Analysis of the level and Efficiency of Foreign Reserves and their Correlation to the Exchange Rate in Iraq for the period (2004-2017)

Asst. Prof. Dr : Sadq Zwer Lglag
dr.sadq@utq.edu.iq
Department of economics/ College of Administration and Economics/ University of Thi - Qar. Iraq

Asst. Prof . Dr : Adnan Mohammed Hasan
adnan-m@utq.edu.iq

Department of economics/ College of Administration and Economics/ University of Thi-Qar. Iraq

Asst .Lecturer Naji Radees Abd
Iraqi Parliament Member

Abstract

Due to the importance of foreign reserves as a component of the economy of any country, most countries, especially developing ones, do their best to increasingly accumulate these reserves to attain several goals, including the ability to solve the problem of imbalances in external payments, including servicing external debt, interference in the foreign exchange market, and establishing a stable economic environment and strengthening the confidence of creditors and foreign investors in the national economy. Many measures were, therefore, used to increase the accumulation of foreign reserves. one important lessons of the financial crisis of (2008) showed that emerging market economies with high levels of reserves is more able to withstand the effects of the crisis, however the largest size of these reserves is not always the best for the making and maintaining of these vast reserves is costing.

In the Iraqi economy, foreign reserves are considered one of the most significant assets on which the economy was and is based to face the manifestations and challenges around among them was the (shock of supply). The aim of this research is to reveal the extent of the monetary authority's ability to manage these reserves and increase their size and preserve them according to international standards and guidelines for managing foreign reserves currency issued by the International Monetary Fund and measure the correlation between them and the exchange rate.

foreign reserves in Iraq turned out to be much higher than the basic rule which is represented by (3) import months more than four times, as well as that foreign reserves are much higher than the basic rule that amounts to (30%) of the value of imports by nearly three times.

Foreign reserves and the exchange rate were related to an incomplete inverse relationship (negative and partial correlation), as the coefficient of correlation between them reached about (0.834), which means that the increase in one of the two variables is offset by a decrease in the other variable, but not to the same degree or ratio, and the decrease in one of the two variables is offset by an increase in The other, but not with the same degree or ratio, and it is also noticed that the mentioned correlation coefficient differs significantly from zero with a level of significant significance (0.01%), and this relationship corresponds to the economic reality in Iraq, and emphasizes that improving the Iraqi dinar exchange rate against the dollar is done at the expense of foreign reserves, in other words, stability in the exchange rate was at the expense of depleting an important amount of foreign reserves, but it is policy and the last resort in light of the almost complete absence of other policies (financial, commercial, etc.), and this requires real attention to the role of foreign reserves, as it can play the role as an external stability factor and limit the fluctuations in foreign exchange rates.

INTRODUCTION

Foreign reserves represent one of the important constituents of the economy of any country, which monetary authorities put at their disposal. Therefore, most countries, especially developing ones, seek to increase the accumulation of these reserves to achieve several goals, including the ability to solve the problem of imbalances in external payments, including external debt service and interference in the foreign exchange market, establishing a stable economic environment and enhance the confidence of creditors and foreign investors in the national economy, but the question which imposes itself is that to what is the adequate level of these reserves?

After the changes that took place in global trade patterns, other developments and currency crises, many measures began to be used to increase the accumulation of foreign reserves as one of the important lessons of the financial crisis of (2008), showed that emerging market economies with high levels of foreign reserves are more able to withstand the effects of the crisis, yet, the largest size of these reserves is not always the best for making and maintaining of these vast reserves is costing.

In the Iraqi economy, foreign reserves are one of the most important assets on which the economy was and is based in order to face crises and challenges around, among them was (the shock of supply).

In light of the foregoing, this research aims to reveal the extent of the monetary authority's ability to manage these reserves, increase their size and maintain them according to international standards and guidelines for managing foreign reserves issued by the International Monetary Fund, while fathoming the impact of those reserves on the stationary of the exchange rate.

Second: The research problem:

The research problem deals with answering the following question

To determine the level actually and optimally achieved by foreign reserves to the optimum level by comparing the scope of expected benefits and the cost of preserving them; what are the best measurement systems and standards for determining that level in the Iraqi economy and its impact on the stationary of the exchange rate.

Third: The research objective

In light of the variation in the reasons for forming foreign reserves, the research aims to analyze the best criteria for measuring the optimum level of those reserves in the Iraqi economy, as well as to study the relationship of their correlation with the exchange rate of the national currency.

Fourth: The importance of research:

The importance of the research stems from the importance of the foreign reserve, where the monetary authority and the reserve management authority can estimate the risks and the sensitivity of the reserve's portfolio to fluctuations. The conduct of measurement and standards tests used requires these reserves to determine the potential effects of variables or total monetary and economic shocks; and the most important among these effects is the effect on the national currency rate through the Open Market Operations (OMO).

Fifth: Research hypotheses:

The first hypothesis: The size of the foreign reserves in Iraq is proceeding according to the optimum level based on international standards and measures.

The second hypothesis: The foreign reserve plays a direct and influential role on the stationary of the exchange rate according to the foreign currency auctions exercised by the Central Bank after the year (2004).

Sixth: Research Methodology:

The research is based on the analytical descriptive approach in analyzing the development of foreign reserves in Iraq for the period (2004-2017) and the adequacy of these reserves in accordance with the criteria and standards used. While in the last part of the methodology, the quantitative standard method was used to measure the correlation between these reserves and the stationery and stability of the exchange rate through foreign currency auctions.

Seventh: Spatial and temporal boundaries

Spatial limits: - Foreign reserves in Iraq that are at the disposal of the monetary authority (the Central Bank of Iraq)

Time limits:

2017 - 2004)The research time frame is determined by the period (

Eighth. Keywords:

-Foreign reserves,

--The official exchange rate

-Parallel exchange rate

-Wide money supply (M2)

-External debt

First: the concept, level and sufficiency of foreign reserves ... a theoretical framework

Foreign reserves are defined as the foreign assets available at the disposal of the monetary authorities subject to their control to meet the needs of the balance of payments and intervention in the exchange markets to affect the currency exchange rate and other related purposes such as assuring confidence in the local currency and establishing a foundation on which external borrowing is based.

Foreign reserves consist of foreign currencies held by the Central Bank in addition to its gold balance, special drawing rights units and the net reserve position at the International Monetary Fund.

Subject to the previous concept of foreign reserves, as being a group of assets denominated in foreign currency, which the state as represented by the monetary authority can resort to, as these reserves have been used historically as follows:

1. To consolidate confidence in the management policies of cash and exchange rate by allotting sufficient time for absorption of shocks and response to emergencies.
2. To be used as a cover for the issued local currency.

3. To encounter unusual and urgent movements and shocks that result from external economic crises or artificial speculations.
4. The temporary emergent deficit in the balance of payments, as these reserves are used to cover the deficit without resorting to adopting unwanted economic policies.

In light of the variation in the reasons behind the making of foreign reserves, it was not agreed on a specific level that is described as an optimal level of reserves, as well as a lack of agreement on whether the level of reserves represents a specific percentage of GDP or enough to cover imports based on a specific number of months, and in general there is no optimal level of reserves for a group of countries in a region or globally, but there is an optimal level of reserves for each country separately and during a specific period of time.

Secondly: the development of foreign reserves in Iraq for the period ..2017-2004)(

The rise and fall of the foreign reserves in Iraq are associated to the foreign currency that comes from oil revenues and the use of these revenues, whether in the state sector or the private sector, the oil exporting country is easily able to build reserves ... taking into account that the high levels of GDP growth do not guarantee the growth of foreign currencies unless the production structure was not export-oriented in order to achieve economic growth and foreign currency accumulation.

What the Central Bank does by accumulating foreign reserves is imposed by the monopolistic source of the dollar. When the demand for the dollar is less than what the Central Bank gets, the (surplus) goes to the foreign currency reserves, and when the demand for the dollar is higher than the dollar resource, the Central Bank uses the currency reserve to cover the deficit, and for this reason, the Central Bank does not control the size of foreign reserves, that is, it increases or decreases by factors outside its control.

Data in Table (1) indicates that foreign reserves increased from (395.9) billion US dollars in (2004) to (74.301) billion dollars in (2013), that means they were doubled early eight times over a period of nine years, with an annual growth rate of about (791.3) % during the abovementioned period, which is a high rate that exceeds the rate of growth in the gross domestic product (GDP) which reached about (304%) and the growth rates in economic variables that are related to foreign reserves such as imports (82%) and external debt (-23.2%) for the aforesaid period, then these reserves decreased again to reach (63.720) billion dollars in (2014) and continued to decrease to (44.447) billion dollars (2017) by virtue of the exceptional circumstances undergone by the Iraqi economy during the war against terrorism and the decline in oil revenues resulting from the decline of prices and quantities of the exported oil and stoppage of oil exports in some of the northern oil fields.

As for the composition of these reserves in their known elements, the foreign currencies represent foreign currencies about (90%) of these reserves, while the other elements of gold and special drawing rights (SDR), do not represent more than (5%) for each of them over the years of research as shown by the annual bulletins and reports by Iraqi Central.

In spite of this decline in recent years, Iraq still occupies internationally advanced position in terms of owning foreign reserves, as it ranks (35) globally for the year (2016) out of a total of (188) countries and ranks sixth in the Arab world for the same year.

(2017-2004) Table (1) the development of foreign reserves in Iraq for the period
)billion dollar

Years	**Foreign Reserves (1)**	**The Rate of Change of Foreign Reserves % (2)**
2004	**9.395**	**…….**
2005	**13.519**	**43.89**
2006	**18.012**	**33.23**
2007	**30.163**	**67.46**

2008	**48.806**	**61.80**
2009	**43.884**	**)10.08(**
2010	**49.939**	**3.79**
2011	**59.707**	**19.55**
1012	**66.505**	**11.38**
2013	**74.301**	**11.72**
2014	**63.720**	**)14.24(**
2015	**51.670**	**(18.91)**
2016	**40.891**	**)20.99(**
2017	**44.447**	**8.69**

Source: Column (1), the Central Bank of Iraq - Department of Statistics and Research - Annual Bulletins for various years

Column (2): From the work of researchers.

Third: the criteria for determining the optimum level of foreign reserves in Iraq

To estimate the optimal level of foreign reserves, the monetary authority is keen to balance between the benefits and the cost of these reserves through some criteria indicating their adequacy and comparison between them:

1.Ratio of foreign reserves coverage to imports (R\ im):

In 947, Triffin proposed this ratio as an indication of the adequacy of foreign reserves because imports are the most important variable in balance of payments items and their close correlation with levels of domestic consumption, current production and economic growth, and that (30%) of the value of imports annually or covering the size of reserves for a three-month period of imports is regarded an appropriate level of reserves.

Table (2) shows the following:

-The average number of months covered by foreign reserves in Iraq for the period (2004-2017) was (12.8) months.

-The average ratio of foreign reserves to total imports was (102.3%) during the abovementioned period.

This indicates that foreign reserves are much higher than the basic rule of (3) import months by more than four times, and that foreign reserves are much higher than the basic rule of (30%) of the value of imports, nearly three times the abovementioned period.

Exaggeration in the accumulation of these reserves is what may waste the return from alternative opportunities that can be generated if these excess reserves are invested locally or internationally in a way that contributes to achieving continuous and sustainable growth and creating productive work opportunities with taking into consideration the conditions facing the country that may require an increase This measure of vulnerability to the degree of high diversity with imports and severe rentier in the Iraqi economy.

Table (2) Covering Foreign Reserves for the Number of Months of Imports(2017-2004) billion dollar)

Years	**Foreign Reserves (1)**	**Total Imports (2)**	**The Number of Months Covered by Imports)3(**
2004	**9.395**	**21.302**	**5.2**
2005	**13.519**	**23.532**	**6.8**
2006	**18.012**	**22.009**	**9.8**
2007	**30.163**	**19.556**	**17.7**
2008	**48.806**	**35.012**	**16.7**
2009	**43.884**	**41.512**	**12.6**
2010	**49.939**	**43.915**	**13.6**
2011	**59.707**	**47.803**	**14.9**
2012	**66.505**	**59.006**	**13.5**
2013	**74.301**	**59.349**	**15.0**
2014	**63.720**	**58.602**	**13.0**
2015	**51.670**	**48.010**	**12.9**
2016	**40.891**	**34.208**	**14.3**
2017	**44.447**	**38.766**	**13.7**
Average	**43.92**	**39.47**	**12.83**

reference: Column (1) and (2) Central Bank of Iraq - Department of Statistics and Research. Annual bulletins and reports.
Column (3): From the researcher's work.

2.Ratio of foreign reserves to broad money supply (R / M2)

This indicator is used to determine the optimum size of foreign reserves in light of the fixed exchange rate system and in light of the stationary of the money demand function. Through this ratio, it is possible to know the degree of capital flight that would press the reserves and measure the degree of confidence in the national currency and the efficiency of the banking system, Therefore, maintaining of foreign reserves equivalent to (20% - 5%) of the money supply in the broad sense is considered an optimal size for international reserves to be able to support confidence in the value of the local currency in the event of a currency crisis (Currency Crisis) and this ratio is important for countries whose banking system is distinguished as weak, with taking into consideration that the relationship between the change in the reserves and the change in the money supplies is not fixed in reserves The rise in reserves is not faced by specific money supply ratio to be built on when preparing the especial implications by change reflections in reserves to money supply.

$$\frac{R}{M2} \geq 20\%$$

Table (3) shows that the ratio of the average foreign reserve to the money supply (M2) reached (104.13%), which is much higher than the internationally approved standard value (20%) represented by the following formula:

(billion dollar -percentage)

Table (3) shows that the ratio of the average foreign reserve to the money supply (M2)
)billion dollar –percentage

Years	**Foreign Reserves (1)**	***Money Supply (M2))2(**	**21:Rate (%)**
2004	**9.395**	**8.433**	**111.40**
2005	**13.519**	**9.995**	**135.25**
2006	**18.012**	**14.369**	**125.35**
2007	**30.163**	**21.478**	**140.43**
2008	**48.806**	**29.270**	**166.75**
2009	**43.884**	**38.835**	**113.00**
2010	**49.939**	**51.612**	**96.75**
2011	**59.707**	**61.690**	**96.78**
2012	**66.505**	**64.722**	**102.75**
2013	**74.301**	**75.196**	**98.81**
2014	**63.720**	**77.811**	**81.89**
2015	**51.670**	**69.407**	**74.44**
2016	**40.891**	**74.018**	**55.12**
2017	**44.447**	**75.160**	**59.13**
The Average			**104.13 %**

reference: - Columns (1) and (2) Central Bank of Iraq - Department of Statistics and Research. Bulletins and reports for various years
Column 3: Researcher's work
*The money supply (M2) was converted to the dollar value, at the annual official exchange rates mentioned in the Central Bank's bulletins.

In view of the specificity of the rentier Iraqi economy, some researchers have suggested that this ratio be according to the following:

$$\frac{R}{M2} \geq 50\%$$

This rise of this ration is considered as an indication of the ability of the monetary authority to confront imbalances in the money supply or speculations that may get foreign currency and thus maintain price stationary.

3.Foreign Reserves Index / Total External Debt:

This indicator takes up the relationship between foreign reserves and total external debt in general and not only short-term, and the index measures the ability of the state to finance the balance of its external debt and that the ratio (40%) is the optimal rate for this, and that taking into account external debt strategies constitutes a primary need When working out reserves management strategies to reduce vulnerability to external fluctuations.

Table (4) shows that the average percentage of foreign reserves covering foreign debt for the period (2004-2017) was about (74.50%), which is higher than the standard ratio of (40%), and the rise of this percentage reflects the ability of Iraq to pay its debts without the need to borrowing from external sources. Rather, it is possible to rely on the foreign reserves the country possesses, so that it can continue to service its external debt.

Table (4) the ratio of foreign reserves covering external debt for the period (2004-2017)

(billion dollar / percentage)

Years	**Foreign Reserves (1)**	**External Debt)2(**	**Rate 1:2)3(**
2004	**9.395**	**88.134**	**10.66**
2005	**13.519**	**70.626**	**19.14**
2006	**18.012**	**57.914**	**31.10**
2007	**30.163**	**60.639**	**49.74**
2008	**48.806**	**46.679**	**104.56**
2009	**43.884**	**46.949**	**93.47**
2010	**49.939**	**61.000**	**81.86**
2011	**59.707**	**61.000**	**97.88**
2012	**66.505**	**60.000**	**110.84**
2013	**74.301**	**59.000**	**125.93**
2014	**63.720**	**58.000**	**109.86**
2015	**51.670**	**66.000**	**78.28**
2016	**40.891**	**64.000**	**63.89**
2017	**44.447**	**67.639**	**65.71**
The Average			**74.50%**

reference: Column (1) and (2) Central Bank of Iraq / Department of Statistics and Research, annual bulletins and reports.
Column (3) of researchers' work.

Fourth: Measuring the correlation between foreign reserves and the (2017-2004)exchange rate in Iraq for the period

Under the new Central Bank Law No. ((56 of (2004)), the monetary authority attempted to pay attention to monetary stationary through the stability of the nominal fixer of monetary policy (interest rate or exchange rate), but the backwardness of the banking system and its weak financial mediation made the role of the interest rate limited in pushing the activity of the Macroeconomic and the exchange rate became the nominated monetary variable for the role of the nominal fixer of monetary policy in Iraq as well as the limited real factors in determining the exchange rate trends in Iraq (gross domestic product, general budget, imports, etc.).

Before starting to analyze and measure the correlation between foreign reserves and the exchange rate, we look at developments in the exchange rate in the official market (auction price) and the exchange rate in the parallel market (market price) after the year (2004)

Table (5) shows that the dinar exchange rate increased for the period (2004-2017) at a rate of (81.9%) for the auction exchange rate and (86.6%) for the parallel exchange rate, i.e. a difference of

growth of (4.7%) between the two prices, which is slightly more than three thousand dinars Iraqi (3.16) as the average spread between the two prices.

The main reason behind the improvement of the Iraqi dinar exchange is the escalation in foreign reserves, which reached (74.30) billion dollars in (2013), after which it decreased to (44.44) billion dollars in (2017) due to the decrease in oil prices as well as increased public expenditures due to the exceptional circumstances that the Iraqi economy went through because of the war against terrorism and sudden exchange fluctuations, which often occur in the Iraqi market, so the stationary that monetary policy sought through the stationary of exchange rates and through its gate of foreign currency auctions, remains a hostage of the diversity of foreign exchange revenue and this only happens with the diversity of the production environment in Iraq.

"This stationary in the exchange rate was at the expense of depleting an important amount of foreign reserves, but it is policy and the last resort in light of the almost complete absence of other policies (financial, commercial, etc.

Table (5) Trends of the Official and Parallel Exchange Rate for the Period (2017-2004)

(dinar/ dollar)

Years	Official Exchange Rate	Growth Rate %	Parallel Exchange Rate	Growth Rate %
2004	1452	.....	1453	.....
2005	1469	1.1	1472	1.3
2006	1467	(1.9)	1475	0.2
2007	1255	(14.4)	1267	(14.1)
2008	1193	(4.9)	1203	(5.0)
2009	1170	(1.9)	1182	(1.70
2010	1170	0	1182	0
2011	1170	0	1196	1.2
2012	1166	(0.3)	1233	3.0
2013	1166	0	1232	(0.08)
2014	1188	1.9	1214	(1.4)
2015	1190	0.1	1247	2.7
2016	1190	0	1275	2.2
2017	1190	0	1258	(1.3)

Reference: Central Bank of Iraq / Department of Statistics and Research, annual bulletins and reports

Growth rates / of researchers' work

Table (6) shows the percentage of foreign reserves for Central Bank sales in the window for the period (2004-2017) and the extent of these reserves' ability to finance the monthly sales rate of foreign currency in the window, that means that the annual foreign reserves rate for the period (2004-2017) is sufficient for (18) months to cover currency auctions in the window, a ratio that is sufficient according to international standards to cover imports and maintain monetary stability.

Table (6) Percentage of foreign reserves for Central Bank sales in the window for the period 2004-2017 Billion dollar

Years	Foreign Reserves	The Quantity Sold Annually	Monthly Sales rate	The Rate of Change of Foreign Reserves %
2004	9.395	6.108	0.509	18.4
2005	13.519	10.462	0.871	15.5

2006	**18.012**	**11.174**	**0.931**	**19.3**
2007	**30.163**	**15.980**	**1.331**	**22.6**
2008	**48.806**	**25.868**	**2.155**	**22.7**
2009	**43.884**	**33.990**	**2.832**	**15.5**
2010	**49.939**	**36.170**	**3.014**	**16.5**
2011	**59.707**	**39.798**	**3.316**	**18.0**
2012	**66.505**	**46.648**	**4.054**	**16.4**
2013	**74.301**	**55.678**	**4.639**	**16.0**
2014	**63.720**	**54.463**	**4.538**	**14.0**
2015	**51.670**	**44.304**	**3.692**	**14.0**
2016	**40.891**	**33.524**	**2.793**	**14.6**
2017	**44.447**	**42.206**	**3.517**	**12.6**

reference: Central Bank of Iraq / Department of Statistics and Research, annual bulletins and reports.
Growth rates: of researchers' work.

We will try to find out the matrix of correlation coefficients between foreign reserves and the parallel exchange rate as it plays an important role in external economic activity, as
X1: foreign reserves.
X2: parallel exchange rate.

Table (7) shows the correlation coefficient matrix:

Table (7) Matrix of correlation coefficients between foreign reserves and the exchange rate in Iraq for the period 2004-2017

		X_1	X_2
Correlation	X_1	1.0	(0.834)**
	X_2	(0.834)**	1.0
Sig.(1-tailed)	X_1		0.00
	X_2	0.00	
N		14	14

**** . Correlation is Significant at the 0.01 level (1-tailed).**
Source: SPSS Program Outputs and the Value in Parentheses are Negative .

The above table shows the correlation of the two variables (X1) (foreign reserves) and (X2) (the exchange rate) with an inverse opposite relationship (negative and partial correlation), as the correlation coefficient between them reached about (0.834), which means that the increase in one of the two variables is offset by a decrease in the other variable, but not with the same degree or ratio, and the decrease in one of the two variables is matched by an increase in the other, but not with the same degree or ratio, and it is also noticed that the indicated correlation coefficient differs significantly from zero with a level of significant significance (0.01%), and this relationship corresponds to the operative theory Economic, and emphasizes that improving the Iraqi dinar exchange rate against the dollar is achieved at the expense of foreign reserves, and it calls for activating the role of foreign reserves being estimated and contribute actively to achieve external stability and reduce the volatility of foreign exchange rates.

CONCLUSIONS

1. Foreign currencies represent about (90%) of foreign reserves, while other elements of gold and special drawing rights (SDR) do not represent more than (5%) for each of them over the years of research.
2. The foreign reserves in Iraq are much higher than the basic rule, which amounts to (3) import months by more than four times, as well as that the foreign reserves are much higher than the basic rule, which amounts to (30%) of the value of imports by nearly three times for the period above.
3. The ratio of the average foreign reserve in Iraq to the money supply (M2) reached (104.13%) which is much higher than the internationally approved normative value (20%), that the high of this ratio is an indication of the ability of the monetary authority to confront imbalances in the money supply or Speculation that may obtain foreign currency and thus maintain price stability.
4. The average percentage of foreign reserves covering external debt for the period (2004-2017) was about (74.50%), which is higher than the standard rate of about (40%), and the highness of this percentage reflects the ability of Iraq to pay its debts without the need to borrow from foreign sources in a way it can rely on the country's foreign reserves that enable it to continue to service its external debt.
5. The stability of the exchange rate was at the expense of depleting an important amount of foreign reserves, but it is politics and the last resort in light of the almost complete absence of other policies (financial, commercial, etc.)
6. The average foreign reserves for the period (2004-2017) is sufficient for (18) months to cover currency auctions in the window, which is a ratio that is sufficient according to international standards to cover imports and maintain monetary stability.
7.The two variables (X1) (foreign reserves) and (X2) (the exchange rate) were related to an incomplete inverse relationship (negative and partial correlation), as the coefficient of correlation between them reached about (0.834), which means that the increase in one of the two variables is offset by a decrease in the other variable, but not to the same degree or proportion, and the decrease in one of the two variables is matched by an increase in the other, but not by the same degree or proportion.

Recommendations:
1. Activating the role of foreign reserves as they contribute effectively to achieving external stability and reducing foreign currency price fluctuations.
2.Not exaggerating the accumulation of foreign reserves and limiting the waste of revenue that can be achieved from alternative opportunities that can be generated if these surplus reserves are invested locally or internationally in a way that contributes to achieving continuous and sustainable growth and creating productive employment opportunities.

REFERENCES

[1] Foreign reserves and liquidity in foreign currency - Guidelines for preparing a standardized data model. www.imf.org,sta
[2] Cash Reserve - Barometer for Financial Stability.
[3] www.aljazeera.net, economy.
[4] .Dr. Ahmad Shafiq Al-Shazly, methods of forming and managing foreign reserves and the experiences of some Arab and foreign countries. www.amf.org.ae
[5] marion wiliams foreign exchange reserves How mush is inough www.bis.org
[6] Ali Mohsen Ismail, foreign reserves and the foreign currency sale window in the Central Bank of Iraq.
[7] Central Bank of Iraq, Department of Statistics and Research, Journal of Financial and Monetary Studies, Volume One, Issue (72) 2017, p. 2.
[8] A look at foreign exchange expectations for (19) Arab countries in2017) (
[9] www.aa.com.tr

[10] Dr. Zairi Belkacem, Adequacy of Foreign Reserves in the Algerian Economy, Algeria, University of Oran, North African Economics Magazine / Issue Seven, 2009. www.uni-chelf.dz .
[11] 8.Dr. Ahmad Shafiq Al-Shazly, Methods of Forming and Managing Foreign Reserves Experiences of Some Arab and Foreign Countries, available on the Arab Monetary Fund website. www.amf.org.ae
[12] "Early Warning Indicators for the Banking Sector - 2017", a research published on the website of the Central Bank of Iraq. cbi.iq.static
[13] Holding Excess foreign Reservers versus infras-structure finance-what should Africa Do. www.afdb Guidelines for managing foreign exchange reserves. www.imf.org
[14] Dr. Mahmoud Muhammad Dagher, Challenges Facing Monetary Policy and the Difficulty of Consistency with Financial Policy, The Central Bank of Iraq, Department of Statistics and Research, Journal of Monetary and Financial Studies, No. 1 and 2, 2017, p. 29.
[15] Hussein Atwan is obsessed, the Iraqi dinar exchange rate between fluctuating global oil prices and pressure on foreign reserves, the Central Bank of Iraq, Journal of Monetary and Financial Studies, first and second issue, 2017, p. 65.