. In addition, there are analyses and studies that must be carried out, negotiation processes, determination of specific procedures and steps and high requirements for the loan process, and commercial banks to develop permanently when running the bank loan service. (Abdel hamid, 2008, 103)
We conclude from previous definitions that credit: is a process or activity under which the cash resources of the creditor (bank) are transferred to (the borrower or agent) the debtors, in accordance with their contract for the amount, time and benefit of the deferred payment. This activity is based on confidence in the two parties.

II. Basis and rules for granting bank credit

There are many grounds for granting bank credit, most notably: (Yas and Jamil, 2016, p. 63)
*** The security element of the bank's funds must be available**: it is intended to assure the bank of a medical or moral agent or that the customer to whom the bank credit will be extended must be able to repay the loans with interest on time.
*** Liquidity:** Banks must have an appropriate amount of liquidity to meet their clients' extraordinary withdrawal demands so that they do not lose confidence in them, since the provision of appropriate liquidity to banks must be

balanced against the credit process.
*** Profitability:** It is intended that the bank will be able to use its resources in various investments for the purpose of obtaining profits and returns as commercial enterprises.

III. EXECUTIVE CREDIT TYPE

There are many types of credit according to a set of criteria, some of which are listed as follows:

a. In terms of purpose of credit :

- Investment credit : this credit is granted to productive projects, for the purpose of using them to finance long-term investments, such as investments in fixed assets such as land, machinery, etc. (Zibide, 2002: p. 95)

- Commercial credit : this credit is granted to business companies for the purpose of financing operations through their working capital, which is a short-term bank credit used to finance ongoing operations. (Cream 2019, 240)

- Consumer credit : normally granted to persons to finance consumer transactions such as the purchase of furniture, car or other durable goods. Such credit is usually personal and is often provided to individuals or persons who are State employees and other companies, and usually medium - term and takes the form of sale by deduction. (KH, 2007:452)

b. For credit purposes, it is divided into:

- Short-term credit: it is less than one year ' s duration, is granted to finance the business's activity and is also used to finance various services. This type of credit is characterized by a reduced interest rate due to its short duration.

- Medium-term credit: This credit is provided to finance investment activities that do not exceed a useful life of more than 7 years, such as transportation means, equipment, and production tools in general. Due to the long credit duration, banks will be exposed to the risk of their funds being frozen, in addition to the possibility of borrowers defaulting on the loan. These loans are divided into two types: the first type is callable loans, which are loans that the bank can rediscount with the central bank or other financial institutions. This process allows the bank to obtain the necessary liquidity when needed without waiting for the loan's maturity date. The second type is non-callable loans, where the bank cannot rediscount the loans with the central bank or other financial institutions, and therefore, it is forced to wait for the borrower to repay the loan amount.

- Long-term credit: It is a loan that typically lasts more than 7 years, sometimes reaching up to 20 years. It is granted for a specific type of investment activities, such as real estate, which includes land and buildings with various uses. Such loans, which involve large amounts and long durations, are therefore granted by specialized institutions because they rely on mobilizing the necessary funds for these loans from long-term savings sources, which banks often cannot gather.(Latrash, 2007: 74-75)

c. In terms of the person receiving credit: credit according to this criterion is divided into: (Zubaidi, 2002: 96)

1. Private credit: It is granted to private law persons, whether natural individuals or legal persons, such as corporations, whose ability to obtain private credit depends on the financial credit they have with credit-giving banks.
2. Public credit: It is granted to persons of public law, whether they are State bodies, public institutions or government interests. Their ability to obtain public credit depends on the degree of trust they have with the State and on the country ' s political, economic and financial circumstances.

d. Credit by security for debt: divided into: (Abdallah and Foley, 2003: p. 80, 81)

* - Personal credit (unsecured loans): In such loans, the debtor does not provide any funds as security for the payment of its debts and the creditor fulfils the debtor ' s promise to discharge itself within the agreed term, its confidence in the customer, its reputational personality and its financial position.

* - In-kind credit (secured loans): In this type of loan, the debtor provides in-kind security for repayment of its debt, and the borrower is often required to have the value of the security greater than the value of the loan taken and the difference between the two is called the "secure margin" and one of its forms (bail-back loans, commodity-back loans, other collateral loans)

IV. Relationship between legal reserve and cash credit

There is a clear relationship and significant impact of the legal reserve ratio on credit liquidity. Therefore, the monetary authority has continued to use this tool in line with the monetary policy plans being implemented at the top of the hierarchy of the Iraqi banking system, which is the Central Bank, and in accordance with the country's economic conditions. Since the situation in the country has improved in terms of security and economically, and in order to stimulate investment and encourage banks to turn towards the market.

The percentage of the legal reserve for the year 2010 was reduced from (25%) on government deposits to (20%), then to (15%) on government and private deposits, and the percentage continued (15%) until 2019, and in 2020 the percentage was reduced to (13% on current deposits, term and fixed deposits at a rate of (10%) for all banks and (5%) for Islamic banks. The purpose of the reduction is to support liquidity for the banking sector, and in 2021 and 2022,

the percentage was restored to (15%) as a result of the improvement in the economic and social situation after... The Corona pandemic, and also to reduce the inflationary pressures that resulted after the Russian war on Ukraine .
That the legal ratio is determined by the Central Bank on the banking sector. If the Central Bank decides to raise this ratio in accordance with the requirements of the economic situation in the country, then this will lead to the establishment of the sector. The banker will pay a larger legal reserve ratio to the central bank, and this will reduce the volume of credit granted by the banks. However, if the central bank reduces the ratio, the situation will be the opposite, meaning that banks can expand in granting credit to customers as a result of the availability of a larger percentage of their surplus reserves. **(The percentage figures from the statistical bulletins of the Central Bank of Iraq)**

The second one.

Analysis and measurement of the impact of the legal reserve index on cash credit for the duration (2010 – 2022)

In this study, the legal reserve index will be analysed and measured and its impact on Iraq ' s cash credit for the duration (2010 – 2022) .

First: analysis of the mandatory reserve index for duration (2010 – 2022)

Table (1) Analysis of the legal reserve index for duration (2010: 2022) (M. dinars)

Growth rate %	Legal reserve	Year	Serial
24-	7155000	2010	1
9.2	7815000	2011	2
10.4	8624000	2012	3
11.6	9627000	2013	4
9.86	10576000	2014	5
11-	9390000	2015	6
7-	8708000	2016	7
25-	6505000	2017	8
60	10410000	2018	9
7.97-	9580000	2019	10
4-	9193000	2020	11
19.82	11015000	2021	12
16.24	12804000	2022	13

The source: The researcher work is based on annual data from the statistical bulletins of the Central Bank of Iraq.
It can be observed from Table (1) the clear fluctuation in the mandatory reserve over the years of our research .The index reached (7,155,000) M. dinars in the year 2010, and the growth rate reached (-24%). Then the legal reserve index increased and reached (7,815,000) M. dinars in the year 2011, with a growth rate. (9.2)The reason is the improvement of economic activity in Iraq.
then the index rose and reached (8,624,000) M. dinars in the year 2012, with a growth rate of (10.4%). After that, the legal reserve index increased further, reaching (9,627,000) M. dinars in the year 2013, with a growth rate of (11.6%). The reason is attributed to the improvement in the economic situation and the increase in deposits in Iraqi banks.
the increase continued, so the legal reserve index reached (10,576,000) M. dinars for the year 2014, with a growth rate of (9.86%). After that, the index decreased to (9,390,000) M. dinars for the year 2015, with a growth rate of (-11%) ؛ the reason is the deterioration of the country's political and security situation, which has led to a decrease in the deposits of Iraqi banks.
Then it decreased to (8,708,000) M. dinars in the year 2016, with a growth rate of (-7%), after which it decreased further to (6,505,000) M. dinars in the year 2017, with a growth rate of (-25). %), after which the legal reserve index increased and reached (10,410,000) M. dinars for the year 2018, with a growth rate of (60%), then the index decreased to (9,580,000) M. dinars for the year 2019, with a growth rate of (-7.97%), and the decline continued further, reaching (9,193,000) One m dinars for the year 2020, with a growth rate of (-4%).
Then the legal reserve index rose and reached (11,015,000) M. dinars for the year 2021, with a growth rate of (19.82%), then it rose even more, reaching (12,804,000) M. dinars for the year 2022, with a growth rate of (16.24%); the reason is the result of the increase in the volume of liquidity from deposits in banks, which positively reflected on the economic situation of the country.

Secondly: Analyzing the total cash credit data for the banking sector in Iraq for the period (2010 – 2022) .

Table (2)Analysis of total cash credit data and its branches, as well as the growth rate of cash credit for the two sectors (private and public), along with their contribution percentage to the total (M. dinars).

Contribution 1 / 3 %	Contribution 1 / 2 %	Growth Rate of the Government Sector %	Cash credit for the government sector 3	Private sector growth rate %	Private sector cash credit 2	Total cash credit 1	Year
27,3	72,75	206	3194404	83,5	8527131	11721535	2010
44,18	55,8	181	8987768	33,2	11356308	20344076	2011
48,49	51,5	53	13788586	29	14650102	28438688	2012
43,42	56,58	-5	13004479	15,7	16947533	29952012	2013
48	52	25	16377926	4,7	17745141	34123067	2014
50,8	49,2	14	18682628	1,8	18070058	36752686	2015
51	48,90	1,7	18999153	0,61	18180970	37180123	2016
48,75	51,3	-2,6	18500536	6,99	19452293	37952829	2017
47,47	52,53	-1,2	18270874	3,9	20216073	38486947	2018
49,96	50	14,99	21010298	4,1	21042213	42052511	2019
48,1	519	13,99	23951085	22,9	25866652	49817737	2020
44.16	55,84	-2	23393215	14,3	29578293	52971508	2021
42.19	57.8	9.26	25559482	18,4	35016532	60576391	2022

Source: The researcher based their work on annual data from the statistical bulletins of the Central Bank of Iraq.

Table 2 shows that there is a fluctuation in the total cash credit. At the beginning of the study, it was low, then it started to rise, distributed between the private and public sectors. In 2010, the total cash credit was (11,721,535) M. dinars, divided into (8,527,131) M. dinars for the private sector with a growth of (83.5%) and a contribution of (72.75%), and (3,194,404) M. dinars for the public sector with a growth of 206% and a contribution of 27.3%. Here, we find that the contribution of the private sector is high.

In 2011, cash rose to (20,344,076) M. dinars, divided into private (11,356,308) M. dinars with a growth of (33.2%) and a contribution of (55.8%), and government (8,987,768) M. dinars with a growth of (181%) and a contribution of (44.18%). Then, in 2012, the total credit reached (28,438,688) M. dinars, and the increase was due to the developments in the country's economic and banking activities. It was divided into private (14,650,102) M. dinars with a growth of (29%) and a contribution of (51.5%), and government (13,788,586) M. dinars with a growth of (53%) and a contribution of (48.49%).

In 2013, the total credit amounted to(29,952,012) M. dinars, with the private sector accounting for (16,947,533) M. dinars and a growth rate of (15.7%), contributing(56.58%). The government sector reached 13,004,479 m dinars, with a growth rate of -5% and a contribution of (43.42%). In 2014, the total credit increased to(34,123,067) M. dinars, with the private sector at(17,745,141) M. dinars and a growth rate of (4.7%), contributing (52%). This clearly indicates a significant decline in the growth of credit for the private sector, primarily due to Iraq's unstable political situation and poor security, which consequently affected its operations and activities. The government sector, on the other hand, amounted to(16,377,926) M. dinars, with a growth rate of 25% and a contribution of(48%).

In 2015, the total credit amounted to (36,752,686) M. dinars, with the private sector contributing (18,070,058) M. dinars, showing a growth of (1.8%) and a share of (49.2%). The government sector reached 18,682,628 m dinars, with a growth of 14% and a share of (50.8%). In 2016, total credit was (37,180,123) M. dinars, with the private sector at (18,180,970) M. dinars, reflecting growth of(0.61%) and a share of (48.90%). The government sector amounted to (18,999,153) M. dinars, with a growth of 1.7% and a share of (51%). It is noticeable that the growth rate of both the private and government sectors declined due to the instability in the country, which led to a reduction in credit and activity in both sectors from an investment and economic perspective.

In 2017, the monetary credit reached (37,952,829) M. dinars, with the private sector accounting for (19,452,293) M. dinars, growing by (6.99%) and contributing (51.3%). The government sector amounted to (18,500,536) M. dinars, experiencing a decline of (2.6%) and contributing(48.75%). In 2018, the credit reached (38,486,947) M. dinars, with the private sector valued at (20,216,073) M. dinars, growing by(3.9%) and contributing (52.53%). The government sector was valued at(18,270,874) m dinars, with a growth of(-1.2%) and contributing (47.47%).

In 2019, cash credit rose to (42,052,511) M. dinars, with the private sector accounting for (21,042,213) M. dinars, growing by (4.1%) and contributing (50%). The government sector reached a value of (21,010,298) M. dinars, growing by(14.99%) and contributing (49.96%). In 2020, credit reached (49,817,737) M. dinars, with the private

sector valued at(25,866,652) M. dinars, growing by(22.9%) and contributing (51.9%). The government sector amounted to(23,951,085) M. dinars, growing by(13.99%) and contributing (48.1%).
In 2021, cash credit rose significantly to (52,971,508) M. dinars due to the improvement in economic activity in Iraq and political stability. The private sector reached a value of (29,578,193) M. dinars with a growth of (14.3%) and a contribution of (55.84%), while the government sector amounted to (23,393,215) M. dinars with a growth of (-2%) and a contribution of (44.16%). In 2022, cash credit reached (60,576,391) m dinars, with the private sector valued at (35,016,532) M. dinars, growing by (18.4%) and contributing (57.8%), while the government sector was valued at (25,559,482) M. dinars, growing by (9.26%) and contributing (42.19%). Through our study, we observe that the growth rate fluctuated significantly during the years under review.

Thirdly – Measuring the impact of the mandatory reserve ratio on credit during the research period.

Initially, the overall impact of the indicators will be determined in general.

$$C_t = \alpha \pm \beta_1 C_{t-1} \pm \beta_2 R_t \pm \beta_3 P_t \pm \beta_4 G_t$$

After this equation, the effect of each variable will be detailed individually as follows:

$$C_t = c_i + \alpha_1 R_t + e_i \ldots\ldots(1)$$

Since:

C_t :- The function (total monetary credit) during T.
R_t: It shows the independent (legal reserve) during T.
e_i:- symbolizes randomness = zero.

$$P_t = c_i + \alpha_1 R_t + e_i \ldots\ldots(2)$$

P_t: The variable (credit to the private sector) is illustrated over T .

R_t: It shows the independent (legal reserve) during T.
e_i :- symbolizes randomness = zero.

$$G_t = c_i + \alpha_1 R_t + e_i \ldots\ldots(3)$$

G_t :- The function (credit to the government sector) is illustrated over T.

R_t: It indicates the independent (legal reserve) during T.
e_i :- symbolizes randomness = zero.

1 - A statistical description of the research sample variables and their distributions.

To clarify the effect and relationship between the research variables, the researcher took the monetary indicator, which is the legal reserve ratio, as an independent variable. The total monetary credit indicator and its types, represented by (credit to the private sector and credit to the government sector), were considered dependent variables.
The above indicator data were taken from annual statistical bulletins published by the Central Bank of Iraq.
Table 3 illustrates the measurement of the standard deviation and the mean of the research variables.

Table (3)The results of the arithmetic mean of the research variables and their standard deviation.

Detailing the variables.	**The math center.**	**Standard deviation**
Legal reserve	9338615.385	1675577.639
Total cash credit	36951546.92	13075444.71
Private sector cash credit	19742253.77	7121702.845
Government sector cash credit	17209264.15	6259113.215

The Source: Results from the SPSS program.

The results of Table (3) indicated that the mean (of the legal reserve indicator), which represents the independent variable, amounted to (9338615.385), and its standard deviation was (1675577.639).

The mean (for the total monetary credit), which represents the dependent variable, was (36,951,546.92), and the standard deviation was (13,075,444.71). As for private monetary credit, which is also a dependent variable, its mean was (19,742,253.77) with a standard deviation of (7,121,702.845). Meanwhile, government monetary credit, another dependent variable, had a mean of (17,209,264.15) and a standard deviation of (6,259,113.215).

2. Clarification of the correlation relationship (of the legal reserve ratio as the independent variable) and (of total monetary credit, private monetary credit, and government credit as dependent variables) :

The measurement of correlation between the study variables is to clarify the result of the correlation and whether there is a strength of correlation and the direction of this relationship, whether it is a direct relationship or an inverse one.

To measure this correlation and relationship of the legal reserve ratio with (the total monetary credit index, monetary credit for the private sector, and monetary credit for the government sector), we will use the Pearson correlation coefficient.

It should be clarified that measuring this relationship, despite its usefulness as a study tool, does not provide predictive results; that is, it does not offer a clear cause, as it does not provide evidence of the impact of the mandatory reserve ratio on the outcome variable of credit liquidity. To measure this effect between the indicators, the statistical method of simple linear regression is used.

Table (4)It clarifies the correlation between the legal reserve and credit types during the research period.

Statistical significance	P-sig.	Linkage factor	Variables	
Mental	0.006	0.714	Total cash credit	Legal reserve
Mental	0.003	0.759	Private sector cash credit	Legal reserve
Mental	0.022	0.628	Government sector cash credit	Legal reserve

The Source: Results from the SPSS program..

The results in Table (4) showed that the correlation coefficient between the research variables, represented by (legal reserve and total monetary credit), reached (0.714), while the correlation between (legal reserve and private monetary credit) was (0.759), and the correlation between (legal reserve and government monetary credit) was (0.628).

It also showed a strong and significant positive correlation between the two variables (legal reserve and total monetary credit) at (0.01 - 0.05). The correlation between the legal reserve and private monetary credit is a strong and significant positive correlation at (0.01 and 0.05), while the correlation between the legal reserve and government monetary credit is a moderate and significant positive correlation at (0.01 and 0.05).

3- The statement of the impact of the mandatory reserve ratio on total credit during the research period.

A: Measuring and analyzing the impact of the mandatory reserve ratio on the total amount of monetary credit during the research period.

In order to analyze the effect of the independent variable, the mandatory reserve requirement, on the dependent variable, total credit volume, Let's assume the following.

H_0: There is no effect of the independent variable, the mandatory reserve requirement, on the dependent variable, total credit liquidity.

H_1: There is an effect of the independent variable of mandatory reserve requirements on the variable of total credit liquidity.

We have reached the following :

Table (5) Impact of the Legal Reserve Index on Total Cash Credit

	β	**Std. Error**	**T**	**Sig.**
(Constant)	-15075519.1-	15612425.63	-.966-	.355
Legal reserve	5.571	1.648	3.382	.006

Source: Results from the SPSS program.

From (5), we find that the calculated value of the marginal slope is (5.571), which indicates that any change in the independent variable (legal reserve) by one unit will result in a change in the dependent variable (total monetary credit) by (5.571).

The standard error of the estimated parameter was (1.648), which is considered a large amount. The calculated value for the t-test statistic is (3.382), and when compared to the corresponding value in the(Sig) field, we find this value to be significant, which means we reject the null hypothesis (H_0) and we accept the alternative model (H_1) .

This demonstrates the existence of a significant effect of the independent legal reserve factor on the dependent factor, which is the total cash credit, And the fixed limit reached a value of (1-15075519.) It is considered intangible when compared to its counterpart in the field (Sig) .

Table (6) The coefficient of determination (R^2) and the calculated F value are used to test significance.

R	R Square	F	Sig.
0.714	0.510	11.435	0.006

The Source: Results from the SPSS program.

Table (6) shows that the coefficient of determination (R^2) is (0.510), which indicates that the independent variable (legal reserve) explains approximately 51% of the variation in the dependent variable, which is (total monetary credit). Additionally, we find that the calculated value of (F) is (11.435), which is a significant amount, and it is considered significant at the value of (0.006) in the field Sig**.** . Therefore, the assumed linear relationship between the independent variable and the dependent variable is significant.

B: Estimation and analysis of the impact of the independent variable, the legal reserve ratio, on private credit.

In order to analyze the impact of the independent variable, the legal reserve requirement, on the dependent variable, the credit liquidity of the private sector, the following research hypothesis must be tested:

H_0: There is no significant effect of the legal reserve factor on the dependent variable of private credit.
H_1: There is a significant effect of the legal reserve factor on the dependent variable of private credit liquidity.

We have reached the following:

Table (7) The impact of the independent variable, the legal reserve requirement, on the dependent variable, credit liquidity for the private sector.

	β	Std. Error	T	Sig.
(Constant)	-10387476.7-	7905612.385	-1.314-	0.216
Legal reserve	3.226	0.834	3.867	0.003

The Source: Results from the SPSS program.

From Table (7), we find that the calculated value of the marginal slope is (3.226), which indicates that any change in the independent variable (legal reserve) by one unit will result in a change in the dependent variable (private credit) by (3.226).

The standard error of the estimated parameter was (0.834), which is considered a small amount. The calculated value for the test statistic (T) is (3.867), and when compared to the corresponding value in the (Sig.) field, we find this value to be significant, which means we reject the null hypothesis (H_0) and we accept the alternative model (H_1) .

This demonstrates the existence of a significant effect of the independent legal reserve variable on the dependent variable, which is the specific monetary credit. The fixed limit reached a value of (-10,387,476.7-), and it is considered insignificant when compared to its counterpart in the field (Sig.) .

Table (8) The coefficient of determination (R^2) and the calculated F value are used to test significance.

R	R Square	F	Sig.
0.759	0.576	14.957	0.003

The Source: Results from the SPSS program.

Table (8) shows the value of (R^2), the coefficient of determination, which is (0.576). This indicates that the independent variable (legal reserve) explains approximately 57% of the variation occurring in the dependent variable, which is (private credit). Additionally, we find that the calculated value of (F) reached (14.957), which is a large amount and is considered significant at the value of (0.003) in the field Sig . Therefore, the assumed linear relationship between the independent variable and the dependent variable is significant.

c. Assessment and analysis of the impact of the Legal Reserve Index on government sector cash credit for duration (2010-2022).

Assessment and analysis of the impact of the independent variable, the legal reserve indicator, on government cash credit .

In order to analyze the impact of the independent variable, the legal reserve requirement, on the dependent variable, government cash credit. The following research hypothesis should be tested:

H_0: There is no significant effect of the legal reserve factor on the dependent variable of government cash credit.

H_1: There is a significant impact of the legal reserve factor on the dependent variable of government cash credit.

We have reached the following:

Table (9)The effect of the independent variable, the legal reserve requirement, on the dependent variable, government credit liquidity.

	β	**Std. Error**	**T**	**Sig.**
(Constant)	-4687709.210-	8308568.46	-0.564-	0.584
Legal reserve	2.345	0.877	2.674	0.022

The Source: Results from the SPSS program.

From Table (9), we find that the calculated value of the marginal slope is (2.345), which indicates that any change in the independent variable (legal reserve) by one unit will result in a change in the dependent variable (government cash credit) by (2.345).

The standard error of the estimated parameter was (0.877), which is considered a small value. The calculated value for the test statistic (T) is (2.674), and when compared to the corresponding value in the (Sig.) field, we find this value to be significant, which means we reject the null hypothesis (H_0) and we accept the alternative model (H_1).

This proves the existence of a significant effect of the independent legal reserve variable on the dependent variable, which is the specific cash credit, with a fixed value amounting to (-4687709.210-), and it is considered insignificant when compared to its counterpart in the field (Sig).

Table (10) The coefficient of determination (R^2) and the calculated F value are used to test significance

R	**R Square**	**F**	**Sig.**
0.628	0.394	7.152	0.022

The Source: Results from the SPSS program.

Table (10) shows the value of (R^2), which is (0.394). This indicates that the independent variable (legal reserve) explains approximately 39% of the variation occurring in the dependent variable, which is (government cash credit). Additionally, we find that the calculated value of (F) reached (7.152), which is a significant amount and is considered significant at the value of (0.022) in the field **(**Sig.) .Therefore, the assumed linear relationship between the independent variable and the dependent variable is significant.

Conclusions

The following research concludes:

1- The increase in the legal reserve factor during the research years; at the beginning of our study, it was (7,155,000) M. dinars, and by the last year of the study, it reached (12,804,000) M. dinars in 2022. We also observed a rise in total cash credit, which was (11,721,535) M. dinars in the first year of the study, and then it increased significantly to reach (60,576,391) M. dinars in the last year of the study, 2022.

2-The legal reserve ratio imposed by the central bank during 2010 was (25%), which was reduced that year to (20%) for government deposits and then to (15%) for both government and private deposits. This ratio remained at (15%) until 2019. In 2020, the ratio was lowered to (13%) for current deposits, and to (10%) for time and fixed deposits for all banks, and (5%) for Islamic banks. The purpose of this reduction was to support liquidity in the banking sector. In 2021 and 2022, the ratio was restored to (15%) due to the improvement in economic activity in Iraq following the decline in the impact of the coronavirus pandemic, as well as to mitigate the inflationary pressures that arose after the Russian war in Ukraine.

3- We found a slight increase in the share of cash credit in the government sector relative to total cash credit, with the share of the government sector (42.19%) in 2022 being 27.3% of total cash credit in 2010, while the share of cash credit in the private sector decreased, with the share of the private sector (57.8%) being 57.8% of total cash credit in 2022 being 72.75 in 2010.

4- There is a moral impact of the legal reserve factor on the dependent research factors (total cash credit, private cash credit, public cash credit) ، because the legal reserve is a safety tool for bank depositors, thus contributing to increased deposits in the banking sector, which in turn contributes to increasing the banking sector's ability to extend cash credit.

Recommendations

The search recommends:

1- As a result of the emergence of the relationship between the legal reserve requirement and credit, it is essential to maintain the money supply and invest it in profitable economic activities with minimal risks.

2-It is important to control the amount of cash available in the banking sector by controlling the size of bank reserves in accordance with the requirements of the country's economic situation and to avoid high-risk activities as they adversely affect the country's economy.

3-The Central Bank of Iraq must use another tool with the legal reserve ratio tool for the purpose of withdrawing liquidity from banks to maintain it and to make monetary policy more effective.

4. Since bank deposits are an important part and a primary source of financing for various banking activities and occupy the largest part of its financial uses, the Central Bank has decided, on the basis of monetary policy plans, that a specific percentage of bank deposits should be kept to protect depositors ' funds and to meet surprise withdrawal requests from customers. The Central Bank can change this percentage according to the requirements of the economic situation, as it deems appropriate, to control and control the volume of credit granted.

Sources

- Instead of God, Zaneb and Foley, Osama Muhammad, "The Fundamentals of the Bank's Monetary Economy" by the Law Society. د.M, 2003.

- The carpenter, the fidelity of Bagher, the Islamic Banks, the Book House for Printing and Publishing, the University of Basra, 2009.

Ramadan, Ziad Salim, Mahfah Ahmed, Bank Management, I1, Al-Safa Printing and Publishing House, Amman, Jordan, 1995

- Abu Hamad, Reza Sahib and Kaduri, Highest Light, Banking Department, Ibn Al-Ather Printing and Publishing House, Mosul University, 2005.

- Mr. Ali, Abdul Munim and Issa, Nizar Saad al-Din, "Money, Banks and Financial Markets," I1, Hamed Publishing and Distribution House, Amman, 2004.

Al Husseini, Falah Hassan Adali and Al-Douri, supporter of Abdurrahman Abdullah, Bank Management, Quantum and Strategic Portal, I1 Waal Publishing House, Amman, 2000.

- Jamil, Hill Agmi, "The effect of the mandatory cash reserve on the credit facilities of Jordanian commercial banks, 2001-1980," Jordan Centre for Studies, Amman 2003.

- Zayda, pray Muhammad. Disruptive credit facilities in the Palestinian banking system: an application study for national banks operating in the Gaza Strip. (Unpublished Master ' s Letter, Islamic University Gaza, School of Commerce, Accounting and Finance, Gaza), 2006.

- Abdelhamid, Abdel Taleb, inclusive banks, their operations and management, University House, Ain Shams University, Egypt, 2008.

- Rahim Hussein, Selim Mahmud, using quantum methods in Trishida to make credit decisions 1 in commercial banks, 6th National Meeting on quantum methods and their role in administrative decision-making, University of Skekda, 23-24 November, 2008.

- Rahim Hussein, Selim Mahmud, using quantum methods in Trishida to make credit decisions 1 in commercial banks, Sixth National Meeting on quantum methods and their role in administrative decision-making, University of Skekda, 23-24 November, 2008.

- Adalla Zainab Al-Fawli, Osama Mohammed, Fundamentals of the Monetary and Banking Economy, 2 Bills of Law, 2003.

- Ibrahim Muhammad Ali Al-Gharlawi, Nadia Shakir Al-Naimi, Bank Credit Analysis using three sets of selected financial indicators, Management and Economics Journal, No. 83, 2010.

- The names of Khadeer Elias, Ahmed Subhi Jameel, the legal reserve effect on the volume of cash credit in Iraq for the period 2013-2004, Dinner magazine, No. 09 of 2016, Baghdad University.

- Hamza Mahmoud Al-Zubaidi, Department of Bank Credit and Credit Analysis, I1, Publication and Distribution Paper Foundation, Amman, Jordan 2002.

- Kareem, Akeel Intruder, Measuring Bank Credit Risks and Their Role in Predicting Financial Disruption of Iraqi Banks, "A sample applied study of Iraqi banks," Muthanna Journal of Administrative and Economic Sciences, vol. 9, No. 2, 2019.

- Tariq Taha, Managing Banks in the Environment of Globalization and the Internet, University Thinking House, Alexandria, 2007
- Clean for Tarsh, Bank Tech, I-6, University Publications, Algeria, 2007.
- Hamza Mahmoud Al-Zubaidi, Department of Bank Credit and Credit Analysis, I1, Publication and Distribution Paper Foundation, Amman, Jordan 2002.
- Zainab Awad Allah, Osama Mohammed Al-Fawli, Fundamentals of the Monetary and Banking Economy, Lebanon, Al-Halabi Law Publications, 2003.

Foreign sources

-Alexander,David & Nobes, Christopher." Financial Accounting: International Introduction",3ed, Pearson education limited,2007
- Fabozzi ,frank J , Modigliani ,franco &Jones, frank .J,"Capital Markets: Institutions and Instruments",3rd ed, pearson prentice Hall,USA,2003.
- Mishkin, frederic S. &Eakins, stanleyG. "Financial Markets and Institutions",6th ed, pearson prentice hall, New york,.2009.
- Pilbeam,Keith,"Finance & Financial Markets",3rd ed , palgrave Macmillan ,New york,2010.
- Rose ,Peter S.& Hudgins ,Sylvia C.,"Bank Management &Financial Services",8th ed, McGraw-Hill , USA ,2010.
-Rose, peter S. ,"Commercial Bank Management",4th ed, McGraw-Hill , USA ,2002.
-Maitah , Mansoor , Zeda, Khalid and Galalh, Abudeltef (2012), The Utilizing of Financial Analysis in Credit Decision in Palestinian Commercial Banks, Journal of Money, Investment and Banking, Vol. 24, No.12, P.114-122.