Impact Of Indirect Monetary Policy Instruments On Certain Indicators Of Financial Stability In Iraq For The Duration (2003-2018)

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Abstract:

The indirect monetary policy tools led to financial stability for the period being studied through the use of indicators of financial stability (aggregate) to show the effect of the foreign reserves of the Central Bank of Iraq and its indirect instruments in achieving financial and economic stability, especially after the significant decline in oil prices and dependence of the Iraqi economy on Oil (rent) and lower reserves of the Central Bank of Iraq after 2014 and now compared to previous years, the goal of this research is to achieve financial stability according to selected indicators and achieve an optimal monetary policy to achieve the development goals of The economic policy in the country. Standard models were used to test the effect of using indirect monetary policy tools in achieving financial stability in the light of selected aggregate indicators. To measure the effect of independent variables, open market operations, discount rate, and foreign reserves on the adopted variable, The third variable of the indicators of financial stability, where is shown that the effect of each of the foreign reserve the price of the rebate is positive and moral, ie, the increase in the price of the discount by one unit leads to an increase of 17.14

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in the margin or the interest rate. And the value of R2 is also good since the changes explained by the independent variables in the dependent variable in the model are equal to 66%, and the value of the F statistic is significant and The level of 1% and the R2 value is less than the DW value, indicating that there is no problem of the false regression of the model

Keyword: Tools Monetary Policy Indirect- Legal Reserve- Financial Stability- Aggregate Indexes.

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First: research problem

There is a weakness in the performance of financial stability indicators in Iraq

Research importance

Indicators of financial stability are central to the stability of the banking sector, which is reflected in economic stability.

Third: Research Hypothesis

Quantitative monetary policy instruments play an active role in influencing some indicators of financial stability.

Fourth: Research Objectives

The research aims to identify the effect of indirect monetary policy tools on foreign reserves and financial stability by using indicators of aggregate stability.

Fifth: research Structure

The descriptive and standard analysis method was adopted to reach the goal of the research, and to test the research hypothesis, the research was divided into two chapters. Chapter one deals with the conceptual framework of indirect monetary policy as well as foreign reserves and financial stability, while the second included standard analysis: the analysis of research variables in a descriptive manner. Then testing the research hypothesis through D.W and (LM) test as well as the (J-B) test.

Chapter one

The conceptual framework for monetary policy

First: The concept of monetary policy

The modern concept of monetary policy can be clarified through several definitions: It is a set of monetary measures that seek to achieve monetary and non-monetary goals to achieve monetary goals in the country, or it is the interconnection between intermediate goals and final goals through the control of monetary policy over a set of monetary means such as the interest rate and the discount rate, or are non-monetary means such as restrictions Imposed on banking institutions or legislative and administrative decisions (Daghir, 2015: 3). The British economist Keynes defined it as a set of procedures and methods followed by the monetary authority to control the money supply to achieve certain economic goals. It is also defined as all the measures that are taken by the government, the central bank, and the treasury to influence the amount of credit provided to the government, the provision of money and its use, or any conscious central act that the monetary authority undertakes to change the size of money or to affect the cost of obtaining it (Al-Dulaimi, 1990: 584).

Second: **Indirect Monetary Policy Tools (Quantitive)**

These means aim to affect the amount of credit, not its quality, that is, the effect on the number of cash reserves that exist in the banking system and the means or tools of indirect control whose scope of application or practice is expanding in countries with advanced banking systems that are available in developed financial and monetary markets. The indirect feature that characterized these means is that

their effect on the amount of money is not direct, as the central bank influences commercial banks first, and then these commercial banks influence credit, and these means included the following (Al-Shammari, 2008: 135).

1. Interest rate: It is the price at which commercial banks deal with customers, that is, it is the interest rate that commercial banks obtain when granting loans and credit facilities to customers, and it is what customers get in exchange for their savings with commercial banks, and commercial banks are committed to the upper limit of the interest rate set by the Central Bank as well. The central bank is the only monetary authority that has the right to change the rate (Al-Lami, 2017: 452).
2. Open market operations: These operations mean that the central bank sells and purchases government bonds, especially in the open monetary and financial market, and it is an effective means of monetary policy if this market is wide, advanced, and regular, and this is since these operations lead to wide quantitative changes in the available liquid reserves at commercial banks. If the central bank feels the need to expand the money supply, then it buys bonds from the market, so the cash reserves at banks increase and their credit base broadens, and vice versa also if the central bank decided to follow a contractionary monetary policy (Ali, 1970: 407).
3. Discount rate: The discount rate, or as it is called, the rediscount rate is the interest rate that the central bank receives from commercial banks in exchange for re-deducting it for the bills and treasury bills presented to it, and the central bank gets the discount rate when it submits loans and advances secured with such papers to commercial banks. The discount rate policy is historically one of the oldest methods used by central banks, although this method has subsequently lost some of its previous importance, especially in developing countries.
4. Statutory reserve: (mandatory): It is the percentage of deposits that commercial banks keep in the form of cash balances with the central bank, and this means that part of the deposits of commercial banks remains frozen at the central bank. Banks are not able to withdraw from it except to the extent of the decrease in the deposits of their customers, which leads to the banks' inability to lend or invest all their deposits, but only the size of their deposits minus the amount of the legal reserve ratio. Therefore, the central bank uses this ratio to affect the reserves of commercial banks and their ability to grant loans, for example, if the central bank wants to follow an expansionary monetary policy, it reduces the legal reserve ratio so that commercial banks can use an important part of their frozen deposits with the central bank in granting loans, and vice versa. The opposite happens if the central bank wants to follow a contractionary monetary policy, it raises the legal reserve ratio, and this means that the ability of commercial banks to grant credit decreases with the increase in the legal reserve ratio and their ability to grant credit increases with a decrease in this ratio (Yas, Jameel, 2016: 61-62).

Third: **Financial Stability**

Over the decades, financial stability has become a fundamental strategic goal whose importance has increased in the context of the economic policies of various countries of the world, and the significance of financial stability goes beyond the simple concept of non-occurrence of financial crises. The new concept was characterized by more than achieving the efficiency of economic resources and distributing them according to geographical areas, as well as achieving efficiency in savings, investment, lending, and borrowing processes, providing liquidity, determining asset prices, accumulating wealth, and limiting the effects of financial crises. Accordingly, the concept of financial stability is evident through the strength and integrity of the work of all components of the financial system, which implies the absence of tensions and turmoil in this apparatus, which reflects negatively on the economy (Al-Shakurji, 2013: 12). Another definition of financial

stability is the situation in which the financial system, i.e. the main financial markets and the banking system, is resistant to shocks and able to perform its basic functions of financial intermediation, facilitating economic operations, managing risks, and arranging payments (Mohsen, 2016: 362).

1. **Financial Stability Importance**

The importance of financial stability can be realized by looking at the global effects that the financial crisis has produced on the economic and financial sector as a whole, including the following (Al-Sabawi, Ahmed, Suleiman, 2012, 70-71):

a. Financial instability reflected negatively on economic growth, which led to a contraction in the economy, and thus this raises unemployment rates, as unemployment rates in the United States of America reached 6.1% in 2008, the highest rate in five years.
b. The lack of financial stability has affected economic growth in light of the mortgage crisis that has been sparked off by the United States of America and spread to other countries as the International Monetary Fund has reconsidered its expectations regarding economic growth.
c. Many banks around the world, especially in Asia and Europe, were exposed to losses as a result of this crisis, which led to widespread lending concerns among banks. The results of the financial crisis showed disasters on all levels (social, economic, and political), whose effects will extend for years to come after their occurrence. The crisis also led to the delisting of several major banks in the world (25 banks) for more than $ 300 billion and the value of their assets as a result of the decline in the value of mortgage-backed securities since 2007.
d. The financial crisis also affected the Japanese economy, which witnessed a decline in economic growth and instability in stock markets. At the same time, the financial crisis affected the Indian economy, which led to a slowdown in economic growth, which caused a sharp decline in demand for Indian exports in its main markets.

2. **Aggregate Financial Stability Indexes**

1. Financial Development Scale: This scale consists of a set of the following indicators:
   a. Market Capitalization Index / Gross Domestic Product: This indicator indicates the extent of capital market development.
   b. Total credit index / gross domestic product: This indicator displays information related to financial intermediation, that is, it reflects the extent of the ability of credit institutions to carry out their intermediation functions. The higher the level of this indicator, the more developed and mature the financial system.
   c. Interest margin indicator: the interest margin or difference represents the difference between average lending rates and average borrowing rates, and reflects the increased real interest margin, which achieves high profitability for the banking sector, which is necessary to ensure its stability, in addition to being an indication of high efficiency in mediation and distribution of resources, while lower margins reflect improved levels of efficiency of the banking system, therefore, high-interest margins are inversely related to financial development. The reason for this is that the increased interest margin can indicate periods of financial instability when credit institutions take additional protection measures against the potential risk of borrowers 'inability to repay.
2. Economic Climate Scale: This scale describes the climate or global economic situation by addressing some important economic variables, and this scale includes the following indicators:
   a. Economic climate index: It is an index computed by the Center for Economic Studies and the Economic Research Institute to give an idea of the prevailing business climate concerning investment opportunities.

b. Global Inflation Index: This indicator describes the state or position of the price level prevailing on the global scale.
c. World Economic Growth Rate Index: This indicator reflects the level of economic growth prevailing at the global level at any time (Al-Saadi, 2015: 6-9).

Chapter two

Analyzing the impact of indirect monetary policy tools

The research relies on the hypothesis that the effect of quantitative tools of monetary policy (legal reserve, discount rate, open market operations) is an independent variable. As for financial stability indicators, including (market capitalization / GDP, total credit / GDP, and interest margin) as dependent or dependent variables. Table (1), shows the indirect tools of monetary policy during the study period.

Table (1) indirect monetary policy instruments for the period (2003-2018) (The amounts are in millions of Iraqi dinars)

Year	Open market operations♦	Re-discount price♦♦	The compulsory reserve ratio
2003	3079474	%6.35	%27
2004	3234637	%6	%25
2005	3234637	%7	%25
2006	1720000	%16	%25
2007	2875480	%20	%25
2008	5488910	%15	%25
2009	4805228	%7	%25
2010	2897300	%6	%15
2011	4715480	%6	%15
2012	4967380	%5.8	%15
2013	3840620	%5.29	%15
2014	5077690	%4.96	%15
2015	7059500	%4.73	%15
2016	4087634	%5.0	%15
2017	4018769	5.0%	%15
2018	4209765	%5.3	%15

Source: Central Bank of Iraq, General Directorate of Statistics and Research, annual reports, various editions.

Table (2), represents aggregate financial stability indicators

Table (2)

Aggregate financial stability indicators for the period 2003-2018

Year indicator	Market capitalization / GDP	Total credit / GDP	Interest difference or Margin
2003	0.36	0.8	7.0
2004	4.36	2.2	4.9
2005	5.85	3.2	7.1
2006	2.04	2.8	7.9
2007	0.91	2.4	9.1

♦ Open market operations include transfers with the Central Bank of Iraq for a period of (91) days, in addition to treasury transfers at the Ministry of Finance for a period of (182) days.

♦♦ The re-discount rate, or it is called the policy price. The policy price is extracted from the rate of securities cuts (transfers, bonds).

2008	1.45	2.9	9.0
2009	2.39	4.1	7.8
2010	2.16	5.8	7.3
2011	2.28	6.0	7.7
2012	2.17	8.5	7.2
2013	3.21	8.32	7.82
2014	2.82	7.24	6.53
2015	3.11	7.41	6.21
2016	3.57	8.61	7.51
2017	4.1	8.3	7.9
2018	4.10	8.5	8.0

Source: Central Bank of Iraq, Department of Statistics and Research, Economic Report for Selected Years.

Table (3)

World Economic Climate Index (WECI) 2003-2018

Year indicator	Global economic climate	Global inflation rate	The rate of global economic growth
2003	5.1	5.6	3.2
2004	6.1	5.5	2.9
2005	5.6	5.3	2.4
2006	6.0	5.4	2.8
2007	6.0	5.7	2.7
2008	4.3	7.9	0.2
2009	4.0	2.3	)3.2(
2010	5.6	4.4	2.8
2011	5.4	5.6	1.6
2012	4.8	3.1	1.2
2013	4.17	3.3	2.7
2014	4.31	3.9	2.4
2015	3.8	2.2	3.5
2016	3.27	2.10	3.3
2017	3.1	2.0	2.89
2018	2.90	1.77	2.66

Source: Central Bank of Iraq, Department of Statistics and Research, Annual Bulletin and Financial Stability Reports for Selected Years.

Characterization of variables and the standard model:

Before starting the data analysis process, the research variables must be described as the independent and dependent variables that were the basis for building the appropriate standard model. These variables can be described as follows: (X1: Open Market Operations¨, X2: Discount Price, W: Statutory Reserve, Y1: Market Capitalization / GDP, Y2: Total Credit / GDP, Y3: interest margin or differential, Z1: global economic climate, Z2: global inflation rate, Z3: global economic growth rate. The research variables were divided into three groups. The first group includes the independent variables represented by the monetary policy tools represented in the open market process and the discount rate in addition to the legal statuary reserve. As for the set of approved variables, it was divided into two groups. The first group includes financial stability indicators represented in market capitalization to GDP, total credit / GDP, and the interest margin or differential. As for the other group of approved

variables, which represent the global economic climate measure, represented in the global economic climate, global inflation rate, and the Global economic growth.

Analytical aspect: The objective of the standard aspect is to measure the effect of quantitative tools of monetary policy on some indicators of financial stability, as follows:

Table (4)
Estimation of the parameters of the model that measures the relationship among monetary policy instruments

Dependent Variable: W
Method: Least Squares
Date: 10/06/17 Time: 18:36
Sample: 2003 2016
Included observations: 14

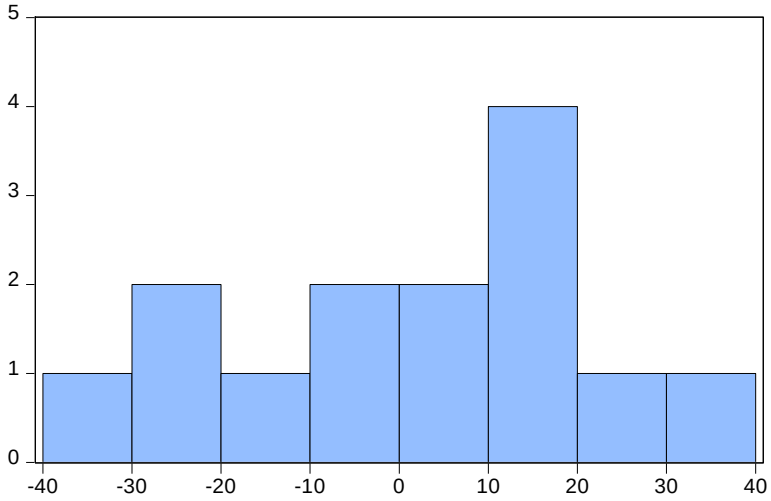
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	1.05E-05	1.92E-06	5.462174	0.0001
X2	-18.69180	86.79222	-0.215363	0.8331

R-squared	0.338343	Mean dependent var	41.63141
Adjusted R-squared	0.283205	S.D. dependent var	23.38787
S.E. of regression	19.80105	Akaike info criterion	8.940910
Sum squared resid	4704.978	Schwarz criterion	9.032204
Log likelihood	-60.58637	Hannan-Quinn criter.	8.932460
Durbin-Watson stat	0.962721		

Source: Prepared by researchers based on Table (1) data, through the results of | eviews9.5.

First: measure the impact of the open market operation and the discount rate on the legal reserve, the following model was estimated where Table (4) shows that open market operations have a significant effect on the legal reserve, as it appears in the column that the probability value is equal to 0.001. It also turns out that when increasing the open market operations by one unit, it leads to an increase of 1.05 in the statuary reserve, meaning that the effect of open market operations on the statuary reserve is positive and that an increase in one of them leads to an increase in the other, while the effect of the re-discount rate was insignificant and negative, as it was found that the changes explained in the variable adopted by the independent variables in the model are equal to 33%, which is a small percentage in addition to that the value of F was not significant, which indicates that open market operations greatly affected monetary policy after 2014, especially the activation of the Treasury Remittance auction for a period of 182 days. The Treasury transfers continued with a maturity of 364 days and multiple cut-off rates for entering into open market operations.

Figure (1)
The impact of open market operations on the statutory reserve



Series: Residuals	
Sample 2003 2016	
Observations 14	
Mean	0.371954
Median	3.335237
Maximum	34.97932
Minimum	-31.11407
Std. Dev.	19.02032
Skewness	-0.068252
Kurtosis	2.139305
Jarque-Bera	0.443000
Probability	0.801316

Source: Researchers' work based on table (1) data.

Figure (1) also shows that the remainder of the estimated model is normally distributed as the probability value equal to 0.80 is greater than 5% of what indicates acceptance of the null hypothesis, which states that the remainder of the model is normally distributed

Table (5)

(LM) test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.172835	Prob. F(2,10)	0.3487
Obs*R-squared	2.659992	Prob. Chi-Square(2)	0.2645

Source: Preparation of researchers based on the data of Table (1)

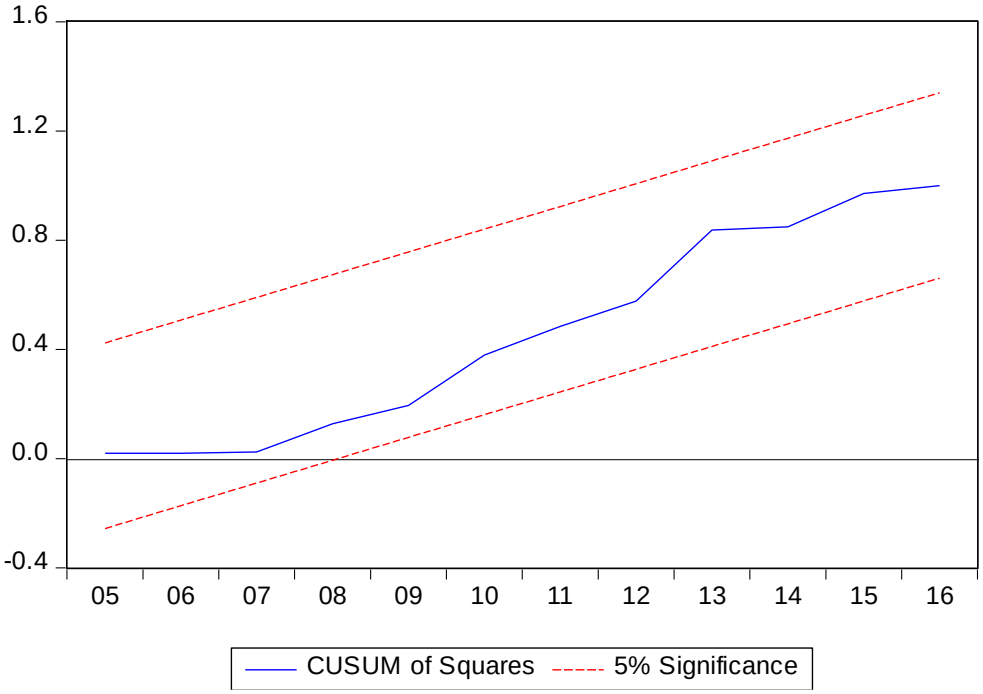
Table (5) shows that the (LM) test statistic is greater than the tabular value at a degree of freedom 2 and 10 and a level of significance of 5%, meaning that we reject the null hypothesis, which states the existence of self-correlation, meaning that the estimated model does not suffer from the problem of self-correlation at period 2.

Table (6) Brunch Bacon Template - Code Free

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.352229	Prob. F(2,11)	0.1411
Obs*R-squared	4.193867	Prob. Chi-Square(2)	0.1228
Scaled explained SS	1.747781	Prob. Chi-Square(2)	0.4173

Table (6) shows that the calculated value of 2.35 is greater than the tabular value at a degree of freedom (2.10) level of significance of 5% and thus the null hypothesis is rejected and the alternative is accepted, i.e. the estimated model suffers from the problem of inconsistency of error variance.

Figure (2)



Source: Researchers' work from E-Views 9.5 output

Figure (2) shows the results of the CUSUM test for the stability of the remainder of the relationship, as it appears that the value of the (CUSUM) statistic did not exceed the upper and lower limit of the test count, indicating its stability in relation to the rest of the estimated relationship.

To estimate the relationship between financial stability indicators and indirect monetary policy tools including the formulation of the three models shown in Table (7), where the first model that measures the estimated relationship between the approved variable market capitalization / GDP and the independent variables (open market process and rediscount price) as it appears from the table that all the variables are not significant and their effects are negative, meaning that the relationship between the dependent variable and the independent variables is a negative relationship that is not influential as well. Also, if the value of R2 was very small, the value of (F) was insignificant, and the value of R2 was smaller than the value of the D.W statistic. The table of tests shows the quality of the description of the estimated model that the probability value of the JB test is greater than 5%, which indicates acceptance of the null hypothesis, which states that the remainder of the relationship is normally distributed. Also, the table shows that the calculated value is greater than the tabular than what indicates the rejection of the null hypothesis, which states that the residual relationship contains a self-correlation, meaning that the estimated model does not contain a self-correlation. The table also shows that the calculated values are greater than the tabular, indicating the rejection of the null hypothesis, which states the variance of error for the estimated relationship is homogeneous, meaning that the presented model suffers from a problem of heterogeneity of error variance, but in general, the model is low indicators and weak in describing the relationship between the dependent variable and the independent variable. The second model is shown in Table (8) measures the relationship between the adopted variable, the interest margin or the difference in interest and the independent variables, indirect monetary policy tools, open market operations, and the discount rate, as it shows that this model shows that the effect of open market operations on total credit has an insignificant and negative effect, as well as the effect of the re-discount rate on total credit is negative. In other words, the increase in the discount rate leads to a decrease in the total credit and significant. Also, the effect on the total credit is positive and significant, as the increase in the total credit is by 0.09. Also, the parameter of the y-section is significant and its value is 0.86 R2 = which indicates that the changes

explained by the independent variables of the dependent variable in the model are equal to 86%, which is a very good ratio. As the value of F is significant, which indicates the suitability of the presented model for the research data, the value of R2 is less than the value of DW. The value of D.W indicates that there is no false regression. Likewise, the table indicates that the probability value of the JB test is greater than 5%, meaning that we cannot reject the null hypothesis, which states that the remainder of the estimated relationship is normally distributed, and the computed value is greater than the tabular value. What indicates linking the null hypothesis, which states that there is a self-correlation between the remainder of the relationship, that is, the estimator model is devoid of self-correlation has a nullity period 2 because the table indicates the calculated values less than the tabular value and at the level of 5%, that is, we cannot reject the null hypothesis which states that the remainder of the estimated relationship is homogeneous, and therefore the estimated model is an excellent model free from measurement errors and description errors. The results of what indicates the existence of an impact of monetary policy tools on financial stability indicators, especially the new monetary policy tools, such as the window for selling foreign currency, existing deposit facilities, and lending facilities adopted by the monetary policy to stimulate banks to go to the market to finance projects and credit their students to support development in addition to that The Central Bank continued to use the banks overnight investment window for a period of (7) days at an interest rate (1%) after 2014 compared to it before 2014, as this window was invested in it for a period of (7) days and at an interest (6%), which led to the banks 'reluctance from this due to the low-interest rate shown above. As for the lending facilities, they increased after 2015 compared to 2014, which are primary credit (8%), secondary credit (9%), and last resort for lending (9.5%) to grant credit to banks in a manner that ensures control over bank liquidity and influencing it through interest rates (price signals), noting that these rates are annually imposed on banks through lending facilities.

Table (7)
Estimating the parameters of the models that measure the relationship between policy instruments and the measure of financial development

D.W	F	R^2	c	w	X2	X1	المتغير المعتمد
1.416537	1.015886	0.233579	4.461610	-0.008280	-14.70863	-7.05E-08	Y1 model1
			2.6502**	-(0.4060)	(-1.7239)	(-0.1969)	
0.977113	20.5685***	0.860541	3.383738	0.096147	-18.44764	-2.08E-07	Y2 Model2
			(2.4410**)	(5.726)***	(-2.625**)	(-0.707)	
2.616901	6.6307***	0.665465	5.360433	0.024107	17.14317	-1.01E-07	Y3 Model3
			(6.293***)	(2.3369**)	(3.971***)	(-0.5577)	

From researchers' work based on eviews 9.5

The value of (t) statistic that tests the null hypothesis (Bi = 0), *** significant at (1%) level ** significant at (5%) confidence level * significant at (10%) level.

Table (8)
Quality tests of estimated model characterization

Spurious Regression	Heteroskedasticity Test: Breusch-Pagan-Godfrey	Breusch-Godfrey Serial Correlation LM Test:	Jarque-Bera	المتغير المعتمد

×	5.038140	1.823065	2.520118	Y1 ,model1
	0.0221	0.2227	0.283637	Probability
×	0.580323	1.754503	1.015489	Y2 ,model2
	0.6412	0.2335	0.601851	Probability
×	3.147841	0.903402	1.046073	Y3,model3
	0.0735	0.4428	0.592718	Probability

From researchers' work based on eviews 9.5

To measure the effect of independent variables, open market operations, and the discount rate on the adopted variable, margin or interest, which represents the third variable of financial stability indicators, as it was shown that the effect of the rediscount price is a positive and significant effect. In other words, an increase in the discount rate by one unit leads to an increase of 17.14 in the interest margin, and that an increase by one unit leads to an increase of 0.02 in the interest margin, and the parameter of the y-section is significant. The value of R2 is also good as the changes explained by the independent variables in the dependent variable in the model are equal to 66%. Besides, the value of the F statistic is significant and at the level of 1% and the value of R2 is less than the value of DW, indicating that there is no pseudo-regression problem of the model. The table also shows that the estimated model does not suffer from the problem of the normal distribution of the remainder, since the probability value is greater than 5%, and therefore the null hypothesis is accepted, which states that the remainder of the relationship is normally distributed and rejecting the alternative and that the calculated values are greater than the tabular value of the Lm test. That is the null hypothesis which states that there is a self-correlation between the remainder of the relationship at period 2 and the alternative is accepted from what indicates that the remainder does not suffer from the problem of self-correlation and that the heterogeneity test for the estimated relationship errors shows that the calculated value is greater than the tabular, which leads to the rejection of the null hypothesis, which states that the remainder of the estimated relationship does not suffer from the problem of homogeneity. To measure the effect of indirect monetary policy tools on the global economic climate indicators, three models shown in the table were estimated, as Model 4 measures the estimated relationship between the adopted global economic climate variable and the independent variables represented by the indirect monetary policy tools, open market operations, the discount rate, and the statuary reserve, where it was found that there is a significant effect of the open market operation at the level of 10% on the global economic climate and that the effect of open market operations on the global economic climate is negative, meaning that the increase in the first leads to a decrease in the second by 3.2, it also turns out that the y-section is significant. As for other policy tools only, they appeared to be insignificant in affecting this dependent variable and that the R2 value of this model is relatively good as the changes explained by the independent variables in the dependent variable model are equal to 56%, and the value of the F statistic is significant at the level of 5% and the R2 value is less than DW, which indicates that there is no false regression problem. The table also shows that the probability value of the JB test is greater than 5%, which indicates the acceptance of the null hypothesis, which states that the remainder of the estimated relationship is normally distributed and that the calculated value is greater than the tabular value of the LM test, which leads to the rejection of the null hypothesis that states the existence of a self-correlation. between the rest of the relationship at period 2, that is, the estimated model does not suffer from the problem of self-correlation, as Table (9) shows that the calculated value is greater than the tabular value at the level of 5% to test the homogeneity of the variance of the remainder of the estimated relationship, which indicates the rejection of the null hypothesis, which states that the problem does not exist, meaning that the estimated model suffers from the problem of non-residual variance.

Table (9)
Estimation of model parameters that measure the relationship between policy instruments and the World Economic Climate Scale (WECI)

D.W	F	R^2	c	w	X2	X1	المتغير المعتمد
1.466817	4.37374**	0.567497	6.385723	-0.010215	3.187147	-3.27E-07	z1 model4
			(7.639***)	(-1.0089)	(0.7523)	(-1.8404*)	
2.345641	2.551227	0.433546	3.860774	-0.023117	17.39433	2.97E-08	z2 model5
			(2.1917*)	(-1.0835)	(1.9483*)	(0.079387)	
2.828243	3.09858*	0.481751	18.73534	0.003342	-1.090152	-1.374223	z3 model6
			(2.269**)	(0.0383)	(-2.653**)	(-2.357**)	

From researchers' work based on eviews 9.5

The value of its statistic (t) that tests the hypothesis of nullity (Bi = 0), ** significant at the level of confidence (5%) * significance at the level of (10%).

Table (10)
Quality tests of estimated model characterization

Spurious Regression	Heteroskedasticity Test: Breusch-Pagan-Godfrey	Breusch-Godfrey Serial Correlation LM Test:	Jarque-Bera	المتغير المعتمد
×	0.540487	0.695241	0.777171	z1 ,model4
	0.6653	0.5268	0.678015	Probability
×	2.788194	1.402741	0.451854	z2 ,model5
	0.0956	0.3005	0.797776	Probability
×	21.34881	0.864207	0.025554	z3 ,model6
	0.0001	0.4573	0.987304	Probability

From researchers' work based on eviews 9.5

Model 5 measures the relationship between the adopted variable, the global inflation rate, and the independent variables represented by indirect monetary policy tools, as the table shows that there is a significant and positive impact at the level of 10% to both the y-segment and the discount rate. That is, the increase in the discount rate by one unit leads to an increase in the global inflation rate by 17.3, and the R2 value of this model indicates that the changes explained by the independent variables of a change in the dependent variable in the model are equal to 43% and that it is somewhat small. Also, the value of R2 is less than the value of D.W, meaning that this model does not suffer from the problem of pseudo-regression, as the table indicates that it does not suffer from the problem of the non-normal distribution of the remainder, as the probability value of the JB test is greater than 5%. Likewise, the calculated value is greater than the tabular value of the test (LM), so the null hypothesis is rejected and that the model does not suffer from the self-correlation problem, and as the calculated value is greater than the tabular value of the error variance heterogeneity test, the null hypothesis is rejected which states that there is no problem of heterogeneity of error variance for the estimated relationship.

Model 6 measures the relationship between the adopted variable, the rate of global economic growth, and the independent variables represented

by the indirect monetary policy tools. It is clear from Table (10) that there is a significant and negative impact of open market operations on the rate of global economic growth, meaning that an increase in the first leads to a decrease in the second, and that there is a significant effect at the level of 5% and a negative impact of the discount rate on the global economic growth rate and that the value R2 for this model is acceptable since the model explained 48% of the changes in the dependent variable by the independent variables and that the value of the F statistic is significant at the level of 10% and the value of R2 is less than DW. That is, the model does not suffer from the pseudo-regression problem. The table also shows that the model does not suffer from the problem of the normal distribution of the remainder, as the probability value of the JB test is less than 5%, and that the estimated model does not suffer from the self-correlation problem at period 2 and at a significance level of 5%, where the calculated values are greater than the tabular than what indicates the rejection of the null hypothesis, as well as that the presented model suffers from a problem of heterogeneity and that the calculated values at the level of 5% are greater than the tabular value, which indicates the rejection of the null hypothesis, the absence of the problem of homogeneity of the error variance.

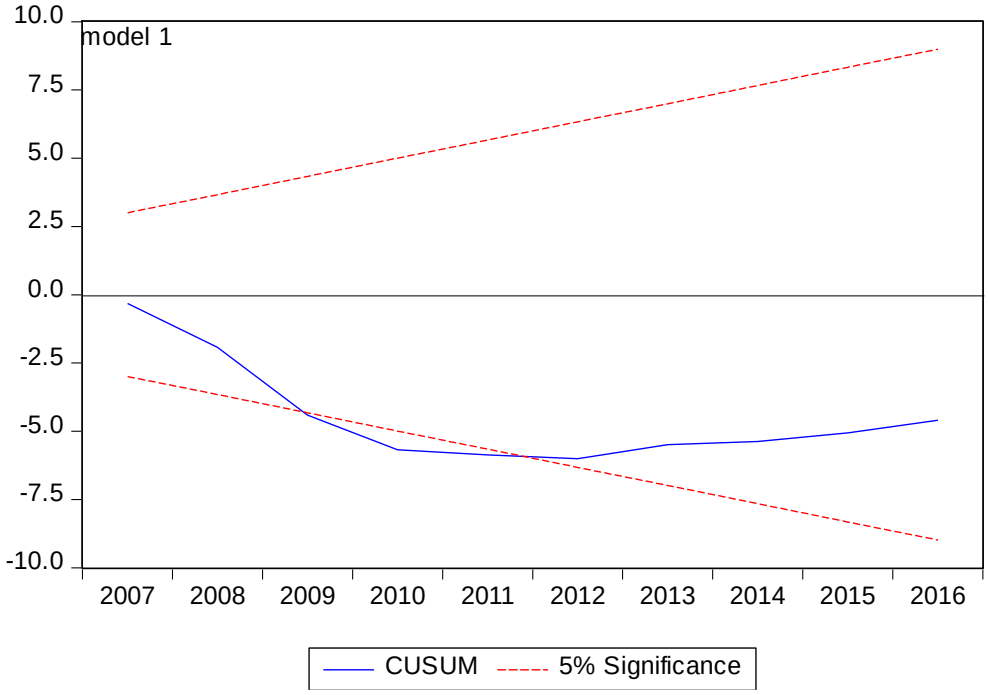
From Model No. 6, it can be said that there is a significant relationship between indirect monetary policy tools and global economic stability indicators, but it is negative, as it is possible to accept the hypothesis that there is a significant effect of at least one of the monetary policy tools on one of the indicators. Through the direction of the Central Bank of Iraq to achieve its ultimate goal of achieving financial stability, the Central Bank of Iraq presented a stimulus program to revive the Iraqi economy, achieve economic development and expand the scope of credit by supporting the liquidity of specialized banks (agricultural, industrial, real estate, housing fund) amounting to (5) trillion Iraqi dinars to enable it to provide loans to industrialists and farmers, housing and real estate loans in support of the economic activity and provide job opportunities. It also supported the country's general budget with an amount of (4.4) trillion Iraqi dinars through operating (50%) of the reserves of commercial banks deposited with the Central Bank of Iraq. At the same time, the Central Bank repurchased treasury transfers from the secondary market, as the Central Bank of Iraq purchased approximately (6.2) trillion Iraqi dinars as the first stage of those bonds and allocated an amount of (1) trillion Iraqi dinars to private banks to finance small and medium enterprises exclusively. While the Central Bank of Iraq sold securities (Deferred delivery bonds in dollar currency) on behalf of the Ministry of Finance, and this process aims to help deepen the financial market or withdraw local liquidity, develop secondary markets, and through diversifying market instruments by creating securities as means (to preserve value).

Financial stability and global economic climate indicators:

Figures (3) indicate that all the previous models are stable, as we note here that the values of its CUSUM statistics did not exceed the upper and lower limits of its test count except for the first model, where its estimated statistic exceeded the minimum for its test.

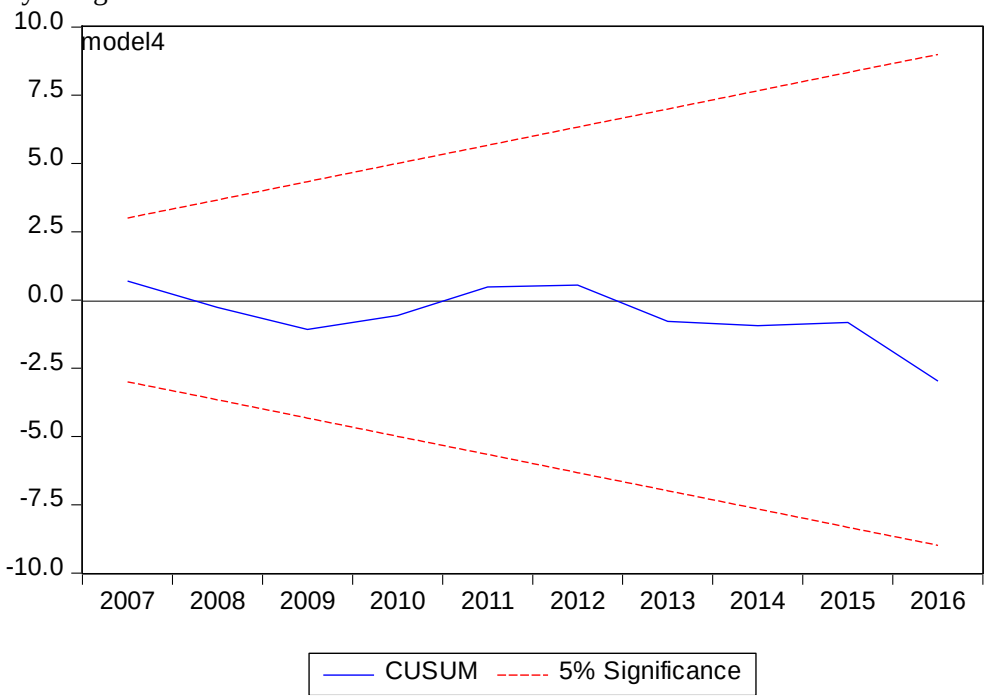
Figure (3)

Financial stability and global economic climate indicators



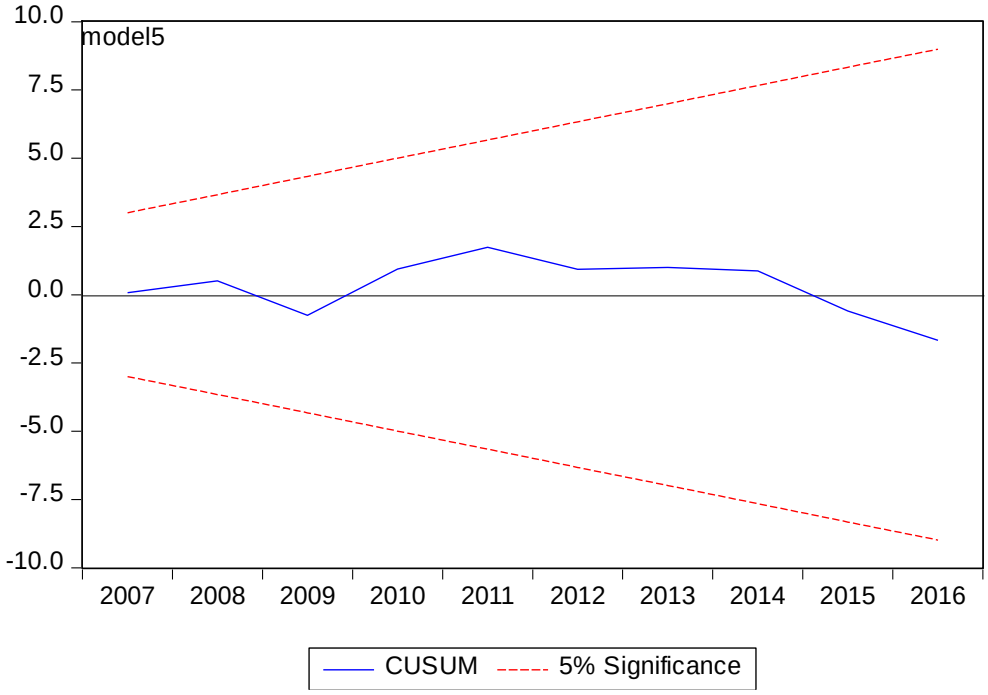
Source: From the researchers' work based on the output of Eviews9.5

Figure (4)
Financial stability and global economic climate indicators



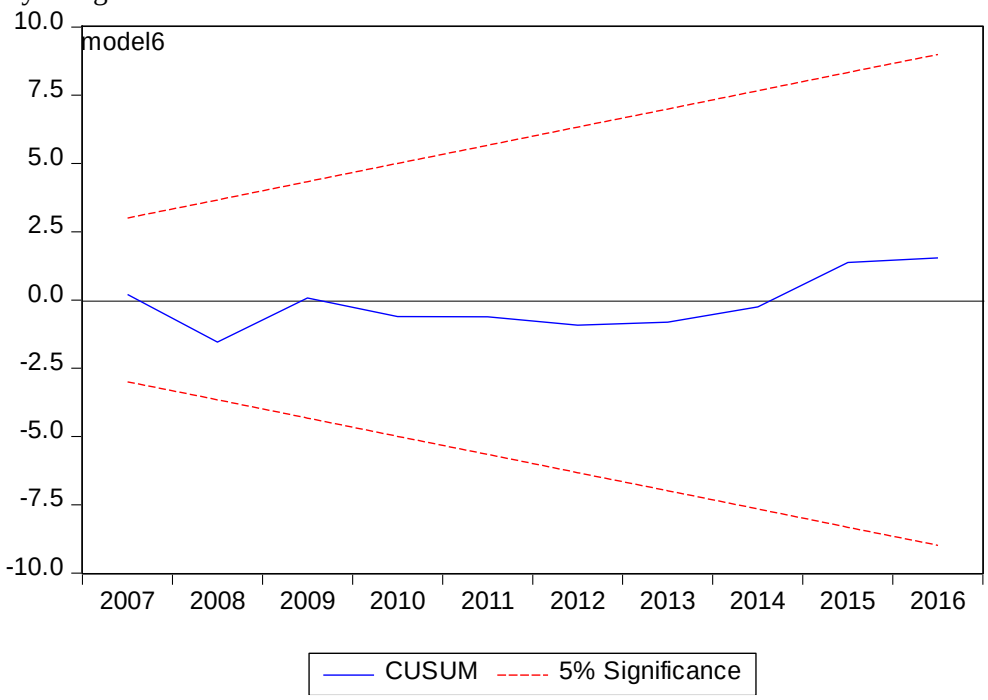
Source: From the researchers' work based on the output of Eviews9.5

Figure (5)
Financial stability and global economic climate indicators



Source: From the researchers' work based on the output of Eviews9.5.

Figure (6)
Financial stability and global economic climate indicators



Source: From the researchers' work based on the output of Eviews9.5.

Conclusions:

1. Financial stability has become, over the past decades, a fundamental strategic goal whose importance has increased in the context of the economic policies of various countries of the world, and the significance of financial stability goes beyond the simple concept of the non-occurrence of financial crises.

2. When increasing the open market operations by one unit, it leads to an increase of 1.05 in the statuary reserve, meaning that the effect of open market operations on the legal reserve is positive, and the increase in one of them leads to an increase in the other, while the effect of the rediscount price was not significant and negative.
3. The effect of open market operations on total credit is not significant and negative, and the effect of the rediscount price on total credit is negative, meaning that the increase in the discount rate leads to a decrease in the total credit and morally. Also, the effect of the statuary reserve on the total credit is positive and significant, as the increase in the statutory reserve leads to an increase in the total credit by 0.09. Also, the parameter of the y-section is significant, and its value = 0.86 R2.
4. There is a significant relationship between indirect monetary policy tools and global economic stability indicators, but it is negative, as it is possible to accept the hypothesis that there is a significant effect of at least one of the monetary policy tools on one of the indicators.

Recommendations:

1. The necessity to effectively use financial stability indicators in Iraq, especially the recent monetary policy direction using these indicators by government and private banks in Iraq.
2. The necessity of adjusting the discount rate when using it as an indirect monetary policy tool, which leads to a significant and positive effect on financial stability.
3. Working to find new means for total credit, which is one of the indicators of financial stability through which market stability is achieved, as well as achieving financial stability in all economic sectors, as well as a measure of financial development.

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