

MEASURING AND ANALYZING THE IMPACT OF MONETARY POLICY TOOLS IN CONTROLLING INFLATION RATES IN IRAQ FOR THE PERIOD 2004-2022

Khalil Ismail Aziz

College of Administration Economic, Tikrit University, Tikrit / Iraq

Khalil14@tu.edu.iq

Hamad Mahmood

College of Administration Economic, Tikrit University, Tikrit / Iraq

humodsaad2080@tu.edu.iq

ABSTRACT

The study aimed to show the extent of the ability of monetary policy to use its tools and the nature of its work in controlling inflation rates in the Iraqi economy for the period (2004-2022), through the use of the analytical and standard method, and the study showed in the descriptive aspect the relationship between the tools used for monetary policy and the phenomenon of inflation, cash. The results of estimating the relationship in the standard side using the methodology of the self-regression model for distributed slowdown (ARDL) showed that there is a statistically significant relationship between monetary policy and inflation, and the results showed that the Central Bank of Iraq was able through the use of monetary policy tools to reduce an important percentage of inflation rates despite the economic and security conditions that the country is going through.

INTRODUCTION

Monetary policy is crucial to economic policy followed by governments and central banks to control the financial quantities circulating in the economy, and it is used to control inflation growth rates, achieve economic stability by controlling the money supply and interest rates, combating inflation and maintaining price stability, which leads to stimulating economic activity by providing appropriate financing conditions, in addition to controlling interest rates to achieve a balance between savings and investment if monetary policy tools (interest rate, market operations open, statutory reserve rate) which serves to stimulate economic activity and determine how much money is needed in the money market.

The role played by the Central Bank in Iraq is important and decisive in the implementation of monetary policy, as the Central Bank sets interest rates, intervenes in the market to maintain currency stability and inflation rates, follows up and evaluates the economic situation, in addition to taking measures to address any undesirable changes and challenges facing the Iraqi economy, which have a negative impact on the economy and currency.

The dependence of the Iraqi economy heavily on oil revenues leads to an increase in economic fluctuations, and this requires an effective monetary policy that contributes to enhancing economic stability, providing better opportunities for consumers and investors, reducing inflation and stimulating economic growth through good coordination between the government and the Central Bank to ensure the achievement of the desired economic goals.

Research problem:

The research problem is summarized in demonstrating the ability of monetary policy in Iraq through its tools to control inflation rates in a rentier economy that has large financial resources offset by a real sector with very limited production capacities, taking into account the principles of economic theory.

Research hypothesis: The study proceeds from the hypothesis that:

First: Inflation rates in Iraq are affected by monetary policy tools

Second: The existence of a short- and long-term equilibrium relationship between the variables of the study.

The importance of the research: The importance of this study is highlighted by the effective role played by monetary policy in drawing the goals and directions of the Iraqi economy, as well as maintaining price stability and addressing all economic problems, especially inflation that the economy suffers from.

Research Objective: The research aims to study the nature of the work of monetary policy and discuss the most prominent monetary tools used by the monetary authority to achieve its objectives. The applied side of the study tries to identify the most important transformations in monetary policy in Iraq after (2003) and to show the extent to which internal monetary stability has been achieved (stability of the general level of prices).

The first topic**The first requirement / monetary policy in Iraq for the period (2004-2022)**

Within the framework of the economic and political changes experienced by Iraq and the Iraqi economy after 2003 and the passage of the Central Bank Law No. 56, which replaced the old Central Bank Law No. (64) for the year (1976), the Central Bank took the reins and the Board of Directors of the Central Bank of Iraq issued instructions and directives and determined the mechanisms and instructions for monetary policy in Iraq for the purpose of reaching the basic central goals, and the most important of these goals is to raise the purchasing power of the Iraqi dinar and raise its value and maintain its balance against foreign currencies, including against the US dollar, as well as one of the main objectives is to reduce inflation rates as well as to create and manage foreign reserves as it is responsible for issuing currency, and preserving its value outside and inside Iraq (Al-Nasiri, 2015: 27).

Monetary Policy Tools in Iraq:

Monetary policy is considered one of the most significant economic decisions aimed at achieving stability in the economic economy, and work to stabilize exchange rates that give the national economy strength and effectiveness to be able to face economic challenges and fluctuations, through its tools: - (Moussa, 2020: 23).

1. Evolution of the statutory cash reserve ratio during the study period:

The Central Bank has determined the percentage of deposits that are subject to the legal reserve by (25%) of the balance of deposits, whether in dollars or Iraqi dinars, noting that (20%) of these deposits subject to the legal reserve the bank is obligated to maintain at the Central Bank, and (5%) of these deposits subject to the legal reserve is kept by the bank as a cash asset in its treasury, in the event that the bank fails to maintain the reserve, which is equal to the legal reserve ratio, the bank pays a fine to the Central Bank of Iraq equal to interest on Credit plus (5%) on the amount in which the average legal reserve actually held is less than the reserve requirements (Barmawi, 2019: 70).

Table (1) shows the legal reserve in Iraq for the period from (2004-2022), as follows:

Table 1 Growth rate in the legal reserve in Iraq for the period (2004-2022) (million dinars)

Years	Legal reserve	Annual Growth Rate %
2004	1604537	-
2005	2965526	84.8
2006	4078106	37.56
2007	12084441	196.3
2008	19993802	65.45
2009	9416761	-52.9
2010	7155093	-24
2011	7814853	9.22
2012	8624023	10.35
2013	9626882	11.62
2014	10576103	9.86
2015	9390493	-11.2
2016	8707551	-7.27
2017	6505171	-25.3
2018	10409660	60.02
2019	9580388	-7.96
2020	9193395	-4.03
2021	11014941	19.8
2022	12803677	16.3

Source: Researcher's work based on the annual bulletins of the Central Bank of Iraq (2004-2022).

It is clear from Table (1) that the ratio of the legal cash reserve changed during the period (2004-2022), as it reached (1604537) million Iraqi dinars in 2004, and then the Central Bank of Iraq raised the legal cash reserve ratio on all commercial banks in order to follow a contractionary policy in order to increase the percentage of reserves at the Central Bank, this led to an increase in the reserves of the Central Bank until it reached (12084441) million dinars with a increasing rate (196.32%) in 2007, which is the highest growth rate in the mandatory reserves of the bank. The Central Bank of Iraq during the study period, and the reserves continued to fluctuate during the period (2008-2017) between decline and rise as a result of the monetary policy followed, in the case of expansion, the monetary reserve decreases

and vice versa in the case of a contractionary policy with the aim of eliminating inflation and increasing monetary and economic stability in Iraq, and in 2018 it rose at a growth rate of more than 60%, and the period 2020-2022 witnessed a slight increase in the cash reserve ratio.

Evolution 2- The window for selling foreign currency in Iraq.

Among the monetary instruments employed by the Iraqi Central Bank is the window of buying and selling foreign currencies as one of the quantitative tools that have been used to control inflation and stabilize the exchange rate of the local currency against foreign currency in order to stabilize the general level of prices, and this window has been applied since 2003 The Central Bank of Iraq has adopted this strategy to achieve a balance between the foreign currency and the local currency and achieve monetary stability (Wissam, 2012: 73).

Table (2) The central bank of Iraq has purchased and sold dollars for the duration (2004-2022)

Years	Central Bank purchases from the Ministry of Finance (Million USD)	Procurement growth rate %	Central Bank sales of Houla and cash (Million Dollars)	Sales growth rate %
2004	10800			
2005	10600	-1.8		
2006	18000	69.8	2719	
2007	26700	48.3	12982	377.4
2008	45500	70.4	20301	56.3
2009	27000	40.6	29421	44.9
2010	41000	51.8	33977	15.4
2011	51000	24.3	35432	4.3
2012	57000	11.7	44985	26.9
2013	62000	8.7	41005	8.8
2014	47515	-23.3	37165	9.3
2015	32450	31.7	38315	3
2016	25653	-20.9	15710	58.9
2017	40355	57.3	31374	99.7
2018	52229	29.4	38345	22.2
2019	58851	12.6	45315	18.2
2020	30730	47.7	40711	11.4
2021	38628	25.7	29180	28.3
2022	53355	38.1	37726	29.2

Source : The Central Bank of Iraq, the Directorate General of Statistics and Research's annual report for the period (-2004-2022) is released.

Extracting the growth rate from the work of the researcher = *100

Where it is clear from the above table that the general trend of purchases of the Central Bank for the period 2004-2013 is an upward trend, and the cause of this is the increase in the volume of oil revenues during this period and decreased for the period 2014-2016, and the reason for this is the security situation and the departure of many governorates from the control of the state, and these purchases returned to rise during the period 2017-2018 to decrease after the years 2020 and 2021 and rise again during the year 2022. The cause of this can be attributed to the fluctuation in global oil prices.

The Central Bank's sales of foreign currencies during the period 2006-2013 also witnessed successive increases, and the reason for this is the openness of Iraq to the outside world and the increase in the volume of imports, and the period 2014-2016 witnessed a decrease in the volume of sales due to the security conditions witnessed by Iraq, and the period 2016-2022 witnessed a clear fluctuation between the rise and fall in the volume of sales. The cause of this is the actions taken by the monetary authority after the currency sales window was subjected to a lot of criticism.

Evolution of the rediscount price during the study period:

The rediscount rate is one of the oldest tools used by the Central Bank to influence the volume of credit provided by banks to the money market. It refers to the rate of interest at which the Central Bank discounts securities that commercial banks discounted with it in order to obtain cash reserves in order to finance their operations in granting credit to individuals and institutions (Al-Shaibani, 2018, 170). It is clear from Table (3) that the paths of the rediscount rate in Iraq in 2004 was (3.95%) and in 2005 a finger (7%) and as a result of the Central Bank some amendments to it to become (16%) in 2006, then the monetary policy worked to raise the rediscount rate to reach (20%) in 2007.

Table (3) Rediscount rate in Iraq for the period (2004-2022)

Years	Rediscount Price	Years	Rediscount Price
2004	3.95	2014	6
2005	7	2015	6
2006	16	2016	4.33
2007	20	2017	4
2008	16.75	2018	4
2009	8.83	2019	4
2010	6.25	2020	4
2011	6	2021	4
2012	6	2022	4
2013	6		

Source: The Central Bank of Iraq, which has a statistical Bulletin that describes the annual situation (2004-2022), is responsible for this information.

Due to the expansionary monetary policy, the Central Bank returned to reduce the rediscount rate to (16.75%) in 2008, and in this context, the Central Bank has pursued an expansionary monetary policy after it succeeded in reducing inflation rates. In line with the aforementioned and to combat inflation rates, the Monetary Authority returned to reduce the discount rate rate by (8.83%) in 2009, to reach (6.25%) in 2010, and then returned to stabilize from 2011 to 2015 to reach (6%) and returned to decline gradually in other years to be in 2016 by (4.33%). It then declined to stabilize at (4%) from 2017 to 2022.

3- Evolution of interest rate trends during the study period:

The Iraqi economy has witnessed changes since the year (2004) after the adoption of the Central Bank's Law Number (56) during the year (2004), where it went towards openness in order to attract foreign investment and integrate into the global economy, so it was necessary for the Central Bank to take some necessary measures to keep pace with developments and changes in global economies, including making the interest rate by the Central Bank a direct function in inflation and the output gap, i.e. linking the interest rate to the state of the Iraqi economy, where the Central Bank of Iraq raises the interest rate if Inflation in the Iraqi economy was higher than the target rate and vice versa (Al-Obaidi, 2018, 46).

Table (4) Interest rate in Iraq for the period (2004-2022)

Years	Interest Rate (Policy Rate) %	Years	Interest Rate (Policy Rate) %
2004	6.0	2014	6.0
2005	6.3	2015	6.0
2006	10.3	2016	4.3
2007	20.0	2017	4.0
2008	16.7	2018	4.0
2009	8.5	2019	4.0
2010	6.2	2020	4.0
2011	6.0	2021	4.0
2012	6.0	2022	4.0
2013	6.0	Average	7.28

Source: The Central Bank of Iraq, the Directorate General of Statistics and Research, published statistical information for different years and the period (2004-2022).

Table (4) shows the development in the interest rates of the Central Bank of Iraq during the study period, where the interest rate reached (6.0) in 2004, and the interest rate in 2005 (6.3%) and continued to rise until it reached its highest rate during the study period, which is (20.0%) in 2007, the reason for this rise is due to the austerity policy followed by the Central Bank to face the inflation situation during the years 2006 and 2007 respectively, after which the Central Bank of Iraq reduced the interest rate During the period 2008-2022 to (6.0%) and (0.4%) with the aim of encouraging local and foreign investment and providing an attractive investment environment for investment, and giving banks a greater role in participating in improving economic growth rates and at the same time encouraging the private sector through granting credit, and it is clear from the above that the monetary policy in Iraq by reducing the interest rate has formed a positive indicator of the investment environment in the Iraqi economy.

4- Evolution of exchange rate trends during the study period:

The exchange rate index is one of the important tools in monetary policy, and it is one of the economic indicators on which the investor relies in directing his investments, especially the foreign investor, the more stable the exchange rate, the more reassuring and encouraging investors to invest (Dagher, 2014, 134).

Table (5) Official exchange rate in Iraq for the period (2004-2022)

Years	Official exchange rate (JD/USD)	Years	Official exchange rate (JD/USD)
2004	1454	2014	1218
2005	1473	2015	1251
2006	1477	2016	1281
2007	1266	2017	1256
2008	1206	2018	1211
2009	1183	2019	1202
2010	1187	2020	1240
2011	1199	2021	1471
2012	1234	2022	1482
2013	1233	Average	1290

Source: The Central Bank of Iraq, in its General Directory of Corporate Statistics, has published statistical information for different years and the period (2004-2022).

From Table (5), it is obvious that the Central Bank's monetary policy has increased the value of the dinar relative to the dollar, as the exchange rate was (1454) dinars in (2004) and it increased slightly in 2005 to become (1473) dinars, and during the years (2007-2020), the exchange rate ranged between high and low for something simple between (1266 and 1240) until (2020), and then the exchange rate rose in 2021 to reach (1471) and in 2022 it rose more to reach (1482) and thus We find that monetary policy during the study period has attained a degree of consistency in the rate of change.

The second requirement / the development and inflation rates in Iraq during the period (2004-2022)

Inflation is one of the monetary phenomena that express the large and continuous increase across the entire price spectrum, which affects the economies of developed and developing countries, and Iraq is one of the countries with developing economies that are characterized by low or weak domestic production and therefore the economy becomes unable to cover domestic demand through the local supply of goods and services produced by local sectors and therefore the demand is greater than the supply of goods and this leads to the occurrence of repeated inflationary waves (Qasim, 2012: 78).

Table (6) The evolution of the inflation rate in the Iraqi economy for the period (2004-2022)

Years	Inflation rate (%)	Years	Inflation rate (%)
2004	26.8	2014	0.8-
2005	36.9	2015	2.4
2006	53.1	2016	0.1
2007	31.0	2017	0.2
2008	12.6	2018	0.4
2009	8.5	2019	0.2-
2010	2.4	2020	0.6
2011	5.6	2021	1.0
2012	6.0	2022	5.0
2013	2.4	Average	10.2

Source: The central bank of Iraq, the directorate general of statistics and research, statistical bulletins for different years (2004-2022).

It is clear from the goal (5) that the inflation rate in 2004 amounted to (26.8%), and the inflation rate continued to rise until it reached its highest level in 2006 at a rate of (53.1%), which is a very large percentage, and then the inflation rate decreased to (31.0%) and (12.6%) and (8.5%) during the years 2007, 2008, 2009 respectively, to end the first phase of the high inflation phase during the study period, and that the reason for the high inflation during this period is due to the pressure of aggregate demand, which It led to maximizing the risks of inflation resulting from the withdrawal of spending in general and consumer spending in particular at a time when most of the productive sectors in the economy were suffering from deficiencies in the face of this increasing demand, but during the remaining period of the study, inflation rates have clearly decreased, due to the repercussions of the global financial crisis that hit the global economy, and the austerity policy adopted by the monetary and financial authorities in addition to the increase in aggregate demand, as well as the Iraqi recession lived there due to the decline in oil prices in the world markets

The second topic

Estimating and analyzing the role of monetary policy in controlling inflation rates in Iraq for the period (2004-2022)

First: Characterization of the variables of the model in question.

The model in this study consists of the general formula in the light of the independent variables represented by (legal reserve, rediscount rate, currency sale window, exchange rate, interest rate and the dependent variable represented by (inflation), as in the following table:

Table (7) Variables of the standard model under research

Variable name in Arabic	Variable noun in English	Icon	Profile
Legal reserve	Statutory reserve	SR	independent
Rediscount Price	Re-discount price	RB1	independent
Sell Currency Window	Currency sale window	CW	independent
Exchange rate	Exchange rate	ER	independent
interest rate	Interest rate	IR	independent
Inflation	Inflation	IN	adherent

Source: Authored by the researcher.

Second: Testing the stability of time series of research variables

1. Dickie-Fuller Extended Test (ADF).

Table (8) Results of the Extended Dickie Fuller (ADF)

Variables		SR	RB1	CW	ER	IR	IN
With Constant	t-Statistic	-4.1228	-2.279	-2.6839	-3.056	-3.1347	-5.9482
	Prob.	0.0017	0.1814	0.0819	0.0344	0.0288	0.0000
	Result	***	no	*	**	**	***
With Constant & Trend	t-Statistic	-4.0660	-4.463	-3.1025	-2.440	-2.009	-3.9524
	Prob.	0.0111	0.0033	0.1138	0.3564	0.5899	0.0151
	Result	**	***	No	No	no	**
Without Constant & Trend	t-Statistic	-0.1263	-1.438	-0.0042	-0.429	-3.5021	-5.9103
	Prob.	0.6365	0.1390	0.6779	0.5250	0.0007	0.000
	Result	No	no	No	No	***	***
With Constant	t-Statistic	-2.7177	-3.170	-2.9258	-3.612	-4.4239	-3.0784
	Prob.	0.0764	0.0258	0.0475	0.0077	0.0007	0.0326
	Result	**	**	**	***	***	**
With Constant & Trend	t-Statistic	-2.7062	-3.192	-2.8922	-3.706	-6.0578	-3.1304
	Prob.	0.2377	0.0932	0.1713	0.0280	0.0000	0.1072
	Result	No	*	No	**	***	No
Without Constant & Trend	t-Statistic	-2.6595	-3.192	-2.8243	-3.641	-3.3520	-3.0772
	Prob.	0.0085	0.0018	0.0053	0.0004	0.0011	0.0025
	Result	***	***	***	***	***	***

*Stable at 10%, ** Stable at 5%, *** Stable at 1%, No Unstable

Source: Developed by the researcher based on the results of the Eviews program.12.

We note from Table (8) that the independent and dependent variables stabilized at the level and at the first difference, but some of them settled at the first case with Constant and some stabilized at the second case With Constant & Trend, and others settled at the third case Without Constant & Trend, and this is enough to exceed the conditions of the model.

Third: Choosing the appropriate standard model.

After conducting the stability test for the time series, through which the integration of the time series was confirmed at the grade (I₁), it became possible to apply the (ARDL) methodology to test the joint integration (boundary test methodology), especially since the model is very appropriate and corresponds to the research sample of (76) views of quarterly data during the period (2004).- 2022) .

Fourth: Monetary policy and its role in controlling inflation rates in Iraq for the period (2004-2022).

In principle, the independent variables and dependent variables that have been included in the standard model are determined to test the relationship of joint integration between monetary policy represented by its variables and the inflation rate in Iraq during the research period referred to earlier, and the following is a description of those variables:

- ❖ Dependent variable: It expresses the inflation variable and is denoted by (symbol (IN).
- ❖ The first independent variable: It expresses the legal reserve variable and is denoted by the symbol (SR).
- ❖ The second independent variable: It expresses the variable of the rediscount rate and is denoted by the symbol (RP).
- ❖ The third independent variable: It expresses the variable of the currency selling window and is denoted by the symbol (CW).
- ❖ Fourth independent variable: It expresses the exchange rate variable and is denoted by the symbol (ER).
- ❖ Fifth independent variable: It expresses the interest rate variable and is denoted by the symbol (IR).

1- Preliminary assessment of (model).

Based on the results of the unit root tests in the previous tables of the study variables, the ARDL model can be adopted on the data of this study, the data was converted to the quarterly formula in order to increase the number of observations of the study, and the results of the initial estimate showed as is listed in the following table:

Table (9) Results of Estimating the ARDL Prototype for the Relationship between Monetary Policy and Inflation Rate in Iraq for the Period (2004-2022)

1460.568	F-statistic	0.998166	R-squared
1.668714	Durbin-Watson stat	0.997482	Adjusted R-squared
	0.000000		Prob(F-statistic)

Source: Developed by the researcher based on the results of the Eviews program 12.

The conclusions of the above table showed that the **Adjusted R-squared** coefficient that explains (99%) of the alterations in the dependent variable inflation (Y1) is caused by the

independent variables monetary policy tools and the remaining portion is attributed to external causes represents (1%) As for the significance of the model in statistical terms and according to the test (F) with a probability level less than (0.05).

2- (Bound Test results).

The results of the boundary test showed that the calculated value of (F) (12.89808), which is greater than the maximum listed value of (3.38) at the probability level (5%), and this means that there is a common integration relationship between the inflation rate as a dependent variable and monetary policy tools, as is listed in the following table:

Table (10) Results of the test of the relationship of joint integration between monetary policy and inflation rate in Iraq for the period (2004-2022)

Test Statistic	Value	K
F-statistic	12.89808	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.08	3
5%	2.39	3.38
2.5%	2.7	3.73
1%	3.06	4.15

Source: Prepared by the researcher based on the outputs of the Eviews program.12 .

3- The results of estimating the response of the short- and long-term parameters and the error correction parameter.

Table (11) Results of estimating the response of the short- and long-term parameters of the inflation rate model .

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RP)	-0.764987	0.317464	-2.409680	0.0196
D(SR)	-5.76E-07	1.20E-07	-4.799366	0.0000
D(CW)	-8.36E-05	3.21E-05	-2.599701	0.0122
D(ER)	0.020661	0.006144	3.362629	0.0002
D(IR)	2.969644	0.352577	-10.04532	0.0000
CointEq(-1)	-0.042096	0.004191	-10.04532	0.0000
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SR	-2.18E-06	1.82E-06	-1.199453	0.2359
RP	9.975540	8.749511	1.140125	0.2596
CW	-0.000491	0.000506	-0.969690	0.3368
ER	0.155337	0.113337	1.370584	0.1765
IR	-15.12854	15.66921	-0.965495	0.3389
C	-111.5329	79.95164	-1.395005	0.1691

Source: Prepared by the researcher based on the outputs of the Eviews program.12.

The results of estimating the response of the short-term parameters of the inflation rate model showed the following:

- The rediscount price index (RP) has an adverse and significant effect on the inflation rate index in the short term, meaning that when the rediscount rate rises by one unit, inflation rates decrease by -0.764987 units.

-The statutory reserve (SR) index has an inverse and significant effect on the inflation rate index in the short term. This means that when the statutory reserve ratio increases by one unit, inflation rates decrease by %5.76E-07 units.

-The currency selling window (CW) indicator has an inverse and significant effect on the inflation rate indicator in the short term. This means that when currency selling window sales increase by one unit, inflation rates decrease by %8.36E-05 units.

-The exchange rate index (ER) directly and significantly impacts the inflation rate index in the short term. This means that when exchange rates rise by one unit, inflation rates rise by 0.020661% per unit.

The interest rate index (IR) directly and significantly impacts the inflation rate index in the short term. This means that when interest rates rise by one unit, inflation rates rise by 2.969644% units.

The error correction results showed that ECM = (-0.042096) is negative and significant at, and this result fulfills the necessary and sufficient condition for the long-term relationship between the variables, and that the short-term imbalance in the previous year (t-) is corrected during (4%) of the year. Current (t-1).

4. Tests of the quality of the estimated model.

ARDL model quality tests include several tests through which the quality of the estimated standard model is confirmed. We review the most prominent of them as follows:

1 Heteroskedasticity Test: ARCH.

The results of the (ARCH) test and the (F-Test) statistics showed that they were not significant. Therefore, there was no problem of homogeneity of error variance, as in the following table:

Table (12) Results of the consistency of variance homogeneity test (ARCH Test) regarding the association between monetary policy and inflation in Iraq.

Heteroskedasticity Test: ARCH			
F-statistic	0.187978	Prob. F(1,68)	0.6660
Obs*R-squared	0.192973	Prob. Chi-Square(1)	0.6605

Source: Prepared by the researcher based on the outputs of the Eviews program.12.

1. Autocorrelation test

Through the results of the LM test and the F-Test statistic, the results showed that they were not significant and therefore there was no autocorrelation problem. See the table (below).

Table (13) Results of the autocorrelation test (LM Test) regarding the association between monetary policy and inflation in Iraq.

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.759604	Prob. F (2,49)	0.4733
Obs*R-squared	2.135105	Prob. Chi-Square (2)	0.3438

Source: Prepared by the researcher based on the outputs of the Eviews program.12.

2. Model stability tests.

The findings of the structural stability of the data demonstrated that it was within the range of critical values at a significant level (5%). This suggests the long-term stability of the estimated model's parameters.



Figure (1) Cusum test for the cumulative sum of residuals

Source: Prepared by the researcher based on the outputs of the Eviews program.12.

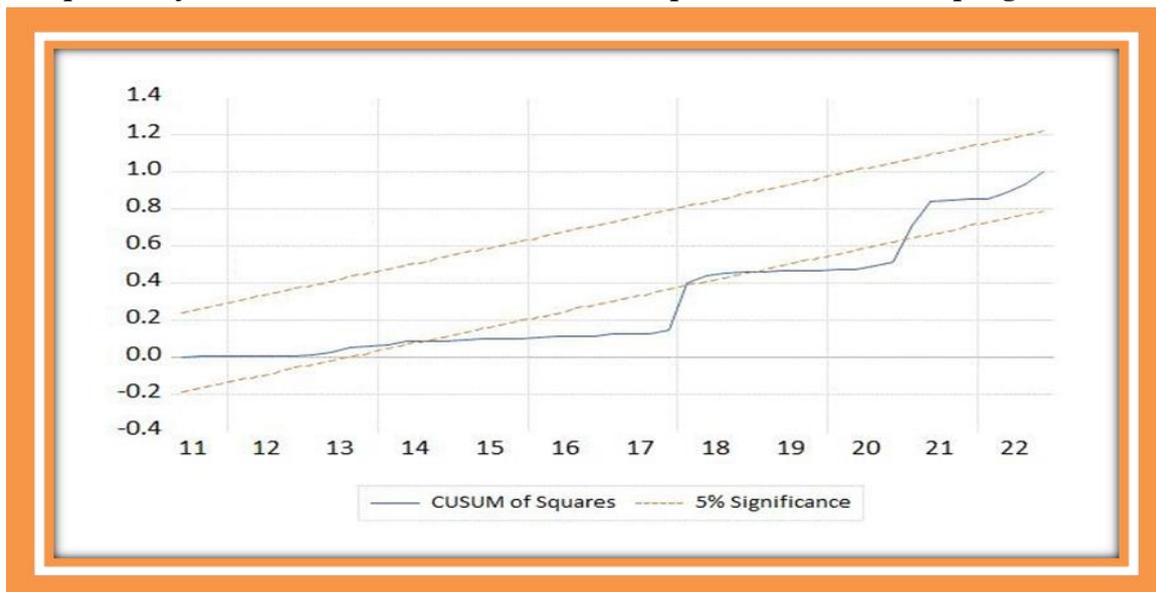


Figure (2) Cusum of Squares test.

Source: Prepared by the researcher based on the outputs of the Eviews program.12.

Conclusions and suggestions

First: Conclusions

Through analysis of the theoretical, measurement and mathematical aspects of the period (2004-2022), a number of conclusions were reached, including:

1. The rediscount rate tool is one of the tools used by the central bank to influence the volume of bank credit, which leads to controlling the money supply and thus reduces inflationary waves.
2. The frequency of rediscounts is inversely proportional to inflation, an inverse relationship between the legal reserve ratio and inflation, an inverse relationship between open market operations, the most prominent of which are the foreign currency selling window and inflation, and a direct association between the currency exchange rate and inflation.
3. The introduction of a foreign currency sales window for buying and selling foreign currencies played a major role in maintaining the local currency's value and stabilizing the Iraqi dinar's exchange rate to control inflation.
4. The results of estimating the relationship on the standard side using the autoregressive distributed lag (ARDL) model methodology demonstrated the existence of a statistically significant relationship between monetary policy and inflation.
5. The results revealed the existence of a relationship and it was shown through the results of the Bounds Test of the model that there is a long-term balanced relationship (co-integration) between the variables studied according to the methodology

Second: Propositions

In light of the previous conclusions, some proposals can be clarified depending on the duration of the study.

1. Monitor inflation indicators carefully. Efforts must be made to monitor and control inflation in books using reliable and accurate indicators. This can help identify any abnormal increase in inflation rates and take the necessary measures.
2. It is necessary for the central bank to use modern tools and mechanisms to confront and control inflation, and one of these mechanisms is to change the existing facilities for the loan process and innovation.
3. Enhancing transparency and providing accurate information about monetary and economic policies can help achieve confidence between the public and monetary authorities, which in turn contributes to reducing tensions and negative expectations that may lead to increased inflation.
4. The necessity of calculating a special index for the exchange rate of the Iraqi dinar against foreign currencies, which is calculated on the basis of daily trading in the foreign exchange market.
5. It is necessary to continue to increase the legal reserve ratio in a scientifically studied manner, which thus leads to addressing inflation through its negative impact on banking activity, investment movement, and internal trade.

REFERENCES

1. Al-Baramawi, Adham Muhammad, (2019), Evaluating the Effectiveness of Monetary Policy in Light of Financial Globalization, doctoral thesis submitted to the Council of the Faculty of Commerce, Tanta University, Egypt.
2. Qasim, Mazhar Muhammad Saleh, Monetary Policy in Iraq, "Building Macroeconomic Stability and Maintaining a Sound Financial System," House of Wisdom, first edition, Baghdad, Iraq, 2012 AD.
3. Al-Jubouri, Hamid Hassan Khalaf, (2010), New Directions for Monetary Policy in Iraq, Comparative Analysis for the Period (2000-2008), Unpublished Master's Thesis, Tikrit University, College of Administration and Economics, Iraq.
4. Al-Samarrai, Ali Dahham Muhammad, (2022), The Impact of Money Supply on Some Economic Stability Indicators in Iraq and Jordan for the Period (2005-2020), Master's Thesis, Tikrit University, College of Administration and Economics, Iraq.
5. Al-Obaidi, Othman Falah Mahdi, (2018), The role of optimal monetary policy in achieving financial stability, an econometric study on the Iraqi economy for the period (2004-2015), a master's thesis submitted to the Council of the College of Administration and Economics, Anbar University, Iraq.
6. Musa, Haider Talib, and others, (2020), The role of monetary policy in achieving financial stability for Iraqi banks for the period (2009-2017), Journal of Economic and Administrative Sciences, University of Baghdad, Volume (26), Issue (117).
7. Al-Shaibani, Fadel Karia Kazar, (2018), The role of monetary and innovative policy in treating inflation, an analytical study in the Iraqi economy for the period 1990-2003), Al-Mustansiriya Journal of Arab and International Studies, Al-Mustansiriya University, Volume (61), Issue (61).
8. Dagher, Mahmoud Muhammad, Mohi, Saif Radi, (2014), Managing Monetary Policy from Money Supply to Interest Rates in the Iraqi Economy for the Period (2004-2011), Journal of Economic and Administrative Sciences, University of Baghdad, Volume (20), Issue (79).
9. Wissam, Belaziza, Monetary Policy as a Means of Achieving Economic Goals, a master's thesis submitted to the Council of the Faculty of Economic Sciences, Commercial Sciences and Management Sciences, Larbi Ben M'hidi University Oum El Bouaghi, Algeria, 2012.
10. Lounis, Ekin, (2011), Monetary Policy and its Role in Controlling the Money Supply in Algeria for the Period (2000-2009), Master's Thesis, University of Algiers, Faculty of Economics and Management Sciences, Algeria.