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MEASURING SOME MONETARY POLICY VARIABLES IN THE STABILITY OF THE EXCHANGE RATE IN IRAQ FOR THE PERIOD (2004-2021)

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Abstract:

The study aims to analyze and measure the impact of some monetary policy variables (wide money supply (M2), foreign currency window sales and foreign reserves) on the Iraqi dinar exchange rate, and to know the impact of these monetary variables on the Iraqi dinar exchange rate, during the period (2004-2021) and based on standard analysis methodology.

The study reached a set of results, the most important of which is that the increase in foreign currency window sales in the long term by one unit leads to a decrease in the exchange rate in the parallel markets by (-10.89395) units, and this applies with the monetary reality of the Iraqi economy, as currency sales are influential and effective. Significantly in the exchange market and that the increase in foreign reserves by one unit leads to an increase in the number of units of the Iraqi dinar against the dollar (decrease in the cash value of the Iraqi dinar) by (5.781217) because the increase in foreign reserves usually results from a decrease in window sales and this affects the value of the exchange rate negatively.

While the study recommended that the monetary authorities (the Central Bank of Iraq) should follow a sterile monetary policy for the increase in the levels of cash liquidity in order to preserve the local currency and avoid the occurrence of unwanted inflation cases that reflect negatively on Iraq from the economic and social point of view, as well as the authorities government by following a policy of diversifying the sources of income for the Iraqi economy and raising the level of domestic production in order to reduce imports that lead to an increase in the demand for the dollar on the one hand and its leakage to the outside world on the other hand

Keywords: monetary policy, exchange rate, broad money supply, foreign currency sales, foreign reserves

INTRODUCTION:

Monetary policy is part of the macroeconomic policy, as it plays an effective role by regulating the money supply and controlling liquidity and bank credit. The local currency and other problems that occur from time to time, and this is when the appropriate conditions are available for it to intervene with its procedures and tools, in order to achieve stability in line with the desired level of economic activity.

The stability of exchange rates is one of the priorities of the monetary policy objectives that it seeks to achieve in order to maintain the stability of the currency value, the general level of prices and more control over inflation rates.

And that the monetary authority usually uses a set of quantitative and qualitative tools in order to reach the desired goals, including achieving stability in the exchange rate, and quantitative tools include (rediscount rate, open market, and reserve ratio) as these tools enable the central bank to influence the volume of supply In general, without distinguishing between the various sectors and economic activities, as for qualitative tools, which include (interest rate, exchange rate and moral persuasion), these tools are used to influence the cost of credit.

The exchange rate is one of the economic and financial indicators that express the quality of the economic performance of any country, and the exchange rate represents the backbone on which the economies of any country in the world depend, whether developed or developing, so most governments seek to adopt policies aimed at ensuring

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the stability of the exchange rate their currencies to avoid the sharp fluctuations experienced by currencies from time to time. The exchange rate also plays an important role in monetary policy because of its use as a target, as a tool, or simply as an indicator of the competitiveness of countries through its impact on the components of economic growth such as investment and the degree of openness to international trade.

As for Iraq, the major shift in monetary policy after 2003 and the accompanying weak financial system and rentier economy, in addition to the weakness of the flexibility of the productive system, with the increasing volume of public spending, especially operational spending, as well as the large rise in the volume of banking liquidity, all of these led to Making monetary policy channels and tools ineffective in the Iraqi economy, which imposed on the monetary authority represented by the Central Bank of Iraq a constraint in achieving monetary stability, thus tying it up and making it in front of very limited options to influence the macroeconomic variables, and the Central Bank of Iraq was left with nothing but resort to a price channel exchange and take it as a nominal anchor for monetary policy through the foreign currency sale window.

Research problem:

The Iraqi economy is an economy with very weak productivity, and therefore it depends in its production on imports to a large extent, and that fluctuations in the exchange rate lead to fluctuations in the prices of goods and services imported from abroad, because the exchange rate directly affects that, and thus fluctuations in prices are Exchange has an impact on the economy as a whole, and through that, the study problem can be formulated as follows: What is the extent of the impact of monetary policy in Iraq on the stability of the exchange rate?

Hypothesis:

The study starts from the hypothesis that the monetary policy variables play a direct role in the positive impact on the exchange rate.

Importance Of Studying:

The importance of the study lies in explaining the role of monetary policy in the Iraqi economy and analyzing developments in the base and parallel exchange rates, as well as showing the impact of some monetary policy variables on the stability of the local currency exchange rate in Iraq for the period 2004-2021.

Objectives of the study:

measuring the impact of some monetary policy variables (wide money supply (M2), foreign currency window sales and foreign reserves) on the exchange rate of the Iraqi dinar.

Methodology:

The inductive approach will be used by extrapolating the reality of monetary policy and analyzing some quantitative and qualitative tools and their impact on the stability of the exchange rate in Iraq and supporting the inductive approach with standard analysis of the relationship between some of the study variables to show whether or not the hypothesis is valid.

Temporal And Spatial Boundaries:

1. Temporal boundaries: The temporal boundaries included the period (2004-2021), since this period witnessed many changes in monetary policy in Iraq, the most important of which was the independence of the Central Bank of Iraq and the change in the currency used.
2. Spatial boundaries: Spatial boundaries are included in the Iraqi economy.

THE SECOND TOPIC
THEORETICAL FRAMEWORK FOR MONETARY POLICY AND OIL PRICES

Firstly. Monetary Policy Concept:

Monetary policy is one of the macro policies established and implemented by the monetary authorities represented by the Central Bank, through the banking system in coordination with the financial system through the mutual influence between the banking system and the financial system, whose institutions are insurance companies, financial markets and investment banks. In its general form, it flows into the money supply (Dagher, 2019, 249).

Monetary policy is also represented as a set of measures and procedures carried out by the monetary authorities, and through these measures, monetary affairs are controlled as well as credit, and this is done by following a monetary policy that affects the amount of money in a way that suits the special circumstances of a country's economy, and aims Monetary policy with these measures aims to inject economic activity with an additional monetary stream or absorb excess liquidity, and this depends on the economic conditions of each country (Hafez, 2021, 8).

Monetary policy defines a set of measures aimed at regulating the money supply or managing the money supply and the exchange rate and then influencing the economic activity of the country in order to achieve predetermined economic goals that

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the monetary authorities want to reach (Al-Jumaili, 2015, 34).

Secondly. Types of Monetary Policy:

There are two types of monetary policies pursued by the monetary authorities depending on the economic conditions, represented in an accommodative monetary policy (expansionary) and a strict monetary policy (contractionary). Through which it aims to raise the levels of the money supply and reduce interest rates to pay banks and expand the granting of credit to finance investments and various projects, as the increase in the levels of gross domestic product, i.e. the rise in economic growth leads to a reduction in unemployment levels through the creation of more job opportunities, and then the Monetary policy here is a "facilitating monetary policy." It should be noted that the decline in inflation rates or their movement within acceptable frameworks helps the monetary authorities to adopt an expansionary monetary policy, enabling them to raise the growth of the money supply, and this leads to stimulating economic activity without causing inflationary pressures. Monetary policy The sudden expansionism pursued by the monetary authorities, which aims to increase the level of output and reduce unemployment rates, leads to achieving the goal if the increase in the money supply is not expected, and in the event that the monetary authority anticipates the upcoming rise in the money supply and thus the sudden and rapid increase will not be effective and the monetary authorities will not achieve The desired goal is to increase production and reduce the unemployment rate, or it will lead to higher prices, so the success of monetary policy depends on the accuracy of individuals' expectations about the effectiveness of the policy. On the other hand, in cases of economic prosperity (high levels of economic activity) and high inflation rates, the monetary authorities operate To adopt a set of measures at the level of monetary policy, through which it aims to reduce growth in the money supply and increase interest rates, which weakens the ability of banks to grant credit in order to curb inflationary pressures, and in this case monetary policy is called a strict policy, i.e. deflationary monetary policy (Idris, 2021, 16-17).

Friedman, the leader of the monetary school, believes that the main cause of economic fluctuations such as inflation, stagnation, and others result from fluctuations in the money supply, and this indicates the positive interrelated relationship between economic cycles and money. The money supply suddenly (Al-Khazraji, 23, 2020).

Third. Concept of Exchange Rate:

The exchange rate expresses the relative price of the currencies of two different countries, that is, it is one unit of the exchange rate of the local currency against the number of units of the foreign currency price, or it is a unit of the foreign currency to buy a number of units of the local currency (Al-Dagher, 2019, 298). Or it is a process of replacing a number of local currency units with a number of foreign currency units, and that the conversion process requires knowing the methods and means affecting the determination of the exchange rate for the currencies of other countries (Anati, 2006, 3)

The exchange rate is also defined as the process of estimating a number of units of the local currency and comparing it with one unit of foreign or foreign currencies, and the exchange process between the local currency and the foreign currency takes place in the foreign exchange market (Mulla and Shaker, 2022, 448).

Fourthly. The importance of the exchange rate:

The importance of the exchange rate can be divided into a group of points as follows: (Al-Dulaimi and Al-Dulaimi, 2019, 62:(

1. The importance of the exchange rate emerges through its use as an indicator to measure the competitiveness of an economy with other economies, where the relationship between the country's competitiveness with the exchange rate is an inverse relationship, where the higher the value of the exchange rate, the less the country's ability to compete in international markets, but in the case of A decrease in the exchange rate of a country will increase the rate of competition for it as a result of the decrease in the prices of goods and services that it provides to other countries, thus increasing its ability to compete in international markets.
2. The exchange rate is used as a policy to achieve economic goals, which is represented by achieving balance at home and abroad. Balance at home is achieved through reaching prices to the level of stability and raising the level of employment and wages. As for the balance abroad, it is represented in achieving balance in the balance of payments, provided that this balance is economic. That is, foreign payments must be equal to imports from abroad, and this is achieved through the exchange rate policy.
3. The use of the exchange rate policy enables the economy to achieve the desired goals that the monetary authorities want to reach, through the

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use of the exchange rate policy as a primary goal in the direction of foreign currencies to achieve the goal of reducing inflation or other goals that the monetary authority wants to reach.

4. Resistance to inflation, as raising the value of the exchange rate leads to a decrease in imported inflation and an increase in the level of competitiveness of institutions, and that France was the first to adopt this policy (Al-Ali and Al-Ammari, 2019, 46.(

Fifth. previous studies

1. A study (Al-Wandawi, 2010) entitled (Measuring the effect of the general level of prices and money supply on the exchange rate of the Iraqi dinar for the period 1980-2002), the study aims to find out which monetary variables have a greater impact on the exchange rate of the Iraqi dinar, which is represented by the consumer price index The narrow money supply, based on the descriptive analysis methodology and the partial adjustment model, and the study concluded that the general level of prices is what causes the deterioration of the value of the Iraqi dinar against the dollar in the short term, and that the narrow money supply had a lesser effect in the short term. The partial adjustment is based on an economic principle that includes minimizing the costs incurred by society as a result of the deviation of the actual exchange rate from the desired level. The study recommended that the monetary authorities intervene during the short and long term in the foreign exchange market in order to maintain the value of the Iraqi dinar.
2. A study (Qasim, 2011) entitled (Monetary and Fiscal Policy and Control of Inflation Variables and Exchange Rates). The study aims to coordinate between monetary and fiscal policy for the purpose of controlling inflation rates through the exchange rate. The Central Bank of Iraq and the government, which begins through the harmonious relationship between finance and the central, with the aim of achieving stability in both the exchange rate of the Iraqi dinar or its external value, as well as the stability of the internal value of the currency and its safety by controlling inflation rates, and the study concluded that there was no harmony between stability The price provided by the monetary authorities by reducing inflation rates to one decimal place in addition to the stability of the exchange rate for four consecutive years and building a high reserve that supported the local currency, with the fiscal policy that was characterized by a unilateral revenue policy dependent on oil, which with high wages does not allow the generation of job opportunities, but rather The opposite was a generator of unemployment.
3. A study (Abdul Karim and Al-Wahili, 2018) entitled (The Impact of Foreign Currency Sale Window Sales on Exchange Rate Risks, An Analytical Study in the Central Bank of Iraq), the study aims to know the role of the foreign currency window of the Central Bank of Iraq in affecting the risks of exchange rate fluctuations The Iraqi dinar against the dollar, during a period of time extending from January 2014 until June 2017, and the study relied on the statistical method for analyzing the data, and the study reached a set of results, the most important of which are: that window sales have an adverse effect on exchange rate risks, as the increase Foreign currency sales by the foreign currency window reduce the gap between the official dinar exchange rate in the Central Bank and the parallel one in the market and thus reduce the exchange rate risk, in addition to the fact that the reserve of foreign money with the Iraqi Central Bank is the basic rule through which the supply is controlled Money, and the study recommends the need to seek to attract foreign currencies into the Iraqi economy by facilitating investment operations, as well as reducing the differences between the window price and the market price and tightening control over banks and money transfer companies.
4. A study (Khudair and Hassan, 2022) titled (The role of the foreign currency window in stabilizing the exchange rate of the Iraqi dinar and its impact on inflation). The Iraqi dinar against the dollar, by following the analytical method during the period (2010-2021), and the study concluded that the window is working to meet the demand for the dollar through direct sales and transfers in order to cover imports, and the study found that there is an inverse relationship between window sales and the parallel exchange rate The study also concluded that raising window sales negatively affects foreign reserves with the Central Bank of Iraq. The study recommended expanding

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foreign investments for foreign reserves and not confining them to foreign banks because that makes them hostage to fluctuations in exchange rates.

THE SECOND TOPIC
MEASURING THE LINEAR IMPACT OF MONETARY POLICY MECHANISMS ON THE IRAQI DINAR EXCHANGE RATE FOR THE PERIOD (2021-2004)

Firstly. Model description:

To ensure the validity of the hypothesis, in this research the relationship between some monetary policy variables will be measured in the dinar exchange rate through the use of the standard program (Eviews12), during the study period, which was represented by the period (2004-2021) and because of the short time series of the study variables, the time series were converted From an annual series to a semi-annual series by relying on the Eviews12 program, and at the beginning the variables are defined in the standard model as follows:

1. Dependent Variable: It expresses the parallel exchange rate of the Iraqi dinar, which can be described as representing the market price.
2. Independent Variable: The independent variable is expressed by a set of monetary tools for the Central Bank of Iraq, which are as follows:

a. The broad money supply (M2).
b. Foreign currency window sales.
c. foreign reserve.

Both the developed Dickie Fuller test and the Phillips Peron test will be relied upon to detect the degree of rest of the time series for all the variables used in the study, as follows:

Firstly. Developed Dickey-Fuller test (ADF):

The expanded or developed Dickie Fuller test (ADF) is one of the tests used to find out the rest of the time series. Table (1) shows the results of the rest of the time series - the developed Dickie Fuller - Iraq, as follows:

It is clear from Table (1) the results of the static time series - Dickie Fuller developer - Iraq. It is clear that all the variables used in the study (the dependent variable) represented by the parallel exchange rate and the independent variables (broad money supply, foreign currency window sales, foreign reserves) were not static At the level (At Level), by relying on the value of (Prob), which was greater than 5% for all variables and in all cases (Without Constant & Trend, With Constant & Trend With Constant,) and therefore the time series for all variables are not integrated at the degree zero.

Table (1)
Time Series Rest Results - Dickie Fuller Developer - Iraq

Variable	At Level			At First Difference		
	With Constant	With Constant & Trend	Without Constant & Trend	With Constant	With Constant & Trend	Without Constant & Trend
	Prob	Prob	Prob	Prob	Prob	Prob
EX	0.5539	0.5817	0.6548	0.2455	0.0337	0.0326
M2	0.9875	0.1437	1.0000	0.0011	0.0053	0.0499
WP	0.2530	0.7955	0.7535	0.1908	0.0341	0.0229
FP	0.6682	0.6438	0.9469	0.0000	0.0000	0.0000

Source: prepared by the researcher based on the outputs of the program (E-views12)

It is clear from Table (1) that all the variables used in the study (parallel exchange rate, broad money supply, foreign currency window sales, foreign reserves) became static at the first difference (At First Difference) by relying on the value of (Prob), which It was less than 5% for all cases (Without Constant & Trend, With Constant & Trend With Constant,) for both the broad money supply and foreign reserves. As for the parallel exchange rate and foreign currency window sales, it became static in only two cases, which are (Without Constant & Trend With Constant & Trend,) Therefore, all variables (the parallel exchange rate, the broad money supply, foreign currency window sales, and foreign reserves) are considered static at the first difference, that is, they are integrated of the first degree.

Secondly. Phillips-Peyron (Pp) Test:

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The Phillips-Pyrone (PP) test is one of the tests used to find out the rest of the time series. Table (2) shows the results of the rest of the time series - Phillips-Pyrone - Iraq, as follows:

table (2)

Results of stillness of time series - Phillips Byron - Iraq

Variable	At Level			At First Difference		
	With Constant	With Constant & Trend	Without Constant & Trend	With Constant	With Constant & Trend	Without Constant & Trend
	Prob	Prob	Prob	Prob	Prob	Prob
EX	0.3969	0.9421	0.6441	0.0000	0.0000	0.0000
M2	0.9697	0.7471	0.9992	0.0006	0.0030	0.0038
WP	0.2929	0.9292	0.7013	0.0000	0.0000	0.0000
FP	0.6807	0.5777	0.9352	0.0000	0.0000	0.0000

Source: prepared by the researcher based on the outputs of the program (E-views12)

It is clear from Table (10) the results of the dormancy of the time series - Phillips Byron - Iraq. It is shown that all the variables used in the study (the dependent variable) represented by the parallel exchange rate and the independent variables (broad money supply, foreign currency window sales, foreign reserves) were not static at The level (At Level), by relying on the value of (Prob), which was greater than 5% for all variables and in all cases (Without Constant & Trend, With Constant & Trend With Constant,) and accordingly, the time series for all variables are not integrated at the zero degree.

It is clear from Table (2) that all variables used in the study (parallel exchange rate, broad money supply, foreign currency window sales, foreign reserves) became static at the first difference (At First Difference) by relying on the value of (Prob), which It was less than 5% for all variables used in the study and for the three cases (Without Constant & Trend, With Constant & Trend With Constant.

Third. Model Estimation Results (ARDL):

The results of the estimation of the model (ARDL) are among the initial tests through which the autoregressive model window is opened for the automatically distributed delay periods and the statistical values of the model are identified such as the (R-squared) coefficient of determination as well as the (F-statistic) and (Durbin-Watson) stat) to ensure the validity of the model used and that it is free from the problem of false regression. Table (3) shows the results of the model's estimation of the relationship between the monetary policy variables and the parallel exchange rate, as follows:

table (3)

The results of the model estimation of the relationship between the monetary policy variables and the parallel exchange rate

R-squared	**0.914596**	**Mean dependent var**	**1251.375**
Adjusted R-squared	**0.879658**	**S.D. dependent var**	**84.83371**
S.E. of regression	**29.42906**	**Akaike info criterion**	**9.852149**
Sum squared resid	**19053.52**	**Schwarz criterion**	**10.31019**
Log likelihood	**-147.6344**	**Hannan-Quinn criter.**	**10.00398**

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F-statistic	**26.17778**	**Durbin-Watson stat**	**1.832722**
Prob(F-statistic)			**0.000000**

Source: prepared by the researcher based on the outputs of the program (E-views12)

Table (3) shows the results of the model's estimation of the relationship between the monetary policy variables and the parallel exchange rate. It is clear from the estimation results that the model is fully acceptable, because the probability of accepting the model was significant and less than 5%, as it reached Prob (F-statistic) (0.000000).) which is significant and less than 5%.

As it is clear from Table (3) that the best criterion for measuring the relationship between the dependent variable and the independent variables is the (Akaike info criterion) because its value amounted to (9.852149), which is a lower value than the rest of the criteria represented by (Schwarz criterion, Hannan-Quinn criterion.(

It is clear that the coefficient of determination (R-squared) amounted to (0.914596), meaning that 91% of the changes in the dependent variable (the parallel exchange rate) are due to changes in the independent variables (wide money supply, foreign currency window sales, foreign reserves.

It is also clear that the value of Durbin-Watson stat, which amounted to (1.832722), indicates that there is no autocorrelation problem, being within the required limits (1.5-4)

Fourthly. Bound test:

The standard model (ARDL) tests the existence of a long-term co-integration relationship between the variables of the model, regardless of their degree of repose, whether it is at the first level or difference, or a mixture between the level and the first difference, and the resilience results of the study variables were all stationary at the first difference. Cointegration according to the Bound Test method, lower bounds (Lower Bound) and upper bounds (Upper Bound) and a statistical test (Wald Test) are determined, as the null hypothesis (H0) is tested, that is, there is no cointegration between the dependent variable and the independent variables In contrast, the alternative hypothesis (H1), which states that there is a long-term cointegration relationship between the dependent variable and the independent variables, after which the calculated value (F-Statistic) and (Wald-Statistic) are compared with the tabular values. Table (4) results of the cointegration relationship (Bound Test) between the monetary policy variables and the parallel exchange rate, as follows:

Table (4)
The results of the cointegration relationship (Bound Test) between the variables of monetary policy and the parallel exchange rate

F-Bounds Test		
Test Statistic	**Value**	**K**
F-statistic	**11.89314**	**3**
Asymptotic: n=1000		
Signif.	**I(0)**	**I(1)**
10%	**2.37**	**3.2**
5%	**2.79**	**3.67**

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2.5%	**3.15**	**4.08**
1%	**3.65**	**4.66**

Source: prepared by the researcher based on the outputs of the program (E-views12)

Table (4) shows the results of the cointegration relationship (Bound Test) for the relationship between the policy variables (broad money supply, foreign currency window sales, foreign reserves). Cash and the parallel exchange rate, and the test results show the existence of a co-integration relationship between the dependent variables (the parallel exchange rate) and the independent variables (wide money supply, foreign currency window sales, foreign reserves) by relying on (F-statistic), which amounted to (11.89314). Because it is greater than the lower limit of the parameter (I(0)) which amounted to (2.79) and greater than the upper limit of the parameter (I(1)) which amounted to (3.67) at a significant level of 5%, and therefore we accept the alternative hypothesis that assumes the existence of a cointegration relationship long-term relationship between the dependent variable (the parallel exchange rate) and the independent variables (wide money supply, foreign currency window sales, foreign reserves), and we reject the null hypothesis that assumes that there is no long-term cointegration relationship between the dependent variable (the parallel exchange rate) and the independent variables (The broad money supply, foreign currency window sales, foreign reserves, and the cointegration test is the first (necessary) condition for the existence of the long-term relationship, but it is not the (sufficient) condition, as the sufficient condition is that the error correction coefficient is identical to its terms, which is represented by being negative And morale.

Fifth. Estimating the short and long term relationship between monetary policy variables and the exchange rate:

Table (5) shows the short- and long-term relationship between the monetary policy variables and the parallel exchange rate, as follows:

table (5)

The short and long term relationship between monetary policy variables and the parallel exchange rate

ECM Regression				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**"Prob"**
M2**	**0.000444**	**0.000499**	**0.888698**	**0.3838**
WP**	**-6.433877**	**1.129776**	**-5.694827**	**0.0000**
D(FP)	**0.432803**	**0.806564**	**0.536601**	**0.5969**
CointEq(-1)*	**-0.590591**	**0.070450**	**-8.383176**	**0.0000**
Levels Equation				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**"Prob"**
M2	**0.000751**	**0.000836**	**0.898938**	**0.3784**
WP	**-10.89395**	**1.924878**	**-5.659556**	**0.0000**
FP	**5.781217**	**2.064715**	**2.800008**	**0.0104**
C	**1302.209**	**40.20391**	**32.39012**	**0.0000**
EC = EX - (0.0008*M2 -10.8940*WP + 5.7812*FP + 1302.2093)				

Source: prepared by the researcher based on the outputs of the program (E-views12)

It is clear from Table (6) that all diagnostic tests do not contain problems, depending on their probability value, and the results were as follows: Table (5) shows the results of the relationship in the short term, which can be summarized as follows:

1. The increase or decrease in the money supply did not have an effect on the parallel exchange rate in the short term, because the probability amounted to (0.3838), which is greater than 5%.
2. The increase in foreign currency window sales in the short term by one unit leads to a decrease in

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the exchange rate of the Iraqi dinar in the money market by (-6.433877) units, and this applies with the monetary reality of the Iraqi economy, as currency sales are highly influential and effective in the exchange market And this relationship was at a significant level of 5%, with a probability of (0.00000)

3. The increase or decrease in foreign reserves did not have an effect on the exchange rate of the Iraqi dinar in the money market in the short term, because the probability amounted to (0.5969), which is greater than 5%, and this applies with economic theory and the reality of the Iraqi economy, since the foreign reserve has an effect in the term long term and has no effect in the short term.

It is clear from Table (5) the error correction coefficient (CointEq(-1)*), as it conforms to the error correction condition, being negative and significant, and its parameter is less than one, as it reached (-0.590591), with a probability of (0.00000), i.e. less than 5%, and therefore it is significant. It indicates that the imbalances that occur in the exchange rate in the short term can be corrected by the monetary authorities (the Central Bank of Iraq) by 59% in the long term.

As shown in Table (5), the results of the relationship in the long term, which can be summarized as follows:

1. The increase or decrease in the money supply did not have a long-term effect on the exchange rate parallel to the Iraqi dinar, because the probability amounted to (0.3784), which is greater than 5%, but this does not apply to the reality of the Iraqi economy, since the increase in the wide money supply is in the long term It leads to a decrease in the value of the exchange rate in the parallel market.
2. The increase in foreign currency window sales in the long term by one unit leads to a decrease in the exchange rate parallel to the Iraqi dinar by (-10.89395) units, and this applies with the monetary reality of the Iraqi economy, as currency sales are highly influential and effective in the exchange market, and this The relationship was at a significant level of 5%, with a probability of (0.00000)
3. The increase in foreign reserves by one unit leads to an increase in the number of units of the Iraqi dinar against the dollar (the decrease in the monetary value of the Iraqi dinar) by (5.781217). This applies with economic theory and the reality of the Iraqi economy, because the increase in foreign reserves usually results from a decrease in window sales and this It affects the value of the exchange rate negatively, and this relationship was at a significant level of 5%, with a probability of (0.0104).

Sixthly. Model Diagnostic Tests:

In order to ensure the validity of the results of the model for the study, it must be ensured that the residuals of the model are distributed normally and that the model does not suffer from the problem of autocorrelation and that it contains stability of variance as well as stability of the model and all diagnostic tests are sound and do not contain statistical problems and the results are as shown in the table (6):

table (6)
Model-specific diagnostic tests

Test	Prob. Chi-Square
:Serial Correlation LM Test	0.2928
Test: ARCH	0.9912
Jarque-Bera	0.9145

1. **Autocorrelation test:**

It is clear from Table (6) that there is no Serial Correlation problem, because the chi-square probability of autocorrelation amounted to (0.2928), which is greater than 5%. Therefore, we accept the alternative hypothesis, which states that the model does not contain a problem of autocorrelation, and we reject the hypothesis The nullity states that the model suffers from an autocorrelation problem.

2. **Variation stability test:**

It is clear from Table (6) that there is no problem in the consistency of homogeneity (Test: ARCH), because the chi-square probability of the consistency of homogeneity amounted to (0.9912), which is greater than 5%, and therefore we accept the alternative hypothesis that states that the model does not contain a problem of consistency of homogeneity We reject the null hypothesis, which states that the model suffers from the problem of consistency.

3. **Normal distribution test for residuals:**

It is clear from Table (6) and Figure (1) that there is no problem in the normal distribution of the

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remainder of the model, because the probability (Jarque-Bera) amounted to (0.9912), which is greater than 5%, and therefore we accept the alternative hypothesis that states that the model does not contain a distribution problem We reject the null hypothesis, which states that the model suffers from a problem in the normal distribution of the residuals.

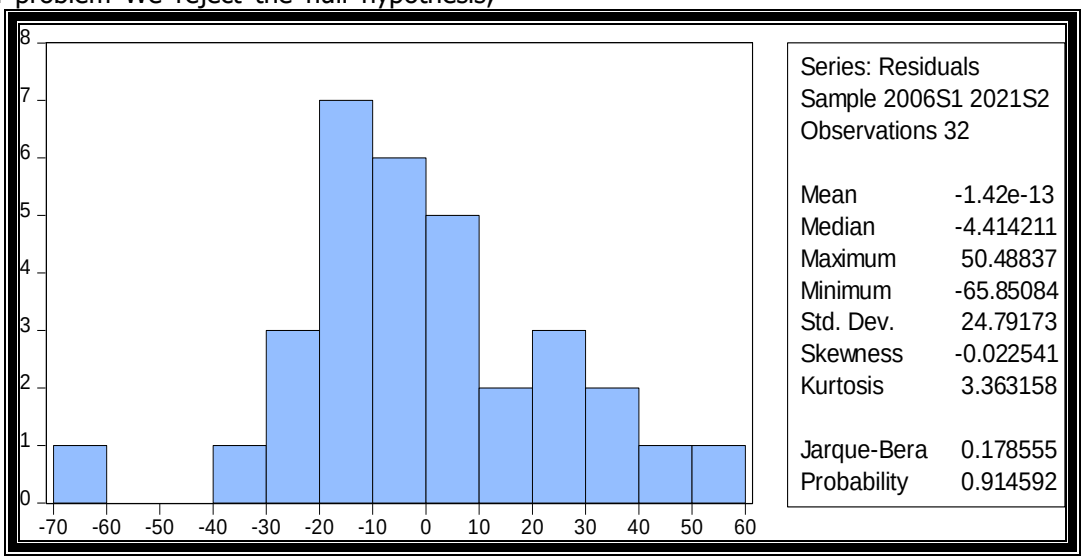

Figure (1)
The normal distribution of the residuals in the model (Jarque-Bera)
Source: prepared by the researcher based on the outputs of the program (E-views12)

Structural stability test:

The structural stability test demonstrates the stability of the estimated coefficients of the correction coefficient are structurally stable and correctly if there is structural stability in the model. Figure (2) shows the cumulative sum of the rest of the model (cusum), as it is clear that the cumulative sum in blue was stable throughout the study period because it falls within the confidence limits 5%, which is the border of the red lines**.**

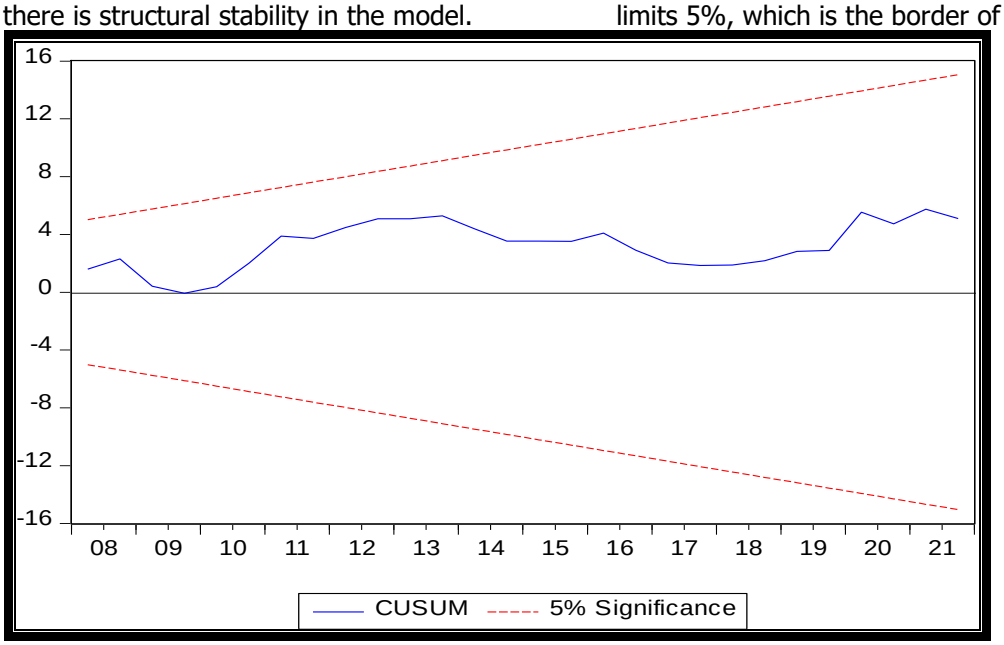

Figure (2)
cumulative sum of model remainder (cusum)
Source: prepared by the researcher based on the outputs of the program (E-views12).

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THE THIRD TOPIC
FINDINGS AND RECOMMENDATIONS
FIRSTLY. RESULTS:

1. The increase or decrease in the money supply had no effect in the short term, because the probability amounted to (0.3838), which is greater than 5%.
2. The increase in foreign currency window sales in the short term by one unit leads to a decrease in the exchange rate in the parallel markets by (-6.433877) units, and this applies with the monetary reality of the Iraqi economy, as currency sales are highly influential and effective in the exchange market, and this The relationship was at a significant level of 5%, with a probability of (0.0000).
3. The increase or decrease in foreign reserves had no effect in the short term, because the probability amounted to (0.5969), which is greater than 5%, and this applies with economic theory and the reality of the Iraqi economy, since foreign reserves have an effect in the long term and have no effect in the short term.
4. The imbalances that occur in the exchange rate in the short term can be corrected by the monetary authorities (the Central Bank of Iraq) by 59% in the long term.
5. The increase or decrease in the money supply did not have an effect in the long term, because the probability amounted to (0.3784), which is greater than 5%, but this does not apply with the reality of the Iraqi economy, because the increase in the wide money supply in the long term leads to a decrease in the value of the exchange rate in the parallel market.
6. The increase in foreign currency window sales in the long term by one unit leads to a decrease in the exchange rate in the parallel markets by (-10.89395) units, and this applies with the monetary reality of the Iraqi economy, as currency sales are highly influential and effective in the exchange market, and this The relationship was at a significant level of 5%, with a probability of (0.00000).
7. The increase in foreign reserves by one unit leads to an increase in the number of units of the Iraqi dinar against the dollar (the decrease in the monetary value of the Iraqi dinar) by (5.781217) and this applies with economic theory and the reality of the Iraqi economy, because the increase in foreign reserves usually results from a decrease in window sales and this It affects the value of the exchange rate negatively, and this relationship was at a significant level of 5%, with a probability of (0.0104).

SECONDLY. RECOMMENDATIONS:

1. The monetary authorities (the Central Bank of Iraq) must follow a sterile monetary policy for the increase in the level of liquidity in order to preserve the local currency and avoid unwanted inflation, which will negatively affect Iraq from an economic and social point of view.
2. Monetary policies that contribute to the investment of hard currencies generated from oil rents must be followed within the Iraqi economy by raising the level of domestic investment, supporting producers, and creating a suitable environment for investment in order to raise productivity and reduce dollar leakage.
3. Modern monetary policies must be followed to maintain the exchange rate of the Iraqi dinar other than the current policy followed of increasing foreign sales, such as the policy of supporting importers or following initiatives of the Central Bank of Iraq that contribute to alleviating poverty in cases of high inflation and depreciation of the local currency, as well About coordination between the Central Bank of Iraq and fiscal policy to reach the best result through the best coordination.
4. The Iraqi government must not rely on the petrodollar only and work to diversify its revenues from hard currencies and follow an exchange rate that contributes to raising the standard of living of individuals and maximizing government revenues, or the central bank should follow a multiple exchange rate policy so that the exchange rate for the purposes of investment goods is less than the price of Exchange for the purposes of consumer goods in order to support investments in the Iraqi economy, which contribute to the diversification of its revenues.
5. The monetary authorities must follow a strict monetary policy capable of absorbing the growth in the money supply and stabilizing the exchange rate of the Iraqi dinar at a level that maximizes government financial revenues and does not affect individuals and economic institutions.

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6. The government authorities must diversify the sources of income for the Iraqi economy and raise the level of domestic production in order to reduce imports that lead to an increase in the demand for the dollar on the one hand and its leakage to the outside world on the other hand.
7. More appropriate monetary policies must be followed in maintaining the stability of the Iraqi dinar exchange rate, such as raising the level of securities sales in open market operations and raising the level of the legal cash reserve to absorb the high quantities of the Iraqi dinar in circulation, as well as following the policy of economic diversification in order to diversify Sources of income and not relying heavily on the dollar from the oil resource.

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