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# Statement of the Impact of Exchange Rate Changes on Inflation Rates in the Iraqi Economy for the Period (2010-2021) Using the Different Time Frequencies Model (Midas)

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#### Abstract:

The research aims to clarify the effect of the exchange rate for the quarterly frequency on economic inflation in the Iraqi economy or not in the Iraqi economy for the period (2010-2021), using the different time frequencies model (Midas), due to the impact of exchange rate fluctuations on economic inflation rates, the research concluded with a set of conclusions, the most important of which was the presence of a positive effect of the exchange rate on inflation rates in the Iraqi economy during the research period; this is due to the dependence of the trade balance in Iraq on a single source represented by oil exports, so the research recommends the necessity of developing non-oil economic sectors in order to make the Iraqi economy more flexible, to reduce the impact of external shocks, which the Iraqi economy was exposed to during the research period.

Keywords: Exchange rate, inflation rates, different time frequencies model (Midas).

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#### Introduction

The Iraqi economy was distinguished by its independence after 2003 in the work of the Central Bank, through the issuance of Central Bank Law No. 56 of 2004, as the monetary authorities followed the currency auction policy with the aim of controlling fluctuations in exchange rates, The relationship between the exchange rate and inflation rates is considered one of the vital economic relationships that affect the stability of the economy and lead to changes in the livelihood of the population, The Iraqi economy has witnessed major transformations since 2003, as the country was exposed to major changes in exchange rates and inflation as a result of several factors, including changes in oil prices, economic policies, and political conflicts, this research aims to study the impact of exchange rate changes on inflation rates in the Iraqi economy for the period from 2010 to 2021, by analyzing economic data and verifying the relationship between the two variables, the research also aims to identify effective economic policies to control inflation rates in light of exchange rate changes, this policy has proven effective in controlling changes in the Iraqi dinar exchange rate against the US dollar, through oil sales and foreign currency obtained by the Central Bank, which constitute a striking force for the Central Bank with the aim of achieving stability in the exchange rate, the intervention of the Central Bank of Iraq had a positive impact on the currency auction, through stabilizing the exchange rate in Iraq during the study period.

A group of previous studies have proven a set of important results regarding the impact of changing exchange rates with inflation rates, as researcher Adham Al-Barmawi proved in (2022) through his study of the impact of asymmetric shocks to the exchange rate on inflation rates using the (NARDL) model that the inflation rate in the short term is affected by positive shocks to the exchange rate, and Muhammad Baraka and Muhammad Jabouri also confirmed that fixed systems are negatively and morally affected by inflation rates, while there is a positive effect of the floating system on inflation in their study the impact of the nature of the exchange rate system on inflation using Batel data (panel Data) (2014), and also the study of Ali Abdul Jalil Al-Sheikhli and Majnah Fouad, (2022) The impact of fluctuations in the official exchange rate and economic openness on inflation and the trade balance in Algeria compared to some Arab countries during the period (1990-2020) using (PANEL ARDL, PANEL NARDL) found a long-term relationship between the independent variables, and that exchange rate fluctuations have an inverse effect on Long term inflation rate.

#### The first axis: Study methodology

The study methodology consists of the following:

## 1. Research problem

The Iraqi economy suffered from a significant deterioration, represented by the economic shocks and crises it was exposed to during the period after 2003, not to mention the lack of coordination between macroeconomic policies, which have generated and, through their work, postponed crises for the Iraqi economy and given the importance of the role of the exchange rate in addressing economic phenomena, including economic inflation.

## 2. Research hypothesis

The research is based on a fundamental hypothesis that there is a significant positive effect of the independent variable, represented by the exchange rate on the dependent variable, represented by inflation rates in the Iraqi economy for the period (2010-2021)

#### 3. Research objective

The research aims to analyze the relationship between the exchange rate and economic inflation, by using the modern methodology of joint integration according to the model of different time frequencies (Midas). Research methodology: The methodology adopted in this research is the standard quantitative method by applying the model of different time frequencies (Midas) for estimation, and conducting the necessary tests for analysis between the independent variable and the dependent variable.

- 4. Research Limits
- Spatial Limits: The Iraqi Economy
- ➤ Temporal Limits: The research covers the time (2010-2021)

#### 5. Research Structure

The research was divided into three axes, the first axis included the conceptual framework of the exchange rate and inflation, the second axis was concerned with analyzing the relationship between the exchange rate and inflation rates in the Iraqi economy for the period (2010-2021), the third axis was concerned with analyzing the impact of the exchange rate on inflation rates in the Iraqi economy for the period (2010-2021)

The study concluded with a set of conclusions and recommendations.

The second axis: The conceptual framework for each of (the exchange rate and inflation rate )

First, I will discuss the concept of the exchange rate and its types.

1. The concept of the exchange rate and its importance: The exchange rate is an important element in international economic relations and an essential part of the daily work of economic units, as a result of the expansion of the volume of international economic relations between different countries of the world, the importance of regulating foreign exchange dealings and determining an exchange rate for each currency against other foreign currencies came, on the basis of which the value of foreign goods is determined in local currency (Abdul Rahman, Zaki: 2007, 251),this strategic importance of the exchange rate is confirmed by the development and growth in international trade and financial relations, in addition, the exchange rate is a basic tool for economic policy in the country, it can even be considered a symbol expressing the economic and political strength of the state (Bin Al-Zawi: 2018, 14), the exchange rate means the number of units of foreign currency that must be paid to obtain one unit of local currency, and this is called the local currency exchange rate, this definition can reflect the foreign currency account in terms of units of local currency, and this is called the foreign exchange rate (Khalil: 838: 2007)

The exchange rate is characterized as a link between the value of goods and assets in local markets and their counterparts in foreign markets. After the exchange rate, it is an important tool for monetary policy in linking the local financial assets market with the global financial assets markets; because it plays a role in directing investment in local or foreign assets and the exchange rate plays a role in allocating local resources (Al-Sadiq 2008: 51), it also plays a developmental function by using the exchange rate to increase certain exports to certain regions, it also works to dispense with industrial branches and replace them with imports whose prices are lower than local prices, the exchange rate also affects the commodity and geographical composition of foreign trade of countries in a positive or negative way, there is a distribution function that the exchange rate harms at the level of the international economy due to its association with foreign trade through the process of trade exchange between countries, as it is done through prices, thus, the exchange rate is a tool that links the local economy with the global economy, and shows the purchasing power of the local currency abroad, and even within the country (Al-Dagher 2018: 300).

2. Types of dollar exchange rate: There are many types of exchange rates, the most important of which are:

A. Nominal exchange rate and real exchange rate: The exchange rate is defined as the price of a foreign currency in terms of local currency units, or it is the relative price of the currencies of two different countries (Al-Abbas: 2003, 2), this definition reflects the calculation of the local currency in terms of units of foreign currency, what is meant by the definition is the nominal exchange rate, i.e. the current currency price, which does not take into account its purchasing power of goods and services between the two countries, i.e. its calculation depends on the current price, taking into account the effect of the inflation rate on the currency of the two countries, thus, it may not fully reflect the change in the real value of the currency, as for the real exchange rate, it is the nominal exchange rate approximated to changes in foreign and local exchange (Al-Rawi 2008: 7), it is the price of the real foreign goods basket linked to the local price, therefore, any decrease in the real exchange rate after a real improvement in the value of the local currency and the increase in the real exchange rate means a decrease in the price of local goods compared to the price of foreign goods, and the real exchange rate of a currency is the price that reflects the real amount of the increase or decrease in the exchange rate of this currency, i.e. it reflects its purchasing power (Al-Hasani, 2009: 149)

B. Cross-currency exchange rate: The exchange rate is known as the price of a local currency in terms of foreign currency units, but there is another type of exchange rate,

called the cross-currency exchange rate, which is the third exchange rate of the local currency in relation to more than one foreign currency (Al-Mashhadani, 2017: 104)

C. Future and forward exchange rate: Current buying and selling operations are the most important in the foreign exchange market and their prices have the greatest importance; Because it constitutes a large percentage of the total transaction, and because price movements are constantly connected and delivery takes place in spot transactions during the day of the transaction, unlike the day on which the transaction was contracted, and accordingly, the exact concept of the spot exchange rate can be identified, which means the exchange rate through which currencies are traded with immediate delivery (Sayed, 2007: 44), the Effective exchange rate: It is a weighted arithmetic average of the bilateral exchange rate between the local currency of the country and a number of foreign currencies, and the relative shares of foreign trade of countries are used as weights to reflect the relative importance of trading partners, if the effective exchange rate is adjusted by inflation rates in the local economy and trading partners, it turns into a real effective exchange rate, however, if the nominal exchange rate is used to calculate the effective exchange rate, it is called the nominal effective exchange rate (Hussein: 23:2007)

#### Second: The theoretical and conceptual framework of inflation rates

1. The concept of inflation: Inflation can be defined as a general increase in the price rate over a period of time, usually a year, and not every increase in prices can be considered inflation, as the price of a specific commodity or a group of commodities, such as agricultural commodities, may rise as a result of emergency factors and circumstances, the occurrence of the phenomenon of inflation is associated with two things: (Yas: 2013, 48)

First: That the price increase is clear, comprehensive and tangible in society.

Second: That the price increase extends over a period of time, i.e. that it leaves a tangible impact, and this affects purchasing power, if purchasing power decreases, inflation decreases with the stability of the level of monetary income, and this leads to a decrease in the quantity of goods and services that an individual obtains with the same monthly income.

- 2. Definition of inflation rates: Inflation can be defined as the state in which the demand for goods and services, and for cash income flows, increases (Al-Sabaawi: 2008, 50), some economists have defined it as an economic phenomenon that results in an increase in prices resulting from an imbalance between demand and supply of goods and services, This leads to a gap between demand and supply that is linked to purchasing power, and this increases the available supply (Al-Kafri 2004, 32), in fact, inflation is a complex economic problem that is sometimes difficult to explain, the multiplicity of its causes and the diversity of its effects, which result from it (Al-Assaf 2021: 158), as for the Marxist schools, they defined inflation as determining the movement of prices, i.e. the increase in costs in producing goods and services, as Keynes defined it as the increase in actual demand over the available supply of goods and services, which leads to an increase in prices, which is linked to many economic variables, including: available supply, actual demand, interest rates, and the level of employment in the production aspects, in addition to the amount of money offered for circulation (Al-Kafri: 2004, 34), based on the above, a more comprehensive definition of inflation can be reached as a continuous and increasing rise in the prices of goods and services, whether this rise is the result of an increase in the amount of money in a way that exceeds the amount of goods and services available or it is an increase in production that is less than the total demand due to the increase in production costs.
- 3. Types of inflation: Economic theory divides inflation into the following types: (Al-

Hallaq, 2016: 141, 142)

- A. Comprehensive inflation: It is a type of deadly inflation, as prices are random and production is disorganized.
- B. Creeping inflation: It is characterized by a slow rise in prices, and individuals can expect it, and individuals are willing to keep money, and in long-term contracts; because the prices, and the costs of the goods and services they buy and sell will not deviate much from their current status (Samuelson 2006: 611)
- C. Hyperinflation: After hyperinflation, one of the most dangerous types of inflation, this type appears as a result of an excessive increase in the amount of money in circulation with a large shortage in the amount of peaceful supply, and this is a result of unusual circumstances, whether economic or political, and prices may rise by (50%) monthly or (100%) annually, and the speed of money circulation also increases, and money stops working; because money is a store of value or a store of savings, and if these conditions continue, it will lead to the collapse of the monetary system as well as the collapse of the currency in the country, an example of this is what happened in Iraq before the occupation in the nineties of the last century due to the economic sanctions imposed.
- D. Stagflation: This type of inflation is the result of rising prices coupled with rising unemployment, as the economy witnesses a stagnation in goods and services due to rising unemployment rates and low real income rates among individuals.
- E. Real inflation: This is one of the types of inflation, and it can also be defined as the situation in which the increase in aggregate demand cannot affect the increase in aggregate supply due to the macro economy reaching the point of full use, which leads to an increase in the general price level in general (Shamiya, 2003: 361)

Based on the above, the rise in prices in the operating stage is incomplete, and is not considered inflation because cash incomes increase with an increase in the prices of goods and services, and supply grows to meet aggregate demand in the economy.

# The third axis: Analysis of the relationship between the exchange rate and inflation rates in the Iraqi economy for the period (2010-2021)

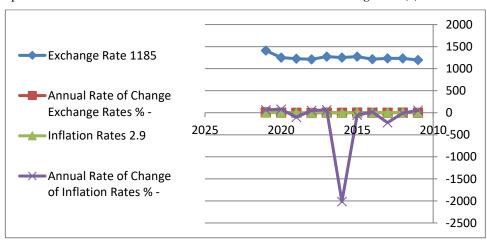
Table No. (1) below shows that the exchange rates in the Iraqi economy witnessed a clear fluctuation during the research period, and this can be followed through the development of the exchange rate in Iraq through Table (1), which indicates the development paths of the exchange rate of the Iraqi dinar against the US dollar for the period (2010-2021), as it is noted that the exchange rate of the Iraqi dinar rose in the year (2012), as a result of the increase in demand for the US dollar in the Iraqi market and the reason for this is the US sanctions, while the period between (2012 - 2016) witnessed a noticeable stability in the exchange rate of the Iraqi dinar, which increased the confidence of individuals in the local currency and somewhat limited the phenomenon of (revolving) that the Iraqi economy was suffering from, in the year (2017), the exchange rate rose to (1274) dinars, and this is due to the reflection of the independence of the Central Bank on the management of monetary policy in Iraq, after which the exchange rate began to fluctuate between decrease and increase, as it reached (1250) dinars in the year (2020), and the reason for this is the return of confidence in the value of the Iraqi dinar and its ability As a store of value, which in turn encourages attracting investment to Iraq, as for economic inflation rates, a slight increase in the inflation level was noted in the year (2012), reaching (6.056%), and the reason may be due to the increase in government expenditures during that period, which accompanied a rise in crude oil prices, to then decline again in the year (2013) to record (1.856%); This is due to the failure to approve the state's general budget, and public spending was limited to armament; due to the terrorist attacks that Iraq was exposed to during the second half of the year (2014) by ISIS, as inflation began to decline after the year (2016) with the stability of the Iraqi state, and the elimination of terrorist attacks, which coincided with the rise in the general price level, reaching (0.068%), and the same is the case for the rest of the study years until the year (2021) to reach (2.8), and this confirms that the performance of the overall economic policies in Iraq has improved during that period.

Table No. (1) Development of prices and inflation rates in Iraq for the period (2010-2021)

| Years | Exchange<br>Rate | Annual Rate of Change<br>Exchange Rates % | Inflation Rates | Annual Rate of<br>Change of Inflation<br>Rates % |
|-------|------------------|---|-----------------|--|
| 2010  | 1185             | -   | 2.9             | -  |
| 2011  | 1196             | 0.919732                                  | 6.5             | 55.38462   |
| 2012  | 1233             | 3.000811                                  | 6.056           | (7.33157)  |
| 2013  | 1232             | (0.08117)                                 | 1.856           | (226.293)  |
| 2014  | 1214             | (1.4827)                                  | 2.242           | 17.21677   |
| 2015  | 1274             | 4.709576                                  | 1.439           | (55.8026)  |
| 2016  | 1253             | (1.67598)                                 | 0.068           | (2016.18)  |
| 2017  | 1274             | 1.648352                                  | 0.203           | 66.50246   |
| 2018  | 1210             | (5.28926)                                 | 0.404           | 49.75248   |
| 2019  | 1225             | 1.22449                                   | 0.201           | (100.995)  |
| 2020  | 1250             | 2   | 1.009           | 80.07929   |
| 2021  | 1410             | 11.34752                                  | 2.8             | 63.96429   |

Source: Prepared by the researchers based on the following data:

- Central Bank statistical bulletins 2010-2020
- Ministry of Finance Statistical Department General Budget Table
- The annual rate of change was calculated wherever it was found in the thesis according to the following formula: 100\*yt-yt-1=R, where: F-1 Annual rate of change: The value of the variable in the current year 1: The value of the variable in the previous year. The path of the exchange rate and inflation rates in the Iraqi economy can be explained during the research period using the graphic form (1)
- 3: Description of the model In order to test the research hypothesis and achieve its objectives, the independent variable was identified, which is the exchange rate, and the dependent variable, which is the inflation rates, as in the following table (2):



Source: Prepared by researchers based on data in Table (1)

The third axis: Results of the analysis of the relationship between the exchange rate and inflation rates in the Iraqi economy for the period (2010-2021)

3-1: Description of the model In order to test the research hypothesis and achieve its objectives, the independent variable, which is the exchange rate, and the dependent variable, which is inflation rates, were identified as in the following Table (2):

Table No. (2) for study variables

| Symbol | Function               | Variable | Description          |
|--------|------------------------|----------|----------------------|
| Pr     | Parallel exchange rate | 1X       | independent variable |
| Ln     | Inflation rate         | Y        | Dependent variable   |

Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition.

Based on the theoretical framework of the study, the following relationship is assumed to be tested:

$$Yt = \beta Xt + f(\lambda 1, \lambda 1X_{t/s}^{H}) + \pounds t....(1)$$

Where (Yt) denotes the dependent variable, inflation, which is measured at a low frequency during the study period.

As for (X1), the independent variable, the parallel exchange rate, which is measured at a high frequency, and its effect on the dependent variable is studied.

f: A function that shows the effect of high-frequency data on low frequency.

XH t/s: A set of weighting functions that show the effect of high-frequency data during the period on low-frequency data during the period.

- β: The parameter of the total effect of the high-frequency variable on the low frequency.
- ^1,^: The parameters of the partial effect for each frequency interval s and in the period t.
- 2-3. Results of the stability test for the study variables.

Here we will test the stability of the study variables using the (Eviews10) program; in order to know whether the variable is stable or unstable, i.e. whether it contains a unit root with specifying the integration order. Detecting the stability of time series has become very important in estimating standard models; in order to get rid of the problem of false regression during estimation, in addition to the fact that stable time series can get rid of the shocks that they encounter, and then return to the equilibrium state in the long term, therefore, we will use unit root tests to ensure the stability of time series, and these tests are (ADF, PP), after conducting one of these tests, we obtained the results shown in the following table:

Table No. (3) Results of the stability of the model residuals

| UNIT ROOT TEST TABLE (PP) At Level)  |                 |             |         |
|--|-----------------|-------------|---------|
|  |                 | IN          | Ex      |
| With Constant  | t-<br>Statistic | -<br>1.4916 | -0.7134 |
|  | Prob.           | 0.5352      | 0.8333  |
|  |                 | n0          | n0      |
| With Constant & Trend  | t-<br>Statistic | 1.6023      | -1.4856 |
|  | Prob.           | 0.7875      | 0.8206  |
|  |                 | n0          | n0      |
| Without Constant & Trend   | t-<br>Statistic | 1.0436      | 1.1310  |
|  | Prob.           | 0.2665      | 0.9310  |
|  |                 | n0          | n0      |
| Notes: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant |                 |             |         |

Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition.

From the results of Table No. (3) above, we note that the dependent variable is not stable at the original level, and the independent variable is not stable at the original level of the data according to the pp test. Since all the variables are not stable, their first difference was taken as in Table (4).

Table (4) Results of stability tests for the study variables at the first difference of the data

| )UNIT ROOT T   | TEST TABL       | E (PP) At L  | evel          |
|--|-----------------|--------------|---------------|
|  |                 | IN           | Ex            |
| With Constant  | t-<br>Statistic | -<br>11.8322 | -6.8208       |
|  | Prob.           | 0.0000       | 0.0000        |
|  |                 | ***          | ***           |
| With Constant & Trend  | t-<br>Statistic | -<br>11.8037 | -6.9020       |
|  | Prob.           | 0.0000       | 0.0000        |
|  |                 | ***          | ***           |
| Without Constant & Trend                                       | t-<br>Statistic | -<br>11.8743 | -6.7082       |
|  | Prob.           | 0.0000       | 0.0000        |
|  |                 | ***          | ***           |
| Notes: (*)Significant at the<br>Significant at the 1%. and (no |                 |              | the 5%; (***) |

Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition.

We find from the results of Table (4) that all the data became stable when taking the first difference of the variables, according to the pp test, and at significance levels (1%), as the calculated value was greater than its tabular value at a significance level (5%), which means rejecting the null hypothesis (0-0), and accepting the alternative hypothesis (H1B0), which confirms the creation of the time series from the unit root.

3-3 Using MIDAS models to measure the impact of the exchange rate on inflation in Iraq: It is proposed to estimate the impact of the exchange rate at a quarterly frequency on inflation at a monthly frequency in Iraq using MIDAS models and the PD/ALMON weighting function using the 12 Eviews program.

Table (5) MIDAS model estimation results

| Dependent Variable:             | IN          |                         |           |          |
|---------------------------------|-------------|-------------------------|-----------|----------|
| Method: MIDAS                   |             |                         |           |          |
|                                 |             |                         |           |          |
| Variable                        | Coefficient | Std.                    | t-        | Prob.*   |
| v ar andre                      | Coefficient | Error                   | Statistic | 1100.    |
| C                               | 6.264601    | 3.976550                | 1.575386  | 0.1237   |
| IN (-1)                         | 0.891082    | 0.039439                | 22.59370  | 0.0000   |
| Page: EX Series: EX(-5) Lags: 8 |             |                         |           |          |
| PDL01                           | 0.004364    | 0.001791                | 2.436602  | 0.0198   |
| PDL02                           | -0.001108   | 0.000451                | -2.45937  | 0.0187   |
| R-squared                       | 0.966522    | Mean dependent var      |           | 1.882000 |
| Adjusted R-squared              | 0.963807    | S.D. dependent var      |           | 1.991548 |
| S.E. of regression              | 0.378880    | Akaike info criterion   |           | 0.989273 |
| Sum squared resid               | 5.311348    | Schwarz criterion       |           | 1.156450 |
| Log likelihood                  | -16.28009   | Hannan-Quinn<br>criter. |           | 1.050150 |
| Durbin-Watson stat              | 1.957907    |                         |           |          |

Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition

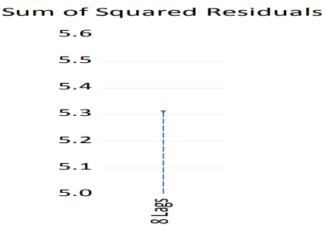
We also note from Table (5) then the choice of the second-degree weighting coefficient, and note the choice of (8) delay periods to explain the effect of exchange rates on inflation in Iraq during the study period, and note that the value of the determination coefficient (2) reached (0.96), which gives explanatory power to the model, i.e. the independent variables explain the changes that occur in the dependent variable by (92%), and the remaining percentage of (8%) is due to the effect of other variables not included in the model, the value of (Durbin-Watson statistic) was about (195), and this value indicates that the model is free from the problem of autocorrelation, using the (Quinn Hannan Schwarz Akaike) criteria, and this leads to estimating the model in which the random error values are as low as possible, according to the following graph No. (2):

| EX\EX(-5) | Lag    | Coefficient            | Distribution |
|-----------|--------|------------------------|--------------|
|           | 0*     | 0.003255               | Ŷ            |
|           | 1 2    | 0.002147<br>0.001038   | 1            |
|           | 3      | -7.01E-05              | I            |
|           | 4      | -0.001179              | •            |
|           | 5      | -0.002287              | •            |
|           | 6<br>7 | -0.003395<br>-0.004504 | 1            |

Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition

### 3-4. Results of the lag test.

The following figure (3) represents the results of the AIC test to determine the best model.



Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition

Since the exchange rate data lag is compensated for by 8 months, according to the information standards we need (8) months of exchange rate data to be able to explain the inflation changes for each quarter.

3-5 Model Quality Test: The second part of Table (3) shows the results of the estimation of the coefficients and statistics of the estimated model (PDL Almon), as the weighting coefficients were significant at( 5.0%), i.e. there is a significant positive effect but eight months, from the exchange rate in inflation in Iraq, we note that inflation responds to changes in the exchange rate, which is consistent with economic theory, theoretically, the exchange rate can have a negative relationship with inflation, according to the exchange policy concluded by the monetary authority. According to the third part of Table (3), we note that there is a direct relationship at the beginning of the research phase, i.e. the increase in the exchange rate led to an increase in inflation, after which the relationship took an inverse direction between the exchange rate and inflation. With the increase in the exchange rate, inflation began to decline in Iraq during the research phase, and the reason is due to the increase in the prices of imported goods, which led to a decrease in demand for these goods, and an increase in demand for local goods. This was clear, especially in agricultural goods, which led to an increase in the prices of these goods domestically, unlike what they were in the past compared to imported goods.

3-6 Normal distribution of residuals: The nature of the distribution of residuals is revealed by comparing the statistic (bera-jarque) with the tabular value (Square Chi) at a degree of freedom of 2%, and a significance level of (5%), according to Figure (4), we note that the test result was not significant because the value of A is greater than (5.6), which supports that the residuals are subject to the normal distribution.

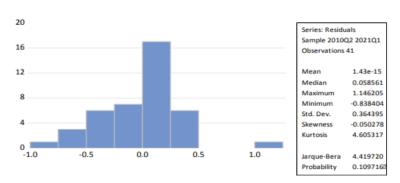
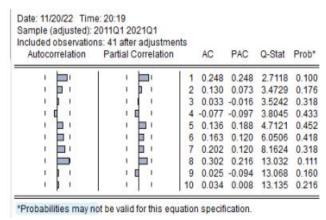


Figure (4) Normal distribution of residuals

Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition

7-3 Autocorrelation test for errors: To ensure that there is no autocorrelation, we resort to autocorrelation tests, as shown in the following table: Table No. (6) Results of the autocorrelation test for errors.



Source: Prepared by researchers based on the outputs of the Eviews program, twelfth edition

From Table No. (6) above, we notice that all columns are within the confidence limits, so we accept the null hypothesis of the absence of autocorrelation.

#### **Conclusions and Recommendations**

First: Conclusions: This study reached a number of conclusions, the most important of which were the following:

1.After the exchange rate is a link between the local and global economy, by virtue of the exchange of goods and finance between countries, it also represents the woman that reflects the state's commercial position with the outside world, the official exchange rate has witnessed stability in recent years, reaching an average of (1168.2). The reason for this is due to the monetary policy followed by the Central Bank, and what this policy achieved in terms of stability in the exchange rate rate; as confidence began to return to the value of the Iraqi dinar as a store of value, which in turn encourages attracting investment to Iraq.

- 2. There is a direct relationship at the beginning of the research phase, meaning that the increase in the exchange rate led to an increase in inflation. After that, the relationship took an inverse direction between the exchange rate and inflation, with the increase in the exchange rate, inflation began to decline in Iraq during the research phase, the reason is due to the rise in the prices of imported goods, which led to a decrease in demand for these goods, and an increase in demand for local goods. This was clear, especially in agricultural goods, as these goods rose domestically, unlike what they were in the past compared to imported goods.
- 3. Monetary policy plays an important role in controlling inflation rates through changes in the exchange rate that affect imported goods, because economic stability is affected by changes in the exchange rate.

Second: Recommendations: This study concluded with a set of recommendations, the most important of which were the following:

- 1. The weighting coefficients were significant at (5.0%), meaning that there is a significant positive effect for every (08) months of the exchange rate on inflation in Iraq, we note that inflation responds to changes in the exchange rate, which is consistent with economic theory, Theoretically, the exchange rate can have a negative relationship with inflation, according to the exchange policy concluded by the monetary authority.
- 2. Adopting modern and accurate methods in order to provide more accurate data on economic variables in Iraq; because this will make the results of the studies more accurate, and they can be used to improve the economic situation in Iraq.
- 3. Working to adopt a monetary policy in the Iraqi economy, a clear monetary policy through coordination between the financial policy, with regard to determining the exchange rate.

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