

# Measuring the Impact of the Tools of the Central Bank in Achieving Monetary Stability in the Iraqi Economy for the Period 2003-2015

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**Abstract** - The aim of the research is to show success or failure in the performance of the Central Bank of Iraq after 2003 by using the means and tools of modern monetary policy such as currency auction, existing facilities, the auction of remittances and bonds because of their role in achieving monetary stability, identification of the obstacles that stand in the way of achieving its objectives and the use of standard model in analyzing the impact of monetary policy indicators, namely, money supply, interest rate and exchange rate in the growth rate of the Gross Domestic Product (GDP) and the rate of inflation.

In order to reach its goal, the research was divided into three chapters. The first chapter dealt with the central bank, monetary policy and monetary stability. The second chapter was under the title of "the Central Bank of Iraq and the development of monetary policy". The third chapter dealt with measuring the impact of tools of the Central Bank in achieving monetary stability in the Iraqi economy (1990-2015).

The research was based on the hypothesis that the monetary policy carried out by the Central Bank of Iraq was sufficient to achieve the state of monetary stability during the period of the research. The research reached conclusions, the most important of which is the usage of modern tools by the Central Bank in addition to traditional monetary tools that have significantly participated in achieving goals. The standard results showed that the indicators of the monetary policy used in the standard model for both equations have a significant impact on the dependent variables when the determining coefficient ( $R^2$ ) is 97%, which means that the independent variables interpreted 97% of the dependent variables.

As is also evident from the relation between the independent and dependent variables used in the research, they do not all agree with the logic of economic theory due to the incorrect decisions taken in most areas (if not all) and the adoption of GDP on an almost single source of revenues representing in oil sector as a rentier country. When studying the relation between the indicators of monetary policy used in our research as independent variables and the rate of growth of GDP as a dependent variable in the first model or the first equation, we find that the exchange rate is inconsistent with the nature of economic theory because of the sharp fluctuations of the foreign exchange rate against the dinar, which is slowing the process of economic growth. Similarly, in respect to money supply, the negative signal indicates its inverse relation with the rate of growth of GDP and this does not correspond to the logic of economic theory.

## INTRODUCTION:

The phenomenon of monetary stability is a manifold and multidimensional and raises many practical and theoretical issues. It is considered as one of the economic problems that takes a great deal of attention from governments and economists. Monetary policy represents a major instrument of general economic policies which, in turn, is striving to achieve a monetary stabilization, which is used by the state alongside other policies, such as fiscal, trade, wages and prices policies to influence the level of economic activity through their effect on the central variables that composing this activity, such as investment, prices, product and income. The role of Central Bank has a crucial importance in establishing a sound monetary policy that is highly effective in achieving monetary stability in first grade. Within this framework, the Central Banks in some advanced countries, which have dismissed the function of supervision and regulation from their banks, have gone to focus on targeting inflation rate as a prime objective of its monetary policy, in the light of liberalizing the capital markets in the world. While the central banks, which are in charge of regulating and controlling banks, are responsible for ensuring the safety of banking conditions and for providing the appropriate banking environment together with the development and implementation of monetary policy.

The importance of research: the importance of research arises from studying the close relationship between sound monetary policies and achieving the monetary stability, represented in stabilizing the general level of prices, exchange rates and interest rates all by its particular angle for which the general economic policies aim at.

Research problem: The problem of research is to answer the following question. Is the sound monetary policy, performed by the central bank, capable of achieving monetary stability? Research hypothesis: The monetary policy, performed by the Central Bank of Iraq, has effectively achieved the monetary stability during the research term.

Research methodology and structure: Whether accepting or rejecting the hypothesis, both researchers used the inductive approach in analyzing economic relations between the economic variables constituting the studied problem during the research period, which was divided into three topics, the first topic deals with theoretical concepts of monetary

stability and monetary policy and a look at the role of central banks in achieving them, while the second one tackles the analysis of the real monetary policy performed by the Central Bank of Iraq during the research period and assessment of the monetary stability in Iraq during this period, whereas the two researchers used the standard analysis method to recognize the role of monetary policy in achieving Iraqi monetary stability. The research is concluded with a number of conclusions, offset by a comparable number of recommendations.

#### The first topic

##### Monetary stability and monetary policy, theoretical approach

###### 1- *the concept of monetary stability:*

Monetary stability does not mean that the exchange rate remains constant and does not mean free floating. On the other hand, monetary stability does not mean high exchange rate fluctuations, so it means those changes in currency exchange rates or the general level of prices that can be expected without Surprises that are under control.[1]

Monetary stability can therefore be defined as the situation in which interest rates, exchange rates and the general level of prices of ordinary commodities remain at low levels of volatility that do not result in severe shocks .

One of the most important criteria in which monetary stability is known is the rate of inflation, the rate of interest and the rate of exchange, and we will deal with them successively.

a- *inflation rate:* Inflation is one of the most serious problems experienced by all countries of the world for its direct impact on their economies, as it adds economic and social costs and impedes the efficient allocation of resources, which adversely affect economic growth and economic efficiency Inflation is defined as: the general rise in prices, due to several reasons we will come later, and this rise leads to other changes in economic variables, which is based on macroeconomic mechanisms (price formation - distribution systems - income distribution...)[2]

The concept of inflation varies according to different economic schools. The classical school suggests that prices are determined by free interaction between the supply and demand of goods and services. For example, Fisher's equation is that the general level of prices equals the amount of money traded. Or the rate of inflation is directly proportional to the amount of cash, and is inversely proportional to the volume of production and the rate of demand for money, and the Keynesian school believes that inflation means increasing the actual demand for the supply of goods and services, leading to higher prices, and therefore according to this School, inflation is linked to changes in the amount of money, in interest rates, and in the level of employment in the productive apparatus of any country .. But the Marxist school has stressed the definition of the movement of prices of goods and services, that the high cost

of production of goods and services leads to inflation, Capitalists always want to raise their profits by raising prices, leading to inflation. It can be said that there is inflation when prices rise The national faster than the rise in world prices, in this case inhibit exports and facilitate imports, and eventually fear that depletion of state reserves may turn into a city state. [3 ]

There are several forms of inflation:

- *Inflation caused by increased demand:* one of the most known reasons for inflation, as the classic sees inflation as a purely monetary phenomenon, starting with the increase in money supply, which leads to higher incomes, which in turn creates pressure on commodity demand, triggering a gap called the inflationary gap Inflationary Gap, which is an expression of market power imbalance. [4 ]
- *Inflation caused by increased factor prices:* It occurs when these prices tend to rise due to one of the causes of emergency may be political or natural.
- *Inflation caused by increased incomes:* It occurs when workers' incomes are higher than their current level as a result of trade union demands or otherwise, resulting in an increase in aggregate demand, pushing prices higher.
- *Inflation compounded by the excessive issuance of money:* the money supply often have adverse effects on the value of cash, and then the effects of a public price level, and often occurs in crises or wars or natural disasters. [5]

Types of inflation:

Inflation is characterized by many types, but these types are not separated from each other, as they share in some of the characteristics that combine them, they all share the same property is the inability of money to perform its functions in full, especially as a function (store value). The most important types of inflation are [6] :

- Slow inflation
- Creeping inflation
- Rapid inflation
- Cumulative inflation
- Imported inflation

b- *Interest rate:* The interest rate is a major role in economic construction and is one of the most important indicators used to analyze the direction and movement of the macroeconomic so as to be used as a tool to achieve economic activity through monetary policy, and Keynes was correct behavior, indicating the difference between the marginal adequacy of capital and its determinations and Interest rate and determinants, only that the insistence on confusion continues as the thinkers after Keynes treated interest and profit indiscriminately in their presentation of the macroeconomic model of macroeconomic aggregates

represented in money supply and demand with the real economy represented in the presentation of savings and demand for investment at different income levels.

And the interest rate several definitions and concepts of traditional school leaders, although at the first glance indicates that there is a difference and the difference in the concept of interest, but this difference in terms of words only and not meanings. These definitions include.

Adam Smith considered interest to be the price of capital use from real saving and therefore did not distinguish between interest and profit. His contribution to interest theory was as small and limited as that of Ricardo which was not clear in the distinction between interest and profit. [7]

Marshall discussed the concept of deprivation as a reason for gaining interest, preferring to use the term abstinence to express the same meaning because the term deprivation is undesirable. In his book *The Origins of Economics*, Marshall defended the importance and necessity of interest on borrowed capital and attributed its opposition in the medieval and old to the lack of clarity on the nature and productivity of capital. [8] Fisher, in his book *Theory of Interest*, The interest rate is the price of impatience with income spending and investment opportunity.[9] While Samuelson defined the interest as income in the form of percentages given as a premium to lend money. [10]

c- The exchange rate: The relationship of monetary stability at the exchange rate is very complex since the process of selecting the appropriate system is dictated by the specific circumstances of that country. The exchange rate is a major price in the economy that ultimately affects the imported services, the cost of goods and the profits of the export industry, Inflation rates, the choice of the exchange arrangement determine the degree to which the economy is affected in situations of recession and recovery abroad, and determines the independent policy and scope within the country. The exchange rate has several concepts, which are as follows:

- Some knew that: the number of units of local currency necessary to buy a unit of foreign currency, ie foreign currency denominated in local currency units. [11] Or is the number of foreign currency units required to purchase a unit of the local currency. [12]

- The exchange rate is also known as the rate on which the exchange of national monetary units in foreign currency units at a certain time. In foreign currency here, we mean all credits and payments due and deposits in a currency in addition to traveler's checks, remittances and bills of exchange. [13]

Exchange Rate:

a- Nominal exchange rate: This indicator acts as a measure that reflects the average volatility of the values ??of other currencies for a particular currency. [14]

b- Real exchange rate: It is measured by comparing the cost of the labor unit in the industrial production after the necessary adjustment is entered. It shows the competitiveness of the prices of the state goods. [15]

The relationship between the real exchange rate and the nominal exchange rate is shown by the following relationship :

$$TCR = \frac{TCN/P_1}{1/P_2} = \frac{TCN * P_2}{P_1}$$

Where: TCR: the real exchange rate

TCN: nominal exchange rate.

P2: The price index in the foreign country.

P1: Local price index.

c - Actual exchange rate: this type expresses the indicator that measures the average change in the exchange rate of a currency for a number of other currencies in a given period of time. Thus, the actual exchange rate index is equal to the average of several bilateral exchange rates. [16]

d - Allegretto Exchange rate: It is defined as the foreign exchange rate applicable to the sale and purchase of foreign currencies in exchange for delivery on the spot. [17]

e - Forward exchange rate: Defined as the price at which a currency is bought or sold at a date subsequent to the closing date of the transaction, the price and the date of delivery and the amounts of the two currencies to be dealt with at the same date as the transaction contract. [18]

2 - The concept of monetary policy:

Monetary policy is a major tool of general economic policy, used by the state alongside other policies such as fiscal and trade policy and wage and price.

f - The monetary policy was defined by the economy as "Kent" as the procedures used by the monetary authorities to control the supply of money and achieve certain economic objectives [19], and also known as[20] "a set of government-style decisions issued through the Central Bank to control the volume of money circulating in Economy."

And defined by Einzing as "a set of monetary and non-monetary actions and actions with monetary objectives affecting monetary systems." [21]

The economist Johnson defined it as "the instrument used by the central bank to control the supply of money by controlling it to achieve the general objectives of economic policy." [22]

Monetary policy can be defined as: a set of means, procedures and instruments that are taken by the monetary authority to achieve macroeconomic objectives.

The evolution of monetary policy within the framework of different economic theories

Many views on the earlier studies of the classical coin money theory of the sixteenth century have been the basis of classical thought. The views of traders have confirmed that money affects only the general level of prices. Physocrats have emphasized the importance of money as an economic variable that affects the overall level of economic activity.

The classics came with many assumptions such as the neutrality of money, the equalization of zero, and the goal of economic activity is consumption as well, the elasticity of prices and wages can rebalance under the dominance of the market of complete competition, and the state of use realized the marginal productivity of the labor component equal to the real wage assuming the stability Wages and incomes as a specific pattern of expenditure and that the best level of production is achieved by equal marginal revenue with marginal costs. [23]

Keynes disagrees with the classics that money is not neutral but requires three motives: the motive for the settlement of trade, the motive for speculation, and the motive for caution. Keynes also disagrees with the classical nature of the role of the interest rate. Keynes sees the interest rate as a monetary phenomenon determined by the intersection of the demand curves of money and money supply in the cash market, and thus the interest rate indirectly plays a role in transferring the monetary shock to economic activity and thus influencing In the size of the national income balance based on the analysis of the elasticities, the flexibility of the investment curve in relation to the interest rate, which is called (the limit of investment). [24]

The critics believe that the first effect of monetary growth will be on production rather than on prices because inflation and money growth do not change in the same direction in the short term. In the long term, however, inflation is usually a monetary phenomenon. Money is important in its impact on production in the short term, with its impact on the long term and at a steady rate of growth and achieving some sort of economic stability.[25] According to this theory, flexible monetary policy will not be successful in achieving economic stability if wages and prices are flexible and their rational assumption makes economic expectations an effective policy to influence real output both short and long term. Therefore, the key role of monetary policy in stabilizing output will be limited, especially since policy makers have the same information as people. [26]

Although there are a number of common views among the supply-side economists and the money-changers, the supply-side economists have criticized the critics by focusing on the supply of criticism and neglect of the real side of the national economy. Low-cost credit, in their view, increases incentives to increase production and productivity. [27]

Monetary policy instruments:

In order to optimize monetary policy objectives, monetary authorities must choose the appropriate monetary instruments. The monetary policy tools vary in monetary authority from one country to another in accordance with the nature and circumstances of the economic conditions of this country. The monetary authority, when implementing monetary policy in the country, sets the priorities of monetary policy objectives that will achieve these objectives. From the knowledge of monetary authority to the general economic policy of the state.[28] Monetary policy tools are divided into indirect tools (quantitative tools) and direct tools (qualitative tools), as follows:

a- Indirect instruments (quantity): They are the tools that aim at influencing the quantity of credit and not its quality (Discount rate, open market operations and legal reserve ratio). These tools are quick to effect the money supply, and are fully controlled by the central bank, unlike other instruments that depend on the behavior of commercial banks. [29]

b- Direct tools (quality) and is intended to control the trends in which commercial banks distribute their loans and various investments, namely (rationalization of credit and direct impact and literary persuasion), but these tools do not produce effects unless supported by other means. It is not easy to change the behavior of commercial banks and other institutions through verbal threats or advice. [30]

3- the role of the central bank in monetary stability: The elements of monetary stability that the Central Bank aims to achieve in the stability of the general level of prices and stability of the currency exchange rate and the creation of interest rate structure in line with local economic conditions and international developments. The Central Bank seeks to achieve this by regulating the growth of domestic liquidity in the national economy commensurate with the financing of economic activity Through the use of traditional monetary policy tools such as the discount rate, mandatory cash reserve ratios and open market operations. In addition, the central bank uses administrative measures to influence the credit structure Man banking and cost, through the setting of interest on loans and deposits and requiring banks under the guidance part of the financial portfolio towards specific investment rates. In terms of interest rates, the central bank must introduce several reforms in order to create a flexible interest rate structure in line with the prevailing economic conditions and developments in interest rates in the global markets.

The central bank acts to indirectly influence interest rates in the banking market by adjusting key interest rates on its monetary policy instruments (re-discount rate, deposit window rate, re-purchase price of certificates of deposit) and through open market operations of selling certificates of deposit in currency local . [31]



The Central Bank believes that the banking environment that enables banking institutions to compete freely and on an equal basis is the appropriate environment that provides financing for economic activity of the appropriate size and cost based on market forces, which increases the efficiency of the use of financial resources. Besides, the Bank attaches particular importance to the development of the banking sector from the institutional and qualitative terms to enable it to play its role in the national economy appropriate service. [32]

#### The second topic

The independence of the Central Bank of Iraq and its impact on monetary policy in the development of Iraq

##### 1- The characteristics of the Iraqi economy:

During the current period, the Iraqi Monetary Authority faced significant challenges in the process of achieving stability and economic and financial growth, promoting development rapidly and achieving a substantial improvement in the standard of living. As a result of the circumstances experienced by Iraq.

a- The Iraqi economy suffers from the high volume of external debt as the amount of indebtedness exceeded (125) billion dollars in 2003. [33]

b- The relative cessation of economic activity and the slowdown in growth rates of employment and economic growth. [34]

c- Deterioration in private economic activity, especially in the industrial and agricultural sectors, with an improvement in the commercial sector. [35]

d- high inflation rates in the Iraqi economy to record levels, especially in the nineties as inflation has become a kind of unbridled and persistent. [36]

e- The high unemployment rates versus the low rate of growth in the gross domestic product, where the unemployment rate reached 50% in the decade of the total workforce in Iraq. [37] The real GDP growth rate in the mid-1990s (2.12%)

f- the aggravation of administrative corruption, both at the level of local administrations or at the level of ministries as the ranking of Iraq ranked third at the international level in the spread of administrative corruption and according to the report of Transparency International 2007.

g- Scarcity of local and foreign investment sources and uncertainty in the volume of oil revenues and channels of expenditure and lack of efficient performance in the management of oil wealth.

h- Dependence on imports significantly as more than (90%) of production inputs in the industry are imported from abroad. [38]

In addition to the above, the Iraqi economy suffers structural problems in the overall economic sectors, including:

a- The imbalance of the structure of the general budget: One of the major structural imbalances that mess in the internal economic balance and this imbalance leads to a deficit in the public budget, as well as the imbalance in the objects of government spending as military spending has increased since the eighties at the expense of the decline in spending on the rest of the economic sectors. And after the imposition of economic sanctions increased spending to secure the ration card items with a drop in spending on the sectors of health, education and social services. [39]

b- The imbalance of the structure of production: This can be seen by tracking the contribution of economic sectors in the output as we believe that the oil sector ranked first by its contribution to GDP. [40]

c- Balance of payments imbalances: The balance of payments suffers from a severe deficit or what economists call external imbalance [41]

The changes that took place in the structure of the Iraqi economy after 2003 were as follows: [42]

a- represents the fundamental change in the trend towards the transition from the system of control of the central state of the joints of the economy to the free market system and the integration of the overall system of international trade.

b- lifting the economic embargo on Iraq and the return of the flow of Iraq's oil exports regularly without international restrictions and the end of the oil-for-food program.

c- Giving greater autonomy to the Central Bank in the formulation of monetary policy and increase the number of commercial banks operating in Iraq, whether governmental or private local and foreign

d- The use of banks to comprehensive banking operations and change the mechanisms of its work and activities. Contractual contracting agreements between Iraq and the International Monetary Fund to implement the known reform mechanisms adopted by the Fund extinguish most of the debts incurred by Iraq resulting from the political phase that preceded the ninth of April 2003.

1- Development Of Iraqi Domestic Product: Table (1) indicates that gross domestic product (GDP) and fixed prices in 2003 were lower than the following year as a result of the country's war conditions and the resulting destruction of infrastructure this year and the beginning of 2004 The gross domestic product (GDP) increased

from JD (26990.4) million in 2003 to JD 41607.8 million in 2004 with an annual growth rate of 54.2%. The GDP continued to rise in 2008 to JD 51716.5 million at an annual growth rate of 6.6%. Revenues of the oil sector because of its impact on GDP compared to the limited contribution of the sector T. Other whether production or service or distributional.

Table (1) Gross domestic product in Iraq for the period (2003-2015) - (Million JD)

Compound growth rate%	Annual rate of growth of GDP at constant prices%	GDP constant prices at	The years
3.6	—	26990.4	2003
	54.2	41607.8	2004
	4.4	43438.8	2005
	10.2	47851.4	2006
	1.4	48510.6	2007
	6.6	51716.5	2008
	5.8	54721.2	2009
	5.5	57751.6	2010
	10.2	63650.4	2011
	10.3	70201.3	2012
	9.6	76922.0	2013
	(0.14)	75581.3	2014
(43.3)	42835.8	2015	

Source: The table, prepared by researchers based on data from the Central Bank of Iraq, various annual bulletins.

That any change in the price of oil will be reflected on gross domestic product directly and noted that through the rise in 2009 and the years that have been caused by the high price of a barrel of crude oil reached (61.06) dollars a barrel in 2009 and continued to rise until 2013 (103) The rise in the world oil prices has been accompanied by a rise in the level of GDP to reach JD (76922.0) million in 2013, with an annual growth rate of 9.6%, but the decline in world oil prices which reached (94.9) and (44.7) dollars per barrel for 2014 And 2015, respectively, had a direct impact on GDP to fall in the last two years (2014-2015) to reach (75581.3) million in 2014 and (42835.8) million in 2015 with a negative growth rate (-0.14) and (-43.3). The compound growth rate from 2003 to 2015 (3.6%.) .

## 2- Indicators of monetary policy in Iraq

### a- Cash presentation

Table (2) shows that the money supply in the narrow sense (M1) in the Iraqi economy has developed during the period of research (2003-2015) reaching (65803115) million dinars in 2015, while in 2003 it was (5773691) million dinars and growth rate The average annual growth rate of cash supply during the period of research was (75.8) in 2004 due to the political change, the increase in salaries and wages, as well as the increase in the need to provide a large amount of cash to cover the cost of rebuilding the country. A positive annual growth rate in 2012 of the same period which amounted to (6.8). On the other hand, the money supply recorded a negative growth during the last two years of the research period and at (-0.30), (-11.5) respectively. The reason for the decline in the value of current deposits, which decreased from 38299676 million dinars in 2014 to 30947859 million This decline appears to have been due to the escalation of military operations in northern and western Iraq and the decline in economic activity in these two important regions and in other parts of Iraq, resulting in a decrease in current deposits and hence the annual growth rate of money supply.

Table (2) M1 Money Supply and its Components in Iraq for the Period (2003-2015) - (Million JD)

Compound growth rate of money supply (**)%	The ratio of deposits to money supply	The ratio of currency to displayCash	The annual growth rate of the money supply (*) %	Money supply M1	Current deposits	Currency in circulation	The year
20.6	19.8	80.2	-----	5773691	1143897	4629794	2003
	29.4	70.6	75.8	10148626	2985681	7162945	2004
	20.1	79.9	12.3	11399125	2286288	9112837	2005
	29.1	70.9	35.6	15640060	4491961	10968099	2006
	34.5	65.5	40.5	21721167	7489467	14231700	2007
	34.4	65.6	29.8	28189934	9697432	18492502	2008
	41.6	58.4	32.3	28300030	15524351	21775679	2009
	52.9	47.1	38.7	51743489	27401297	24332192	2010
	54.9	45.1	21.2	62692098	34396082	28296016	2011
	54.3	45.7	6.8	66880017	36286370	30593647	2012
	53.1	46.9	11.5	74591912	39596459	34995453	2013
	51.5	48.5	(0.30)	74371269	38299676	36071593	2014
	47.1	52.9	(11.5)	65803115	30947859	34855256	2015

Source: The table, prepared by researchers based on data from the Central Bank of Iraq, various annual bulletins .

The annual growth rate is calculated according to the following equation:

$$R = (A_t - A_{t-1} / A_{t-1}) * 100$$

\*\*The compound annual growth rate is calculated by the following equation:

$$r = \left[ \left( \frac{y_t}{y_0} \right)^{\frac{1}{t}} - 1 \right] * 100$$

**b- Exchange rate**

Since 2004, after the issuance of the new Central Bank of Iraq law, the daily auction method was used to sell and buy the dollar in order to control the supply of cash and liquidity. Thus, the central bank became a central market for foreign currency. It contributed to putting an end to fluctuations in the value of the Iraqi dinar against the US dollar. Foreigner for several purposes including:

- Balance the demand for the dollar and the dollar.
- Stability in exchange rates, which is reflected in the stability of prices.

rate of the dinar against the dollar in the parallel market, down from (1936) dinars / dollars in 2003 to (1453)

dinars / dollars in 2004 and a negative annual growth rate (-24.9) ) To the confidence of individuals in their new currency and increase demand for the new Iraqi dinar as a store of values.

In 2005 and 2006, the exchange rate rose to (1472) and (1475) JD / USD with an annual growth rate of (1.3) and (0.2) respectively, and by 2007 the exchange rate started to decline and the improvement was due to the increase in the value

**Table (3) Exchange rate, interest rate and inflation for the period (2003-2015)**

Inflation rate	Consumer price index	Interest rate	The annual growth rate%	Official exchange rate	The parallel exchange rate	The years
33.6	6943.5	6.4	-----	1896	1936	2003
26.9	8815.6	6.0	(24.9)	1453	1453	2004
36.9	12073.8	7.0	1.3	1496	1472	2005
53.2	18500.8	16.0	0.2	1467	1475	2006
30.8	24205.5	20.0	(14.1)	1255	1267	2007
2.7	24851.3	16.8	(5.1)	1193	1203	2008
(2.8)	24155.1	8.8	(1.7)	1170	1182	2009
2.4	24748.5	6.3	0.3	1170	1186	2010
5.6	26133.3	6.0	0.8	1170	1196	2011
6.1	27716	6.0	3.1	1166	1233	2012
1.9	28230.3	6.0	(0.1)	1166	1232	2013
2.2	28863.4	6.0	(1.5)	1188	1214	2014
1.4	28900.2	6.0	7.4	1190	1304	2015
(21.7)	11.6					Growth rate

- Reducing the phenomenon of dollarization through exchange rate reference.
- Inflation fell 20% in 2007 compared to 2006.
- This decline helped to add purchasing power to the economy estimated at about 21 trillion dinars as a benefit.

In the track of the exchange rate, as shown in Table (3), we see an improvement in the average exchange

of the Iraqi dinar against The US dollar to the monetary policy adopted by the monetary authority with the support of the Iraqi dinar and thus clear the stability of the exchange rate in the parallel market and spread this decline until 2014, which amounted to (1214) dinars / dollars and an annual growth rate (-1.5). It can be noted through Table (3) The decline in the exchange rate of the two official markets represented by the currency and parallel market and the reduction of the phenomenon of exports.

In 2015, the dinars / dollar exchange rate rose to (1304) and the annual growth rate (7.4) as a result of the Iraqi economy suffered from recession in most economic sectors due to the financial crisis and the unstable security situation experienced by the country, Editing from them.

#### c- Interest rate

Monetary policy has seen the level of interest rate changes oscillatory by applying a new structure in the interest rates on the dinar is characterized by a high degree of flexibility in moving speed to rise and fall to keep pace with economic policy variables.

It is possible to identify monetary policy through an indicative rate of interest, which is the price of the bank, which determines prices in the primary and secondary markets, the last resort facilities, and the prices of overnight investment deposits.

It is evident from our follow-up to the interest rate path during the period of the research (Table 3) that it changed only in the years 2006 to 2008 where the interest rate was between 16.0 and 16.8. The Central Bank raised interest rates on loans and deposits with a view to withdrawing cash to reduce the money supply and thus control inflation rates.

The policies followed by the Central Bank of Iraq in raising the interest rate on loans until 2008, but the central bank reduced the interest rate on loans and deposit with the beginning of 2009 to stimulate the Iraqi economy and encourage investment.

#### d- the rate of inflation

Inflation in the Iraqi economy is a composite phenomenon, which was not formed by a single factor, namely, the increase in the prices of derivatives or the increase in cash received as a result of the current expenditure of public expenditure, but as a result of the interaction of many factors, monetary and real, related to structural imbalances in the productive sector as a result of the deterioration Especially in the agricultural and manufacturing sectors, and it is known that the Iraqi economy is a model of the rent economy, ie, the sources of income are linked to external demand regardless of production and productivity. Table (4) shows that the price index Perished in 2003 amounted to (6943.5) million dinars so arrived in 2015 to (28900.2) million and the compound rate of growth (11.6) during the period of search (2003-2015).

In 2003, the rate of inflation was (33.6) due to the cancellation of duties and customs duties on imported goods and the increase in the demand of households to purchase household and motor vehicles. In addition, the highest level of inflation in 2006 was (53.2) The fact is that there are many

reasons for such a level of inflation, but the apparent reason is the expansion of current government expenditure, which is usually of a consumptive nature and low supply due to higher production and marketing costs. To (30.8) and the reason is the pursuit of the Central Bank Low inflation rate by following a monetary policy aimed at raising the value of the Iraqi dinar through raising interest rates.

Thus, inflation rates continued to decline until 2009. The inflation rate was negative at (-2.8), the lowest rate of inflation during the period of research to increase the value of the Iraqi dinar against the dollar in this year from (1475) dinars in 2006 to (1182) dinars / 2009, and tracking the path of inflation rate through the table (5) referred to earlier we will notice the return of any inflation rate to rise during the years following the period of research, but at a lower rate than the beginning of the period of our research and the reason for its rise is that the Iraqi economy is open to the outside world in its foreign trade and adoption of most of the components of consumption of imports, so are affected by domestic prices at external prices. In addition to the nature of the budget for the Iraqi economy, which is a recuperative economy, so does not stabilize the link to the price of oil, which is priced globally, and can be seen developments in rates

4- The emergence of the Central Bank of Iraq:  
After the formation of the Iraqi government in 1920 showed the desire of Iraq to establish a central bank to carry out the process of issuing the Iraqi currency as a form of completion of political independence and economic, and at that time raised the problem of issuing the paper currency. Initially, the Iraqi currency department was assigned to a London-based committee, but the public objected to the idea and neglected the project at the time. In 1927, the government proposed the establishment of a national bank with the task of issuing, but the project was not implemented due to differences on the basis on which the new currency was based. In 1930 an Iraqi committee was formed to issue the currency. The dinar is the monetary unit in Iraq, which made a measure of value estimation, and in 1931 was the first issuance of the Iraqi dinar, has changed its content many times because of the change and development of monetary basis in the country. Because of the turmoil in the financial situation in the world and the departure of England from the gold rule was amended the Iraqi currency law in December 1931 and became worth one pound sterling, which made the Iraqi dinar is fully linked to the sterling currency, which boost confidence in the Iraqi currency at home and abroad until the World War The second which violated monetary regulations and the freedom of external transfer. [i]

In 1939, the currency law was issued No. 27, which provided for the government to participate in the establishment of a civil bank under certain conditions, was intended to establish this bank to find a joint governmental institution gives a special privilege to issue currency and in addition to all



transactions by commercial banks, In 1974, the Iraqi National Bank Act No. 43 was issued, which provided for the establishment of the Central Bank, and thus prepare the year 1947, which established the National Bank law a turning point in Iraq's monetary history. [ii]

5- The modernization procedures of the Central Bank of Iraq:

The Central Bank of Iraq took a series of measures after 2003 to adapt to the changes witnessed by the Iraqi reality. The most important of these measures are the following:

- a- Replacement of the national currency on 15 January 2004 by replacing (4 trillion) old Iraqi dinars with a new currency. This step carried many general advantages such as additional categories and improved the currency's durability, which restored confidence in the Iraqi dinar and contributed to the improvement of the exchange rate clearly. [iii]
- b- Liberalization of the financial sector, especially the liberalization of interest rates on 1/3/2004, by making supply and demand mechanisms work efficiently and competitive in the financial market. [iv]
- c- The transition from controlling banking supervision to automatic preventive control, on the basis of which the Central Bank of Iraq, under its law and the new banking law No. 94 of 2004, to impose preventive controls through the regulations and their applications away from the administrative measures of coercive control, which enables the banking system to work on Flexible systems that are efficient in banking. [v]

6- Independence of the Central Bank of Iraq:

The Central Bank of Iraq is one of the oldest central banks in the Arab arena, where it gained independence after 2003 in accordance with Article (2) of Law No. 56 of 2004, but this autonomy granted to the Bank is relatively independent and can not be absolute, especially in Iraq as a rent-dependent country. The purpose of the independence is to reduce the interference of the executive authority represented by the government in the work of the Central Bank and despite the independence gained by the Central Bank, the text of the law in Article (24) that there are meetings between the Governor of the Central Bank of Iraq or one of its representatives and government officials to To coordinate the monetary and financial policies as necessary to coordinate economic policies. [vi]

Thus, the Central Bank of Iraq does not receive any directives or orders from any party, even if the government and therefore must respect this independence and will not any person or entity to interfere in the activity of the Central Bank of Iraq. [vii]

The third topic

Measuring and analyzing the impact of monetary policy in achieving Iraqi monetary stability

1- Characterization of the model

Factors influencing monetary stability are important factors and can not only be analyzed theoretically. Rather, it is necessary to determine and measure their impact or role and the proportion of the contribution of each variable to convert the relationship between variables to mathematical equations using symbols in determining the direction and type of relationship between economic variables.

Based on the logic of the economic theory, which illustrates the nature of the relationship between the independent variables with the dependent variables in the standard model and depending on the method of multiple regression to reach the best results that can be relied upon and analyzed in relation to the relationship between the variables of our search are as follows:

- a- Dependent variables: The model includes two variables:
  - Growth rate of GDP (GDP G) at constant prices
  - Inflation rate (IN)
- b- Independent variables: The research is limited to studying the effect of the following variables because they are the basic in the estimated standard model which explains the increase or decrease in the dependent variable during the period of the research, which is as follows:
  - Money supply (M1): - It is positively correlated with GDP growth rate and vice versa with the rate of inflation according to the logic of economic theory.
  - The exchange rate (ER): It is positively correlated with GDP growth rate and vice versa with the rate of inflation according to the logic of the economic theory.

Thus, the estimated equations for the standard model are as follows:

$$GDPG = \beta_0 + \beta_1 ER + \beta_2 M1 + \beta_3 IR + u_t \dots \dots \dots 1$$

$$IN = \beta_0 + \beta_1 ER + \beta_2 M1 + \beta_3 IR + u_t \dots \dots \dots 2$$

1- Data Sources: The research was based on time series data consisting of (26) years, which represents the number of observations for each

variable (2015-1990). Data on dependent and independent variables were obtained as statistical aggregates and various annual publications of the Central Bank of Iraq.

- Interest rate (IR): According to the logic of economic theory, there is an inverse relationship between the interest rate and the growth rate of GDP and the inflation rate.

- 2- Estimating the parameters of the standard model: This step comes after we describe and formulate the standard model correctly, as many methods are used to obtain the estimate of the parameters of the model and requires this step to know all the methods of econometric to choose the best way.
- 3- Evaluation and analysis of results: The next step to determine the extent of reliance on the results of the assessment using economic criteria and statistical standards and then standards.

**Table (5) Results of the stability of time series**

When the level without definite direction I (0.)			When the level of the breaker and the direction I (0.)			When the level of the breaker I (0)			The variable
The result	Critical values	Statistical value	The result	Critical values	Statistical value	The result	Critical values	Statistical value	
Stable moral level (1%)	-2.660720 -1.955020 -1.609070	-6.625723	Stable moral level (1%)	-4.374307 -3.603202 -3.238054	-7.011664	Stable moral level (1%)	-3.724070 -2.986225 -2.632604	-7.047242	GDP <sub>c</sub>
Moral level stable (5%)	-2.660720 -1.955020 -1.609070	-2.091744	Unstable	-4.374307 -3.603202 -3.238054	-3.080957	Unstable.	-3.724070 -2.986225 -2.632604	-2.346515	IN
Unstable.	-2.679735 -1.958088 1.607830-	-0.487480	Unstable	-4.498307 -3.658446 -3.268973	-2.240499	Stable level of spirits (10%)	-3.808546 -3.020686 -2.650413	-2.980882	ER
Stable level of spirits (10%)	-2.660720 -1.955020 -1.609070	1.826535	Unstable	-4.374307 -3.603202 -3.238054	-1.457635	Unstable.	-3.724070 -2.986225 -2.632604	0.643380	M1
Unstable.	-2.669359 -1.956406 -1.608495	-0.639744	Stable level of spirits (5%)	-4.394309 -3.612199 -3.243079	-3.710497	Stable level of spirits (5%)	-3.737853 -2.991878 -2.635542	-3.738133	IR

Source: table prepared by researchers based on the outputs of the program (E-views9)

- c- Random Variable: An independent element that is added to the econometric model to express the other independent variables that were not included in the model because they can not be expressed in numbers or can not be obtained with detailed data. The following table (4) illustrates this.

**Table (4) Variables of the standard model**

Type	Icon	In English	The variable
Dependent	GDPG	Gross Domestic Product Growth	GDP growth rate
Dependent	IN	Inflation	Inflation
Independent	ER	Exchange Rate	The exchange rate
Independent	M1	Money Supply	Money supply
Independent	IR	Interest Rate	Interest rate

- a- The stability results: GDP growth rate, inflation, cash supply, exchange rate, interest rate, GDP values) to ensure that the time series according to the Expanded Dicky Fuller test are stable and at the following three levels:

- at the level only cut.
- At the level of a cut and direction.
- at the level without a cutter and direction.

Notes from table (5) that the GDP growth rate has stabilized its abstract level 1% while inflation series stabilized abstract level 5% Exchange rate series and money supply moral level has stood at 10% interest rate series has stabilized at levels 1% and 5%.

- b- Appreciation of how self-gradient vectors (VAR) to not move-bound goals as time series for all stabilized form variables when this level of almo'kdanha traits long and no need to use the joint integration test thus became the standard model ready for appreciation after completing stages of testing the stability of the standard model was chosen to not move bound goals for appreciation by the results of the programme (Eviews9) based on the value of standard (Akaike) the return form was selected who got the lowest value to (Akaike).
- VAR test to the first equation:-results showed appreciation for the factors affecting alimadel GDP growth as follows:

$$\begin{aligned} \text{GDP}_G &= 6146.023 + 445.7881\text{ER}_{(t-2)} \\ &\quad - 0.342434\text{M1}_{(t-2)} \\ &\quad - 974385.4 \text{IR}_{(t-2)} \end{aligned}$$

$$t_s = (56805.4)(4064.9)(0.28513)(479462)$$

$$R2 = 0.970178 \quad R-2 = 0.954272 \quad F= 60.99705$$

$$T\text{-tab}1\% = 2.518 \quad F\text{-tab}1\% = 5.7804$$

The results of the estimated equation indicate that the growth rate of GDPG reached (6146.023) units with the remaining factors constant. It is also noted that the exchange rate ER is correlated with the growth rate of GDP for the current year and this does not correspond to the nature of economic theory This result was due to fluctuations The sharpness witnessed by the foreign exchange rate against the Iraqi dinar, which is slowing the process of economic growth and the positive sign indicates that the exchange rate by one unit for two years leading to increase GDPG for the current year by (445.7881) units, This shows the inverse relationship between it and GDPG for the current year. Thus, increasing the money supply and increasing the cash supply by one unit will lead to a decrease of GDPG by (0.342434) units, which is not consistent with the logic of economic theory and the reason for this is due to the weakness of the productive economic sectors except the oil sector Which is not affected by the money supply but affects it, while the negative signal shows us the reverse relationship between the interest rate for two years earlier with GDPG for the current year and this is consistent with the logic of economic theory as the increase in the interest rate for two years (974385.4) units. As for the R2 test, a high percentage of (97%) indicates that the model was able to explain its factor (97%) of the factors affecting GDPG and accounted for (3%) is the impact of other factors within Almng (R2) is close to the correct one. This indicates the strength of the relationship between the

independent variables and their effect on the dependent variable. (95%). Based on the results of the standard analysis, the value of the (F) test was (60.99705), which is higher than the tabular value of (5.7804) at a significant level of 1%, thus rejecting the null hypothesis and accepting In terms of t (test), the results showed the significance of the estimated parameters of the fixed limit, the interest rate and the exchange rate at a significant level of 1% because the calculated value (t) is greater of Tabulated value amounting to (2.518), while showing that significant money supply at The level of 50%, indicating the weakness of its significance and it has a slight impact on GDPG and therefore reject the hypothesis of nothingness and accept the alternative hypothesis and this indicates the significance of the parameters included in the standard model.

- Test VAR second equation:

$$\begin{aligned} \text{IN} &= -5402.087 - 189.9961\text{ER}_{(t-2)} - 0.33333\text{M1}_{(t-2)} \\ &\quad + 959067.4\text{IR}_{(t-2)} \end{aligned}$$

$$t_s = (12915.9)(6204.2)(487938)(0.28307)$$

$$R2 = 0.970399 \quad R-2 = 0.954611 \quad F= 61.467$$

$$t\text{-tab}1\% = 2.518 \quad F\text{-tab}1\% = 5.780$$

The results of the estimated equation indicate that the rate of inflation IN amounted to (5402,087) units with the survival of other factors are fixed, and note that the exchange rate ER is linked to the inverse relationship with the inflation rate for the current year and this is consistent with the logic of economic theory and the negative sign of the exchange rate indicates that the exchange rate increase by the unit (189.9961) units, as a result of the independence of the Central Bank of Iraq to take monetary policy decisions. With respect to the money supply M1, the negative signal indicates the inverse relationship between the money supply and the inflation rate for the current year. This result is contrary to the logic of economic theory, due to the nature of the Iraqi economy and the structure of foreign trade in the form of open borders and the policy of dumping practiced by many countries of the world towards Iraq, as for the price of one unit and two years leading to lower inflation for the current year. Interest Rate The positive correlation between the interest rate and the inflation rate indicates that the rise in the interest rate for the last two years by one unit leads to a rise in the inflation rate for the current year by 959067.4 units. This is contrary to the logic of economic theory, which indicates an inverse relationship between them.

This fluctuation in the interest rate shows that the CBI was constrained by decisions made by the government. This makes the interest rate a minor influence on the country's monetary policy. As for the test of the coefficient of determination ( $R^2$ ) recorded a high rate of (97%). This indicates that the model was able to explain its (97%) of the factors affecting IN and that (3%) is the influence of other factors did not fall within the model. Since  $R^2$  is close to the correct one, this indicates the significance of the results. (95%). Based on the results of the standard analysis, the value of (F) was 61.46700, which is higher than the scale value of (5.7804) at a significant level of 1%, thus rejecting the null hypothesis and accepting As for test (t), the results showed the significance of the estimated parameters of the fixed limit, the width of the exchange rate and the exchange rate at a significant level (1%) because the calculated value (t) is greater Of its highly valued (2.518), and the interest rate at 50% indicates this level We do not accept the null hypothesis and accept the alternative hypothesis this indicates the significance of the parameters in the standard mode.

#### CONCLUSIONS:

1. The central bank used modern tools in addition to the traditional monetary instruments that have contributed significantly to achieve the goals.
2. Liberalize the interest rates and adopt the bank price as an indicative price in order to achieve monetary stability.
3. In accordance with law No. 56 of 2004, and after the central bank has obtained its independence, it has led to decrease the rates of inflation and increase the growth rates of gross domestic product (GDP).
4. From a practical side, it is noted that there is a one-way relationship between the independent variables used in the standard model represented by money supply , interest rate and exchange rate, and between dependent variables related to growth rate of GDP and inflation rate.
5. The standard results regarding the stability test have shown that all time-series of variables engaged in the estimated standard model and for both equations have stabilized at their level, indicating a long-term equilibrium correlation between variables, so there is no need for conducting a joint integration test to prove that.
6. The standard results show that the monetary policy indicators used in the standard model and for both equations have a significant impact on the dependent variables when the indicator was at ( $R^2$ ) represented by the determination

coefficient 97%, that means the independent variables were interpreted 97% from the dependent variables.

7. It is also clear from the relationship between the independent variables and the dependent variables used in the research that they are not all consistent with the logic of economic theory due to the adopted improper decisions in most areas, if not all, and the adoption of gross domestic product (GDP) on a source that can be the unique of revenues as revenue-generating country represented by the oil sector.

#### Recommendations:

1. There should be conformity in relationship between monetary policy and other economic, financial, trade policies, which must be in the same direction in order to achieve the goals and reduce the inconsistency in economic policy trends.
2. Support the central bank in order to diversify monetary reserves in a series of other foreign currencies in addition to dollar.
3. Diversify the sources of obtaining foreign currency and not rely on a single source of foreign currency of dollar derived from oil revenues.
4. As a monetary authority and through monetary policy, the central bank should control the money supply through the coordination between the growth of the money supply and the growth of the gross domestic product.
5. The central bank should target the exchange rate and interest rate in order to check the inflation phenomenon.
6. Mainly, not to rely on the oil sector in creating the gross domestic product (GDP) as it is considered the governing sector and the leader of the economy, but also to encourage the rest of economic sectors to contribute to the composition and growth of product so that the economy will not be affected and remains stable in the event of any changes in oil prices.

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