Al-Qadisiyah Journal for Administrative and Economic Sciences ISSN$_{Online}$: 2312-9883
QJAE, Volume 25, Issue 2 (2023) ISSN$_{Print}$: 1816-9171

Evolution impact of bank credit on the gross domestic product : the Iraqi economy, a case study for the period from 2004-2022

Zuhair Hadhek
University of Gabes
Jenan Saleem Hellal
Al-Qadisiyah University - College of Administration and Economics
Corresponding Author: Jenan Saleem Hellal

Abstract **:** The current study aims to identify the role of entrepreneurial skills through its dimensions (communication, teamwork skills, leadership skills, problem-solving skills, enthusiasm, focus on ultimate goals, entrepreneurial creativity, creating a new project) in achieving the entrepreneurial social orientation through its dimensions (risk-taking social, social proactive, social relations), as the problem of the study consisted of several questions to define the intellectual frameworks variables, and then diagnosing the level of interest in it in the field. As well as identifying the organization's appropriate procedures, two main hypotheses were developed, from which several hypotheses branch out to measure the level of association and influence by analyzing the relationship between these variables. Investors and founders in private schools in Diwaniyah Governorate were selected for the study and testing of their hypotheses. The questionnaire form was adopted as a primary tool in collecting data related to the field side of the study. The sample size was (357). Entrepreneurial social orientation and the study concluded with a set of recommendations**.**

Introduction:

Bank credit Lead an important and vital role in the framework of modern economic development through the role it plays in providing the necessary financial resources for financing and directing them towards multiple and different areas that serve economic activity and greatly enhance the role of the productive sectors. This gives bank credit a significant impact on the level of economic activities and economic cycles Whether in the boom or deflation stage. On the one hand, and on the other hand, the Iraqi economy has become in dire need of bank credit, especially after the new trend towards relying on the role of the private sector and devoting efforts by relying on privatization in a large way to support the effectiveness of economic sectors that serve economic activities and promote economic growth .

1. **The problem:** The research problem came in the form of questions:

- Can the relationship between bank credit and GDP be two-way .
- Can bank credit correct the problems of the Iraqi economy and address structural imbalances in shade of the competition between the public sector and the private sector in relying on bank credit granted to banks .

2. **Hypothesis**: The research assumed that the answer to the questions raised within the problem is as follows

- There is no mutual relationship between the search variables in two directions .
- Bank credit cannot succeed in its role in addressing the structural imbalances of the Iraqi economy .

3. **Importance**: The importance of the research is represented in the study of the most important economic variables that address the structural imbalances of the Iraqi economy as a result of the high volume of public expenditures and the coverage of those expenditures with loans as well as inflationary pressures, which caused a loss of balance and economic instability, which calls for attention to bank credit with the necessity of compatibility The time period between the economy's actual need for financing and its conformity with the currents of spending in it, especially since the main purpose of credit is to enhance the deficit in some units from the surplus in other units, and this is what calls for saying that bank credit constitutes the backbone of banking activities and its most important focus is revenue.

4. **Research structure**: The research was divided into four axes: The first axis: dealing with the theoretical and analytical framework for the concept of credit in general and cash credit in particular and its importance, dimensions, elements, the point of view of some economic schools and the requirements for its activation within the Iraqi economy and finally the actual reality . For cash credit in Iraq for the period 2004-2022. The second axis: included the conceptual and analytical framework of the gross domestic product. As for the third axis, it specialized in defining the relationship between credit and gross domestic product. In the fourth axis: the focus was on the standard aspect of measuring the moral impact between the research variables during the period 2004-2022, annual data .

<u>The first axis</u> : The theoretical and analytical framework for the concept of credit and bank credit and its economic importance for the period 2004-2022

1. **The concept of credit**: It is the purchasing power that is lent or that becomes available to borrowers during a specific period of time (Hadi ,2019 . 10) . Likewise, it is the process of exchanging a present value for a promise of an equal future value. Often that value is money added to it another amount called interest, which is paid to the lender in the future in return for giving up the present value (Daoud, 2014, 17) . This meaning refers to the presence of two parties, the first is the entity or person granting the credit (the lender), and the second is the recipient of the credit (the borrower). It is also defined as the present right to future payments (Thomas ;2018 ;67) . So it can be said that credit is the confidence that financial institutions give to every legal person and grant him a loan associated with an interest rate agreed upon by both parties

2. **Bank credit** : The content of bank credit is included within the concept of credit policy, and it is one of the most important economic policies, which is no less important than the monetary and financial policies of all countries of the world, depending on their levels of development or direction, and their role increases with the role and importance of banks, which represent the backbone of economic life, as they play a role Vital and extremely important in the development of various economic activities in their industrial, agricultural, commercial and service fields. Since the Banks are financial institutions that perform the function of financial intermediary between deficit and surplus units, so it is imperative for them to strive to attract savings and employ them in the form of loans and investments, and thus they have contributed to achieving their most important function, which is the process of creating money, which is synonymous with the concept of bank credit, which is defined as: loans granted by commercial banks to its customers from individuals, institutions and other banks (Al-Najjar, 2007, 66) . It is also the loans that financial institutions and banks provide in exchange for guarantees that enable them to recover their money if the borrower stops paying without any losses (Obeid, 2015, 23).

3. **Elements of granting bank credit:** There is a set of elements that must be available when granting credit, accompanied by a prerequisite for each element (Al-Zubaidi, 2018, 30-33)

- The existence of two legal parties (whether natural persons or institutions) and this is coupled with a basic and necessary condition, which is the availability of trust between them. This element is called the element of trust.
- The availability of the necessary funds for borrowing is associated with the debtor's obligation to pay within the period agreed upon and concluded within the contract. This element is called the guarantee element. As for Haddad, he called it the element of liquidity (Haddad, 2005, 14).
- The lending party establishes the interest rate, which is the percentage added to the borrowed amount, which is the price of risk and risk between credit transactions, and is approved by the borrower to guarantee the lender's right to repay the debt. This element is called profitability.

Second: Interpretation of the importance of bank credit from the point of view of economic schools

1. The classical point of view : The owners of the classical theory point out that changes in the money supply have an impact on the nominal variables only without the real variables, according to their concept of the neutrality of money. However, the shocks that faced the economy directed criticisms at the behavior of the theory, and some of their propositions changed that the level of production could be affected by an increase Offer cash in the long term. (Al-Zubaidi, previous source, 45).

2. Keynes' point of view : Although most of the proposals of the Keynesian theory were in the short term, according to his famous saying (we are all dead in the long term), yet the recent proposals of his school emphasized the positive relationship between granting cash credit and improving the level of economic activity and thus increasing the volume of Credit leads to increased levels of consumption as well as investment and thus positively affects economic activities.

3. The point of view of the monetarists (or as it is called the Chicago School), led by the economist Milton Friedman, the owners of this theory assert that the money stock is the main engine of the economic system and that changes in the money supply are transmitted directly to the general level of prices, and therefore every increase in the offering of cash credit changes the The level of economic activity, at least in the short term (Malawi, 2012, 87) .

Third : The importance of bank credit and its impact on economic activity

Bank credit has a sensitive impact on economic life, and through it there is sufficient guarantee for the economy to achieve a level of growth and stability, and without it, the comparison process between its financial sources becomes restricted and does not achieve the basic purpose of its uses, so there must be an efficient flow faced by more productive uses, the central bank When he sets out to develop a policy to increase the money supply, he takes into account the volume of credit and the nature of the work of the banking system according to the plans drawn up. Granting credit means circulating money through the production units disbursing the credit allocated to them in a manner that enhances the monetary unit within the economy, and not only that, but it is considered bank credit , It is one of the decisions or policies taken by the government, so it can be considered as one of the tools for controlling

investment and commercial activities through the use of the credit balances allocated to it, and thus it becomes a means affecting economic activities directly and through it the decrease or increase in savings can be controlled. In order to achieve its goal, decision makers must take into account the size of government spending and the purchasing power available within the economy (Miller, 2009, 33). And from another point of view , Bank credit is one of the most important sources of enhancing the financing needs of the various economic sectors, but it may lead to great damage to the economy if it is not used properly. The contraction of bank credit leads to economic recession, and the state of excessive it leads to inflationary pressures. Therefore, it is a sensitive tool that leaves very economic effects. Dangerous and difficult to treat if it affects the structure of the economy (Vaish,2017,22) . As for the case of the Iraqi economy, which suffers from economic fluctuations as a result of its dependence on one source of revenue, the bank credit policy was different from what it should be, due to the high volume of public spending and the increase in the government's demand for funds available for lending provided by the banking system led to the displacement of other sectors. From available credit, in other words, more precisely, the increase in the demand of the public government sector for bank credit and its withdrawal of funds to cover its expenses and face debt burdens created the idea of competition with the private sector, which could have borrowed to finance its private investment projects, and thus bank credit lost its developmental role within the Iraqi economy.

Fourth: Requirements for the success of the credit policy in Iraq

The Iraqi economy needs to activate the role of private investment, which is the basis for creating growth and expansion in investment projects in a way that enhances its development potential, and this requires increasing reliance on loans as it is one of the most important sources of financing projects, especially since the size of markets and economic projects in the Iraqi economy is still small and emerging and most of them It suffers from a structural and structural defect, as well as many distortions due to the conditions that Iraq is going through, this on the one hand, and on the other hand, most of the institutions and projects are still small and medium in size, and they are mostly Individual projects depend on self-financing (wealth or profits). As for the external financing sources for those institutions and projects, they are still weak and have not risen to the required level. In this regard, the Central Bank's advisor, Dr. Madhar Muhammad Salih, indicated that (only 28% of credit sources for doing business come from the individual sector, and (56%) are internal financing sources. Its source is profits, as for the official credit market represented by banks, it constitutes only 11% of financing sources, and only 5% comes from other sources (Saleh, 2018, www.glo.bank) Hence it must be said: that credit activities must be linked to investment, as it A means of attracting him, and through him, banks can guarantee the growth and continuity of his ability To achieve the Objectives that it seeks to achieve, and not only this, but also because it is the most activities that guarantee the returns of the Central Bank, and through it the bank can take its role in activating economic activity.

Fifth: The reality of cash credit in the Iraqi economy for the period 2004-2022

The conditions experienced by the Iraqi economy have affected the development of the banking system in general and the role of bank credit in particular. After 2003, as a result of the occupation of Iraq by the international coalition forces, economic life in the country deteriorated, and economic stagnation dominated most of its sectors and activities, which called for foreign sector companies to hesitate to invest or borrow, in addition to the deterioration of the security situation and the destruction of many public sector departments and government facilities. Especially the military manufacturing companies, which caused the loss of many profit opportunities. But after 2004, a broad turning point began on the economic and political level, and it witnessed many changes, and the most important of these changes was the independence of the Central Bank and the activation of the role of monetary policy, as well as the transition to a market economy. As a result, the Iraqi economy achieved tangible development on the monetary level and was able to maintain the exchange rate and strengthen The value of its local currency to liberate the financial sector through the fulfillment of credit restrictions and the freedom to allocate credit resources among its various economic sectors. Schedule (1) shows the total cash credit to the Iraqi economy for the period from 2004-2022.

Schedule (1)

Total monetary credit to the Iraqi economy and its relative importance for the period from 2004-2022 (trillion dinars)

Years	monetary credit	growth rate %
2004	0.8	--
2005	1.7	112.5
2006	2.7	58.8
2007	3.5	29.6
2008	4.6	31.4
2009	5.7	23.9
2010	11.7	105.3

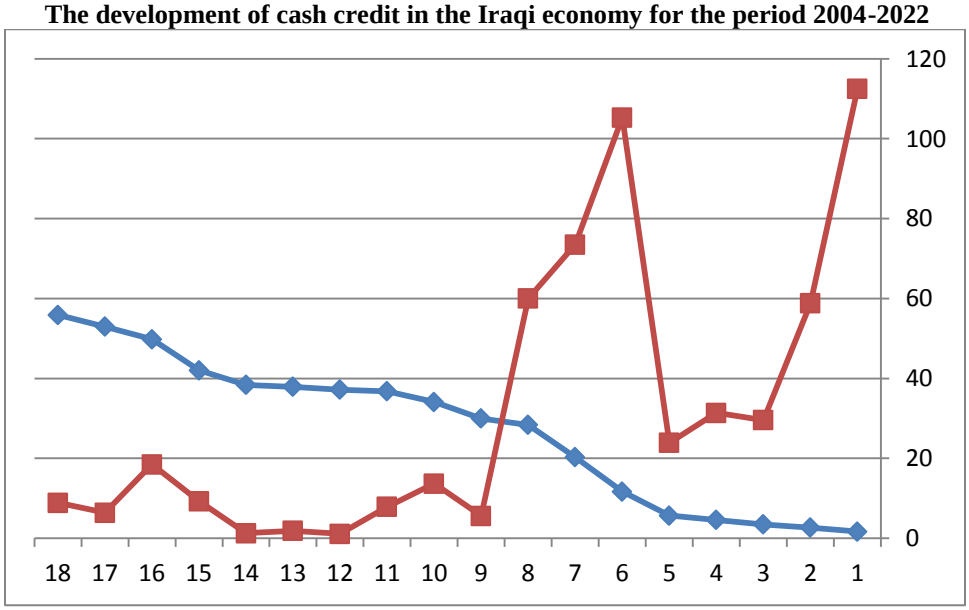
2011	20.3	73.5
2012	28.4	60.0
2013	30.0	5.6
2014	34.1	13.7
2015	36.8	7.9
2016	37.2	1.1
2017	37.9	1.9
2018	38.4	1.3
2019	42.05	9.3
2020	49.81	18.5
2021	52.97	6.4
2022	55.88	8.9

Source: Central Bank of Iraq, General Directorate of Statistics and Research, annual reports for separate years .

From the data of Schedule (1) , we notice a clear improvement and increase in the volume of cash credit with its high annual growth rates, despite the conditions that the Iraqi economy went through for some periods, including the drop in international oil prices, which affected the volume of public revenues, such as what occurred in 2006, in addition to the exposure of Iraq to attacks Terrorist Dash during the years 2014 and 2015 and its occupation of more than (30%) of its lands, and Iraq still faces these gangs from time to time. In addition to the shock of the Corona pandemic and the drop in oil prices in 2020, all of these reasons It was reflected in the financing capacity of the Iraqi economy after the decrease in the volume of oil revenues, which constitute approximately (95%) of the country's average general revenues, and this prompted the government to increase borrowing from banks to cover the budget deficit. In the sense that this increase in the volume of credit was not reflected in the improvement of the level of economic growth and the achievement of an increase in the rates of gross domestic product, despite the measures taken by the Central Bank and its initiatives that encouraged banks to grant loans at low interest rates in support of the national economy and in a way that enhances the liquidity ratios of the banking sector.

draw the graph (1)

The development of cash credit in the Iraqi economy for the period 2004-2022



Source : (Excel) program according to Schedule (1) data

From the above figure, it is clear that the volume of cash credit for the period 2004-2022 is constantly increasing, but its growth rates are fluctuating. It achieved a growth rate of (7.1%) to reach (80.62) trillion, after it was (75.26) trillion in 2020. In contrast, it recorded an increase of (55.88) trillion, with a growth rate of (8.9%) in 2022, as a result of the precautionary measures that the Central Bank took, including Raising the exchange rate of the currency and increasing the percentage of reserves of hard currencies, as well as taking decisions to reduce the granting of credit to the public sector, and in return, increasing the rates of credit granted to the private sector to increase investment opportunities and encourage the work of investment projects in support of the private sector.

The second axis : The theoretical and analytical concept of the gross domestic product in Iraq for the period 2004-2022.

First :- The concept of Gross Domestic Product: It is an indicator that expresses the size of the market, and it means everything related to the production of goods and services, and it is one of the most important indicators that occupies the forefront among all Economic Indicators Women are considered as reflective of the growth of the national economy for all developed countries or on the way to growth, and it depends on the contribution of all productive sectors within the economy. It is defined as the total value of all final goods and services produced by any country, and thus it is considered a comprehensive tool for measuring the production of this country (Lutfi, without a year of publication,P25). not this Not only, but the gross domestic product is considered the most important criterion for measuring the efficiency of the economy in its use of its resources and energy without the use of external resources. Therefore, in order to identify the influencing elements in the economic mechanisms that attract investment, we must first evaluate the influencing elements involved in determining the value of the gross domestic product, and thus we can conclude Including the extent of its impact on the economy as a whole. Accordingly, it is measured by relying on individual consumption spending with public spending and total investments in addition to net exports. An increase in investment leads to an increase in The Gross Domestic Product (GDP), which leads to an increase in employment and thus an increase in income for individuals. The last meaning of GDP can be formulated according to the following formula :

GDP = C + G + I + (N-X)

Second: - Measuring the gross domestic product

The main purpose behind calculating the gross domestic product is to identify the amount of consumer spending and government spending, since the latter fuels economic activities that contribute to raising growth rates, which gives the ability to create more labor forces, so the investment movement is activated, as well as increasing the productive capacity represented by the ability of the trade balance. Several studies have appeared that focused on explaining the positive extent of economic variables to interact with the GDP rate, including the study of (Robert Lucas) (Cooper, 1999 , PP12-19). The study is based on the following explanation that the government can systematically influence the level of GDP real or actual. It is summarized by:

$$y_t = y_t^* + a\left[p_t - E_{t-1}p_t\right] \quad \text{.....(1)}$$

whereas :-

y_t: indicates the actual level of GDP

y_t^*: The desired level of gross domestic product that the government aspires to obtain, which is affected by shocks in price levels.

$$y_t = y_t^* + a\,\varepsilon_t \quad \text{.....(2)}$$

$$m_{t+1} = m_t + \phi_{t+1}; \text{.....(3)} \qquad E_t\, p_{t+1} = E\left[p_{t+1}\middle|I_t\right], \text{.....(4)}$$

$$i_t = r_t + E_t p_{t+1} - p_t \;; \text{.....(5)}$$

From equation (3) it is clear that any deviation of (y_t) or (GDP) actual real about ($GDP\ y^*$) Desirable real (which measures material output regardless of the level of well-being) is caused by random shocks (ϕ_t)To display cash as well as interest rate changes, formula (5) . After application, the study confirms the impact of the slowdown, reflecting the disturbance between the monetary interest rate and price levels, which causes changes in the money supply. In other words, more precisely, inflation does not affect interest rates as much as it affects GDP rates. We conclude from the above model that the growth rate of the gross domestic product or the increase in the gross domestic product from year to year or from quarter to quarter gives a clear vision through which the rate of growth or contraction of the economy is measured, and The following Schedule indicates the growth rate of the gross domestic product in the Iraqi economy for the period from 2004-2022 through it is also possible to predict inflation rates or alert in the event of An upcoming economic recession.

Schedule (2)

Gross domestic product growth rate in the Iraqi economy for the period 2004-2022 (trillion dinars)

Years	GDP	GDP annual growth rate
2004	53235359	--
2005	73533599	17.8
2006	95587955	0.3
2007	111455813	29.9

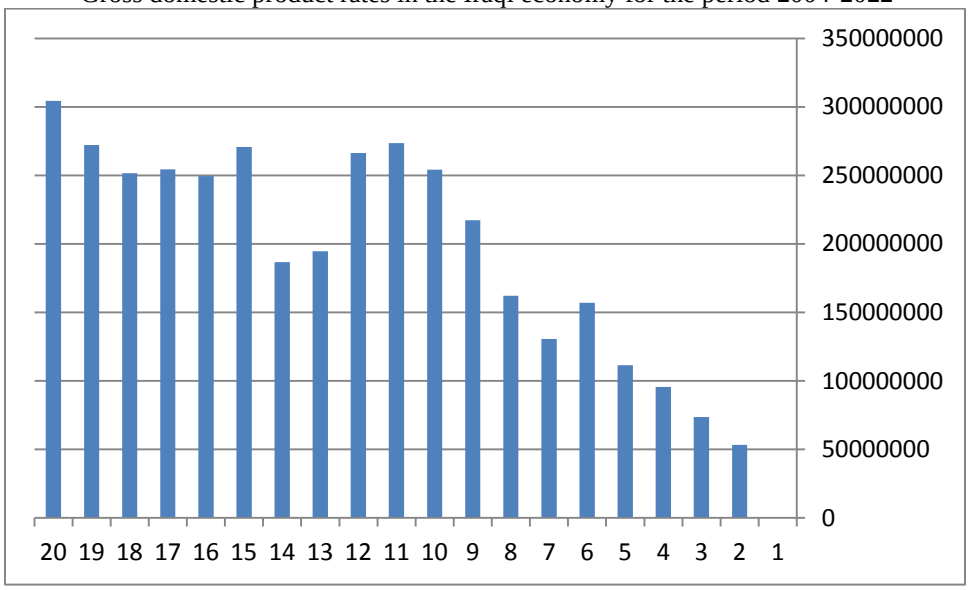
2008	157026062	0.8
2009	130643200	13.1
2010	162064566	0.16
2011	217327107	0.21
2012	254225491	0.32
2013	273587529	0.16
2014	266332655	0.11
2015	194680972	0.03
2016	186542703	0.26
2017	270621134	0.02
2018	249574276	0.15
2019	254443953	1.10
2020	251661517	0.06
2021	272218761	0.25
2022	304455632	13.1

Source: Central Bank of Iraq: Department of Statistics and Research, annual reports for separate years

From the data of the above table, we notice a fluctuation in the high rates of economic growth, and despite this improvement in the GDP rate, this increase did not come from the increase in the contribution of the productive sectors, but rather from the increase in oil imports after the rise in oil prices, in addition to the Paris Club initiative to reduce external debt and ease sanctions economy that was imposed on him. Figure (2) shows the rates of increase in the rates of gross domestic product in the Iraqi economy for the period 2004-2022 .

Figure (2)

Gross domestic product rates in the Iraqi economy for the period 2004-2022



Source (Excel) program according to the data of Schedule (2)

From the above figure, it is clear that the gross domestic product rates in the Iraqi economy are almost at a constant level that does not change much, fluctuating between a slight rise in some years that is accompanied by a rise in oil prices and quickly re-declines, and this can be explained by the weakness of the production expenditure side, as well as the low percentage The contribution of the private sector, which led to a lack of diversification of the channels of gross domestic product in Iraq.

The third axis: - The relationship of monetary credit to the gross domestic product

As for the monetary credit relationship with the gross domestic product, it can be summarized through two theories

The first: The simple accelerator theory (SAT): This theory indicates that economic growth rates depend on income, and that increasing income will increase production (Polok, 2007, 11-14). This relationship can be estimated according to The content of the theory (SAT) through the following formula:

$\Delta Y = Y - Y_{-1}$ ……. (1)

In other words, an increase in investment is associated with an increase in income, and vice versa. From equation (1), we get the following relationship:

$K = VY$ ……(2)

Where (ν) refers to the coefficient of capital - output, which gives the amount of capital needed to increase the level of production by one unit.

By taking the changes on the side of equation (2), we get the following

$K - K_{-1} = VY - VY_{-1}$

$K - K_{-1} = V(Y - Y_{-1})$

$\Delta K = V\Delta Y$ ……(3)

$\Delta K = I$:Since the

The investment accelerator function will have the following form

$I = V\Delta Y$ ……(4)

Accordingly, changes in production levels are achieved in the case of income growth in the economy. But if the level of income is constant, that is, the changes in income are equal to zero. The SAT theory implicitly assumes that the optimal balance of capital (K*) It can be obtained continuously at the end of each time period , or $K = K^*$. However, this assumption is not realized in reality. The second theory that explained the relationship is the flexible accelerator theory .

2: The elastic accelerator theory (EAT) This theory indicates that at the beginning of each period there is a certain amount of capital remaining from the previous periods. This theory is based on a set of assumptions, the most important of which are:

a. An increase in income leads to an increase in investment and the volume of desired output increases

B. It also depends on the cost of the factors of production such as the worker's wages and the interest rate, which is seen as the price of capital. If wages rise, labor becomes more expensive, and investors turn to other means of production that rely more on capital than labor, because capital has become relatively cheaper than labor, and thus the desired production volume increases. According to the operative theory, the optimal production volume is directly related to both income and wages.

$K^* = \mathcal{F}(Y, W, i)$

$K^* = \varphi \frac{W}{i} Y$

term (φ) Refers to: optimal output response to changes in income, wage and interest rate. And by substituting for the ratio of the difference between the two equations, which can be substituted with λ, the elastic accelerator equation is obtained.

$I = \varphi \frac{W}{i} Y - K_{-1}$ ……(2)

$I = \lambda (K^* - K_{-1})$

$I = \lambda \left(\varphi \frac{W}{i} Y - K_{-1} \right)$ ……(3)

Note that the value of (λ) ranges from zero to one

The fourth axis: - measuring and estimating the relationship between bank credit and gross domestic product in the Iraqi economy for the period 2004-2022

First: the concept of correlation

The economic process explains the set of laws that link all economic variables, which are expressed in causal and functional relationships according to the succession of events and for different periods of time. This is explained when building standard models that explain the nature of interdependence and then determining the direction of the causal relationship between those variables. Some prefer to interpret the relationship on the basis of correlation coefficients, but this does not give a sufficient economic explanation for the existence of the causal relationship or to determine the effect. The alternative is to use the regression analysis method in the Cranger formula, which is one of the standard methods that depend on the effect of past values of the independent variable using stable time series with a zero mean

associated with some statistical tests (Djankov, 2007, 30). The general model of Cranger causality is explained in the following formula

$$X_t = \alpha + \sum_{i=1}^{R} X_{t-1} + \sum_{j=1}^{m} Y_t + \varepsilon_t \ \dots\dots\dots\dots\dots\dots\dots (1)$$

$$Y_t = \alpha + \sum_{i=1}^{R} Y_{t-1} + \sum_{j=1}^{m} X_t + \epsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Whereas

X_t : Refers to the independent variable (bank credit).

Y_t -: Refers to the dependent variable (Gross Domestic Product)

ε_t :- refers to the random variables that are not included in the model

(R,M,I,j) -:It expresses the Log. periods, which are supposed to be less than the studied time series.

1. **Characterization of the standard model for testing the relationship**:

The basic model of the study will be described to determine the significant relationship between monetary bank credit (independent variable) with the symbol (C) and the gross domestic product represented by the symbol (Y) as a variable Dependent , and there are many influential variables not included in the measurement (such as inflation, interest rates, etc.) that were excluded not because they are not important, but rather for the ease of determining the moral impact between the two variables under study.

$$C_t = \alpha_0 + \beta_1 C_{t-1} + \beta_2 Y_t + \mu_t \ \dots\dots\dots (3)$$

The analysis focuses on the value of parameter ($ß_1$) . which indicates the effect of cash credit in the past year on the current cash credit, and the value of parameter ($ß_2$) , which indicates the effect of (GDP) represented by the variable (Y) in Equation No. (3).

2**. Estimating the model and testing the relationship**

The model will be estimated based on a set of tests to detect the stability of the data. The most important of these tests is the(unit root test) , which is a prerequisite in the study of time series and is used in the prediction stage of variable values. Without it, the time series would not be static at the set of differences, and thus it would be difficult to obtain logical results. As well as the (R^2) and (T, F) tests, as well as the expanded Dickey Fuller test and the Akake test. The tests involve comparing the statistical values of (T, F) calculated with tabular values. If the tabular values are less than the calculated ones, the null hypothesis will be rejected and the alternative hypothesis accepted, and vice versa. The degree of integration between the variables indicates that the time series is stable in levels ($I \approx 0$).Or stable in the first differences ($I \approx I$) (Differences1) or in the second differences (Differences2) Then ($I \approx 2$) The following table indicates the statistical results of the test application (ADF) at level Differences1 . The critical values are at a significant level (1%) ، (5%) ، (10%) . As for the degree of stillness for the research variables at a significant level (5%) and at the first differences with a categorical and time trend

schedule (3)

Statistical results from the application of the test (ADF)

Table **3**: ADF unit root test

ADF results

Variable	With intercept			With time
	Level	First difference	Level	First difference
CPRI	1.03	−17.79*	−2.87	−18.09*
CGOV	−0.88	−3.00*	−1.47	−5.79*
GDP	−1.83	−8.48*	−1.99	−8.55*
Log GDP	−1.33	−7.58*	−2.31	−7.55*

*, **Refer to that the null hypotheses that the sires contains a unit root is rejected at 1%, and 5%, significance level, respectively (the critical values (with time) are: 1%, −4.1; 5%, −3.5; and the asymptotic critical values (with intercept) are: 1%, −3.6; 5%, −2.9.

Since the distribution of the ADF statistic is non-standard and requires the use of critical values tabulated by MacKinnon .

Source: results of the statistical program E-views.10

The statistical results of schedule (3) confirm that the time series of the variables (C, and the cointegration of the independent variable (GOV C, GDP, Log GDP) are not static at the level where the probability of the values of the variables is less than (0.05), and this means accepting the hypothesis that the variables are not static In their level, that is, they contain the(unit root) .When taking the first differences of the research variables, it is clear from the probability of the variables that they were less than a significant level of (5%) , which means that the alternative hypothesis is accepted that the variables are still and that they are devoid of the unit root and that they are integrated of the first degree (I≈1) .

3. Cointegration analysis

When the time series of the research variables are integrated of the first order (I~1), they will be integrated to the same degree, and this indicates the possibility of a joint integration between monetary credit on the one hand and the real growth rate of the gross domestic product. And the existence of a co-integration relationship reflects in turn the existence of a long-term equilibrium relationship between those variables.

4. **The impact test and the maximum values test**: schedule (4) shows the calculated value of the impact test and the maximum value test. By comparing the calculated value of the impact test and the average of the greatest possibility with the critical (table) value (5%), we note from the results that there are four vectors of co-integration .

schedule (4)
cointegration test

Johannes's co-integration			
Hypothesized No. of CE (s) 2	**Trace statistic**	**5% critical value**	**1% critical value**
R=0	176.5*	95.9	0.010
R=1	109.6*	69.7	0.010
R=2	67.4*	47.8	0.030
R=3	38.5*	29.9	0.017
Hypothesized No. of CE (s)	**Max-Eigen statistic4**	**5% critical value**	**1% critical value**
R=0	67.8**	40.3	0.020
R=1	43.2**	33.8	0.014
R=2	30.1**	27.7	0.025
R=3	31.3**	21.6	0.044
*Trace test indicates co-integration at both 5% and 1% levels of significance **max-eigenvalue test indicates co-integration at both 5% and 1% levels of significance. The 5% and 1%			

Source: results of the statistical program E-views.10

5. Testing the error correction vector model VECM

After proving the existence of a cointegration relationship between the variables of the model, a vector error correction model (VECM) is built, and in light of the assumptions of the (Granger) model, and in the case of cointegration, it is possible to build a model (VAR) in the form of the first difference of the variables with the addition of a decelerating time gap to limit Random error correction(ec_{t-j}) , which measures the speed of adaptation of imbalances in the short run to equilibrium in the long run in the estimated model. (Johansson, 2016,43) And confirmed (Johansson) The time lag values of the change in the model variables reflect the effect of the causal relationship in the short term, while the error correction limit represents the effect of the causal relationship in the long term. Before constructing the error correction vector model, the optimal deceleration time must be determined by using a set of standards, including the AIC criterion and the Schwarz criterion (SC). From the data of schedule (5), the second deceleration is the optimal deceleration for the model .

schedule (5) optimal idle time

Optimal VAR lag order		
Lag	**AIC**	**SC**
0	−8.21	−8.10
1	−29.51	−28.77
2	−33.24	−31.88
*Indicates lag order selected by the. VAR: Vector auto		

Source: results of the statistical program E-views.10

Schedule(6)
coefficients of natural cointegration

C	**C_{t-1}**	**Y_t**	**U_t**	**Constant**
35.41	-1.52	1.33	0.02	−36.42
S.E	−0.37	−1.12	−0.86	
t-value	4.14	−1.31	3.51	

Source: results of the statistical program E-views.10
The cointegration equation for the long-run relationship becomes:

$$C = 35.41 - 1.52C_{t-1} + 1.33Y_t + 0.02 \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Equation (1) indicates that the previous credit in the period (t-1) is associated with a negative relationship with the cash credit in the period (t), and the value of the parameter is estimated to be greater than zero (-1.52). Towards providing credit to the private sector to implement its investment programs, as increasing government borrowing from the local banking sector by one dinar reduces private credit by about (1.52) dinars. As for the rest of the explanatory variables, they refer to the positive effect of (Y) on monetary credit, and this certainly coincides with the logic of economic theory, reflecting the fact that an increase in it usually leads to greater flows of household income and an increase in credit.

The fifth axis: conclusions and recommendations

First: the conclusions

1. The standard results and statistical tests indicated that cash credit plays a distinct role in economic life, and its impact appears directly on its vital activities and effectiveness, and through it the economy ensures high levels of growth and stability.
2. Without cash credit, the comparison between financial sources within the economy becomes restricted, meaning that the surpluses saved by economic units will not flow to more productive uses.
3. Dealing with cash credit by borrowers increases the volume of the money supply, and thus it is considered an essential factor that must be taken into account when determining the volume of government spending and purchasing power within the economy to ensure its direct impact.
4. the value of the parameter is estimated to be greater than zero (-1.52). Towards providing credit to the private sector to implement its investment programs, as increasing government borrowing from the local banking sector by one dinar reduces private credit by about (1.52) dinars

Second: Recommendations

1. When the central bank legislates the monetary issuance policy, it must take into account the volume of cash credit with banks in order to organize the process of issuing legal money and support the monetary unit.
2. It is necessary to direct cash credit towards the productive sectors for the purpose of developing them and benefiting from them in supporting economic activities, as well as ensuring diversification of revenue sources, and this in turn will reduce the budget deficit and improve economic performance.
3. Introducing modern credit methods in the banking business in a way that enhances the ability of cash credit and enhances its position and ability as a real tool capable of addressing the structural imbalance of the Iraqi economy.

Sources

First: The sources are in Arabic

1. Saif Hadi Al-Saif, Bank credit and its economic importance, Juhayna Bookshop, Dar Al-Qatif for Publishing, Printing and Distribution, first edition, Saudi Arabia, 2019.
2. d. Ali Saad Daoud, Banks and Investment Portfolios (Introduction to Decision-Making Support), University Education Publishing House, Alexandria, Egypt, 2014.
3. Faeq Al-Najjar, Credit Analysis (Decision-Making Approach), The Housing Bank for Printing and Publishing, Amman, Jordan, Part Two, 2007.
4. Muhammad Najm Obaid, Banking Administration, Dar Al Manhaj for Publishing and Distribution, Amman, Jordan, first edition, part one, 2015.
5. Hamza Mahmoud Al-Zubaidi, The Role of Bank Credit and Credit Analysis, Al-Warraq Foundation for Publishing, Distribution and Printing, Syria, Damascus, 2018.
6. Zainab Hussein Haddad, The Role of Monetary Policy in Economic Development, Institute for Arab Research and Studies, Dar Al Sharq for Printing and Binding, Cairo, Egypt, 2005.
7. Ahmed Zaki Malawi, The Impact of Credit Policy on the Loan Portfolio in Commercial Banks, Journal of Baghdad University College of Economic Sciences, Issue Nineteen, Volume Four, Baghdad, Iraq, 2012.
8. Dr. Mazhar Muhammad Salih, advisor to the Central Bank of Iraq, the structure of bank credit and its implications for the economy, an article published on the official page of the Central Bank of Iraq: www.glo.bank. 2018.
9. Lutfi Saeed Lutfi, Banks Views, Part One, Arab Community Library for Publishing and Distribution, Amman, Jordan, without a year of publication.

Second: The sources are in English

1. Edward Thomas . Commercial Banking , N.J;Printice ; Hall 4th , ed . 2018 .
2. F.Sentico . Miller . The Economics of Money and Financial Markets ,8th , ed. Publisher Person Addison Wesley . 2009 .
3. Roger Vaish . Banking and Economic Activity , 3th, ed. New jersey , 2017 .
4. L.Cooper , Modern Money and Banking , 2th , ed. McGraw , hill, New York , 2007 .
5. Djankov S. Monetary Theory . Visas Publishing House , India , 2007 .
6. J. Polok . Money , Banking . Texts in Business and Economics . Springer-Verlar , Berlin , 2007 .
7. Johansson , Accounting Reference , Copy Right ; by jony wiiey in the USA , New York , 2016 .

Third: Reports

1. Reports of the Central Bank of Iraq, General Directorate of Statistics, separate years.