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Analysis Of The Impact Of Credit Money On Public Expenditure

A Case Study Of The Iraqi Economy For The Period (2005–2022)

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Abstract: The Iraqi economy is one-sided, relying on fossil fuels to finance its expenditures. These fuels represent a major export commodity upon which the state's general budget relies in determining its current and investment costs. This poses a significant threat to the Iraqi economy, prompting a search for alternative means of financing public spending. Amid this dilemma, monetary policy has emerged to play a crucial role in the financing process through cash credit, which mitigates the effects of occasional significant declines in government spending due to fluctuating oil prices in global markets.

The research aims to demonstrate the extent of the impact of cash credit on government spending. It is based on the hypothesis that cash credit significantly impacts government spending, especially during times of weak fiscal policy in financing government expenditures. The research also sheds light on a problem centered around the impact of cash credit on changes in government spending and, consequently, the impact of these changes on the Iraqi economy. The researchers used the quantitative approach to prove the hypothesis and the analytical deductive approach. They also used a quantitative approach to measure

monetary credit and its impact on public spending, demonstrating its contribution to reducing the decline in government spending. The research drew several conclusions, indicating that monetary credit contributes to mitigating the decline in government spending and limiting the resulting economic impact, particularly in financing the economic development process that the Iraqi economy aims to achieve. The researchers also recommended reducing the severity of the effects of crises on government spending on the Iraqi economy by adopting a credit policy capable of expanding and directing credit to government contracts, particularly investment credit, as it is the most critical component of the general budget.

Keywords: Private credit, public credit, current spending, investment spending.

Introduction: During the period (2005-2022), Iraq experienced several economic and political crises that led to a loss of confidence in the banking system, leading to a decline in the impact of monetary credit across all economic sectors. Public spending also fluctuated.

Between the ups and downs caused by the shocks to the Iraqi economy, which is a rentier economy that relies primarily on oil, the price of which fluctuates according to external shocks in global markets, government spending faced the shock of political tensions experienced by the Iraqi economy and the accompanying emergence of extremist groups. Most government spending was directed towards military spending, which led to a decline in investment spending and a deterioration in the country's economic situation, not to mention the decline in the gross domestic product and other effects resulting from this political and security tension, the effects of which continue to this day. This led to the search for new methods to address this issue, enhance the role of the banking system in economic life, and resort to cash credit to finance the economy and the development process, stimulate various economic sectors, and diversify funding sources. Therefore, it was necessary to study the development of both cash credit and public spending, and the extent of their financing impact during the study period.

Significance of the Research

To provide an informational and analytical basis for the importance of monetary credit in giving sufficient liquidity for government spending when it declines, and to identify methods, approaches, and interactive relationships to leverage it in formulating economic policy and supporting its actions in the event of a fiscal policy decline, by providing studies that support this.

Research Hypothesis

The research seeks to test the hypothesis that monetary credit is an influential factor in financial variables, particularly government spending. The higher the monetary credit, the greater the decline in government spending, reflecting the positive role of credit in mitigating the decline in government spending.

Research Problem

The research problem lies in the impact of changes in monetary credit on government spending, which leads to the following question:

To what extent can monetary credit contribute to influencing government spending, and will there be a positive impact on the Iraqi economy?

Research Objectives

The research seeks to achieve several objectives, including:

1. Monitoring and analyzing the development of both government spending and monetary credit during the research period.
2. Finding a measure of the impact of monetary credit on government spending.
3. Measuring the relationship between monetary credit and government spending.
4. Evaluating credit policies.

Research Structure

Previous Studies

1-(Al-Tuwaijri's study, 2017)	
Bank Credit and its Role in Transmitting the Impact of Monetary Policy to Economic Activity in Iraq (2003-2015)	Research Title
This lies in the weakness of credit analysis, procedures, and financial feasibility studies conducted by banks before granting credit. This has led to a weak role for bank credit in transmitting the impact of monetary policy to economic activity in Iraq.	Research Problem
Analyzing and Measuring the Impact of Monetary Policy and its Impact on Economic Activity	Research Objectives
The research aims to determine the type of relationship between the economic variables under study using a simple regression method.	Research Importance
A one-unit increase in the interest rate leads to a decrease in credit by 6.452 billion Iraqi	Main

dinars, and a one-unit increase in cash credit leads to an increase in the gross domestic product by 3.0 billion Iraqi dinars.	Conclusions
Adopting bank credit as an independent variable in the research	Similarities
The research relied on bank credit, while cash credit was used.	Differences
2- (Ali's study, 2018)	
Banks, Credit, and Financial Depth: Iraq and the International Experience	Study Title
Identifying possible ways to enhance the role of banks in terms of the size and quality of banking products, both quantitatively and qualitatively.	Study Objectives
The research aims to highlight the importance of cash credit and financial depth in Iraq, as they are stimulants of economic activity and their role in resolving the financial crises that the Iraqi economy faces from time to time.	Study Importance
The non-credit activities of banks and non-interest income sources compete with the primary function of banks. Therefore, this problem must be addressed and addressed, especially with the increase in banks' income from the foreign exchange market and other services.	Main Conclusions
The credit variable as an independent variable in the research	Similarities
The difference in the relationship between the dependent and independent research variables	Differences
(Hassan's study, 2023)	
The Impact of the Legal Reserve Ratio on Commercial Banks' Ability to Grant Cash Credit (Iraq as a Case Study)	Study Title
Analyzing trends in the legal reserve ratio and size, the excess reserve size, and cash credit, as well as analyzing the Central Bank of Iraq's ability to influence commercial banks' ability to grant credit through the legal reserve.	Research Objectives
The importance of this research is evident in clarifying how monetary policy, through the legal reserve ratio, influences commercial banks' ability to grant cash credit, and demonstrating its importance as a means of controlling liquidity levels within the Iraqi economy.	Research Importance
An inverse relationship exists between the volume of cash credit and the legal reserve ratio, but this effect disappears in the long run.	Main Conclusions
Cash credit is one of the research variables.	Similarities
Credit is a dependent variable, while the research considered credit as an independent variable.	Differences

Section One

Reviewing the Relationship between Research Variables

The problem of financing public spending is one of the most critical problems facing the development process sought by the Iraqi economy. It has been the focus of attention for most economic researchers and decision-makers in the financial field. It has become a source of intellectual debate in banking due to its numerous impacts on credit policies in the banking sector, reflecting the creditworthiness of commercial banks and national economies in general due to their support for the development process (Al-Baldawi, Ismail, 2019, p. 6).

The ability of banks to grant credit varies from one country to another, depending on the degree of liquidity enjoyed by the banking system. Cash credit is a part of banking credit, which aims to provide the necessary credit facilities and financing required by the economic development process to support various economic sectors, contributing to the growth of the gross domestic product and, consequently, achieving increased growth rates in the economy. Cash credit also contributes to financing government spending (Al-Janabi, 2012, p. 17). To facilitate fiscal policy tasks and provide it with the necessary liquidity, as well as mitigate the effects of the deficits that the general budget is exposed to from time to time due to the heavy reliance on spending on oil revenues, which is the main export commodity in the Iraqi economy and is in turn subject to price shocks and supply and demand in global markets (Ministry of Planning, 2016, p. 2). Granting cash credit entails many risks, including those related to the borrower and their ability to fulfill their obligations to the amount and the interest due on it promptly.

Furthermore, the decision to grant credit is one of the most challenging responsibilities a bank faces and is a critical determinant of the bank's performance, without compromising its survival (Muhammad, 2021, p. 138).

This is achieved by striking a balance between the size of loans and the size of deposited funds, and reducing the risk associated with borrowers. Credit is the bank's primary source of income, generated through commissions and interest. On the one hand, cash credit plays a significant role in the development of economic and commercial sectors. Increasing the volume of credit and lending operations by commercial banks contributes effectively to driving economic growth, in addition to its contribution to deepening the local capital market and implementing productive and service projects through financing and bank credit operations, which contribute to achieving high growth rates in economic sectors and contribute to providing financial stability and security (Matar, 2012, p. 18). Accordingly, the study of the relationship between cash credit and government spending has been the subject of widespread debate in economic studies, particularly those that address the financing of the general budget, to which banks contribute actively, especially during financial crises. The relationship between cash credit and government spending takes two forms:

First: The impact of an unexpected increase in government spending on cash credit. This increase can be interpreted as increasing liquidity in banks by increasing individual savings due to rising incomes, thus increasing banks' ability to lend.

Second: The unexpected increase in cash credit relative to government spending. This increase can be interpreted as a sign of optimism regarding the future budget if this optimism leads to increased government spending, particularly investment spending, which subsequently leads to increased economic growth rates.

Section Two

Analysis of Public Spending and Cash Credit Indicators in Iraq for the Period (2005-2022)

First: Analysis of Public Spending Growth for the Period (2005-2022)

Public spending is one of the key indicators used by the Ministry of Finance to achieve the state's economic and social goals over a specific period of time, regardless of the direction of the financial system and its intellectual philosophy. Through it, the government can influence the size of aggregate demand and usage in the direction it desires, aligning with its overall objectives. It has become apparent that economic conditions will have varying impacts on the content and level of public spending. Therefore, financial policymakers have the discretionary power to adjust the size of public spending to suit the state's political and economic needs. Accordingly, the monetary policy in Iraq has adopted a behavior towards maximizing consumer spending at the expense of investment spending, and this was clearly evident in the composition and structure of the preparation of general budgets throughout the research period, and this was reflected in the data in Table (1), as it became clear that there was a clear fluctuation in the total public expenditures throughout the study period, as the total expenditure amounted to about (26,376,000) million dinars in 2005, and at the same time the current spending for the same year ((22,472,000 million dinars with a contribution rate to the total public spending of (85.2%).. while investment expenditure amounted to ((3,904,000 million dinars with a contribution rate to the total current expenditure of (14.8%). This high contribution to the current expenditure is attributed to the policy of the Governing Council, which directed spending in all areas (reconstruction, salaries, risk allocations, and granting new positions). As for the year 2008, the current expenditure amounted to (39,087,000) million dinars, with a contribution rate of (65.8%), while investment spending amounted to (20,316,000) million dinars, with a contribution rate of (34.2%). This was due to the rise in oil prices, on which the Iraqi economy relies heavily in preparing public expenditures, which was positively reflected in the improvement of public spending (Al-Hajmi, 2023, p. 59). In 2009, current spending rose to (45,941,000) million dinars, with a low contribution rate of (17.4%). The reason for the low contribution rate was attributed to the security and political tensions that Iraq experienced during that period. Investment spending also rose to (9,649,000) million dinars, with a contribution rate of (17.4%). As for the total public spending, it amounted to (55,589,721) million dinars. This decline is attributed to the implementation of the State Employees Salaries Law in 2008, which was implemented in 2009, in addition to the occurrence of the global crisis, the effects of which were negatively reflected on oil prices in Global markets, which are the leading financiers of government spending and expenditures, both current and investment, continued to increase until 2014, the year when extremist groups entered Iraq, leading to a decline in investment spending. Current spending in 2014 amounted to (58,625,500) million dinars, with a contribution rate of (62.3%), while investment spending amounted to (35,450,000) million dinars, with a contribution rate of (28.3%) (Ahmed et al., 2018, p. 31). Public expenditures continued to fluctuate during the years (2016, 2015, 2017, 2018), as current spending amounted to (51,832,800, 51,173,400, 12,111,200, (67,052,900) million dinars, with a contribution rate of (61.2%), 76.3%, 16.0%, 82.9%), while investment spending amounted to (18,565,000, 15,894,000, (13,820,300, 16,465,000) million dinars, with a

contribution rate of (21.9%, 23.7%, 21.8%, 17.1%). (Planning, 2021, pp. 33-34). Public expenditures, both current and investment, increased in 2019, as current spending amounted to (87,301,000) million dinars, with a contribution rate of (78.1%), while investment spending amounted to (24,422,600) million dinars, with a contribution rate of (21.9%). After that, both expenditures declined again in 2020, as current spending amounted to (72,873,500) million dinars, with a contribution rate of (95.8%), while investment spending amounted to (3,208,900) million dinars, with a contribution rate of (17.1%). It reached (4.2%). The significant decline is attributed to the COVID-19 pandemic and the resulting halt in most economic sectors. Subsequently, public expenditures (both current and capital) increased in 2021 and 2022. Current expenditures amounted to (89,526,700, 104,941,100) million dinars, with a contribution rate of (87.0%, 89.7%). Investment expenditures rose to (13,322,700, 12,018,500) million dinars, with a contribution rate of (12.9%, 10.3%). This was due to the emergence of signs of easing and easing of restrictions between countries, as well as the return of economies to their normal activities. This led to an increase in revenues, which made it possible to raise public expenditures to cover economic and administrative requirements in Iraq (Planning, 2022, p. 29).

Table (1) Growth of public spending indicators in Iraq at constant prices for the year (2010) for the period (2005-2022) (million dinars).

The Percentage of Investment Spending In Total Public Spending	The Percentage of Current Expenditure To Total Public Expenditure	Annual Change Rate of Public Spending	Total Public Spending	Investment Spending	Current Spending	Year
14.8	85.2	------	26376000	3904000	22472000	2005
16.0	84.0	47.1	38807000	6209000	32598000	2006
23.6	76.4	0.6	39031000	9211000	29820000	2007
34.2	65.8	52.2	59403000	20316000	39087000	2008
17.4	82.6	-6.4	55590000	9649000	45941000	2009
22.2	77.8	26.2	70134000	15553000	54581000	2010
22.6	77.4	12.3	78758000	17832000	60926000	2011
27.9	72.1	33.5	105140000	29351000	75789000	2012
33.9	66.1	13.3	119127800	40381000	78746800	2013
37.7	62.3	-21.0	94075500	35450000	58625500	2014
26.4	73.6	-25.2	70397800	18565000	51832800	2015
23.7	76.3	-47.3	67067400	15894000	51173400	2016
57.6	42.4	-57.4	28576200	16465000	12111200	2017
17.1	82.9	183.0	80873200	13820300	67052900	2018
21.9	78.1	38.1	111723600	24422600	87301000	2019
4.2	95.8	-31.9	76082400	3208900	72873500	2020
13.0	87.0	35.2	102849400	13322700	89526700	2021
10.3	89.7	13.7	116959600	12018500	104941100	2022

Source: - Ministry of Planning, Central Statistical Organization, Directorate of National Accounts, (Early Warning Indicators for the First Quarter of 2021-2023) Second Quarter 2017.

- Central Bank of Iraq, General Directorate of Statistics and Research, various annual bulletins.

- Ministry of Finance, Annual Evaluation of Fiscal Policy, various reports.

Second: Analysis of the Growth of Cash Credit in Iraq for the Period (2005-2022)

Table 2 shows that direct cash credit has followed an upward trend in absolute terms and annual growth rates during the study period, recording favorable growth rates throughout the study period. It increased from 1,717,450 million dinars in 2005 to approximately 3,459,020 million dinars in 2007, at a growth rate of 29.8%. This was due to banks granting loans to their employees, in addition to providing consumer and housing loans to a large segment of citizens (Central Bank of Iraq, 2006, p. 7). The private sector accounted for 55.3% of the total credit granted, with a value of approximately 950,287 million dinars. In contrast, the credit granted to the public sector amounted to approximately 767,163 million dinars, with a growth rate of 44.7%. The reason for this is attributed to the low

contribution of public credit due to the weak credit rating and assessment of borrowers due to the expected risk of inflationary assets (market risk). In the years following 2005, credit witnessed a significant increase in the general trend of the credit balance provided by banks, as it increased from (11,721,535) million dinars, with a growth rate of (106%) in 2011, to (34,123,067) million dinars, with a growth rate of (13.9%), as a result of the government's plans to expand the granting of loans to achieve several economic and social goals in the Iraqi economy. The private sector's share of cash credit increased from 55.3% in 2005 to 81% in 2009, while the public sector's share of the credit granted decreased from 44.7% in 2005 to 18.3% in 2009, which led to an increase in the gap between these two percentages. The credit balance granted by banks operating in Iraq continued to rise during the years following 2009 until it reached (29952012) million dinars in 2013, with an annual growth rate of (5.9%) as a result of the Central Bank implementing its monetary policy that it adopted and encouraging banks to move towards the market to expand credit and serve the goals of economic development and revitalizing the Iraqi economy, which decided that the legal reserve ratio would be (15%) on the total bank deposits, with (10%) kept by the Central Bank and (5%) kept in the bank's vaults (Central Bank of Iraq, 2013, p. 6). In addition to reducing interest rates as a tool of monetary policy to (6%) to revitalize the Iraqi economy by lowering the costs of borrowed funds to banks to encourage them to finance economic sectors at appropriate prices, it is clear from the above that the share of the private sector in credit has become low when compared to the total cash credit granted by operating banks, especially during the period (2011-2013), until it reached about (56.6%) in 2013, compared to (43.4%) for the public sector.

Bank lending witnessed a significant expansion in 2014, with the balance of cash credit granted to various economic sectors reaching 34,123,067 million dinars, with a growth rate of 13.9%. This increase is a significant indicator of the growing demand for credit and the employment of deposits in various sectors, which enhances the capacity of these sectors and ensures the necessary liquidity. This increase in total cash credit is due to the rise in credit provided to all sectors, especially government sectors, with a growth rate of 31.20%. Accordingly, their contribution rose to approximately 24.5% of the total credit provided to the public sector, followed by credit provided to public institutions, with a growth rate of 52%, bringing credit to 35,016,532 million dinars in 2022, with a growth rate of 31.20%.

(2005-2022) It reached 42.2%, demonstrating the banks' ability to meet the needs of the private sector, especially as the government prioritizes the private sector for its pivotal role in boosting economic growth rates in the coming period. The gap between the two ratios is also gradually narrowing, reaching 4% this year (Annual Report, 2022, p. 52). (2005-2023)

Table (2)

(2005-2024) Direct cash credit granted by banks operating in Iraq by sector for the period (2005-2022) (million dinars)

Private Sector Contribution Rate 8%	Public Sector Contribution Rate 7%	Annual Rate Of Change 6%	Total Cash Credit 3 + 4 5	Cash Credit Granted To The Private Sector 4	Cash Credit To The Public Sector 3	Public Institutions 2	General Government 1	Years
55.3	44. 7	108.2	1717450	950287	767163	631409	135754	2005
70.6	29 .4	55.2	2664898	1881014	783884	759439	24445	2006
69	31	29.8	3459020	2387433	1071587	1054992	16595	2007
86.7	13. 3	32.6	4587454	3978301	609153	575382	33771	2008
81.7	18. 3	24	5690062	4646167	1043895	644506	399389	2009
72.7	27. 3	106	11721535	8527131	3194404	886022	2308382	2010
55.8	44 .2	73.6	20344076	11356308	8987768	1637817	7349951	2011
51.5	48 .5	39.7	28438688	14650102	13788586	6120523	7668063	2012
56	43. 4	5.32	29952012	16947533	13004479	6626795	6377684	2013
52	48	13.9	34123067	17745141	16377926	8010217	8367709	2014
49.2	50. 8	7.71	36752686	18070058	18682628	7802727	10879901	2015

48.9	51. 1	1.16	37180123	18 180 970	18 999 153	7 383 184	11615969	2016
51.3	48 .7	2.08	37952829	19 452 293	18 500 536	7 221 255	11279281	2017
52.5	47. 5	1.4	38486947	20 216 073	18270874	2675495	15595379	2018
50	50	9.27	42052511	21 042 213	21 010 298	2 654 868	18355430	2019
51.9	48 .1	18.5	49817737	25 866 652	23 951 085	2 717 075	21234010	2020
55.8	44 .2	6.33	52971508	29578293	23 393 215	4169687	19223528	2021
3575102	25559482	35016532	60576014	14.3	42.2	57.8	21984380	2022

Source: Columns (1, 2, 3, 4, 5) based on the annual reports of the Bank of Iraq for the period (2005-2022), columns (6, 7, 8) prepared by the researchers.

Section Three

Measuring the Relationship between Cash Credit and Government Spending

1. Description of the Model Variables

The research includes a set of economic variables, which can be described as follows:

Private Credit: Independent Variable

Public Credit: Independent Variable

Consumer Spending: Dependent Variable

Investment Spending: Dependent Variable

The relationship between the above variables was estimated to demonstrate the extent of the influence of the independent variables (public credit, private credit) on the dependent variables (consumer spending, investment spending). Specific periods were identified according to the estimated model, and these periods were then divided into annual segments using the statistical program (EViews 12), based on data from the Central Bank of Iraq's annual reports during the research period. 2- Unit Root Tests for Model Variables

Performing the ADF (Adapted Dickey-Fuller) test demonstrates the stationarity of the model variables. The results showed that the current expenditure series (Y1), according to Table 3, showed that the calculated value (-4.008812) is greater than the value of the tabular statistic (-2.717511) with a significance level of 1%. Therefore, we reject the null hypothesis (H0: B = 0) and accept the alternative hypothesis (H1: B = 1), which indicates that the current expenditure series does not contain a unit root because the series is stationary at level (0) and integrated to degree (I).

As for the investment expenditure series (Y2), it was stationary at a level with a constant term. The calculated statistic ( ) reached (-3.470329) and was greater than the table value ( ), which came (-3.052169) at a significance level of (5%). Therefore, we reject the null hypothesis and accept the alternative hypothesis, which means that the series does not exhibit a unit root, as it is stationary and non-explosive at its current level.

The results of Table 3 show that the private credit series (X1) was stationary at its level and non-explosive in its course. It remained at the level without a limit or a general trend. The calculated value of ( ) was (-2.804133), which was greater than the table value of ( ), which was (-2.708094) at a 1% significance level. This leads us to reject the null hypothesis and accept the alternative hypothesis, which states that the series does not contain a unit root and is integrated at degree (0) ~I.

After conducting the Dickey-Fuller test on the public credit series (X2), it was found that the series was stationary at its level, without a trend or drift. The calculated value of ( ) was (-2.207360) greater than the table value of ( ), which was (1.968430) at a 5% significance level. Therefore, we reject the null hypothesis and accept the alternative hypothesis that the series does not suffer from a unit root and is integrated of degree (0) ~I.

Table (3) Stationarity test for model variables using the ADF test.

Variables	Dickey- Fuller Unit Root Test Statistics		
Y1 Current Spending	Intercept& trend	Intercept	Non
	____	_ _	_ _
D(Y1)	_ _	— —	-4.008812 (0.0005)

Y2 Investment Spending	_	-3.470329 (0.0226)	_ _ _
X1 Private Credit	_ _ _	- _ _	-2.804133 (0.0.80)
X2 Public Credit	_ _ _	_ _ _	-2.207360 (0.0309)

Source: Researchers' work based on EViews12 outputs.

** Y1: Current spending, Y2: Investment spending, X1: Private credit, X2: Public credit.

***The value in parentheses indicates the probability.

Table (4) Stationarity test for model variables using the test (P-P).

Variables	Philips-Perron's Unit Root Test Statistics		
Y1 Current Spending	Intercept& trend	Intercept	Non
	_ _ _	_ _ _	_ _ _
D(Y1)	_ _ _	_ _ _	-4.008812 (0.0005)
Y2 Investment Spending	_ _ _	-3.520791 (0.0205) 5% -3.052169	_ _ _
X1 Private Credit	_ _ _	_ _ _	-2.798367 (0.0081) 1% -2.708094
X2 Public Credit	_ _ _	_ _ _	-2.338523 (0.0232) 5%-1.968430

Table (5) VAR model test for model variables.

Source: Researchers' work based on the outputs of the EViews12 program. • The value between parentheses indicates the probability.

The results of the Phillips-Perron (P-P) test indicate that the current expenditure series (Y1) is stationary at the first difference, which supports the results of the Dickey-Fuller test. Therefore, we reject the null hypothesis and accept the alternative hypothesis, which means there is no unit root. Thus, the series is stationary at its first difference and not explosive in its course.

The results of the (P-P) test show that the investment expenditure series (Y2) is stationary at its level with the constant term. Therefore, we reject the null hypothesis and accept the alternative hypothesis, which confirms the absence of a unit root and that the series is integrated of degree (0) ~I.

The private credit series was stationary at a level without a limit and a general trend, which supports the results of the Dickey-Fuller test. Therefore, the alternative hypothesis was accepted and the null hypothesis was rejected because the series does not suffer from a unit root and is not explosive in its course.

The results of the (P-P) test showed results identical to the Dickey-Fuller test, as the public credit series was stationary at the level and without a limit and a general trend, which led to the rejection of the null hypothesis and the acceptance of the Alternative rejection is given because the series does not suffer from a unit root and is stationary at its level.

Second: Short- and long-term tests

1. The equilibrium relationship between the model variables was to be tested using the VAR model.

Before implementing the cointegration test so as to determine the existence of a long-run equilibrium between the variables, it is urgent to determine the best lag period. As can be seen in Table 5, the model variables relationship can be modeled in five lag periods using the statistical criteria highlighted in an asterisk (Akaike, Schwarz, Hannan- Quinn). The reason behind this is that the value of the statistical criteria will be the lowest at a lag of five.

VAR Lag Order Selection Criteria
Endogenous variables: Y1 Y2 X1 X2
Exogenous variables: C
Date: 08/02/25 Time: 16:53
Sample: 2005Q1 2022Q4
Included observations: 56

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-448.1090	NA	120.9356	16.14675	16.29142	16.20284
1	-170.9609	504.8056	0.010785	6.820031	7.543371	7.100469
2	-92.69211	131.3797	0.001178	4.596147	5.898158	5.100934
3	-85.64512	10.82215	0.001660	4.915897	6.796581	5.645034
4	-77.96147	10.70223	0.002335	5.212910	7.672265	6.166397
5	25.21196	128.9668*	0.000112*	2.099573*	5.137600*	3.277410*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: Researchers' work based on the outputs of the EViews12 program.

1. Cointegration Test

After conducting the Johansen test, it was found that there was cointegration between the model variables, as the Trace Statistic value of 82.06458 was greater than the critical value of 47.85613, which corresponds to a probability value of 0.0000%. This was in addition to the remaining probability values of the Trace test, which express the equilibrium relationship and similar behavior of the variables. These linear combinations of the cointegration vector confirm the maximum eigenvalue test, in which all values are greater than the critical values, indicating the presence of a long-term integrative relationship between the variables.

Table (6) Cointegration Test for Research Variables

Date: 08/03/25 Time: 09:26
Sample (adjusted): 2005Q4 2020Q1
Included observations: 58 after adjustments
Trend assumption: Linear deterministic trend
Series: Y1 Y2 X1 X2
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.529938	82.06458	47.85613	0.0000
At most 1 *	0.372533	38.28089	29.79707	0.0042
At most 2	0.134563	11.24916	15.49471	0.1966
At most 3	0.048228	2.866957	3.841465	0.0904

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.529938	43.78370	27.58434	0.0002
At most 1 *	0.372533	27.03173	21.13162	0.0066
At most 2	0.134563	8.382202	14.26460	0.3412
At most 3	0.048228	2.866957	3.841465	0.0904

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

Y1	Y2	X1	X2
-0.040451	-0.290336	-0.307698	0.974984
-0.014971	-0.500713	0.762662	-0.078133
0.679733	0.187565	0.112131	0.208094
-0.063299	0.287480	0.203294	0.293509

Unrestricted Adjustment Coefficients (alpha):

D(Y1)	0.026288	0.031167	-0.119279	0.027551
D(Y2)	0.399827	0.158507	0.011829	-0.076903
D(X1)	0.040619	-0.269821	-0.015522	0.011396
D(X2)	-0.458884	0.124830	-0.021563	-0.006712

1 Cointegrating Equation(s): Log likelihood -106.9691

Normalized cointegrating coefficients (standard error in parentheses)

Y1	Y2	X1	X2
1.000000	7.177441	7.606634	-24.10269
	(2.17146)	(2.85426)	(3.47758)

Adjustment coefficients (standard error in parentheses)

D(Y1)	-0.001063
	(0.00206)
D(Y2)	-0.016173
	(0.00337)
D(X1)	-0.001643
	(0.00262)
D(X2)	0.018562
	(0.00282)

2 Cointegrating Equation(s): Log likelihood -93.45325

Normalized cointegrating coefficients (standard error in parentheses)

Y1	Y2	X1	X2
1.000000	0.000000	23.60449	-32.11443
		(4.22060)	(5.53505)
0.000000	1.000000	-2.228908	1.116239
		(0.38008)	(0.49845)

Adjustment coefficients (standard error in parentheses)

D(Y1)	-0.001530	-0.023238
	(0.00219)	(0.02938)
D(Y2)	-0.018546	-0.195451
	(0.00345)	(0.04635)
D(X1)	0.002396	0.123310
	(0.00223)	(0.02996)
D(X2)	0.016694	0.070727
	(0.00290)	(0.03895)

3 Cointegrating Equation(s): Log likelihood -89.26215

Normalized cointegrating coefficients (standard error in parentheses)

Y1	Y2	X1	X2
1.000000	0.000000	0.000000	1.095545
			(0.50597)
0.000000	1.000000	0.000000	-2.019689
			(0.29405)
0.000000	0.000000	1.000000	-1.406935
			(0.21057)

Adjustment coefficients (standard error in parentheses)

D(Y1)	-0.082608	-0.045611	0.002307
	(0.03253)	(0.02906)	(0.03964)
D(Y2)	-0.010506	-0.193232	-0.000812
	(0.05453)	(0.04871)	(0.06645)
D(X1)	-0.008154	0.120398	-0.220021
	(0.03522)	(0.03146)	(0.04292)
D(X2)	0.002037	0.066682	0.233983
	(0.04579)	(0.04090)	(0.05580)

Source: Researchers' work based on the outputs of the EViews12 program.

Diagnostic Tests

A- Autocorrelation Test: Diagnostic tests ensure that the model is free of autocorrelation using the VEC Residual Correlation LM Test. Table 8 shows that the model does not suffer from an autocorrelation problem, as the probability values are greater than 5%. Therefore, the alternative hypothesis was rejected, and the null hypothesis, which states that there is no autocorrelation, was accepted.

Table (7) Autocorrelation Test

VAR Residual Serial Correlation LM Tests
Date: 08/02/25 Time: 17:38
Sample: 2005Q1 2022Q4
Included observations: 59

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	11.93525	16	0.7484	0.739690	(16, 132.0)	0.7492
2	5.315592	16	0.9939	0.321604	(16, 132.0)	0.9940
3	27.60312	16	0.0352	1.812308	(16, 132.0)	0.0356
4	111.2765	16	0.0000	10.12067	(16, 132.0)	0.0000
5	18.40532	16	0.3007	1.168026	(16, 132.0)	0.3018

Null hypothesis: No serial correlation at lags 1 to h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	11.93525	16	0.7484	0.739690	(16, 132.0)	0.7492
2	22.67843	32	0.8882	0.690062	(32, 145.4)	0.8900
3	110.5861	48	0.0000	2.843382	(48, 136.9)	0.0000
4	202.1478	64	0.0000	5.208161	(64, 123.6)	0.0000
5	211.9415	80	0.0000	4.343622	(80, 108.9)	0.0000

*Edgeworth expansion corrected likelihood ratio statistic.

Source: Researchers' work based on the outputs of the EViews12 program.

A- Testing the Problem of Instability of Variance Homogeneity

Table 9 shows that the model does not suffer from the problem of instability of variance homogeneity. The calculated probability value was (2.332090), which is greater than the tabular value of (0.0323), meaning that the model is free of this problem. Furthermore, the model's explanatory power is weak, as demonstrated by the value ( ), which was (9.325589), which is greater than the Chi-Square value of (0.053). Therefore, we reject the null hypothesis, which states that there is a problem of instability of variance homogeneity, and accept the alternative hypothesis that the problem does not exist.

Table (8) Testing the Problem of Instability of Variance Homogeneity

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	3.422814	Prob. F(3,58)	0.0230
Obs*R-squared	9.325589	Prob. Chi-Square(3)	0.0253
Scaled explained SS	9.790322	Prob. Chi-Square(3)	0.0204

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/03/25 Time: 09:57
Sample: 2005Q1 2022Q1
Included observations: 62

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.921513	1.378063	5.022639	0.0000
Y2	-0.612167	0.262497	-2.332090	0.0232
X1	-0.174776	0.318803	-0.548226	0.5856
X2	-0.403557	0.274436	-1.470494	0.1468

R-squared	0.150413	Mean dependent var	2.974014
Adjusted R-squared	0.106469	S.D. dependent var	4.644222
S.E. of regression	4.390034	Akaike info criterion	5.858892
Sum squared resid	1117.799	Schwarz criterion	5.996126
Log likelihood	-177.6257	Hannan-Quinn criter.	5.912774
F-statistic	3.422814	Durbin-Watson stat	0.364104
Prob(F-statistic)	0.022972		

Source: Researchers' work based on the outputs of the EViews12 program.

1- Vector Error Correction Model

Table (9) shows that the error correction model test was negative and significant according to the error correction coefficient (Coin Eq1), whose calculated value was (-0.044005), which is greater than the table value of (0.03145). After dividing by one, the error correction coefficient value yielded 22. Given that the data are quarterly, this means that fiscal policies need 22 quarters to restore balance to the economy. This means that credit policies need 22 quarters to influence government spending to restore balance to the Iraqi economy. This highlights the weakness of current credit policies and their diminishing influence on public spending, underscoring the need to intensify efforts to enhance the impact of monetary credit on public expenditure.

Table (9) VECM Error Correction Model Test

Vector Error Correction Estimates
Date: 08/02/25 Time: 17:42
Sample (adjusted): 2006Q3 2020Q1
Included observations: 55 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
Y1(-1)	1.000000
Y2(-1)	-0.402651 (0.36863) [-1.09228]
X1(-1)	3.470928 (0.59653) [5.81853]
X2(-1)	-2.855141 (0.78090) [-3.65623]
C	-5.517923

Error Correction:	D(Y1)	D(Y2)	D(X1)	D(X2)
CointEq1	-0.044005 (0.03145) [-1.39913]	-0.067569 (0.03242) [-2.08447]	-0.078094 (0.01597) [-4.88964]	0.091211 (0.02668) [3.41837]
D(Y1(-1))	0.844398 (0.15971) [5.28692]	0.041830 (0.16461) [0.25412]	0.013751 (0.08110) [0.16954]	-0.024532 (0.13550) [-0.18105]
D(Y1(-2))	0.026917 (0.19420) [0.13861]	0.041330 (0.20014) [0.20650]	0.047768 (0.09861) [0.48440]	-0.055791 (0.16475) [-0.33865]
D(Y1(-3))	0.026917 (0.19420) [0.13861]	0.041330 (0.20014) [0.20650]	0.047768 (0.09861) [0.48440]	-0.055791 (0.16475) [-0.33865]
D(Y1(-4))	-0.491481 (0.19961) [-2.46224]	0.302919 (0.20572) [1.47248]	0.100675 (0.10136) [0.99323]	-0.150550 (0.16934) [-0.88905]
D(Y1(-5))	0.394037 (0.18169) [2.16870]	-0.042302 (0.18726) [-0.22590]	0.065814 (0.09226) [0.71332]	-0.108823 (0.15414) [-0.70600]
D(Y2(-1))	-0.111416 (0.29570) [-0.37678]	0.593176 (0.30476) [1.94636]	-0.270486 (0.15016) [-1.80132]	0.414882 (0.25086) [1.65381]
D(Y2(-2))	0.021507 (0.20270) [0.10610]	0.033024 (0.20891) [0.15808]	0.038168 (0.10293) [0.37081]	-0.044579 (0.17196) [-0.25924]
D(Y2(-3))	0.021507 (0.20270) [0.10610]	0.033024 (0.20891) [0.15808]	0.038168 (0.10293) [0.37081]	-0.044579 (0.17196) [-0.25924]
D(Y2(-4))	-0.193136 (0.20281) [-0.95229]	-0.961439 (0.20902) [-4.59965]	0.582087 (0.10299) [5.65196]	0.177658 (0.17206) [1.03255]
D(Y2(-5))	0.534108 (0.32435) [1.64673]	1.035829 (0.33428) [3.09868]	-0.086459 (0.16470) [-0.52494]	-0.498353 (0.27516) [-1.81113]
D(X1(-1))	-0.381084 (0.45229) [-0.84256]	-0.254083 (0.46615) [-0.54507]	0.316741 (0.22968) [1.37908]	0.511859 (0.38371) [1.33398]
D(X1(-2))	0.150070 (0.29462) [0.50937]	0.230429 (0.30364) [0.75889]	0.266323 (0.14961) [1.78015]	-0.311055 (0.24994) [-1.24451]
D(X1(-3))	0.150070 (0.29462) [0.50937]	0.230429 (0.30364) [0.75889]	0.266323 (0.14961) [1.78015]	-0.311055 (0.24994) [-1.24451]
D(X1(-4))	-0.146330 (0.29473) [-0.49649]	-0.524004 (0.30376) [-1.72509]	0.227574 (0.14966) [1.52057]	0.813896 (0.25004) [3.25512]
D(X1(-5))	0.748220 (0.49512) [1.51119]	1.057959 (0.51029) [2.07327]	0.606440 (0.25142) [2.41203]	-1.633219 (0.42004) [-3.88823]
D(X2(-1))	-0.433405 (0.54758) [-0.79149]	-0.460696 (0.56435) [-0.81632]	-0.634397 (0.27806) [-2.28148]	1.634896 (0.46455) [3.51932]
D(X2(-2))	-0.000756 (0.21282) [-0.00355]	-0.001161 (0.21934) [-0.00529]	-0.001342 (0.10807) [-0.01241]	0.001567 (0.18055) [0.00868]
D(X2(-3))	-0.000756 (0.21282) [-0.00355]	-0.001161 (0.21934) [-0.00529]	-0.001342 (0.10807) [-0.01241]	0.001567 (0.18055) [0.00868]
D(X2(-4))	-0.233526 (0.21286) [-1.09708]	-0.056443 (0.21938) [-0.25728]	0.153597 (0.10809) [1.42098]	-0.226452 (0.18058) [-1.25400]
D(X2(-5))	0.278422 (0.17962) [1.55008]	0.118146 (0.18512) [0.63821]	-0.064926 (0.09121) [-0.71183]	0.122941 (0.15238) [0.80680]
C	0.084852 (0.07436) [1.14111]	-0.001183 (0.07664) [-0.01544]	0.058526 (0.03776) [1.54995]	-0.034313 (0.06308) [-0.54394]
R-squared	0.649877	0.882025	0.926374	0.916497
Adj. R-squared	0.427072	0.806950	0.879522	0.863359
Sum sq. resids	5.230096	5.555387	1.348648	3.764185
S.E. equation	0.398105	0.410299	0.202159	0.337737
F-statistic	2.916795	11.74861	19.77204	17.24748
Log likelihood	-13.33677	-14.99608	23.93472	-4.292072
Akaike AIC	1.284973	1.345312	-0.070354	0.956075
Schwarz SC	2.087907	2.148245	0.732580	1.759009
Mean dependent	0.074491	-0.068193	0.010529	-0.068094
S.D. dependent	0.525954	0.933825	0.582422	0.913668

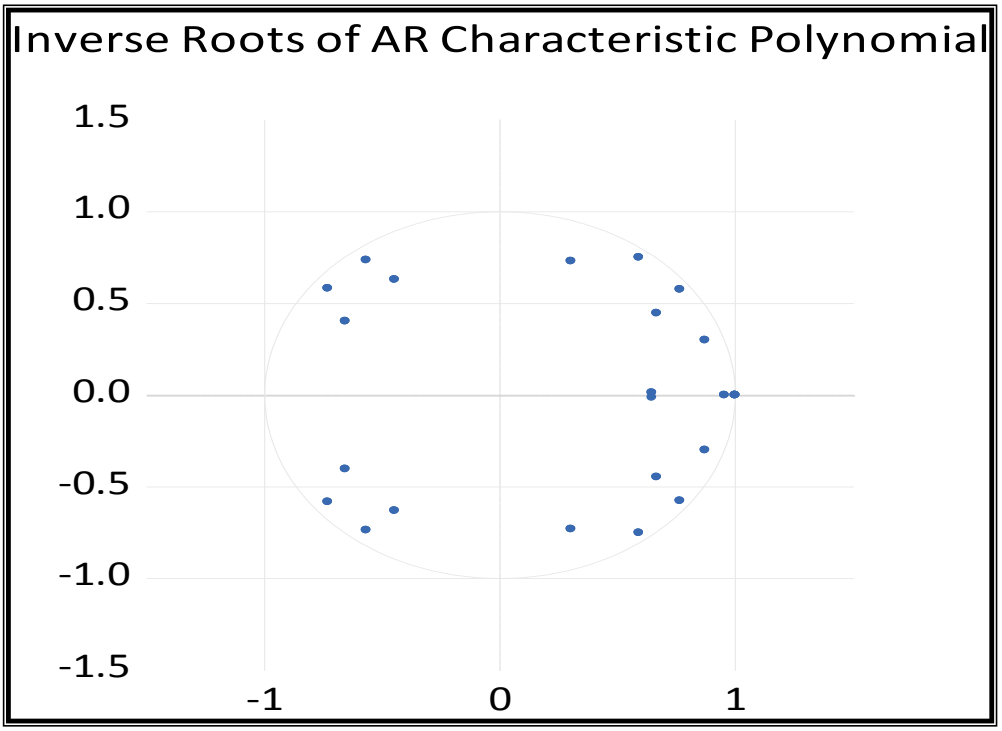
Determinant resid covariance (dof adj.)	4.07E-06
Determinant resid covariance	5.28E-07
Log likelihood	85.32235
Akaike information criterion	0.242824
Schwarz criterion	3.600545
Number of coefficients	92

Source: Researchers' work based on the outputs of the EViews12 program.

1-AR roots graph

The figure below shows that the stability of the model as a whole is stable, as they all fall within the unit circle, indicating quiescence among the variables in the estimated model.

Figure 1: Testing the stability of the model as a whole



Source: Researchers' work based on the outputs of the EViews12 program.

CONCLUSIONS

1. Government spending rates fluctuate depending on the economic, political, and social conditions experienced by the Iraqi economy during the study period.
2. The statistical significance of the regression model used to measure the impact of spending on cash credit increases confidence in the research results.
3. The research results indicated a direct relationship between the study variables (cash credit and government spending) during the study period. The greater the banks' ability to grant cash credit, the greater the increase in public spending, both current and investment.
4. The stability of all model variables within the unit circle leads to static variables in the estimated model.
5. Credit policies in Iraq are still weak and require work to become more effective in the development process needed for the Iraqi economy.

RECOMMENDATIONS

1. The need to intensify research and studies to diagnose the factors affecting the volume of government spending and not limit it to cash credit alone, as many factors contribute to influencing government spending.
2. Adopting a balanced spending policy between investment and consumer spending, with a focus on the former, as it contributes to supporting investment projects that contribute to the development process sought by the Iraqi economy.
3. Directing monetary credit to diversify the economic basket and reduce dependence on oil as the primary source of government spending. It is essential to give greater importance to private banks, as they are true partners in the economy and the primary providers of loans and credit to meet the local market's needs.
4. Working to coordinate monetary and fiscal policies to maintain normal levels of inflation and compensate some economic sectors affected by monetary policy through budgetary policy, and vice versa. This should also take into account tax policy, which should be consistent with economic cycles.

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