

# Measurement and Analysis of the Impact of the Oil Revenues in the Exchange Rate of the Iraqi Economy for the Period (1999-2015)

Prof. Dr. Hussein Diekan Darweesh  
University of Babylon  
Faculty of Management and Economics

Syif Ali Abdul-Razaq  
Master student  
University of Babylon  
Faculty of Management and Economics  
Department of Finance and Banking.

**Abstract** - The Iraqi economy is characterized by its legitimacy due to its dependence on the oil sector, which is the main source in the financing of the revenues side of the public budget of the state by more than (82%), which constitutes more than (56%) of GDP, , And this dependency imposed on the economy the feature of instability and volatility of the direction of shocks in oil revenues associated with oil prices and this dependency has made the monetary authority (CBI) has difficulty in controlling the variables of monetary policy in such a way that ensures the achievement of its final objectives, Economic stability, maintaining the foreign exchange rate and lowering inflation rates.

This study attempts to measure the effect of fluctuations in oil revenues on the exchange rate for the period 1999-2015, based on the hypothesis that the fluctuations of oil revenues in both of them (positive and passive) contribute to monitoring the course and movement of changes in the foreign exchange rate.

To achieve this hypothesis, the research structure was divided into three sections, the first dealt with the theoretical framework of oil policy and the exchange rate, while the second dealt with the analysis of economic variables studied for the Iraqi economy and the third dealt with the economic measurement of the impact of the shock of oil revenues in the exchange rate

The results of the study reflected the large role played by the shocks of oil revenues in the exchange rate, and recommends the study monetary policy in Iraq to pursue an effective monetary policy in order to maintain the exchange rate, at the lowest costs, which maintaining foreign Exchange reserves.

**Keywords** : Oil Revenues Shock, Exchange Rate, Random Error Function, Behavior of the Residuals .

section (1) : The conceptual framework of oil policy and the exchange rate part (1): The theoretical framework for oil policy:

The concept of Oil: It is a dense fluid composed of heavy hydrocarbons in which are flammable, brown colored, in the upper layers of the earth's crust and differs from its appearance and decreased purity and composition according to the places of extraction and is one of the most important sources of energy, in addition to being a key element for many industries<sup>(1)</sup> .

The concept of the oil policy: Is the concept and the procedures that regulate the oil sector different stages including oil prospecting, drilling wells and reclaiming them, production of crude oil, the isolation of the gas and the transportation of oil materials, and then classifying and storage. as well as fair pricing and increase the capacity to export and to attract the necessary investments to develop the oil sector and identify appropriate investment decisions in order to take the advantage of the national oil wealth<sup>(2)</sup> . And the most important basic underpinnings oil policy are:

First. The oil production. The process of oil production from any oil field is similar to any other production procedures in other fields Where Hubbard managed to develop a theory of oil production to indicate the three stages of the production process .

- a. Production before peak: this stage is considered to be the primary step as the crude oil is produced until the peak is reached and through this step the production is At an increasing rate and the expenditures are at a minimum rate due to the proximity of the oil from the Earth surface and flows usually impulsively with least heavy machinery requirement that may cost more to utilize in addition to the low sulfur percentage in the oil as a result the oil is marketed at low prices due to the disparity of the offer and demand.
- b. production at Hubbard's peak: this is the highest level of the graphical table resembling a jar bell from the production remains at this point for a short length of time then it starts to withdraw gradually until the growth stops resulting in disability of covering the demand and therefore pushes the prices upwards it does not mean stopping the production but it is an indicator of reaching to the half of the oil reserve.
- c. production after peak: this step is characterized by the growth of the expenditures At an increasing rate vs decreased production rate until the point of unfeasibility of the productivity process due to the High cost compared with the revenues taking into account the circumstances and the nature of producing oil, in this point the oil is located in very Deep underground pockets where High cost machinery is required to the extraction, another Factor is the high concentration of sulfur in the oil which makes the refinement process very difficult and prolonged<sup>(3)</sup> .

Second. Oil prices: American economist by the name of Hotlink established the theory for the pricing of crude oil in his well known article the economics of exhaustible resources in 1931 where he made clear that the price of exhaustible resource must grow as Time Goes where he used a very intricate mathematical sample named the Golden sample that has become the Essential reference in modern study analysis<sup>(4)</sup>.

The theory stated that the price of the depleted resource should grow at an average rate equal to the average rate of interest along with the efficient extraction pattern and the balance of the competitive resource industry. In the monopolistic market, however, marginal revenue should grow at the rate of interest rather than price<sup>(5)</sup>.

The depleted resources that are in the ground are the property of the society and must be preserved by rationalization of consumption because over-supply leads to the sale of this resource without a fair price that is commensurate with its scarcity. In a way that ensures its growth with the real interest rate<sup>(6)</sup>.

Third. The consumption of crude oil: crude oil has been ranked as the primary source of energy since after WWII until now due to the numerous features it has the consumption of oil has developed gradually starting from 5 million barrels daily prior to WWII reaching 55.7 million barrels daily through the period between 1950- 1970 it then reached 66.5 million barrels daily in 1990 and 84.5 million barrels daily 2008 and The Rise continued paralleled with the demand and the economic growth rate globally which boosted the consumption to (92.9) million Barrels daily in 2015<sup>(7)</sup>.

Fourth. Oil revenues: oil revenues play a major role in The regressive countries economy as these countries depend on this resource in providing foreign currencies and financing the largest part of the operating expense Affecting Almost every economical Changes for these countries so when the amount of the revenues increases the price raise in short term or the increase of the amount of production in long term an increase in the economical activity occurs for these countries as they are in a plastered relation and the opposite happens in case of a decrease and this phenomena is called "dependence of economy" and through this the importance of these revenues appears as they are distinguished by their positive and negative Impact on the economy in general.

part (2):The theoretical framework of the exchange rate

Exchange rate concept: It is the price of the local monetary unit, corresponding to the foreign currency or the exchange rate of a currency in another currency<sup>(8)</sup>. It is also possible to clarify the relationship between the exchange rate and the value of the local currency through the following: Any increase in the foreign exchange means the devaluation of the local currency and the low exchange rate means the appreciation of the local

currency which means that the relationship between the exchange rate and the value of the local currency<sup>(9)</sup>.

Exchange Rate Systems:

First. Fixed exchange rate system: This type of exchange rate is divided into two types:

- a. Fixed exchange rate system under the gold base : This type of exchange rate is one of the most important types of exchange rates because it is easy to apply. It has been used by most countries for more than half a century because of the stability in the exchange rates of the countries followed by this system and it did not lead to imbalance in the balance of payments, By changing the level of prices and production. Countries that follow this type of exchange rate have to determine the value of their currency unit with a certain weight of gold and be prepared to exchange paper money with the corresponding gold at the request of the holder, along with the freedom available to import Export of gold<sup>(10)</sup>.
- b. Fixed exchange rate adjustable system : This type of exchange rate emerged after the Britton Woods Conference, which was hoped to provide international trade relief and provide the member countries with liquidity and ensure that no restrictions are imposed in the face of international transactions. This new monetary system is based on the dollar exchange rate and between overnight The US dollar turned from domestic currency to international work. The system continued until August 17, 1971, when US President Nixon announced a change in the ability to switch the dollar to gold, the most important element of the Britton Woods system<sup>(11)</sup>.

Second. Floating Exchange Rate System : According to this system, the exchange rate is free and its price is determined according to the forces of demand and supply on the local currency without any restrictions. This is done after determining the exchange rate alone by the monetary authority and does not take precautionary measures to maintain certain limits. The most important countries that adopt this type of exchange rate. United States of America. European countries. Japan. The most important feature of this system is the automatic correction of the balance of payments by market forces and the need for monetary authority to a large foreign exchange reserves. The disadvantages are the large burden of monetary authority in determining the optimal size of the cash supply that corresponds to the size of the macroeconomic to avoid The economy is exposed to inflation<sup>(12)</sup>.

Third. Exchange Rate of intermediary System: This type of exchange rate system is an intermediary between the two rigid and floating systems where the work is done under this system by leaving the local currency exchange rate set to the market supply and demand. but at the same time the monetary authority specified for the exchange rate of its currency according to one of the leading currencies<sup>(13)</sup>. In other words, the monetary authority determines the exchange rate through the

forces of demand and supply on the local currency and then directs its monetary policy in order to target the exchange rate at the level of balance in the balance of current operations<sup>(14)</sup>.

Exchange rate varieties:

1. Nominal exchange rate: It is the price that is adopted and declared by the monetary authority to complete the official trade exchanges.
2. Parallel exchange rate: This is the price at which informal exchanges in the parallel market or the black market are completed.
3. Real exchange rate: It is the ratio of the value of the commodity denominated in the local currency against its value denominated in foreign currency in the global markets<sup>(15)</sup>.
4. Actual exchange rate: This type is based on the calculation of the exchange rate of a currency against a basket of foreign currencies by calculating the average during a given period of time and can be said to be equal to the average of several bilateral exchange rates and is used to infer the development or improvement of any currency in relation to a group or a basket of currencies But with the other considering the relative weights depending on the relative importance of each state of its trading structure and is calculated using the Lasber Code of Standard Numbers.

Section (2): analysis of oil revenues and exchange rate of the Iraqi economy for the period (1999-2015)

part (1). Development of Iraqi oil revenues for the period 1999 to 2015.

Oil Revenue: Oil revenues derive their importance from the Iraqi economy, which depends on all the dependence on the oil sector in the financing of revenues of the General Budget of the State Faisal average contribution of oil revenues in public revenues to 94.6 per cent along the length of research and that the most important factors in the oil revenues is crude oil prices in the class The first and quantity of oil produced and exported to the consuming countries and the oil reserve.

The history of oil revenues in Iraq during the period studied is divided into two periods:

The first period : Is the period leading up to the US occupation of Iraq from 1999 to 2002, during which time the oil revenues amounted respectively (234,649 + 458,157 + 580,160.7 + 1,020,022) million dinars. Do not contribute to the general revenues of the (719,065 + 1,133,034 + 1,289,246 + 1,854,585) million dinars to the state largely because the bulk of these revenues was going to exchange food and medicine because of the economic blockade and the reservation of the proportion of the contribution of these years in public revenues respectively (32.6%, 40%, 45%, 55%) This period has not witnessed a negative growth rate of oil revenues, but on the contrary it was the highest and reached the highest amount in 2000 reached 95.5 and 20 and reached a minimum in (2001) to be (26.63%) This is due to the return of the decline of crude oil prices due to the economic recession that hit the world

resulting from the events of September 11 in the United States of America<sup>(16)</sup>. Then returned rises once again to (75.82%) in (2002), The relative importance of the public revenue (43.25%) and the annual compound growth rate for this period reached (62.2%). This period represents the lowest level reached of oil revenues throughout the period studied as shown in the figure .

The second period: After the US occupation of Iraq, the oil revenues took another direction, it took a rising trend in the form of leaps in the light of the decline in non-oil revenues, which led to a rise in the proportion of the contribution of oil revenues in the composition of public revenues of the state by a high rate of more than (94%), The economic blockade and the return of oil exports to full capacity and in conjunction with the increase rate of global economic growth, which increases the global demand for energy and in light of limited production. where we find that oil revenues during this period took the rise from 2003 to 2008 in gratitude The increase in oil prices reached ID (15,728,387) million in 2003, a very large increase (1442%), and reached ID (79,131,752) million in 2008, an increase of (403.1) However, due to the industrial concentration suffered by the structure of Iraqi exports, this led to the transmission of the effects of the global financial crisis from the economies of the developed countries the largest joint power, especially the United States of America, which is the first consumer of energy in the world to the Iraqi economy in 2009 to (51,749,059) million dinars and decreased by (-34.6) for the year 2008, After this year in 2010 increased oil revenues to (66,819,670) million dinars, an rate increase of (29.2%) compared with 2009 continued to increase until 2012.

The high prices of crude oil during the period between 2003 and 2012, which is reflected on the returns, worked to create an investment environment of economic feasibility high oil investments cost, which led to the opening of space the production of another type of crude oil (rock oil) which cost more than eighty dollars per barrel, which reduced the market share of traditional oil because of the entry of rock oil rival traditional, which led to the increase global oil supply this in turn pressure on oil prices downwards to begin to decline and thus decrease revenues Of the oil producing countries during the

table (1): The Oil revenues in Iraqi economy (1999-2015)

ID million

Year	Oil revenues (1)	change ratio % (2)	relative importance (3)	public revenues (4)	ratio 4:1 (5)	(6)	(7)
1999	234,649	-	0.027%	719,065	32.6	compound annual growth rate of Oil revenues $Ln(OR) = 0.073 + 0.359t + u_t$ $R^2=71\%$	compound annual growth rate of public revenues $Ln(TR) = 0.43 + 0.33t + u_t$ $R^2=77\%$
2000	458,157	95.3	0.053%	1,133,034	40.4		
2001	580,160.7	26.6	0.068%	1,289,246	45.0		
2002	1,020,022.00	75.8	0.119%	1,854,585	55.0		
<b>average</b>	<b>573,247.175</b>	<b>48.15%</b>	<b>0.067%</b>	<b>1248982.5</b>	<b>43.25%</b>		
2003	15,728,387	1,442.0	1.831%	15,985,527	98.4		
2004	32,593,011	107.2	3.794%	32,982,739	98.8		
2005	39,480,069	21.1	4.595%	40,502,890	97.5		
2006	46,908,096	18.8	5.460%	49,055,545	95.6		
2007	50,747,131	8.2	5.907%	54,599,451	92.9		
2008	79,131,752	55.9	9.210%	80,252,182	98.6		
2009	51,719,059	-34.6	6.020%	55,243,526	93.6		
2010	66,819,670	29.2	7.777%	69,521,117	96.1		
2011	98,090,214	46.8	11.417%	99,998,776	98.1		
2012	116,597,076	18.9	13.571%	119,817,224	97.3		
2013	110,677,542	-5.1	12.882%	113,767,395	97.3		
2014	97,072,410	-12.3	11.298%	105,386,623	92.1		
2015	51,312,621	-47.1	5.972%	66,470,252	77.2		
<b>average</b>	<b>65,913,618.31</b>	<b>126.8%</b>	<b>7.7%</b>	<b>69,506,404</b>	<b>94.9%</b>		
<b>total average</b>	50,539,413.34	%115.42	--	833,941,445.53	94.6	35.9%	33%
<b>total summation</b>	859,170,026.70	--	100%	908,579,177			

Source: (1 and 4) Ministry of Planning, central Statistical Organization, Statistical bulletins for various years.

(2): The change ratio has been measured according to the following mathematical formula :  $CR = \left(\frac{Y_t - Y_0}{Y_0}\right) * 100\%$

Where is (Y<sub>t</sub>): the appearing value in the comparison year, (y<sub>0</sub>): the appearing value of the basic year.

(3): The relative importance has been measured according to the following mathematical formula:

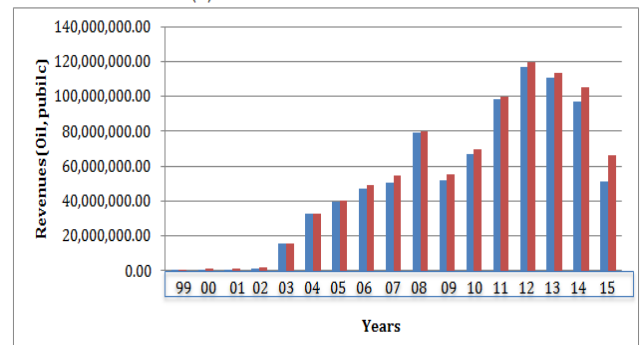
$$RI = \left(y_t / \sum y_t\right) * 100\%$$

(5) Of the work of the researchers.

(6, 7): The annual compound growth rate (r) was calculated according to the following formula :

$$Y_t = A . e^{rt} . e^{u_i}$$

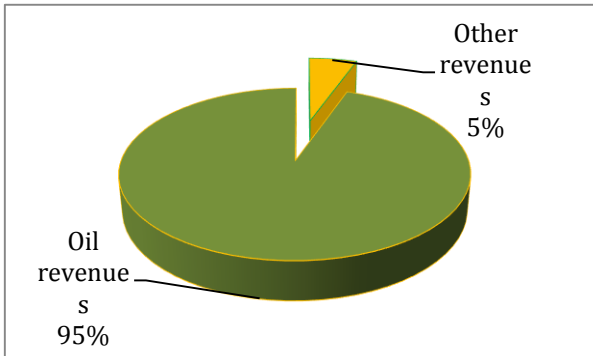
Figure (1) : Oil revenues and public revenues



source : of the work of the researchers relying on table (1) .

To clarify the importance of oil revenues in the Iraqi economy in general and in public revenues in particular is compared between the contribution of oil revenues and the contribution of other non-oil revenues in public revenues and for each period studied and as shown in the figure below.

Figure (2) Ratio of Oil revenues and other revenues to public revenues



source : of the work of the researchers relying on table (1) .

Figure (2) shows that the total contribution of oil revenues for the period studied as an average of 95%, while other revenues had a very low contribution rate so that they can be said to have relatively little impact.

part (2): The development of foreign exchange rates in the Iraqi economy for the period between 1999 and 2015.

Foreign Exchange Rate: During the period studied, the monetary authority in Iraq used two types of exchange rate: the first was during the period between 1999 and 2002. The second after the occupation of Iraq, where Iraq had before the US occupation more than one exchange rate (fixed exchange rate system) varies according to the student body To the foreign trade as it was suffering from large fluctuations and sudden leave negative effects in the economy and this is due to the failure to follow the previous system of monetary goals dictated by the advance of the monetary authority and work to achieve, but on the contrary, the funding was adopted deficit against a negative interest rate. After the Iraqi dinar was more than three times the US dollar during the period leading up to the Iran-Iraq war, it fell to more than 3,000 dinars in the 1990s, mainly because of the economic embargo imposed on Iraq after the Gulf War<sup>(17)</sup>.

As for the period that followed the occupation of Iraq has adopted monetary authority the first managed exchange rate which is based on determining a certain level of the exchange rate according to the demand and supply on that the control by the monetary authorities. Then allow him to fluctuate according to the market above or below the specified price weight The border is a preview and you enter the authorities in the exchange market to reduce the unwanted fluctuations is done through the foreign currency auction, which is the most appropriate place in determining the exchange rate of the Iraqi dinar, which is a nominal goal to achieve the main objectives. Maintaining the general level of prices and reducing inflationary pressures<sup>(18)</sup>.

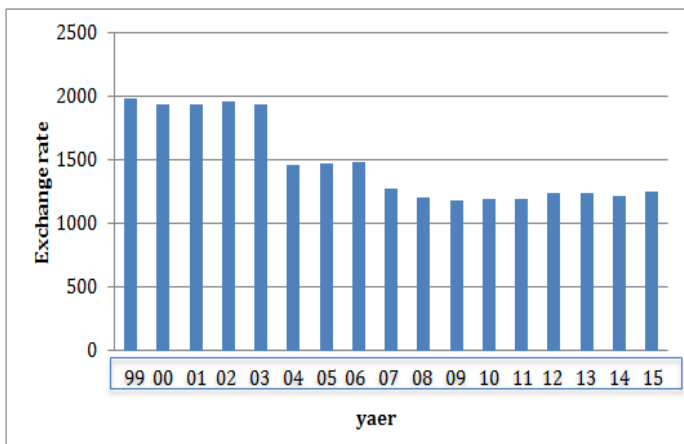
Moreover the independence achieved by the Central Bank of Iraq after 2004 and under Law No. 56, which provides for non-purposes of the government directly or indirectly and not receiving orders from the executive authority allocated cash policy and lines of accounts of the monetary authority external auditor on the standards of international auditing of central banks The work of this mechanism has continued until today, but has had a negative impact on the monetary reserves of the foreign currency in possession of the Central Bank of Iraq to adopt the Iraqi economy on one source of foreign currency. The oil sector<sup>(19)</sup>.

Table (3) : The exchange rate of the Iraqi dinar against the US dollar in Iraq for the period (1999-2015)

year	market exchange rate (1)	change ratio (2)	relative importance (3)	compound annual growth rate (4)
1999	1975	-	7.9	$Ln(EX) = 7.57 - 0.037t + u_t$ R2=78.5%
2000	1930	-2.3	7.7	
2001	1929	-0.1	7.7	
2002	1957	1.5	7.8	
2003	1936	-1.1	7.7	
2004	1453	-24.9	5.8	
2005	1472	1.3	5.9	
2006	1475	0.2	5.9	
2007	1267	-14.1	5.1	
2008	1203	-5.1	4.8	
2009	1182	-1.7	4.7	
2010	1185	0.3	4.7	
2011	1196	0.9	4.8	
2012	1233	3.1	4.9	
2013	1232	-0.1	4.9	
2014	1214	-1.5	4.8	
2015	1247	2.7	5.0	
summation	25,086	--	100%	-3.7%
average	1476	-2.6	--	

source: (1) Central Bank of Iraq, Directorate General of Statistics and Research, Statistical bulletins for various years.  
 (2, 3, 4): of the work of the researchers

Figure(3) : Exchange rate movement for the period(1999-2015)



(Table 3) and Figure (3) indicate that the exchange rate of the dinar was low during the period 1999-2003. The average exchange rate at this time was (1945.4) against one dollar and did not decrease during this period. The main reason was the decline in foreign currency revenues in the context of the economic blockade as an external factor during the period 1999-2002. The internal factors were the growth of money supply excessively due to the policy of financing deficit (new cash issue) and the low level of GDP. And the decline in the volume of imports, which became more expensive in view of the people of the country

because of inflation. And the intervention of the state in economic life led to distort the structure of prices of goods and services that were below the fair price, while in 2003 the exchange rate has witnessed large fluctuations and many have reached more than (3000) dinars during the military operations in Iraq and the legacy of security and economic unrest. And then returned to improve during the month of May after the military operations planning the bulk of the spending of the occupation forces in dollars in addition to the distribution of salaries for retirees and employees in dollars, which led to a drop in demand and thus improve the exchange rate to (1000) to one dollar during this period, but returned to deteriorate once. Other increase the demand for the dollar at the announcement of the decision to replace the local currency at the end of the year<sup>(20)</sup>.

At the beginning of 2004, the exchange rate witnessed an improvement in value as it decreased to ID 1453 (-24.9%). This improvement in the dinar value resulted from the dollar balance which the central bank has as a cover for the local currency. Rate of dinar exchange rate remained within these limits for a period of three years between the years 2004 to 2006, the average exchange rate was (1466.7) dinars, and thus it is clear that the monetary authority maintains the exchange rate through the auction, although the exchange rate has seen fluctuated during (2005), due to several reasons, the most important of which is the increase in the demand for dollar due to the performance of Hajj, Hajj and migration because of the security situation by the members of the community in addition to the high prices of foodstuffs due to the lack of

the Ministry of Commerce on agents, which led to a rise in exchange rates by an increase of (1.3%), In 2006, exchange rates again rose more than in (2005) due to deteriorating security conditions and The high frequency of terrorist acts of murder, kidnapping and displacement, this has increased the demand for the dollar.

During the years 2007 to 2008, the exchange rate witnessed relative stability, averaging (1235) dinars against one dollar. This is due to the effectiveness of the monetary policy adopted by the Central Bank of Iraq in addition to the improvement of security conditions during this period, in addition to the increase of foreign currency reserve with the Central Bank of Iraq Oil, which increased oil revenues denominated in dollars, but in 2008 the exchange rate witnessed a significant improvement of (-5.1%) from 2007, which is due to the high daily rate of sales of foreign currency in the auction, which amounted to (98) million dollars a day.

The improvement of the Iraqi dinar against the US dollar during the period between 2009 and 2011, it did not exceed 1200 dinars to the dollar, the lowest amount in 2009, as shown in Figure (3), reaching 1182 dinars and an improvement of 1.7% This is due to a significant decline in the rate of global economic growth, which was reflected on the US dollar against other currencies caused by the global crisis that started from the US economy, and this contributed to the decline in the dollar exchange rate in Iraq during the year and then returned to rise again, but at the rate of Relatively low of (0.3%) in 2010 for 2009 and to (-0.9%) in 2011 for the year 2010. The rise was driven by increased demand for foreign currency This is reflected in the daily rate of selling the US dollar by the monetary authority in the auction, which amounted, respectively, during this period (86.6, 137, 151) million dollars per day.

The remaining period of the period studied from the year 2012 to the year 2015 The average exchange rate for this period reached (1231.5) dinars, which means the fair exchange rate to rise above the level of (1200) dinars per dollar, despite the arrival of oil revenues peak in 2012 and 2013 to the exchange rate has increased, The reason for this is that regional conditions are worsening and increasing The exchange rate was relatively stable during these two years, which reached (1232, 1233) This is a proof of the stability of the domestic market. In 2014 and 2015, the exchange rate witnessed a relative improvement, with the lowest level During 2014, which reached (1214) dinars, an improvement of (-1.5%) over 2013 In view of the instructions imposed by the Central Bank on the process of buying and selling dollars in order to reduce money laundering, but the exchange rate in 2015 to reach To ID (1247) and an increase of (2.7%) over 2014. The compound annual growth rate also shows the effectiveness of the monetary policy adopted by the central Bank of Iraq to improve the value of the Iraqi dinar and maintain the stability of the fact that the signal it appeared in was negative, which was (-3.7%) and this means improving the value of the Iraqi dinar during the duration of the search.

Section (3) : Measuring the impact of the oil revenues on the foreign exchange rate of the Iraqi dinar

Part (1): Testing the standstill of the time series:

Statistical data usually suffer from instability due to the intrinsic correlation with time series , which leads to the emergence of the problem of intrinsic correlation, and to address this problem there are many procedures that help to get rid of this problem, the most important test is . Dickey & Fuller. This test enables us to discover the root problem of the unit. Unit root. For any time series no matter how many views and stability accomplished.

This test is based on the following two models :

$$\Delta Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 t + e_t \dots\dots\dots(1-3)$$

$$\Delta Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 \sum_{i=1}^n (\Delta Y_{t-i}) + \beta_3 t + e_t \dots\dots\dots(2-3)$$

Where ( $\Delta$ ), the first difference ( $Y_t$ ) represents the dependent variable whose stability test ( $\beta_1, \beta_2, \beta_3$ ) represents the parameters of the independent variables and ( $\beta_1=1-\rho$ ) (Time) as the independent variable (direction), ( $e_t$ ) disturbance limit (white noise context) , ( $\rho$ ) coefficient of self-correlation at the first difference.

The first equation represents the origin of the Dickey & Fuller test<sup>(21)</sup> . The second represents the origin of the test Augmented Dickey & Fuller<sup>(22)</sup> . And suffering any model of the problem of instability (The existence of root unit) When the value of ( $|\rho|=1$ ) And the absence of a problem when the value of ( $|\rho|$ ) Smaller than the right one. And the result is reached after comparing the value of ( $\tau$ ) Tau) calculated with the corresponding table ( $b_2$ ) If the calculated greater than the table, this indicates the stability of the time series and thus reject the hypothesis of nothingness and acceptance of the alternative hypothesis and Vice versa. These two assumptions can also be clarified. Nothingness ( $H_0$ ) and ( $H_1$ ) the alternative as follows:

$H_0$  :  $|\rho|=1$  The time series suffers instability and there is a root unit

$H_1$ :  $|\rho|<1$  The time series is stationary and there is not a root unit to be found.

This mechanism is relatively user-friendly and is provided by the (EViews) statistical program. It is also the first step before each process of estimating the model and analyzing the results .

Table (4) Results of the time series of the standard model variables

Variable	Stability at the 1 <sup>st</sup> difference			Stability at the level		
	intercept	Trend & intercept	None	intercept	Trend & intercept	None
OR	-1.408264	-2.424746	-0.331672	-2.179926	-2.270889	<b>-2.298213</b>
1% } 5% } 10% } Critical values	-3.920350	-4.886426	-2.717511	-3.959148	-4.728363	-2.728252
	-3.065585	-3.828975	-1.964418	-3.081002	-3.759743	<b>-1.966270</b>
	-2.673459	-3.362984	-1.605603	-2.681330	-3.324976	-1.605026
EX	-1.431458	-1.206226	<b>-1.703659</b>	-3.864314	-2.782773	-3.565850
1% } 5% } 10% } Critical values	-3.920350	-4.667883	-2.717511	-3.959148	-4.886426	-2.728252
	-3.065585	-3.733200	-1.964418	-3.081002	-3.828975	-1.966270
	-2.673459	-3.310349	<b>-1.605603</b>	-2.681330	-3.362984	-1.605026

Source : Of the work of researchers based on the results of the program Eviews9 .

Part (2): Measuring the Oil Revenue Shock

This can be done by exploiting the self-correlation function of the following oil revenues:

$$OR_t = \beta_0 + \beta_1 OR_{t-1} + e_t \dots\dots (1)$$

After the recognition and extraction of residuals for the values of the previous residuum process is a regression between the residuum (et) with residuum slowing for one time period (et-1) any estimate following the specimen:

$$e_t = \beta_0 + \beta_1 e_{t-1} + U_t \dots\dots (2)$$

The residuals resulting from the second oil shock of the specimen represents the revenue that will be used to estimate the effect of the shock specimen of oil revenues in the following foreign exchange rate:

$$EX_t = \alpha + \beta U_t + U_t^{EX} \dots\dots (3)$$

After the process of estimating the specimen (3) are extracted and analyzed residuals from it and compare it with the nature of the time series of foreign exchange rates.

Part (3) : Econometrical analysis of the shock of oil revenues in the foreign exchange rate

1. Estimating the basis of the shock of oil revenues :

Table (5) Results of the model based on the shock of oil revenues after excluding the impact of the second variable.

Explanatory power(R <sup>2</sup> )	The estimated equation	
0.771	$RO = 11.789 + 0.83(RO_{t-1}) + e_t$	
D.W=1.37	F=47.1	75.4% $\bar{R}^2 =$

Source : Of the work of researchers based on the results of the program Eviews9

2. Estimating the Oil Revenue Shock Model (U<sub>t</sub>):

Table (6) Results of the Shock Model (U<sub>t</sub>)

R <sup>2</sup>	F	t	The estimated equation
0.02	0.357	0.6	$e_t = 0.222 + 0.2(e_{t-1}) + U_t$

Source : Of the work of researchers based on the results of the program Eviews9

Although the statistical results are not significant (R<sup>2</sup>, F, t), However, the D.W. statistic of (1.67) at a significant level (5%), which is the basis of the standard model test for alternative residus (U<sub>t</sub>), which represents the shock of oil revenues.

3. Estimating the model of the impact of the oil revenues (U<sub>t</sub>) in the foreign exchange rate:

Table (7): Results of the model of the impact of oil revenues in the exchange rate

Explanatory power(R <sup>2</sup> )	The estimated equation
1.5%	$(EX = 1412.1 - 1.93U_t + e_t^{EX})$

Source : of the work of researchers based on the results of the program Eviews9.

It's possible to stand at the nature of the inherent relationship between oil revenues and exchange rates (when taking exchange rates as a function of revenues), Where economic logic describes the relationship between them inversely (Any increase in revenue leads to a reduction in exchange rates) The economic basis of this relationship stems from the proceeds of oil denominated in foreign currency (in dollars), Where the increase in oil revenues increase the supply of foreign currency within the domestic economy and then the appreciation of the local currency against foreign .



But in the distorted Iraqi economy, which is characterized by the economic handicap and the nature of monetary policy, which seeks to stabilize the exchange rate of the Iraqi dinar against foreign currency, albeit at the expense of the dollar reserve (the cover of the currency) being dependent on one policy is ineffective (open market operations) The seller intervenes only in addition to the inability to determine the direction of foreign currency sold (money laundering), and the purchase is limited to a certain category (banks) working on speculation in order to achieve large price differences and then high profits illegally; Changes in The volume of oil revenues as a shock to be shown on exchange rates can be clearly indicated directly.

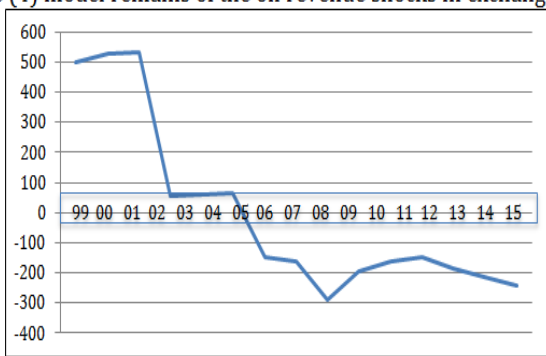
However, we can do the analysis of the previous model by extracting the residuals from this model to arrive at the impact of the oil revenue shock in the exchange rates that have emerged in some places. After extracting the explanatory power of the booths, they explain the changes in exchange rates by 98.5% Very large, the values of these residues will be extracted to be analyzed as follows:

Table (8) Shock model (U<sub>t</sub>) preservatives at exchange rates

Year	$e_t^{EX}$	Year	$e_t^{EX}$
2001	498.616	2009	-289.775
2002	527.293	2010	-194.246
2003	533.794	2011	-161.711
2004	54.2531	2012	-146.256
2005	57.7681	2013	-185.379
2006	66.8048	2014	-211.94
2007	-146.333	2015	-241.999
2008	-160.891	summation	$\Sigma=0$

Source : Of the work of researchers based on the results of the program Eviews9

Figure (4) model remains of the oil revenue shocks in exchange rates.



source : of the work of the researchers relying on table (8) .

correlation between it and the previous form of ( $e_t^{EX}$ ) of this we conclude that the oil revenues left their impact on the exchange rates, taking the point of maximum and minimum of the previous residual curve, ) Because of the effects of the war, which led to a decline in the exchange rate of foreign exchange during this year and the years before this war were not better because of the economic blockade and the decline of dollar reserves in the Central Bank in addition to the policy (cheap currency) General; In

2004, after the war, the lifting of the economic blockade and the return of oil exports, we find that the exchange rate has improved against other currencies (which, the emergence of the positive shock of oil revenues on the exchange rate). When taking the smallest point in 2009, The Iraqi dinar was at its best this year despite the shock of negative revenues, but the value of the dinar has improved. We conclude from this that this improvement is apparent only because this year is a crisis year that pushed the dollar to decline, while the other leading currencies improved the value of the dinar against the dollar It also has cash power You have a large reserve dollarized estimated (43.9) billion dollars this year, helped to pay the impact of the crisis on the Iraqi economy.

The subsequent years of the crisis show us the policy of the Central Bank aimed at maintaining the exchange rates because the changes that have occurred in oil revenues have not left their impact during these years and can be evidenced by the size of the dollar reserves of the Central Bank, which declined significantly, (48.54) billion dollars in 2015 after reaching the threshold of (80) billion dollars in 2013, meaning that the central bank has lost (39.33%) of dollar reserves in just two years.

### CONCLUSIONS.

- oil is considered to be an exhaust to go resource at the same time as the wealth of the upcoming generations therefore it has to be conserved throughout the consumption of its revenues in fashion that helps to obtain an ideal appropriation the resource, such as investing in the oil sector in particular in a way that guarantees the rise of the added value to this wealth owing to the features of being the leading sector in the development race for the Iraqi economy, While increasing the share of the investment budget so that the other productive sectors can develop in conjunction with the activity of the oil sector in order to avoid the effects of Dutch disease.
- the necessity to pursue a monetary Policy by the monetary authority where it's main task is adjustment of the developing rates and money supply with average of the domestic development as a whole, including the oil sector which fortify the stability of the velocity of the circulation of the money at the level of (1:1) which (MS:GDP).
- it's possible to measure the shock of the oil revenues and it's relation to exchange rate through random error dynamic mechanism and this is done through the follow-up of the fluctuations at the error average positive and negative.
- the achievement of the annual compound growth with significance two the equation of the regression for variables. Oil revenues. General revenues. Foreign exchange rate consecutively, (35,9% ,33% , -3.7 %).
- the treatment of an average of the oil revenues contribution for the total general revenues by 83% approximately to indicate virtual economical dependence for the oil sector.

6. the stability of the exchange rate data ( at the average ) and at ( the first variation ) whereas the data for the oil revenues stabilized at ( the first variation only ).
7. the results showed that there is an opposite relation between the oil revenues and the exchange rate with a factor that achieved (-1.93) which copes with the economical logic.

#### RECOMMENDATIONS.

1. the necessity to follow a purposeful oil policy which aims to accomplish harmony between the framework and its variables, and to concentrate on the oil revenues role in funding the developing economical process.
2. the necessity to follow monetary Policy which is independent that can enable the Central Bank for the control of the foreign exchange rate without exhausting the foreign reserve.
3. working on binding the dinar with the group of leading currencies such as ( euro , British pound ) in order to preserving the domestic economy in case of the American dollar rate deterioration.
4. Seeking to reduce the phenomenon of dollarization by improving the value of the Iraqi dinar by following the Turkish experiment, which was used to raise zeros from the local currency to facilitate the process of carrying and storage.

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