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The Impact of the Foreign Currency Selling Window on the Money Supply in Iraq for the Period (2004-2016)

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Abstract: The transition situation experienced by the Iraqi economy after 2003, and the shift in the trends of monetary policy recently after the Central Bank obtained independence based on Law 56 of 2004, Led to the use of monetary authority modern tools and commensurate with the requirements of orientation towards the market system on the one hand, and the specificity that characterizes the Iraqi economy in light of the structural imbalance suffered by the failure of the financial system and banking on the other, As the Monetary Authority succeeded through the use of the window to sell the currency to control the supply of money and reduce the gap between the exchange rate and the official parallel price, and thus stability of prices and purchasing power in the Iraqi economy.

Keywords: Foreign currency selling window, Cash

Introduction

The monetary system witnessed very rapid transformations and changes, including most economic sectors, such as bank mergers and electronic monetary transactions, as well as capital transfers, and increased demand for foreign currency in light of economic liberalization and openness, as the demand for foreign currency increases the more open the country is to the outside world. Also, preferring the foreign currency and making it a store of value instead of the local currency comes as a result of the internal structural imbalances of the local economy, and during those developments, buying and selling of foreign currency has recently emerged, and international markets have been created, such as the Eurodollar markets, as well as the establishment of similar markets in other countries. It is less developed in achieving a balance between the demand and supply of that money, and Iraq is one of those countries that resorted to opening a window to buy and sell foreign currency after 2003, as a result of the inflationary demand for hard currency, due to the complete opening of the borders, so the Iraqi economy witnessed a gap between the decline in demand for the local currency It is higher than others, and therefore it has become necessary for the Central Bank to restore stability between the two functions of monetary demand, through buying and selling foreign currency obtained from allowing Iraq to export oil.





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Research Methodology

First: A Problem

How successful is the central bank in using the foreign currency selling window to influence the money supply?

Second: The Importance Of The Research

The importance of the research stems from the following:-

1-The growing role of the Central Bank of Iraq's sales of hard currency and its significant impact on economic policy.

2-The extreme importance of achieving monetary stability through harmonization and creating a balance between the demand and supply of both local and foreign currency.

Third:- The Research Objective

The research aims to achieve a set of goals:-

1-Explaining the nature of the window for selling foreign currency to the Central Bank of Iraq.

2-Identify the nature and mechanism of operation of the foreign currency selling window.

3- Statement of the impact of central bank sales on the money supply.

Fourth: Research Hypotheses

The research is based on the hypothesis that the foreign currency selling window has a clear impact on controlling the money supply and thus achieving monetary stability and meeting the demand for foreign currency despite the significant depletion of hard currency reserves.

The Theoretical Aspect

1- The Concept Of Foreign Currency Sales Window

The currency sale window is a type of one-way currency auction. It represents the mechanism followed by some central banks as one of the methods of intervention in the exchange market with the aim of covering the gap in local demand for foreign currency and then stabilizing exchange rates (Werner, 2001: 25). It is known as One of the direct methods used by emerging economies with medium or weak financial depth to intervene in the exchange market with the aim of maintaining the stability of the exchange rate and the general level of prices in light of the inflation targeting policy (Bank of Thailand 2013: 328)

2-Types Of Sales In The Foreign Currency Selling Window

There are two types of foreign currency sales operations in general and in the currency sale window in particular:-

A-Urgent sale

These are the daily or weekly sales offers carried out by the Central Bank in the window, where buyers buy the currency according to the price announced at the moment of completing the exchange process, and through it the immediate or urgent exchange rate is determined (Gray, Karam, 2013: 20)

B-Term sale

These are the daily or weekly operations carried out by the Central Bank to sell the currency, but they are carried out with forward contracts, in which the maturity period varies. Accordingly, the exchange process is carried out by selling the currency to buyers with contracts or instruments that mature for exchange after a certain period and according to what is approved by the Central Bank,





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and in this way the forward exchange rate is determined. This process helps to rationalize expectations about future exchange rate prices and thus increase confidence in the ability of monetary policy to achieve stability (Claro & Soto, 2013: 86).

3- Objectives Of The Foreign Currency Selling Window

The objectives of the currency sale window are multiple. In addition to being a temporary method used by the monetary authority, its goal is to achieve monetary and financial stability to pave the way for the process of stimulating growth, and improving the economic reality in light of a suitable environment for decision makers to take appropriate measures. It focuses directly on: (Saleh, 2012: 292).

A-The development of the currency exchange process between the banks themselves, as banks that have a surplus of foreign currency sell the surplus to banks that suffer from a deficit, which reduces the pressure on the central bank, and at the same time works to generate an organized market for exchange in the economy.

B- Finding the best ways to manage international reserves in a way that achieves the greatest benefit to the Iraqi economy and protects its foreign resources.

C-It is one of the indirect tools of monetary policy that the Central Bank uses within the framework of adopting market mechanisms in managing the economy, with the weak role of financial intermediation, which makes it the only intervention tool capable of achieving stability in the exchange rate and the general level of prices.

D- A primary source of financing private sector trade and satisfying local demand for goods and services.

E-Working to reduce the gap between the official and parallel exchange rates in a way that is reflected in the improvement of the value of the currency, as the latter leads to achieving relative price stability, and is considered an incubator for economic growth and a check on the role of inflationary expectations that have always brought negative effects to the Iraqi economy previously and other economies (the current Egyptian experience).

F- Providing foreign currency to banks, enabling them to open documentary credits and transfer money in foreign currency.

The window is practically part of open market operations, and organizationally it is a division in the Financial Operations Directorate of the Central Bank of Iraq

4- The Concept Of Money Supply

The circle of economic activity in any society is represented by two axes:-

A-The material aspect: which represents the total supply in society, that is, the commodity flows generated in the economic sectors of any country.

B-The monetary aspect: It is represented by the cash flows corresponding to the commodity flows. It is self-evident that financial balance is achieved if equality is achieved between the total demand and the total supply of society. If it is not equal, a financial imbalance occurs and it is in the form of inflation (if the demand is greater than the supply), or Deflation (if demand is less than supply), and since the central bank is responsible for issuing banknotes (the official currency) and the government is responsible for issuing auxiliary money of various types and its depository institutions, the most important of which are commercial banks that are responsible for issuing





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bank money, so the circle of responsibility The responsibility of these institutions mentioned above falls within what is known as the narrow and broad money supply (Yunus, 2013: 49-50).

After it was accepted that money was a means of exchange, societies began to retain a certain amount of money, and this is what is called (money supply), meaning the size or quantity of money that is used in circulation in any economy. In this regard, we can discuss several types of money supply, including the following:-

A-Money supply in the narrow sense: In economics, it is called the money supply (M1) or M1) and it is called the money of current operations, which is included in the paper and metal currencies that individuals circulate, that is, the money in circulation (CR) outside the banking system and the volume of money in banks, which is represented by current accounts (under Demand) and its symbol is (DD). From this it is clear that the money supply equation M1 is sometimes called (the monetary mass), and the narrow concept is considered the best indicator for measuring the money supply in the national economy, which the International Monetary Fund adopted (Bradley. Schiller, 2003: 226) M1 = DD + CR

B- Money supply in the broad sense: In economics, it is called the money supply (M2) or M2) and includes the money supply in its narrow sense, in addition to accounts or time deposits such as (savings deposits, foreign currency deposits, and stocks and bonds), symbolized by (TD), in addition to savings accounts. In banks, it is symbolized by the symbol (S), meaning savings account deposits as well as postal savings fund deposits. Through this, it is clear that the money follows (Al-Wazani, supply equation M2 is as Al-Rifai, 2003: 284 - 285M2=M1+TD+S

C- Money supply in the expanded sense: It represents the money supply (M2) plus repurchase agreements, shares of money market mutual funds owned by institutions (Yunus, 2013: 55), certificates of deposit, and total cash investments (demand deposits, term accounts, certificates of deposit). In foreign currencies for residents (Al-Ayeb, Bukhari, 2013: 70), in addition to deposits or shares in so-called savings and loan institutions, cooperative savings banks, and credit unions (Abdul Razzaq, 2013: 73). It is worth noting that the third type of money supply, M3, is not used in many countries. From the economies of countries, it suffices in defining the concept of money supply at M1 and M2

5- Factors Affecting The Money Supply

In order to identify the main reasons for the increase in the money supply, it is based on an analysis of the factors directly affecting the money supply. The money supply equation is usually used as an input for analyzing these factors, as follows: (Giyas, 2016: 6).

Monetary liabilities = assets - non-cash liabilities

Cash liabilities consist of:

Currency in circulation + private current deposits with commercial banks

As for the assets, they consist of:-

A-Net foreign assets, which represents the difference between the total foreign assets and liabilities.

B- Local credit, which in turn is divided into two parts:

1-Credit granted to the government sector is usually calculated net, that is, government deposits are subtracted from it.





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2-Credit granted to the private sector.

The non-cash liabilities paragraph consists of:

A-Quasi-cash, which includes (fixed deposits + savings deposits + foreign currency deposits with commercial banks.

B-The budget paragraph, which is the result of calculating the capital and reserves - net of other accounts.

Any increase in total monetary assets will have an expansionary effect on the money supply, while any decrease is a contractionary factor, and with regard to non-cash liabilities, their increase is a contractionary factor in the money supply and vice versa.

The Practical Aspect

Central Bank Sales

The table below shows the Central Bank of Iraq's sales and purchases of dollars for the period (2004-2016), as the ratio of its sales to its purchases for the above period reached (91.7%), meaning that most of the Central Bank's purchases are sold through the window.

The highest sales were in 2013, amounting to approximately 55,678 million dollars, or 89.8%.

We note that its sales during the year 2004 amounted to (6008) million dollars, and rose to (10463) million dollars in 2005, and continued to rise to reach (53231) million dollars in 2013, with a sales to purchases ratio of 89.8%, and then decreased in 2014 to (51728) million dinars and continued to decline to reach (33.5) million dinars in 2016

Central Bank purchases

Table (1) indicates an increase in the Central Bank's purchases of dollars from the Ministry of Finance since the beginning of the window's operation, reaching (10,352) million dollars in 2004 until it reached its highest level in 2013, at (62,000) million dollars, then decreasing in 2014 to approximately (47,515). One million dollars due to the decrease in oil revenues resulting from the decline in oil prices, and it continued to decline to reach 25,653 million dollars in 2016.

Table (1) Central Bank sales and purchases of dollars for the period (2004-2016)						
Years	Purchases	Sales Difference		Ratio of sales to		
				purchases %		
2004	10352	6.008	4344	58,03		
2005	14854	10463	4391	70,43		
2006	16800	11175	5625	66,51		
200 7	26700	15980	10720	59,85		
2008	45500	25869	19631	56,85		
2009	23000	33990	-10992	147,79		
2010	41000	36171	4829	88,22		
2011	51000	39798	11202	78,03		
2012	57000	48650	8350	85,35		
2013	62000	53231	8769	89,80		
2014	47515	51728	-4213	114,62		
2015	32450	44304	-11854	136,53		
2016	25653	33524	-7871	130,68		
Total	453824	416075	37749	91.7		





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Money Supply In The Iraqi Economy

The money supply is the quantity of money circulating in society, meaning that the money supply is represented in all forms held by economic units, whether individuals or institutions, and the following table includes the money supply in the narrow sense in the Iraqi economy.

A- Money supply in the narrow sense

Table (2) shows the money supply in the narrow sense in the Iraqi economy, as it recorded an increase (2004-2013), as it was (10,149) billion dinars in 2004, rising to (73,831) billion dinars in 2013, with a growth rate of 15.8%. The main reasons behind the increase The money supply M1 in the period 2004-2013 is due to the large increase in net foreign assets resulting from the rise in oil prices in global markets. However, the money supply in the narrow sense decreased to (72,691) billion dinars in 2014, with a percentage change over the previous year (-1, 5% (and (65435) billion dinars in 2015 with a change rate of (-10), and this is due to the deflationary effect of external factors represented by (net foreign assets) as a result of the clear decline witnessed in global oil prices starting from the second half of 2014, as well as the misuse of Resources in foreign currencies, the delay in implementing the investment plan within the federal general budget, and the presence of many cases of financial corruption that led to the cessation of investment projects entrusted to the private sector, but the M1 money supply increased in 2016 to reach (69,830) billion dinars, at a rate of 6.7%, and this The rise is mainly due to the growth of the currency outside banks, compared to the decline in the relative importance of current deposits in the total money supply M1. This is due to the public's hedging and retention of savings to confront the state of uncertainty in light of the country's economic recession.

years	M1	% growth rate
2004	10149	
2005	11399	12.3
2006	15460	35.6
200 7	21721	40.5
2008	28190	29.8
2009	37300	32.3
2010	51744	38.7
2011	62616	21
2012	63736	1.8
2013	73831	15.8
2014	72691	1.5-
2015	65435	10-
2016	69830	6.7

Table (2) Money supply M1 in the Iraqi economy for the period (2004-2016)

Econometric Analysis

First: Concept Of Econometrics

Econometrics is a branch of economics, specialized in analyzing phenomena in a quantitative manner, based on mathematical equations to quantitatively prove the relationship under study between various economic variables. (Najm, 1991: 14).





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Second: Stability Analysis

This study will address the analysis of the stability of the time series of the window for selling foreign currency and money supply in Iraq for the period 2004-2016, through unit root analysis, as well as resorting to analysis of the total and partial autocorrelation function to show that the series are free of autocorrelation coefficients, according to a test analysis. Correlogram. As for the other test for analyzing the general trend of time series, it relied on the (Phillips Peron) test and the (Dickey-Fuller) test.

1-The currency sale and money supply window data has been converted to quarterly data instead of annual data

In order to obtain statistically significant functions using the E-Views program, according to the following table:-

years	Cash offer	sales	years	Cash	sales
2004Q1	25.4375	5004.7738	2010Q3	2.61875	194414.31
2004Q2	26.5625	7720.9374	2010Q4	3.03125	177687.6
2004Q3	27.5625	10087.706	2011Q1	5.853125	75746.476
2004Q4	28.4375	12105.079	2011Q2	6.471875	50734.772
2005Q1	29.1875	13773.057	2011Q3	6.809375	35092.556
2005Q2	29.8125	15091.64	2011Q4	6.865625	28819.828
2005Q3	30.3125	16060.827	2012Q1	6.296875	56401.544
2005Q4	30.6875	16680.62	2012Q2	5.928125	59073.81
2006Q1	32.65625	15658.475	2012Q3	5.415625	61321.583
2006Q2	32.09375	16096.494	2012Q4	4.759375	63144.863
2006Q3	30.71875	16702.134	2013Q1	3.225	64791.467
2006Q4	28.53125	17475.397	2013Q2	2.575	65666.631
2007Q1	22.5625	17724.364	2013Q3	2.075	66018.174
2007Q2	19.9375	19109.636	2013Q4	1.725	65846.095
2007Q3	17.6875	20939.296	2014Q1	1.759375	64586.327
2007Q4	15.8125	23213.345	2014Q2	1.615625	63592.633
2008Q1	15.234375	27326.81	2014Q3	1.528125	62300.945
2008Q2	13.740625	29931.624	2014Q4	1.496875	60711.263
2008Q3	12.253125	32422.814	2015Q1	1.865625	58852.553
2008Q4	10.771875	34800.38	2015Q2	1.809375	56655.296
2009Q1	9.046875	15547.261	2015Q3	1.671875	54148.46
2009Q2	7.678125	26304.406	2015Q4	1.453125	51332.043
2009Q3	6.415625	45554.752	2016Q1	1.153125	48206.046
2009Q4	5.259375	73298.3	2016Q2	0.771875	44770.469
2010Q1	3.25625	174904.27	2016Q3	0.309375	41025.311
2010Q2	2.69375	193486.53	2016Q4	-	36970.574
				0.234375	





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Analysis Of The Partial And Total Correlation Function

The data was subjected to the variables under study, which are: Dependent variables Money supply (M1) Independent variable Window Sales (SAR) In order to test whether the series values suffer from a correlation between the random residuals, the researcher examined the series values using the Correlegram test, as follows:-

1- Cash offer

By conducting a test for the total and partial autocorrelation coefficients, the following results were reached:-

Table (3): Test of total and partial autocorrelation coefficients Date: 08/11/18 Time: 09:17 Sample: 2004Q1 2016Q4 Included observations: 52

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
· []		1	0.958	0.958	50.503	0.000
	i 🖡 i	2	0.915	-0.02	97.571	0.000
· •	i 🖡 i	3	0.873	-0.02	141.27	0.000
	i 🖡 i	4	0.831	-0.02	181.66	0.000
	I 🗖 I	5	0.780	-0.12	218.02	0.000
		6	0.729	-0.02	250.49	0.000
		7	0.679	-0.03	279.23	0.000
	(-	8	0.628	-0.03	304.38	0.000
	· □ ·	9	0.565	-0.17	325.19	0.000
· 👝		1	0.501	-0.04	341.99	0.000
· 👝		1	0.438	-0.04	355.14	0.000
· 👝	- (1	0.375	-0.04	365.00	0.000
· 🗖	· 🔲 ·	1	0.305	-0.10	371.70	0.000
· 🗖 · 🔰	- 	1	0.235	-0.06	375.79	0.000
· 🗖 · 🛛		1	0.165	-0.06	377.87	0.000
· þ ·	· 🛛 ·	1	0.096	-0.06	378.59	0.000
- i 🎙 i 🔤	· 📮 ·	1	0.037	0.107	378.70	0.000
- I (I)		1	-0.02	-0.05	378.73	0.000
· 🛛 · 🛛	- 	1	-0.08	-0.05	379.29	0.000
· 🗖 · 🛛	- 	2	-0.13	-0.06	380.99	0.000
· □ ·	- p -	2	-0.18	0.052	384.22	0.000
· 🔲 · 🛛 🗌	- 	2	-0.23	-0.05	389.52	0.000
	· • •	2	-0.28	-0.05	397.53	0.000
	1 0 1	2	-0.33	-0.06	408.91	0.000

The above results show that there is no correlation between the previous and subsequent values by relying on the total and partial correlation function, as it took a descending path, in addition to comparing the Q-Stat test values of 408 with a delay of 24 years, as they are greater than the Chi-Square test values of 27 at the 95% level of significance. Therefore, we reject the alternative





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hypothesis and accept the null hypothesis indicating the absence of a unit root, i.e. judging the stability of the time series for the variable M1.

2-Sales

By conducting the approved test on the previous variables, the results were arrived at, according to the table below:

Table (4): Test of total and partial autocorrelation coefficients Date: 08/11/18 Time: 09:18 Sample: 2004Q1 2016Q4 Included observations: 52

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	<u> </u>	0.866	11 268	0.000
		2	0.000	-0.46	63.842	0.000
		2	0.004	-0.40	71 //0	0.000
		1	0.004	-0.13	72 283	0.000
		5	0.113	0.51/	72.200	0.000
		6	0.001	-0.28	72.340	0.000
		7	0.011	-0.20	72.343	0.000
		2 2	0.030	0.10	72.420	0.000
			0.077	0.011	72.003	0.000
· • ·		1	0.074	0.192	73.100	0.000
· • ·		11	0.000	-0.09	72 106	0.000
		1 1	0.030	-0.05	73.400	0.000
		11	0.007	-0.01	73.409	0.000
		11	-0.01	-0.02	73.506	0.000
· • •		1	-0.03	0.004	73.609	0.000
· U ·		1	-0.05	-0.02	/3.8/1	0.000
· Ц ·		1	-0.07	-0.03	74.364	0.000
· •		1	-0.09	-0.07	75.144	0.000
יםי		1	-0.11	-0.01	76.299	0.000
י 🗖 י	I I I I	1	-0.13	-0.04	77.950	0.000
י 🗖 י		2	-0.16	-0.06	80.280	0.000
· 🔲 ،	ı ⊟ ı	2	-0.20	-0.20	84.103	0.000
– –	I I	2	-0.24	0.028	89.841	0.000
		2	-0.28	-0.00	97.598	0.000
	I ()	2	-0.30	-0.02	106.90	0.000

The above results show that there is no correlation between the previous and subsequent values by relying on the total and partial correlation function, as it took a descending path, in addition to comparing the Q-Stat test values of 106 with a delay of 24 years, as they are greater than the Chi-Square test values of 27 at the 95% level of significance.

Unit Root Test

This test was relied upon to detect the absence of a time trend in the values of the time series of the variables under study, as the Dickey-Fuller test was resorted to, based on the statistical program E-Views V8, and after the test was conducted for the time series of variables that they were not stable at the level With the first difference with all terms, the test was repeated after taking the second difference (II), and the results showed the following:-





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Table 5: Dickey-Fuller stationarity test results						
Variables	Calculated	Tabular values			Prob	
	values	%1	%5	%10		
M1(II)	-2.091	-2.612	-1.947	-1.612	0.03	
SAR(II)	-4.285	-3.596	-2.933	-2.604	0.00	

It is clear from the data in Table (5) that the time series is stable, that is, there is no unit root according to the Dickey-Fuller test, as when comparing the calculated values at a significance level (1%, 5%, 10%), it turns out that they are less than their tabulated values, Since the tabulated values exceeded the calculated values, we reject the null hypothesis and accept the alternative hypothesis indicating the stability of the time series values for all variables under study.

The Effect Of Window Sales On The Cash Offer

The results of the initial linear regression showed Unusual observation, so the outliers were removed and the following function was arrived at:-

Regression Analysis: LOG M1 versus log SAD

The Regression Equation Is $LOG M1 = 2.85 + 0.729 \log SAD$ Predictor Coef SE Coef Т Р Constant 2.8466 0.7567 3.76 0.000 log SAR 0.72875 0.07180 10.15 0.000 S = 0.414713 R-Sq = 67.3% R-Sq(adj) = 66.7% Analysis of Variance Source DF SS MS F Р Regression 1 17.717 17.717 103.02 0.000 Residual Error 50 8.599 0.172 Total 51 26.317

Through the signals of the estimated parameters above for the model, the signals of these parameters do not match the logic of economic theory, as the signals indicate a direct relationship between the money supply (M1) and window sales. However, when the central bank increases window sales, this will lead to the absorption of the monetary mass from the currency. Local, meaning that the relationship between them is an inverse relationship because window sales are considered one of the policies of the Central Bank to withdraw cash from the local currency. When the government represented by the Ministry of Finance pumps large quantities of local currency, the Central Bank pumps foreign currency, meaning dollar sales increases through the sales window. the currency.

Conclusions

1-The foreign currency selling window was able to control the money supply and achieve monetary stability between the demand and supply of foreign and local currency during the research period.





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2-The study concluded that a large amount of hard currency is being transferred abroad to pay the amounts of imports through documentary credits, so it would have been better to allocate these amounts to develop the real sector of the Iraqi economy.

3-Dollar sales were linked to a direct relationship with the money supply, and this is consistent with the logic of economic theory, as an increase in dollar and hard currency sales leads to an increase in the money supply, while tests indicated that it is statistically significant.

Recommendations

1-Reducing the phenomenon of depletion of hard currency reserves and the necessity of finding other development alternatives to provide hard currency and meet the increasing demand for it. 2-Resorting to creating a fixed monetary base commensurate with the rate of production growth and not linking the money supply with the increase or decrease in Iraq's reserves of oil revenues. 3-The necessity of creating a contractionary policy through other tools, such as the discount and reserve rates, which act as a deterrent force against the massive increase in the volume of hard currency sales by the Iraqi Central Bank.

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