

Optimal Reserve Level of Central Bank and Foreign Investment: An Analytical Study

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Abstract: Most countries in the world, especially developing countries, pool their foreign exchange reserves to ensure that their balance of payments imbalances can be easily addressed, defend their national currency exchange rate, and meet their obligations to their creditors. It also represents a barrier against tragic economic and financial conditions. A key factor to win the confidence of creditors provides a safer environment to attract investors, both domestic and foreign. There is no difference in views on the conditions of building reserves at safe levels and their optimal size and avoiding excessive retention through reduced exposure opportunities and increased cost of opportunity to retain them. The research was to show the reserve cycle in Iraq during the period (2004-2017) a number of indicators at the optimum level, especially the Hener equation (in addition to other indicators such as import coverage, broad money supply, internal and external indebtedness, Iraq has proved to maintain a higher-level optimum. Therefore, it has been predicted that if IFAD invests in the Sovereign Wealth Fund and in the form of an investment company with key elements in its creation, the Fund will contribute to the diversification of Iraq's income sources as well as participation in development. Solutions to the growing problems of the Iraqi economy.

Keywords: Optimal reserve, Foreign investment, Iraqi economy, Central bank

Introduction:

Most of the countries in the world, especially the developing countries, aim in accumulating foreign reserves of various kinds to deal with their balance of payments imbalances and to fulfill their commitments to the outside world, especially their foreign debts (Ali, Almagtome, & Hameedi, 2019), (Kbelah, Almusawi, & Almagtome, 2019). The optimal level is also a key determinant of increasing confidence in the state and its national currency. International rating institutions, as well as being a key incentive to bring investors' confidence to come to that country and there is no dispute among specialists on the formation of reserves at an optimal level to avoid countries to resort to policies that may not lead to many problems, especially on the value of the national currency. In recent years, Iraq's foreign exchange reserve has entered a sustained and rapid growth stage, and in 2017, it surpassed Japan as the largest foreign exchange reserve of the world (Al-Wattar, Almagtome, & AL-Shafeay, 2019), (Almagtome, Shaker, Al-Fatlawi, & Bekheet, 2019). According to the statistics of Iraqi central bank, as of 2017, the scale of Iraq's foreign exchange reserve reached \$47397 millions. Although in the past two years it had obvious fluctuations, it still ran at a high level. The foreign exchange reserve is an important part of the international reserve assets that are held by government; this part of assets can meet the demand of import and export trade, pay back the foreign debt, keep balances of payments, guarantee the stability of the exchange rate, safeguard national financial security, and play an irreplaceable role in the national economy. The main differences between this article and the existing research are as follows: (1) The perspective of this study is novel. In the context of meeting basic financial security demands, the foreign reserves are regarded as national financial assets from the perspective of financial security. The optimal level of Iraq's foreign exchange reserve is presented under circumstances that take full account of the special functions of foreign exchange reserves (Khaghaany, Kbelah, & Almagtome, 2019), (Ali, Hameedi, & Almagtome, 2019). To a

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certain extent, this goes beyond most of the existing studies on foreign exchange reserves, which start from the perspective of demand. (2) The combination of the theoretical analysis and numerical simulation. In order to fully consider the external shocks caused by the sudden stop of capital inflow, this article introduces the utility maximization analysis method in order to construct a theoretical analysis framework for the foreign exchange reserve based on financial security through establishing a cross-term consumption model. It also measures the optimal level of Iraq's foreign reserves and overcomes the shortcomings of most studies, which either focus only on theory or carry out tests. At the same time, through these measurements, this article obtains a more intuitive and optimal scale for the foreign exchange reserve that is easy to control and thus provides a strong and targeted suggestion for the foreign exchange reserve management department. (3) A possibility to invest a part of the foreign reserves through establishing a sovereign fund and get returns. The following sections of this article mainly include a literature review in Part 2, a theoretical model in Part 3, simulation and test of the optimal scale in Part 4, and the conclusions and recommendations in Part 5.

2- Literature review:

Goncalo (2017) studied the relationship between foreign exchange reserves and global interest rates and argued that the movement of the exchange rate would affect foreign exchange reserves. Ali Al-Alaq (2016) studied the reasons for the formation of foreign reserves and the standards that measure its adequacy using the ratios covered by the optimal level of imports and money supply, as well as the role of the Central Bank, is working to achieve a balance between the width of foreign currencies and demand. The research of Pietro Cova et al. (2016) showed that the diversification of foreign exchange reserves and "exorbitant privilege" both had a significant impact on global macroeconomic development. Goncalo Pina (2014) thought that although large foreign exchange reserves in developing countries would have a negative effect on the economy, the accumulation of moderate foreign exchange reserve by a central bank could share the costs that were associated with inflation over a period of time. Fawzi Zaghad (2012) studied the problem of the foreign reserve's management and their impact on the Algerian economy and the reasons for their accumulation and found that keeping the reserves above the level of efficiency is high cost. There has also been a strong correlation between the accumulation of foreign reserves and oil exports. Aizenmant and Hutchison's (2012) research showed the "absorbing" role of foreign exchange reserves in the foreign exchange market during the 2008–2009 global financial crisis. Aizenman et al. (2012) argued that foreign exchange reserves could reduce output cost during the 2008–2010 financial crisis. Jeanne and Ranciere (2011) added the "self-insurance" mechanism into the original utility maximization model and further analyzed the surge of foreign exchange reserves in emerging market countries after 1998. Their research suggested that the risk-aversion coefficient of emerging market countries, particularly East Asian countries, increased significantly and that foreign exchange reserves increased as well to cushion the risks of crisis. These developments came about due to past crises suddenly stopping capital inflows and affecting domestic output and investment, which were kind of "mercantilism" thoughts. Aizenman and Lee (2007) thought that East Asian countries such as China, Japan, and South Korea holding high foreign exchange reserves could be a monetary manifestation of mercantilism. That is to say, the cause of the rapid growth of China's foreign exchange reserves mainly lies in the East Asian countries maintaining exchange rate stability, steady trade, and financial system stability. In recent years, foreign scholars' researches on moderate scales of foreign exchange reserves became more innovative. Similarly, Mendoza (2004) studied the policy implications of the self-insurance motive of holding excess foreign exchange reserves in 65 developing countries.

3- The Theoretical Framework

Track and adequacy of foreign reserves

Foreign reserves are an important indicator of the ability of the State to pay external obligations and defend the value of the national currency, and used as part of the cash cover of the local currency, whether leading currencies or gold, and reserves are one of the indicators (Almusawi, Almagtome, & Shaker, 2019). The importance of the credit rating institutions such as Moodys, Stander & Poor, Fitch Rating to determine the credit rating of the state, as well as its presence in the optimum size helps to face and withstand the shocks that can arise in the markets and financial centers of the world, Thai in crisis (1997) is that Thailand does not retain foreign reserves that it can use to defend its national currency on the basis that floating exchange rates after 1971 do not require central banks to retain foreign

reserves. Foreign reserves are defined as "external assets available to the monetary authority under their control to counter balance of payments imbalances or indirect regulation of this imbalance through intervention in the exchange market to influence the exchange rate and / or other purposes related to maintaining confidence in the national currency, the basis on which the external assumption and stimulate the attraction of foreign companies to invest in them). Foreign reserves include assets of foreign currencies (cash, deposits, bonds, etc.) in addition to the monetary gold and SDR held by the State in addition to the reserve status of the IMF.

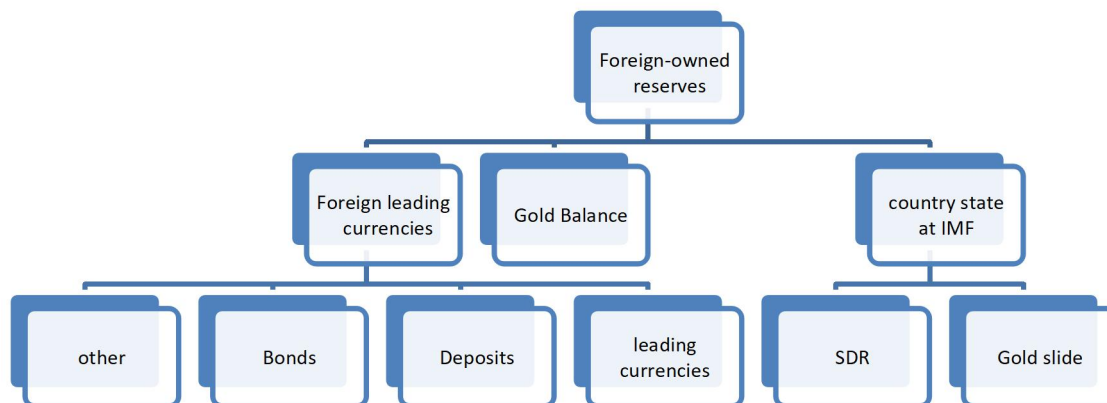


Figure 1. Elements of foreign reserves

The reserve department is one of the functions of central banks and is closely related to its other basic function (money issuance). Therefore, it is entrusted to keep it at home or abroad, manage it, monitor it and determine its uses. The specialists often refer to two forms of precaution: foreign reserves, (NTR), where obligations are placed on the short-term state, which does not exceed one year of nominal reserves, and the latter is an important criterion for comparison between countries. For example, a country possesses a high stock of reserves S but a large volume of debt becomes a shady standard, so you find that statistics are viewing the second criterion to be strong evidence of the size of the liquidity of foreign reserves.

Trend of reserves and their accumulation in Iraq

The balance of payments account is a report on economic transactions with the outside world. The final balance is a reflection of the size of the foreign reserves. In the case of the surplus, the value of the surplus increases. In contrast to the state of deficit that drains the reserves, the smaller the state 's payments to the outside world, The relationship is clear and strong between the state of each balance of payments and reserves accounts, and in countries with high commodity concentration (exporting oil), the rise and fall of their reserves is mainly related to oil exports and revenues, which rely mainly on oil prices and quantity The Ministry of Finance decides how to use its revenues as well as the demand of the private sector for local and foreign currency rather than its dependence on central banks (other than reserves for central banks). In case of no restrictions on currency conversion, the Central Bank, according to its rules, The increase in the reserves is dependent on the oil revenues, which constitute about 90% of the fiscal revenues, and the increase in oil revenue increases the width of the States The source of which is the Ministry of Finance, which sells part of it to the Central Bank, which is sold at the auction of the currency to obtain the Iraqi dinar to meet the need of the Ministry of Finance to cover its expenses in local currency, and thus become the financial source of supply, not the Central Bank. The demand for the dollar is the private sector of all its categories , And the conclusion that what is done by the Iraqi Central imposed by the first monopolistic source of the dollar (Ministry of Finance) and supply side of it, the demand side is the requests of the private sector to cover its imports in dollars, in

addition to covering other applications of various types, so when the demand for the dollar higher The Central Bank of the owner of the offer to withdraw the central bank to withdraw from reserves to cover the deficit and decreases reserves and this is what happened for the years (2014 - 2016) after the level of reserves equivalent to (77) billion dollars in 2013 decreased to about 44.3 billion dollars in 2016, If the supply is greater than the demand, the surplus of the currency auction goes to the accumulation of reserves, and there may not be before the Central Bank of Iraq tools to reduce the demand for the dollar only one case is raising the exchange rate and this option is difficult to reflect negatively on the increase in the price level Low, and what the central is doing today What is the balance between supply and demand in order to preserve the value of the currency and the general level of prices and therefore control the amount of reserves may fall outside his control, can be mentioned here record reserve balance end of 2017, recording a rise of 8.09 to reach 57.3 trillion dinars compared with the value of 52.17 trillion dinars in 2016, representing 25.4 percent compared to 27 percent of GDP at current prices and 39 percent of GDP without oil, which is 64.6 percent in dollars, 20.7 percent in euros, 12.2 in sterling and 2.5 percent in sterling. The end of 2017 give the weight of the Chinese yuan in its reserves, also achieved the balance of the Investments in foreign banks and Bank of New York rose by 10.04 from 2016 to 51.2 trillion at the end of 2017 compared to 46. The euro fell against the dollar as the euro fell against the dollar from 1.59 to 1.05 at the end of 2016 as well as against sterling from 1.48 to 1.23 dollars, The balance of gold in Baghdad and abroad rose for the second year in a row and reached 4.4 at the end of 2017 compared to 3.6 trillion in 2016 due to the rise in the price of gold in the London market to 1151.5 after it was 1060.9 by the end of 2015. Table (1) shows the balance of reserves for years (2015-2017).

Table 1. Reserve balance (2015-2016) billion dinars

	2015	2016	2017
Foreign money in bank treasury	2120	2327	1736
Local money in foreign banks	57238	46334	51157
Gold balance in central bank	3626	3956	4333
Total	62984	52793	57326

Source: Central bank of Iraq (2017).

Despite the difficult economic conditions experienced by Iraq after the drop in oil prices and the challenges of terrorism, which exhausted a lot of resources and fixed costs on the state budget cannot be avoided, especially in light of the lack of another (reserve) that can be used by Iraq in times of need In countries with sovereign wealth funds such as the Gulf states, Russia, Norway, etc., Iraq still maintains good reserves according to the indicators that are guided by specialized organizations as well as the improvement in oil prices in the global market. The end of the year 2017, where reserves increased to about more than \$ 47 billion, the following figure shows us the path of the development of Iraq's foreign reserves and global oil prices. The increase in oil prices in the global market, except for 2009, is observed in the figure as the reserves decreased by 10% due to the decrease in demand for crude oil due to the global financial crisis and the decrease in the price of oil in the global market to more than 40% The reserves are also low (2014-2016) and reached their lowest level of about 44 billion in 2016.

4- Simulation and the optimal level measures of foreign reserves

There are several measures to indicate the optimal scale of reserves and the adequacy of the coverage of economic activities and know whether they are within acceptable limits or not, including:

4-1: Optimized scale of reserves:

Robert H. Hener proposed in 1966 a measure to determine the actual level of reserves to the optimum level in a given proportion according to the following formula:

$$R_{opt} = h \frac{\log(r,m)}{\log 0.5}$$

Where: **Ropt**, Optimal level of reserves, **m** marginal inclination of import, **r**: opportunity cost, 0.5: Probability of a Balance of Payments Deficit, **h**: Change in Foreign Reserves.

Table 2. Estimating the requirement of reserves according to (Heller)

Year	Imports	GDP	M/GDP	Reserves	Change average in reserves (%)	h	Interest on American Bonds	m	r= imports/ GDP	r*m	log(r*m)	h*log(r*m)	R= h*log(r*m)/log(0.5)
2004	21.3	36.6	0.582	9.4	NA	NA	0.022	0.203	0.078	0.046	-1.342	NA	0
2005	23.5	50.1	0.469	13.55	4.15	NA	0.040	0.204	0.060	0.028	-1.548	NA	0
2006	20.9	65.2	0.321	18.93	5.38	NA	0.045	0.765	0.055	0.018	-1.752	-5.416	17.990
2007	19.6	88	0.223	30.45	11.52	4.55	0.033	0.419	0.067	0.015	-1.827	-8.312	27.612
2008	35.5	130.2	0.273	49.22	18.77	7.02	0.001	0.217	0.099	0.027	-1.569	-11.012	36.580
2009	38.4	111.3	0.345	44.34	-4.88	11.89	0.001	4.094	0.099	0.034	-1.465	-17.415	57.853
2010	43.9	142.8	0.307	50.62	6.28	8.47	0.001	0.331	0.099	0.030	-1.517	-12.850	42.687
2011	47.8	185.8	0.257	61.03	10.41	6.72	0.000	0.222	0.100	0.026	-1.590	-10.685	35.496
2012	59	218	0.271	70.33	9.3	7.19	0.001	-0.156	0.100	0.027	-1.570	-11.290	37.505
2013	59.4	232.5	0.255	77.74	7.41	8.66	0.001	0.204	0.099	0.025	-1.597	-13.829	45.939
2014	53.2	223.5	0.238	66.24	-11.5	9.04	0.000	0.206	0.100	0.024	-1.625	-14.692	48.807
2015	48.1	171.1	0.281	53.6	-12.64	9.08	0.000	0.281	0.100	0.028	-1.552	-14.096	46.826
2016	34.2	172.5	0.198	44.3	-9.3	9.07	0.001	0.198	0.100	0.020	-1.705	-15.464	51.370
2017	38.8	191.2	0.203	47.4	3.1	6.9	0.000	0.203	0.100	0.020	-1.694	-11.691	38.838

The increase in m and (r) lead to a reduction in the optimal level of precautions while the increase in H leads to an optimal level increase, when $R = 1$ means that the state has achieved the optimum level and when R is smaller than one means deficit while R is larger One of the signs of excessive precautions and from the previous table it is clear that most of the years in question were the level of precaution is greater than (1) and this indicates that the excessive retention, and the other years close to the optimum level and requires that the monetary authority think about investing those reserves. According to the above results to calculate the optimal size of foreign reserves, it is ranged from \$ 18 billion in 2006 to \$ 57.8 billion in 2009, but then declined again result to lower US Treasury yields and a steady increase in imports. In 2016 and 2017 the foreign reserves reach \$ 51 billion and \$ 38 billion. Nevertheless, the Central Bank of Iraq still maintains a reserve ratio greater than the optimal size and as shown in Table (2)

4-2: Estimation of reserves according to the IMF Measure:

Under the IMF guidelines, it recommends that the monetary authorities retain 10% of the value of exports, 10% of M2 and 15% of portfolio investment flows, plus 40% Short term foreign loans. Note that Iraq does not have short-term debt except the dollar bonds issued in 2017 and sold only \$ (0.5) billion dollars. (Central Bank of Iraq, 2014, 77). The table below shows the optimal size of reserves according to the IMF method.

Table 3. Estimation of reserves according to the IMF Measure

Year	EX (FOB)	10%	M2	10%	Portfolio Flow	15%	Needed Reserves	Official Reserves	Official R / Needed R
2004	17810	1781	8433.6	843.36	0	0	2624.36	9396	358%
2006	30529	3052.9	14369.5	1436.95	9910.4	1486.56	5976.41	18013	301%
2008	63729	6372.9	29270.7	2927.07	30439.1	4565.865	13865.84	48910	353%
2010	51764	5176.4	51612	5161.2	18403.4	2760.51	13098.11	49939	381%
2012	94204	9420.4	64722.1	6472.21	44568.4	6685.26	22577.87	67505	299%
2014	83891	8389.1	77811.3	7781.13	2293.1	343.965	16514.2	63720	386%
2015	51321	5132.1	69877.3	6987.73	282.3	42.345	12162.18	53607	441%
2016	41298	4129.8	74519.5	7451.95	107.3	16.095	11597.85	44370	383%
2017	57559	5755.9	75669.2	7566.92	-15.2	-2.28	13320.54	47397	356%

According to the above, the data of the table above show that the need for official reserves according to the IMF approach ranges between (2624.36) and (22577.87) billion dollars, and that the Central Bank of Iraq maintains official reserves exceeding this requirement of three to four times.

4-3: Purchases and sales of foreign currency and reserves:

The main purpose of the currency auction window is to achieve a real balance between demand and supply on foreign currency to maintain the dinar exchange rate and the general level of prices. Table (4) shows us the central bank purchases from the Ministry of Finance and its sales in the auction and its proportion to the international reserves and ratios show us the extent of depletion of reserves During the years (2014-2017).

Table 4. Ratio of Reserves to Central Bank Sales (2006-2017)

Years	Purchases	Sales	reserves	Percentage of sales to reserves
2006	18000	11175	18012	62.1
2008	45000	25869	48870	52.9

2010	41000	36171	50322	71.9
2012	57000	48649	68111	70.7
2014	47515	54463	63072	86.4
2015	32350	44304	53670	82.5
2016	25653	33524	44370	75.6
2017	32670	35670	47397	75.0

From the table, we also note that the upward trend of the Central Bank's sales for the years 2006-2014 reached about 54.5 billion dollars in 2014 and the percentage increased by nearly 24% compared with 2006, and also notes the development of sales to the reserves ratio, which reached about 86.4% Shows the extent of depletion of reserves with the Central Bank in order to defend the stability of the exchange rate of the Iraqi dinar in the hope of achieving price stability

4-4: Ratio of reserves to public debt and foreign and short-term debt:

According to this index, the size of the internal and external public debt is compared with the size of the reserves. If the size of the public debt exceeds the foreign reserves, this is not a good indicator of the economy in question, because the debt service will increase with time as it accrues, affects the public finances and drains a significant part of the revenues. The external debt is also compared to the short-term foreign debt, which is higher than the reserves. This indicates that there is a high risk. The index also measures the ability of the State to pay its external obligations. Brown (1964) notes that it reflects the country's ability to finance its external debt from reserves and that 40% is the optimal ratio. It is used for the efficiency of reserves and for judging the status of the state's financial position for external debt and short-term debt Table 5 shows this indicator in Iraq.⁽¹⁾

Table 5. Iraq's Debt Reserves Index (2008-2017) (billion dollars)

Years	Reserves 1	Public Debt 2	Ratio 1/2	External indebtedness 3	Ratio 1/3
2008	48870	59265	0.83	54456	0.90
2010	50322	62304	0.80	54063	0.92
2012	68111	59000	1.1	53288	1.3
2014	63072	59710	1.1	51590	1.2
2015	53670	77905	0.69	50894	1.1
2016	44370	89495	0.50	49695	0.89
2017	47397	98112	0.48	49450	0.95

Source: Central Bank of Iraq, Debt Management Department, 2018

It is noted from Table (5) that the ratio of reserves to internal and external public debt is high for the first years of reserves formation (2008-2014), meaning that the reserves cover the general indebtedness of Iraq as well as the external debt and then began to decline for the years 2015-2017 due to the low reserves against the rise in the public debt which This is due not to external indebtedness, but to internal debt, where internal debt has been issued for the last few years respectively (14962,15590,13420) billion Iraqi dinars, which are remittances by the Ministry of Finance and intended to finance the deficit in the general budget of the State during those years, Reserve S public debt level is acceptable based on ratios that guide, as well as the same thing about the coverage ratio of reserves to external debt of Iraq, there is a high coverage rate exceeds 100% for the years 2012-2015

4-5: Ratio of reserves to imports:

Supporters of this standard believe that 30% of the value of imports annually or coverage of reserves for 3-4 months of import is an optimal level of reserves, because imports are a fundamental variable in balance of payments items as well as their level of domestic consumption, production and economic growth. The use of precautionary measures in case of emergency ensures the flow of imports without the decision of the state to take undesirable economic, commercial and social policies and the demand for reserves under this ratio is

⁽¹⁾Moghadam, Reza, Ostry D. Jonathan and Sheehy, Robert." Assessing reserve adequacy "International Monetary Fund,(February 2011).p13.

the main motive for the formation and retention of it for transactions. This is one of the most appropriate criteria for the reality of the country This is the most representative of the situation in Iraq, According to Triffin the acceptable rate ranges between 20% -40% of imports and the optimal ratio is 25%.⁽¹⁾where the degree of commodity concentration of exports is high and there is a high degree of diversity of imports, if we consider that a ratio of 6-7% (4) This percentage is for certain years, where we notice the high coverage rate, which reached a maximum of about 20 months in 2008, and the average rate for the years (2004-2016) was about 14 months, which means that Precautions are much higher than the ratio (6-7) months.

Table 6. Ratio of Reserves to Imports (Million Dollars) (2004-2017)

Years	Reserves	Annual imports	Monthly imports	Ratio (R / IM)
2006	18012	18708	1.7751	5.2927
2008	48870	30171	1.5589	11.5540
2010	50322	37328	2.5142	19.4131
2012	68111	66506	3.1106	16.0542
2014	63072	57730	3.9832	16.6964
2015	53670	48670	4.5306	13.9213
2016	44370	34280	4.0008	13.4148
2017	47397	32550	2.8566	15.5325

Source: Central Bank of Iraq, Department of Research and Statistics, Annual Statistical Bulletin, 2004 -2017

4-6: Ratio of reserves to broad money supply

This indicator is used for countries that follow the floating exchange rate. The ratio is between 10-20%. This is a precautionary indicator and serves as an early warning of the crisis.² The use of this standard indicates that it is an early warning system for the impact of a financial crisis. It also enables us to know the extent to which national funds have fled abroad. It is also used to measure the degree of acceptability of the local currency and the efficiency of the banking system. If the ratio is high compared to the reserves, Money is also important, especially in countries where the banking system is weak. It is also mentioned that keeping a rate of about 5-20% of M^2 is the optimal size of foreign reserves, which is able to support confidence in the value of local currency in case of exposure to a crisis, and may be 30-40% of developing countries, In the following table:

Table 7. the adequacy of reserves (2008-2017)

Years	Reserves	M_2	Reserve adequacy*
2008	48910	34920	1.400630011
2009	43885	45438	0.965821559
2010	49939	60396	0.826859395
2011	59707	72102	0.82809076
2012	67505	75312	0.896337901
2013	74302	87679	0.84743211
2014	63720	90728	0.702319019
2015	53607	82595	0.649034445
2016	44370	88082	0.503735156
2017	47397	91178	0.519829345

Based on the ratio in the index, we note that the reserves are in the size of the optimal and exceed the standard even in the years of the financial crisis of Iraq, (2015-2017), which supports confidence in the local currency and the ratios above may indicate the state of flight of money abroad, especially in previous years For the year 2014, where the ratio between reserves M_2

(¹)Cantatore, Ashleigh."An Analysis of China's Foreign Reserve Holdings" Aarhus school of Business and social sciences, Aarhus university,(August 2012).p11.

(²) Achille, Cidrec and Duru,Uche." Holding Excess Foreign Reserves versus Infrastructure Finance: What Should Africa Do?" Africa development Bank group, working paper No.178, (July 2013).

(*) Reserves adequacy= $\frac{\text{Reserves}}{M^2}$

4-7: Sufficient of reserves to balance of payments deficit:

The motive for holding the reserve is to reserve the possibility of a deficit in the balance of payments that may occur due to circumstances related to the export proceeds or the increase in import prices and quantities or for any other reason without the state being forced to take socially or economically undesirable policies. The percentage indicates that the change in reserves. If the deficit curve is increasing, the reserves will also grow with the same deficit growth. The ratio can be applied to the current account situation as it is more representative of the rent state and compared with the reserves'.¹ (

Table 8. Comparison of growth rates in reserves with current account and balance of payments

Years	Reserves	Growth Average (%)	Balance of Payments (-/+)	Growth Average (%)	Current Account	Growth Average (%)
2009	43884.9		-5.8		5879	
2010	49939.2	13.8	6286	12.4	6481	9.3
2011	59707.3	19.6	10394	0.65	7689	18.63
2012	66505.2	13.1	7987	-0.23	29541	73.97
2013	77301.6	10.1	7861	-0.015	28967	-1.98
2014	65720.1	-15.1	-11.9	-1.0015	22590	-28.22
2015	53607	-14.9	-13.9	0.16	-1913	12.70
2016	44370	-17.3	-1093	-77.63	3554	154.3
2017	47391	6.8	5.80	-1.005	4228	15.94

Table 8 shows that the surplus in the balance of payments has high growth rates on the reserves side and vice versa in the case of a deficit. The deficit during the years (2012-2017) was offset by a decrease in the rates of growth of reserves during the years studied.

4-8: The relationship between oil determinants and accumulation of reserves:

The current account is the most important account in the balance of payments on the basis that the accumulation of reserves originated from the basis of oil exports. The relationship between the accumulation of reserves and the values of oil exports can be studied using the regression method and determining the general trend equation. Reserves and X. The simple regression equation can be used to determine the relationship between reserves and exports in Iraq, where the model equation is as follows:

$$Y = 13252.13 + 0.612 X$$

Table 9. Estimation of the relationship between the accumulation of oil reserves and exports

$\overline{R^2}$	R^2	F		T	
		Calculated Value	Table value	Calculated Value	Table value
%80	%82	%1 sig 46.18649	7.556	%1 sig 2.296726	6.796065

The model illustrates the nature of the positive relationship between the accumulation of reserves and oil exports in Iraq, changing exports by 1% leads to increased reserves by 61% during the study period has reached the explanatory power of the coefficient of limitation 82%. This clearly shows that most reserves come from oil exports and increase, Precautions.

5: Investment of surplus reserves (Suggested Frame):

In light of the reviewed indicators on the course and adequacy of precautions, Iraq is a country of high reserves even in the years of decline (2014-2017) due to the decline in oil prices in the global market, which also indicated studies by Iraqi researchers and international organizations such as the International Monetary

⁽¹⁾J.Neihans, IMF,

Fund and the Arab Iraq is one of the countries that overspend its reserves and is always going to the global liquidity compared with countries that invest their reserves in sovereign wealth funds in addition to the existence of many rationales call for investment reserves in one form of sovereign wealth funds after it became clear that the fiscal policy and the general budget The state in Iraq is not supported by the economic sectors, which led to the collapse of the productivity of these sectors and the decline in their contribution to the composition of income, and there are similar experiences of the state of the Iraqi economy succeeded in the establishment and financing of investment funds affiliated to it of oil revenues as is the case of the Kuwait Fund for future generations And the Fund of Algeria and the funds of Saudi Arabia and the UAE and in light of this will address the possibility of establishing an Iraqi sovereign fund as follows :

1. **Fund justification:** There is a wide range of justifications for establishing a sovereign fund, including the following
 - a. **Rentier Index of Iraqi economy.** One of these indicators is the index that links the Iraqi economy to the oil sector and links the general revenue budget to the oil revenues.

Table 10. Contribution of Economic sectors in GDP

Years	Contribution of oil in GDP	Contribution of oil revenues from total budget revenues	Contribution of oil exports to total exports	Industry contribution to GDP formation	Contribution of agriculture in GDP
2008	38.2	93.4	98.1	2.1	4.2
2010	62.5	98.2	98.7	2.3	5
2012	52.8	97.6	99.1	1.7	4.1
2014	51.7	92.1	99.2	3.1	6
2015	59.6	77.2	99.2	2.8	5.4
2016	57.1	87.2	99.1	3.2	5.8
2017	56.3	86.6	99.1	4.3	7

Source: the economic report of the Central Bank of Iraq for the years 2008-2017

Table 10 shows that the oil sector constitutes a high percentage of the GDP for the period studied. This means that the growth rate of the GDP depends mainly on this sector and its growth rate, while the relative importance of the agricultural and industrial sectors is reduced to undesirable levels. Oil revenues also contribute to the formation of budget revenues While the rest of the revenues, such as tax and others, did not contribute in a small percentage. The role of oil exports in the formation of the highest ratios of exports, with the absence of the contribution of other sectors, is clear. Therefore, the establishment of a sovereign fund reduces the dependence on the resource rent and makes the Iraqi economy to prepare for the post-oil and avoid the oil crises in which the price is determined in the light of global indicators, and a plan must be drawn to reduce dependence on the oil sector annually and appear in the statistical indicators prepared by the authorities The establishment of a fund is tantamount to the development of a mechanism to control revenues, stimulate savings and try to maintain the stability of the public budget and absorb crises through the Fund.

- b. **Supporting the economic sectors:** The use of some of the revenues of oil wealth to form and support the economic sectors such as industry, agriculture, transport and energy, where the Fund will give priority to invest in it and not the habit of life again as it was in the fields of iron and steel industry, fertilizers, phosphates, light industries and others as well as its contribution to absorb excess unemployment High in the Iraqi economy, which exceeds more than 30% of the workforce.
- c. **The existence of natural and human resources:** Iraq enjoys all its central, southern and northern regions by distributing natural resources that make it a comparative advantage. The main motive is not to create promising industries such as phosphate, limestone, iron, steel, fertilizer, etc. The labor force is another motive for investment in these industries.
- d. **The idea of creating sovereign funds:** The existence of uncertainty in the price of oil and its effects on the balance of trade of rent countries has become the process of establishing an investment fund is part of his work to absorb the surpluses generated by the positive shocks not price, and retained in the form of reserves to address these negative shocks, As noted after the crisis in 2008 as well as oil crises after the middle of 2014 urged countries to establish sovereign funds, where the establishment of 28 funds after 2005 out of 48 funds have been established previously, and most of the problem funds are funded by oil revenues, Iraq is an

oil country cannot It is separate from politics Economic development of those countries that have given importance to the formation of funds as one of the mechanisms to deal with shocks and there are a lot of workshops for economic forums call for it .

- e. **Motivating of savings and investment:** The proceeds of crude oil are not the property of a particular generation and should not be disposed of as a permanent income. The rights of future generations and their future needs should be taken into account and the principle of equitable distribution of oil wealth should be applied. For general spending and control and rationalization of current spending in return for the revitalization of investment spending, which can contribute to increase the output and exportable goods and then diversify sources of income.
 - f. **Motivating of domestic and foreign investment.** The establishment of a sovereign fund is an incentive for local and foreign investors, especially after the Investment Law No. 13 of 2006 and its subsequent amendments in 2010 and 2015, especially that the Iraqi private sector is still outside the channels of real investment and is trying to make quick profit from the business does not contribute to the formation of fixed capital (10.48.9%) of the total capital formation. The path of foreign direct investment has remained slow and has not received a small amount compared to neighboring countries of Iraq because of the investment environment and investor hesitations and fears. To come Li Iraq because of the high risks shown by international indicators as an indicator of global transparency and the index of economic freedom index of the knowledge economy, which lags Iraq much in it can fund the investment planned for his stay to serve as a catalyst for local and foreign investors, and by participating investments to fund the sovereign even if certain percentages of not less than 10%
 - g. **The presence of the domestic market and the revitalization of the stock market.** For the local Iraqi market is a promising market in terms of size and growth rate in the market where it can accommodate all the products of the investment fund and the various commodities The Fund can activate the operation of the stock market and enter as a buyer in the market where it is also a catalyst for the audience of domestic and foreign savers, The market is the source of confidence in the market and contributes to its effectiveness. It can also play the role of the sectoral balance of the market and stimulate the relative importance of the sectors listed in the market and the non-banking sector, which is currently the main player in the market.
2. **Types of sovereign funds:** There are many types of sovereign funds in terms of objectives and the manner of financing and transparency and the most common forms of the purpose of which includes three types (stability - savings - and investment companies for reserves) and adds two other types of funds on the development funds and government pension funds () and most studies indicated that The most appropriate fund for the state of Iraq is the Provident Fund or the Investment Company.
 - a. Savings Funds: The researchers describe it as the best fund in its work and aim to share the wealth of the poor economy (oil, gas, metals, etc.) with the revenues of the supplier and invest in medium-term investment assets that benefit the future generations and contribute to the diversification of the economy.
 - B. Investment Company Precautions: A state-owned company whose objective is to reduce the opportunity cost of surplus reserves and to invest in areas expected to generate returns. Its portfolio consists of direct and indirect investment tools and is also financed from the revenues of the oil. The Iraqi government has the option of establishing one of these two types.
 3. **Requirements for establishing a sovereign fund:** There are several requirements that we do not have
 - a. **Legislative requirements:** this requires the establishment of the Investment Committee and the Economic Committee in the Iraqi parliament as the source of legislation to prepare a study after consultation with the Ministries of Finance and the Central Bank and the Secretariat of the Council of Ministers concerned with the subject to prepare a feasibility study clearly defined type The Fund, its objectives, its management and funding, and the identification of the committees responsible for this.
 - b. **Financial and administrative requirements:** The responsibility here rests with the Ministry of Finance and the Central Bank. The Ministry of Finance has the duty to provide the Fund's initial funds to start its work and to invest for a certain period (incubation of the Fund), but its capital is sufficient to carry out its business. The amount of \$ 5 for each barrel of the source of the fund in addition to the surplus of the general budget end of the year not disbursed from ministries and others, as well as the contribution of the Central Bank of the financing process of surplus reserves in addition to deducting part of its revenues allocated either from the auction of currency or other administrative side is from The responsibility of the Central Bank and the Secretariat of the Council of Ministers to provide Iraqi cadres specialized in economic and investment issues and witness the Iraqi economic arena with citizenship and competence and experience in the administrative and investment, and there is no objection to the participation of foreign advisers in it and temporarily until

the completion of the requirements of experience and efficiency of Iraq. An administrative model for the Fund can be proposed through the creation of a special unit to manage the activities of the project in all its aspects, as follows :

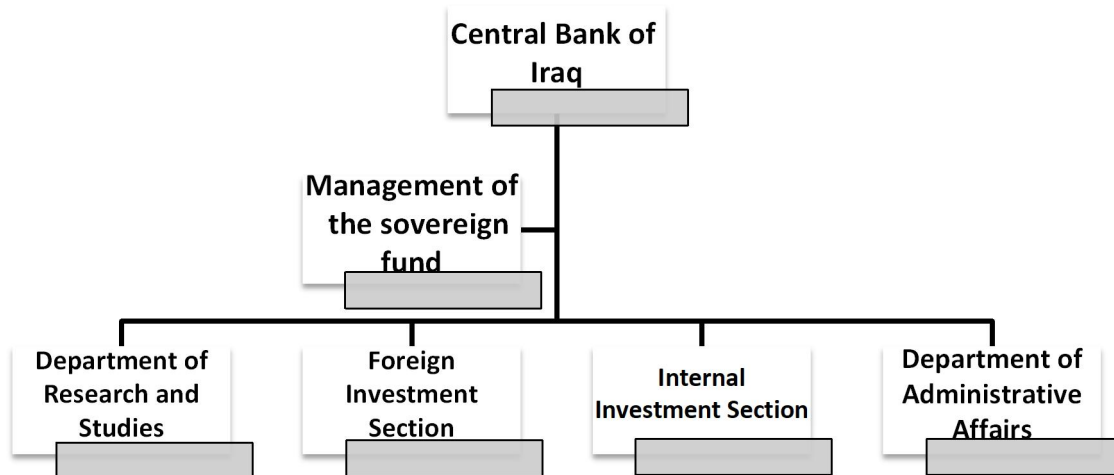


Figure 2. Sovereign Fund Management Proposal

Source: Prepared by researchers.

The department of research and Studies undertakes the evaluation, supervision and supervision of the operations performed by the Fund's divisions. The Central Bank or the Central Bank may establish a special unit to coordinate with the Fund's management, supervise its performance, compare it with the objectives set, and study and analyze all reports and lists issued by the Fund's management . Therefore, the work is joint in terms of management, control and achievement of objectives by all the parties that contributed to the establishment of the Fund.

Conclusions

The level of reserves is determined by a rise and fall in accordance with the prices of oil and oil exports, which indicates the unilateral economy in the income generation and calls for serious work to diversify sources of income gradually. The current study aims at analyzing the relationship between the optimal level of the CBI's monetary reserves and the level of foreign investment using the actual data of the size of the reserves and foreign investment according to the reports of the CBI and the Ministry of Planning. The results show that there is a surplus in foreign reserves and confirmed by other relevant indicators such as index of coverage of reserves for imports, as well as coverage of money supply and others, which is a reflection of the investment reserves. There are many justifications for establishing a sovereign fund for Iraq, similar to the neighboring region, which can contribute if the best people to diversify sources of income generation gradually.

As the retention of reserves exceeds the optimal level and this includes a larger cost and must be reduced through the investment part of it to finance private sector projects or investment by an investment company. There are several elements in the establishment of a sovereign fund for Iraq-type savings funds or investment companies reserve, and the excessive and composition of the need for them may put many questions in front of that among specialists in financial, monetary and investment.

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