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The Credit Impact on Inflation Rates for The Iraqi Economy for The Period 2004-2022

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Abstract

The aim of this study, through economic analysis, was to review traditional quantitative tools, which include open market operations, discount rate, and reserve ratio, as well as innovative tools such as quantitative easing and banking facilities. The research started from the hypothesis that there is no relationship between traditional monetary policy tools (open market operations, discount rate, reserve ratio) as independent variables and Iraqi banking credit as a dependent variable. Supposedly, there is no relationship between the newly established quantitative tools (quantitative easing, banking facilities as an independent variable, and banking credit as a dependent variable) due to the importance of the role played by the central bank in managing the credit variable and achieving economic and monetary balance. The central bank decides the areas of cash balance usage, lending rules, and banking legislation in order to ensure the safety of granted loans, guarantee satisfactory returns, and develop its activities while providing continuous supervision in the lending process at its various stages. Furthermore, the process of granting credit is affected by economic, political, security conditions, and the nature of the economic cycle. Therefore, the central bank has a role in stabilizing the financial aspect of the economic situation. The inductive method was used to describe and analyze the research topic, while the deductive method was used to measure the relationship between variables. The research reached a set of conclusions, the most important of which is that there is a long-term inverse relationship between the policy rate, open market operations, credit facilities, banking credit, and the legal reserve.

Keywords: Credit, Monetary Credit, Inflation Rates, Iraqi Economy.

Chapter One / Cash Credit and Inflation: Theoretical Framework and General Concepts

First Requirement: Banking Credit

First: The Birth of Banking Credit

The origin of banking credit can be traced back to ancient times when money itself existed and lenders and borrowers existed in primitive societies. Since ancient times, there have been individuals who have had surplus savings beyond their consumption needs, and others who do not have enough money to meet their needs. Hence, the need for borrowing arose (borrowing being the first form of credit). Considering that the holy books (Torah, Bible, and Quran) are a fundamental source of historical information, several indicators have emerged. Firstly, credit has been known since ancient times before the birth of Christ. Many references have pointed out that Babylonian and other societies have known credit for over 2000 years before Christ. They knew borrowing, mortgage operations, and the use of deeds to transfer properties and rentals. Wealthy families emerged that engaged in money lending, but the third indicator is that these divine religions prohibit interest and usury on credit transactions (Saeed, 2013: 188-189). Therefore, the emergence of credit is historically linked to the development of the goldsmith's activity. Traders and businessmen used to deposit their money with the goldsmiths in order

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to keep it safe in exchange for receipts that document their rights. This is how the first function of banks emerged, which is depositing money (Abu Hamad, Al-Douri, 2002: 32). As large amounts of money accumulated with the goldsmiths, they noticed that the demand for loans on their deposits was low, which allowed them to invest the money. Thus, the function of granting loans by banks to those in need of liquidity against a specified interest rate emerged, becoming the cornerstone of the banks' operations, accepting deposits and savings on one hand, and providing credit facilities and banking services on the other hand. As for the creation and issuance of money, it originated when the loan took the form of a receipt issued by the goldsmith and given to the borrower, especially after people started trusting these receipts. As a result, the goldsmiths engaged in these activities, which were accompanied by a significant increase in the trust of those dealing with them. This formed the initial nucleus from which commercial banks were formed in their early days (Jouda, 2013: 24)

Second: Concept of Bank Credit

The concepts of bank credit have varied and diversified, similar to many other concepts in the fields of economics, administration, and society. Credit is generally defined as the process of providing individuals, institutions, and entities in society with the necessary funds, with the debtor committing to repay those funds and their interests in a lump sum or in installments on specific dates (Bashir, Al-Amin, 282-283)

It is also known as the provision of all possible credit facilities by banks to individuals and borrowing business enterprises in order to meet their financing needs for various activities and for specific and different periods, in exchange for the banks receiving a certain return. It is also known as the process by which a deferred value is exchanged for an immediate value. In other words, the phenomenon of "credit" occurs when one person provides another with money or something in the form of a commodity or service in the future (Al-Afandi, 123.)

On the other hand, credit is defined as a contractual agreement whereby the client receives a sum of money and undertakes to repay it along with the resulting interests at a later agreed-upon time by both parties (Abdulhamid, 2000:103). From another perspective, bank credit is seen as the process in which the bank functions as a financial intermediary, supplying the markets with capital by transforming deposits into loans. This creates new opportunities and investments that play a significant role in the national economy (Yanelle, 2012: p294) There must be two parties to complete the transaction: the borrower, also known as the debtor, and the lender, also known as the creditor. Credit involves giving and receiving goods or purchasing power in exchange for a promise to repay (settlement) the goods or purchasing power at a later date (Sadik, 1976: 121). Thus, it can be said that bank credit is used to mobilize and redistribute balances in an organized manner to meet temporary cash needs. It serves as a link indirectly connecting various economic activities ⁽¹⁾.

Thirdly, Types of Bank Credit

Bank credit can be classified according to several criteria as follows:

Credit Based on the Nature of The Activity

- **Investment credit:** This refers to loans obtained by regulators or investors to establish productive projects with large capital. An example of this is the establishment of a factory with high capital costs for purchasing land, constructing buildings, importing necessary equipment for production, and other expenses. Long-term financing of investment projects is adequately represented by bonds.
- **Commercial credit:** This is the credit granted to finance ongoing business operations. It is short-term credit used to finance the working capital in business enterprises, with the funds being repaid

within the specified timeframe. Consumer credit: It is the credit granted to individuals in order to meet their various needs for durable and semi-durable goods such as cars, household furniture, refrigerators, etc. This credit often takes the form of installment sales, where the merchant sells these goods in installments over a specified number of months in exchange for an increase in the selling price (Alhali, 2013: 357). Therefore, it is medium-term credit in the form of installment sales.

Credit by Terms

- **Short-term credit:** This is credit with a maturity period of no more than one year. This type of credit is used to finance activities and business, industrial, and agricultural operations carried out by individuals and companies within a short period of time. Treasury bills issued by the state are common examples of this type of credit (Alshara, 2017: 23).
- **Medium-term credit:** Banks provide credit for a period of more than one year and less than five years to individuals and projects that require funding for asset renewal or the purchase of new equipment and machinery. It is also used to finance individuals' purchases of durable goods.
- **Long-term credit:** It is credit that has a long-term duration, meaning more than five years. Under this classification, companies obtain long-term credit to finance fixed investment operations in industrial, real estate, and agricultural projects.

Fourthly: The Importance of Bank Credit

Bank credit is of great importance to the banks themselves, their clients, and the economy as a whole. On the bank level, credit is considered the primary source of revenue and the largest source of profits. On the client level, credit is the best method for meeting their needs and achieving their commercial gains. It is no longer the poor and low-income individuals who seek credit, but rather the wealthy who are the main credit seekers, and countries are the largest borrowers at present (Al-Mousawi, 2016: 56).

In general, credit has a significant impact on the economic activity of any society. There are several key areas where the importance of credit is evident:

1. Credit contributes fundamentally to stimulating economic activity, providing the necessary resources for operation and increasing economic growth.

Where bank credit encourages savers, who possess surplus cash to lend their money and employ it in various investment activities, such as agriculture, industry, services, and others. From another perspective, it is an important tool that has a clear impact on the economy by increasing inflation and contraction rates if there is an exaggeration by banks in granting credit. Therefore, the granted credit should be balanced to achieve actual needs of the national economy, which reflects an increase in economic development rates and its various indicators (Acosta-Gonzalez, E & Fernandez-Rodriguez, 2013, p65).

2. Credit plays an important role in achieving economic, financial, and monetary stability.
3. Credit policies are considered effective tools in controlling monetary policy trends on one hand and achieving desired control over commercial bank activities on the other hand (Maznan, 2011:72).
4. Increased production: Specialized banks play an important role in providing financial resources for industrial and agricultural projects, whether new or existing, by granting credit due to the insufficiency of self-resources for these projects.
5. Utilization of idle resources: Short-term financing plays an important role in temporarily utilizing idle funds for temporary activities to benefit from them. Therefore, the borrower benefits from utilizing these resources in temporary activities that generate profitable income, while the lender receives income as a result of utilizing those funds.
6. The distribution of credit and financial resources across most economic activities: Bank credit

contributes to the distribution of existing financial resources within the banking system across various economic sectors in a way that promotes optimal utilization of these resources by distributing them according to the needs of economic projects and achieving good rates of economic growth (Al-Barzanji, 2018: 79-80).

7. Bank credit works to expand the volume of international trade by granting documentary credits, which helps facilitate and expand the process of foreign exchange (Al-Barzanji, 2018: 79-80).
8. Bank credit achieves a balanced economic performance through the distribution of credit cash resources, which requires the amount of credit and its timing to be compatible with the needs of economic activity and the set economic development plan (Al-Hilu, 2021: 121).

Fifthly: Criteria for Granting Credit

Credit management takes into consideration the bank's environment when granting credit, and granting credit is considered one of the riskiest activities performed by banks (Abdul-Baqi, 2015: 256-257). The most prominent known credit system is the "5 Cs" model, which measures credit standards when granting loans by the bank. These criteria include:

Client's Personality (Reputation and Ethics)

The client's personality is one of the fundamental pillars in making credit decisions, and a complete picture of the client must be formed through an interview and the ability to obtain sufficient data and information needed by the credit department. Good reputation, honest and trustworthy personality, integrity, honesty, and responsibility are all qualities that make an individual responsible for their commitment to repay their debts (Galda, 2009: 142).

Client's Repayment Ability

This criterion determines the extent to which the client is able to repay the loan and its interest on the specified date. The estimation can be known by examining the borrower's past experience, financial position, and banking transactions with the same bank or other banks. It is necessary to analyze several factors and how to control them, such as expenses, payments, estimating internal and external cash flows, which determine their ability to repay. Certainly, the amount of internal or external cash flows provides a preliminary picture of whether the client is exposed to financial difficulty or not, and thus their ability to repay debts on time. Measuring the client's managerial efficiency by studying their pricing policy for various products, their ability to compete, predict changes in price demand, diversify their products, and their ability to preserve capital (Abdulhamid, 2008: 11) plays an important role in the credit granting process by the bank to the credit applicant.

Sixthly: Factors Influencing Bank Credit Approval.

Before a bank makes a decision to grant credit, it must take into consideration certain factors that may affect the goals it seeks to achieve, while at the same time avoiding unforeseen credit risks that could result in the loss of its funds or the shaking of customer confidence, leading them to withdraw their deposits from the bank and subjecting it to bankruptcy. Therefore, there are a number of factors that affect the credit decision, including those related to the customer, those related to the lending bank, and those related to the credit itself. These factors include:

Customer-Specific Factors

a. Customer Personality (Reputation and Ethics)

The customer's personality is the cornerstone of the credit decision and has the most influence on the risks that banks are exposed to. A good reputation is the result of several qualities, including honesty,

perseverance, and good ethics. If these qualities are present in the borrower, they instill a sense of responsibility and create a general impression of their personality, financial reputation, commercial reputation, and even social commitment and respect for their obligations and signatures. Trust in the client's moral integrity and honesty is essential in business in general, and specifically in banking operations.

b-Capability

The bank must ensure that the customer has the legal capacity to sign the credit contract and has the ability to employ his funds and manage his business in a manner that guarantees efficiency and embodies effectiveness. The bank's confidence in this ability is based on the borrower's business experience, details of his financial position, assets, and obligations according to their various due dates, previous banking transactions, and supported by the stability of a number of indicators reflected in the final accounts, and the basis of the debtor's income. The more positive this study is, the more confident the decision-maker becomes of the borrower's ability to repay the facilities granted according to the proposed conditions and specified repayment dates. Thus, the essence of this aspect is focused on ensuring the availability of experience, technical and administrative efficiency, and financial solvency of the debtor (Al-Shawarbi, 2002: 576).

Factors Related to Credit Itself

There are many factors related to credit, including the following (Al-Banna, 2006: 452):

- a. The purpose of the credit.
- b. The duration of the loan or facility, i.e. the period in which the client wishes to obtain the loan and its repayment duration, and whether it is proportionate to the client's capabilities.
- c. The source of repayment that the borrowing client will use to repay the amount.
- d. The required type of credit and whether it is in line with the bank's general lending policy or contradicts it.
- e. The repayment method, whether the loan or facility will be repaid in one installment at the end of the term, or if it will be repaid in regular installments, in line with the nature of the client's activities, revenues, self-resources, and inflows.
- f. The amount of this loan or facility is of special importance in credit analysis, as the bank is more cautious in its studies, especially in the results of non-repayment of a large loan amount, which can be difficult and may affect the financial soundness of the bank.

The second topic: Inflation

Inflation is one of the most undesirable economic phenomena experienced by most economies around the world due to its significant impact on various economic and social aspects. In order to understand the reality of this variable, we deemed it necessary to review it sufficiently for understanding, as follows:

Inflation and the Concept's Controversy

Inflation is considered one of the economic problems faced by most developed and developing economies alike. No country has been spared from the problem of inflation. Therefore, price stability is an essential requirement to ensure the stability of the national economy and increase its efficiency in performance. As the increase in prices negatively affects the economic stability of the country due to its impact on interest rates and the purchasing power of money.

The concept of inflation varies depending on the intellectual perspectives of economic schools. The classical school interpreted inflation as a purely monetary phenomenon caused by monetary and financial factors, resulting from an increase in the quantity of money and its consequent increase in aggregate demand, leading to a rise in the general price level.

The quantity theory of money is one of the first theories that attempted to explain fluctuations in the general price level. It adopted a set of hypotheses regarding the importance of changes in the quantity of money relative to other factors in affecting its value.

Causes of Inflation

It has become clear that the rise in prices does not represent a cause of inflation but rather a natural result of it. Many opinions have emerged attempting to explain inflation and attribute its causes to multiple factors, which can be summarized as follows:

a- Increase In Aggregate Demand (Demand-Pull Inflation)

Most modern theories attempt to explain inflation by the presence of excessive demand for goods and services, meaning an increase in aggregate demand exceeding aggregate supply at a certain price level. This explanation is based on the laws of supply and demand, where the price of a commodity is determined when the demand for it equals the supply of it, if there is excessive demand for a certain reason while the supply remains the same (or increases by a lesser percentage), the price of this commodity increases (Al-Hollay, 2013:357).

With each increase in price, the gap between supply and demand decreases until it disappears. From this simple rule that explains the dynamics of price formation in a specific commodity market, it can be generalized to a group of markets for goods and services that society deals with. Also, excessive demand for a single commodity leads to an increase in its price. If there is excessive demand for all goods and services or the majority of them, it leads to a rise in the general price level. This inflation is caused by an increase in the circulating money supply when there is a budget deficit in the state's general budget, where government spending exceeds revenue. The state is then forced to issue and print more money through the central bank, increasing the circulating money supply without a corresponding increase in production. This reflects on the demand for goods and services while the supply remains stable, especially in the case of full employment of production elements. Demand inflation can also occur as a result of the expansion of commercial banks in credit operations and money creation. To address this type of inflation, monetary and fiscal policy tools are used to induce a contractionary state (a decrease in most prices and cost) the state can also cover the budget deficit through issuing bonds, increasing demand, or limiting the credit capacity of commercial banks (Rafaai, Sultan, 2019: 6).

B. Decrease in Aggregate Demand

The unique economist Marshall contributed at the beginning of the 20th century to formulating analytical tools for supply and demand, and the vital role of the time factor necessary to balance prices. The theories that emphasize the demand side alone are not sufficient to fully explain inflation in all periods. Therefore, its development has been accompanied by a similar development in other theories that emphasize the supply side. What we mentioned regarding the increase in demand is also applicable to the decrease in supply, as the latter can lead to inflationary phenomena. One of the main factors causing a decrease in aggregate supply is the shortage of productive wealth that the economic system can provide, as well as public spending policy, excessive and circulating money in achieving programs, in addition to a set of factors, including (Al-Qurayshi, 2011, 129-130).

Measurement of Inflation

We have previously discussed the concept of inflation and clarified that its general appearance is represented by the continuous rise in prices. This phenomenon can be inferred by monitoring the statistical figures of prices. In general, there are several indicators used to demonstrate the movement of price changes and thus measure inflation. Some of these indicators are as follows: -

1-The Wholesale Price Index

This indicator is used to measure developments in commodity prices in commercial markets, as well as their weights based on their relative importance in those markets. Often, the total sales of the commodity in those markets are taken as a measure of its importance (The Ministry of Planning 1988: 218). It measures the change in the overall level of prices based on wholesale prices of goods and services from the wholesale trade sector (Al-Seriti, former source: 251).

Despite the criticisms directed at this indicator, it is still relied upon in measuring inflation, especially since it includes a large sample of food items, which are important consumption items, making it an acceptable standard for calculating changes in the cost of living.

2- Implicit Deflator

The GDP deflator is one of the important indicators for measuring inflation rates because it measures price changes for all goods and services produced in an economy, not just a specific commodity as in the Consumer Price Index. Therefore, this indicator reflects the relationship between GDP at constant prices and GDP at current prices, and it can be calculated by dividing GDP at current prices by GDP at constant prices (Dawood 2010: 166).

The Third Requirement: The Relationship Between Bank Credit and Inflation Rates.

It is known that inflationary tendencies appear in the economy when there is an increase in the money supply, accompanied by the inflexibility of the production system to meet the increased demand for goods and services. An increase in the money supply creates a gap between money growth and output growth, resulting in monetary instability that is reflected in a general rise in prices and the loss of money's role as a medium of exchange.

From a theoretical perspective, granting bank credit leads to an increase in the volume of money and affects the overall liquidity in the economy. Therefore, the relationship between the increase or development of credit volume is inversely proportional to the increase in loan volume on one hand and inflation on the other, assuming the stability of other economic factors (Al-Halaw 2021: 122) and thus, inflation is primarily attributed to the expansion of credit to stimulate investment and consumption, leading to an increase in aggregate demand and consequently rising prices in the event of supply shortages.

The concept of inflation varies depending on the intellectual perspectives of economic schools. The classical school refers to a direct relationship between the increase in the quantity of money and the rise in price levels. It emphasizes the full use of economic resources and the stability of money circulation. Therefore, according to this school, inflation represents pure monetary phenomena caused by an excessive increase in the quantity of money resulting from excessive credit granted by commercial and government banks. This leads to an increase in aggregate demand, followed by a rise in the general price level and the emergence of inflation in the economy. On the other hand, the Keynesian school views inflation, in its general sense, as an increase in aggregate demand for total supply of goods and services, which leads to a rise in the general price level. According to this school, the emergence of inflation is associated with changes in one of the components of aggregate demand, namely consumption and investment, resulting from changes in the volume of bank credit granted. Therefore, the increase in one of these components leads to an increase in aggregate demand and subsequently a rise in the general price level (Al-Seriti, Najah, 2008: 227) At the same time, the monetarist school, led by economist Fred Man, supports the view that inflation is a monetary phenomenon in the long term, resulting from excessive increase in the quantity of money supplied, exceeding the increase in the quantity of goods and services produced within the economy (S.mishkin2004: p632).

As for the advocates of the supply-side economics school, they agree with the monetarists in this regard, that any increase in the quantity of money supply caused by bank credit at a rate exceeding the increase in production levels ultimately leads to higher price levels, decreased purchasing power of money, and

the emergence of inflation (Al-Rubaie, 2013: 25).

In this context, the International Monetary Fund sees inflation as a monetary phenomenon resulting from excessive money supply, while consecutive price increases are seen as a result of demand excess due to an increase in aggregate demand for goods and services beyond the real aggregate supply resulting from the imbalance between the monetary and goods flows, manifested in the form of price increases (Zaki, 1996: 119). Many studies have aimed to measure inflationary pressures in the economy based on the concept of demand excess based on Keynesian analysis, if the increase in aggregate demand does not keep up with the increase in total supply of goods and services, this reflects on the general rise in prices".

"Second Topic / Analysis of the Evolution of Cash Credit and Inflation Rates in Iraq for the Period 2004-2022.

The First Requirement / Evolution of Cash Credit.

The activity of the Iraqi banking system for the period (2004-2022) can be clarified by observing the efficiency of commercial banks in granting cash credit. This stage witnessed a radical change in instructions and regulations for granting cash credit by raising credit ceilings. Commercial banks grant cash credit as low-risk and to mitigate the impact of unstable political and economic conditions in Iraq. Commercial banks prefer short-term credit to avoid long-term investment credit, which exposes them to credit risks, economic and political instability, inflation risks, and other risks. The evolution of cash credit granted by commercial banks operating in Iraq for the period (2004-2022) can be known."

According to the results shown in Table (1), which illustrates the sectoral distribution of monetary credit between the public and private sectors, the total monetary credit reached (824,673) million dinars in the year (2004). The credit granted to the public sector accounted for (24.8%) of the total monetary credit, while the private sector accounted for (75.2%). (Central Bank of Iraq, 2016: 78).

Monetary credit continued to increase, as in the year (2006) the total credit reached (2,664,898) million dinars compared to (4,587,454) million dinars in the year (2005). This is due to banks granting loans to their employees and providing housing and consumer loans to a large segment of citizens. Most of the credit goes to the private sector, with a credit balance of (1,881,014) million dinars, representing a contribution of (70.6%) of the total credit in the year (2006) compared to (287,950) million dinars, representing a contribution of (55.3%) in the year (2005). Meanwhile, the credit granted to the public sector in the year (2006) amounted to approximately (783,884) million dinars, with a contribution rate of (29.4%) compared to (767,163) million dinars, with a contribution rate of (44.7%) in the year (2005). As commercial banks continued their activity in granting credit to all economic sectors, the reason for this is attributed to the central bank maintaining a low interest rate of 7% in 2005 as part of its monetary policy, which aims to stimulate economic activity by reducing the cost of funds for banks and thus encouraging them to provide financing for various economic activities. The years 2013-2014 witnessed a significant increase in the volume of credit, as the total balance of monetary credit during 2014 reached 34,123,067 million dinars compared to 29,952,012 million dinars in 2013. Credit provided to the public sector amounted to 16,377,926 million dinars with a contribution rate of 48% in 2014, while the credit value for the public sector in 2013 was 13,004,479 million dinars with a contribution rate of 43.4%. The value of credit provided to the private sector amounted to 17,745,141 million dinars with a contribution rate of 52% in 2014, but the value of credit provided to the private sector was 16,947,533 million dinars with a contribution rate of 56.6% in 2013. The balance of granted monetary credit continued to increase in value and years consecutively (60,576,014; 52,971,508; 42,052,511; 37,498,177; 38,485,672) million dinars for the years 2022, 2021, 2020, 2019, and 2018, respectively¹. The reason for the increase in the size of cash credit is attributed to the policy of the Central Bank of Iraq in reducing the interest rate to (4%), and it continued to increase until the year (2022), which is the duration of the research. The banks contributed to increasing lending to citizens and projects, as Table (1) included clarifying the annual growth rates of the total cash

credit during the research period to illustrate the rates of increase and decrease for the total cash credit. And to clarify the sectoral distribution of cash credit (government sector, public institutions, private sector) for the period from (2004-2022), and that the private sector has a more important and prominent role than the public sector in all research years, and then comes the central government, while public institutions were characterized by their fluctuation during the research period.

Cash credit granted by commercial banks by sector and type for the period (2004-2022) (Million dinars)

Contribution ratio Private sector	Contribution ratio of the public sector	Annual change rate% Cash credit	Total Cash credit 3+4 4+3 5	Cash credit granted to the private sector. 4	Cash credit granted to the public sector. 3	Public institutions 2	General government 1	Years
8%	7%	6						
8	7							
75.2	24.8	—	824673	620267	204406	190336	14070	2004
55.3	44.7	108	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	20353139	11365371	8987768	1637817	7349951	2011
51.5	48.5	39.7	28438688	14650102	13788586	6120523	7668063	2012
56.6	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	38485672	20 216 073	18 269 599	2 674 220	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
57.8	42.1	14.3	60576014	35016532	25559482	3575102	21984380	2022

Source: Columns (1-2-3-4-5) based on the annual reports of the Central Bank of Iraq for the period (2004-2022)

Columns (6-7-8) prepared by the researcher based on the annual reports of the Central Bank of Iraq for the period (2004-2022)

The relative significance of each sector in relation to cash credit was extracted using the following equation.

(Relative significance of the sector for a specific year = Amount of cash credit granted to the sector for the year ÷ Total cash credit for the same year)

The Second Demand: The Evolution of Inflation Rates in The Iraqi Economy for the Period 2004-2022.

Inflation represents an increase in the quantities of circulating influence on the quantities of goods and services, leading to a rise in the general price level and creating inflationary pressures on the economy. This negatively affects the value of the local currency and the Iraqi economy. It suffered from this dangerous phenomenon, which was primarily contributed to by the exceptional conditions that Iraq went through before 2003, especially the Second Gulf War and the economic sanctions that lasted for more than 12 years. Then, after that, the war in 2003, which led to significant destruction of the economic infrastructure. Through Table (5), you notice an increase in inflation rates for the years (2004, 2005, 2006, 2007), caused by economic instability, especially monetary economics. However, the reforms carried out by the monetary authority, including the independence of the Central Bank, the inflation targeting policy adopted by the monetary authority after 2006, and the lifting of economic sanctions

imposed on Iraq, all contributed to the decrease in inflation rates in the Iraqi economy.

In the year 2008, the inflation rate recorded a decrease to about 2.8% with an annual change rate of 90.94%. This success can be attributed to the monetary policy followed by the Central Bank of Iraq, which was evident in the movement of the cash market through the increase in the exchange rate of the Iraqi dinar against foreign currencies, gradually achieved through the optimal use of the central bank's monetary management, represented by the exchange rate of the local currency and interest rates (Annual Report of the Central Bank of Iraq, 2008: 9).

In the year 2009, the inflation rate decreased to 2.75% with an annual change rate of 198.21%. The central bank management attributed this success to its various means and achievements in reducing the inflation rate and improving monetary stability, which in turn leads to the stimulation of the growth and economic development climate in the country (Annual Report of the Central Bank of Iraq, 2009: 35).

Meanwhile, the inflation rate for the year 2012 reached 6.09%. The ratio of imports to the gross domestic product amounted to 26.7%, which reflected the inflationary pressures due to the increase in global prices of imported goods and services. Inflationary pressures primarily affected the local level through the rise in prices in the housing and education sectors, as changes in these sectors are considered essential and not subject to seasonal factors (Annual Report of the Central Bank of Iraq, (2012: 48)

In the year (2019), the inflation rate decreased by (0.2%) based on the message of the Central Bank of Iraq adopting a monetary policy that recognizes the monetary stability as a fundamental condition for achieving sustainable growth and a crucial element in providing a suitable investment environment and protecting the purchasing power of the local currency (Annual Report of the Central Bank of Iraq, 2019: 20).

However, in the years (2022, 2021), it recorded an increase with an annual change rate of (966.67%) due to the increase in the foreign exchange rate (dollar) against the decline of the Iraqi dinar, leading to a rise in the general price level and cost of living in the country as most consumer basket components are imported. This will keep the Iraqi economy vulnerable to expected price fluctuations in the world, negatively or positively (Annual Report of the Central Bank of Iraq, 2021: 48).

Inflation rates in the Iraqi economy for the period (2004-2022) (million dinars / percentage)

Years	General price index Based on the base year (100=2012)	Inflation rate %
2004	36.4	20.92
2005	49.9	37.32
2006	76.4	53.19
2007	100	30.9
2008	112.7	2.8
2009	122.1	-2.75
2010	125.1	2.44
2011	132.1	5.60
2012	140.1	6.09
2013	142.7	1.89
2014	145.9	2.23
2015	148.0	1.39
2016	104.1	1.4
2017	104.3	0.17
2018	104.7	0.09
2019	104.5	-0.2
2020	105.1	0.6
2021	111.5	6.0
2022	117.0	5.0

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

The Third Topic: Measuring The Impact of Cash Credit on Inflation.

The Relationship Between Cash Credit and Inflation

The relationship between cash credit and inflation is a negative relationship. The expansion of the banking system in granting credit means the flow of cash into circulation, which means an increase in the circulating money supply in the economy, leading to an increase in demand for goods and services, resulting in price increases and inflation. On the other hand, an increase in credit directed towards investment sectors means an increase in the establishment of investment projects, leading to an increase in demand for investment assets and labor, which leads to an increase in their prices and inflation.

1. The Equation for Cash Credit and Inflation

$$Y_3 = \beta_0 + \beta_1 X + U_t$$

Where:

X: Cash credit

Y3: Inflation rate

β_1 , β_0 : Represent estimated parameters.

U_t : Error term

2. Determining The Optimal Lag Length And Estimating A VAR Model For Variables (X, Y3)

Table () shows that after determining the optimal lag length for variables (X, Y3), it is found that the optimal lag length according to the Akaike, Schwarz, and Hannan-Quinn criteria is five periods.

Table (): Optimal Lag Length for Variables (X, Y3).

VAR Lag Order Selection Criteria						
Endogenous variables: X Y3						
Exogenous variables: C						
Date: 10/06/23 Time: 15:32						
Sample: 2004S1 2022S1						
Included observations: 32						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-525.7281	NA	7.23e+11	32.98300	33.07461	33.01337
1	-442.2213	151.3561	5.03e+09	28.01383	28.28865	28.10493
2	-418.9169	39.32602	1.51e+09	26.80731	27.26535	26.95914
3	-409.1642	15.23865	1.07e+09	26.44776	27.08902	26.66032
4	-406.7282	3.501780	1.19e+09	26.54551	27.36999	26.81880
5	-389.4719	22.64883*	5.36e+08*	25.71700*	26.72469*	26.05102*

Source: Researcher preparation based on programme outputs (Eviews 12)

Through the table, it is observed that, after estimating the VAR model, the coefficient of determination (R2) value reached 93%. This means that 93% of the variations in the dependent variable are caused by variations in the independent variable, while the remaining 7% can be attributed to variables not included in the model. Additionally, the test statistic (F) value was 30, indicating the model's significance at a 5% significance level. Furthermore, the coefficient of the independent variable was 3.8, which is positive and consistent with the logic of the economic theory regarding the inverse relationship between money supply and inflation. An increase in the banking system's ability to grant credit leads to an increase in individuals' and institutions' cash balances, resulting in increased demand for consumer goods and services compared to other sectors. This increased credit supply implies higher investment, leading to increased demand for investment goods and labor, ultimately causing their prices and investment costs to rise, resulting in inflation.

The table represents the estimation of the VAR model.

Vector Autoregression Estimates	
Date: 10/06/23 Time: 15:32	
Sample (adjusted): 2006S2 2022S1	

Included observations: 32 after adjustments		
Standard errors in () & t-statistics in []		
	X	Y3
X(-1)	1.792536 (0.21380) [8.38419]	3.87E-09 (2.8E-09) [1.37920]
X(-2)	-1.075553 (0.44444) [-2.42001]	-2.20E-09 (5.8E-09) [-0.37798]
X(-3)	0.449206 (0.51375) [0.87437]	-1.27E-09 (6.7E-09) [-0.18921]
X(-4)	-0.303207 (0.46836) [-0.64737]	1.50E-09 (6.1E-09) [0.24436]
X(-5)	0.119786 (0.22561) [0.53094]	-2.05E-09 (3.0E-09) [-0.69286]
Y3(-1)	-337257.0 (4215415) [-0.08001]	0.837790 (0.05527) [15.1590]
Y3(-2)	-180234.1 (6082494) [-0.02963]	-0.957146 (0.07975) [-12.0026]
Y3(-3)	-869648.7 (6902284) [-0.12599]	0.716393 (0.09049) [7.91654]
Y3(-4)	917490.4 (5936250) [0.15456]	-0.456892 (0.07783) [-5.87054]
Y3(-5)	-3278062. (3674508) [-0.89211]	0.267125 (0.04818) [5.54489]
C	1540664. (846902.) [1.81918]	0.004355 (0.01110) [0.39224]
R-squared	0.996751	0.936492
Adj. R-squared	0.995204	0.906250
Sum sq. resids	2.94E+13	0.005060
S.E. equation	1183950.	0.015522
F-statistic	644.3233	30.96675
Log likelihood	-486.1664	94.62862
Akaike AIC	31.07290	-5.226789
Schwarz SC	31.57674	-4.722942
Mean dependent	29976781	0.033825
S.D. dependent	17096656	0.050696

Source: Researcher preparation based on programmed outputs(EViews 12)

First: Conclusions

1. Bank Credit

1. Cash credit: The significant inverse relationship between bank credit and each of:
 - The policy rate, due to borrowers' reluctance to long-term borrowing due to prevailing conditions in the country, investors seek short-term investments with lower credit risks.
 - The inverse relationship with open market operations, making them the most effective tools for the

Central Bank of Iraq in long-term credit facilitation due to changes in the legal procedures for the banking facilitation process due to long-term lending risks.

-Non-monetary cash reserves, as banks are not affected in the long term by changes in legal reserves.

2. Weak contribution of bank financing to economic activity and thus weak impact on economic growth and low percentage of bank credit granted to the Iraqi economy.
3. The credibility of the central bank plays a significant role in anticipating inflation, which leads to a decrease in wage and price levels by following a contractionary policy. This is evident through the impact on reducing bank credit and provided banking facilities, and the associated risks in controlling inflation rates and monetary stability.
4. The research concluded the inverse relationship between bank credit and credit facilities, and credit risks in the short term, as the higher the percentage of bank credit and banking facilities granted, the higher the credit risks associated with them.
5. After 2004, the policy rate was adopted as a nominal anchor for inflation expectations. However, the failure of the banking system, weak financial intermediation, and the dominance of the public sector over the GDP limited the role of the policy rate as a nominal anchor.

Second: Recommendations

1. It is important to regulate monetary policy to expand monetary credit and avoid unnecessary expansion in credit provision. This does not contribute to economic growth but rather maximizes speculation and profitable activities outside the economic sector. This contradicts the objectives of monetary policy, such as achieving growth, economic stability, and addressing inflation. Therefore, the central bank needs to reconsider its management of surplus reserves granted as existing facilities or various bonds and instruments.
2. Strengthening bank credit to finance economic activities by mobilizing savings resources and directing them towards productive activities with profitable returns and lower risks, and improving payment systems to increase the efficiency of banking and economic activity.
3. The need to activate the role of government banks and transform them into specialized banks to provide credit according to the industrial, agricultural, and real estate sectors, and to promote investment activity and provide financial and economic incentives and immunity through the regulation of laws and systems and providing improvements that serve investment activity to support the process of economic development.
4. It is necessary to adopt coordinated economic policies to achieve overall stability and rely on sources of income other than oil that target an increase in real non-oil GDP growth, and stimulate the agricultural, industrial, and tourism sectors through credit facilities and support for local products instead of import financing that reduced the foreign exchange surplus.
5. The need for coordination between monetary and fiscal policies to achieve the intended objectives and avoid conflicting results and achieve integration.

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