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The Impact of the Shock of Public Revenues on the Components of the Monetary Basis in Iraq for the Period /2004-2018

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The research aims to analyze and measure the impact of the government revenue shock in Iraq on the components of the monetary basis for the Central Bank of Iraq for the period 2004-2019. These revenues are linked to international variables, such as global demand, political and security conditions, and competition between producing countries. The Iraqi economy depends on oil revenues to finance what may reach 90% of budget spending. The results of the joint integration model showed that there is a relationship between government revenues and the monetary basis, which confirms that there is an impact of government revenues on the monetary basis in Iraq. The government should work to increase its types of income because this will reduce the dependency of the monetary basis on public revenues and increase the ability of the central bank to control the money supply.

Key words: *TQM, higher education, organization performance, Thailand.*

First / Introduction

Introduction to the Research

The Iraqi economy is one of the rentier economies that depend on oil revenues to finance up to 90% of budget spending, and the size of these revenues depends on international variables such as global demand and political and security conditions and competition between producing countries and others, which makes these revenues vulnerable to sudden changes that may sometimes form A big shock to the general budget of the Iraqi state, just as these revenues are in the hard currency, and this requires monetizing these revenues in the local currency, which makes many of the items of the budget of the Central Bank of Iraq

dependent on changes in oil revenues from the hard currency, thus affecting the monetary basis and the money supply as a result of those changes.

The Importance of Research

The shock of government revenues may generate significant effects on the components of the monetary basis, especially on the currency in circulation and thus increase the narrow money supply in Iraq, this mechanism reduces the ability of the central bank to control the money supply increases, which can turn into a significant increase in total demand The largest of this demand is from abroad, as this necessitates covering these imports in foreign currency, so large bleeding from the foreign currency will take place on consumer goods.

Research Problem

In oil countries, which represent oil revenues a large percentage of the total budget revenues, whose prices are usually subject to change due to international reasons as well, these revenues are in the hard currency, which requires exchange in the local currency, and thus the money supply is a variable that follows these revenues, which negatively affects the ability of the central bank to control Using it and therefore on a cash basis.

Research Hypothesis

Sudden changes in government revenues can have a clear impact on the components of the monetary basis of the central bank and, consequently, on the money supply.

Research Objective

The research aims to analyze and measure the impact of government revenue shock in Iraq on the components of the monetary basis of the Central Bank of Iraq for the period 2004-2019, as well as an analysis of the relationship path between public revenues and the monetary basis for the period under study.

Second / Shock the Public Revenue

When there is fluctuation in the economy, this comes from changes in total supply or aggregate demand. Economists call that external changes (Exogenous Changes). The transfer of the aggregate supply curve is called the shock supply supply. These shocks disrupt the performance of the economy in its required form by pushing the output and use away from its normal levels (Mala, 2017: 165).

Shock means in general is every case that occurs unexpectedly, or it is any change that occurs suddenly to economic variables, as the shock can be positive and the shock may be negative so it is said that the shock is positive when there is an increase in the value of the arrogant and vice versa (Al-Jabouri And Hussein,: 22).

As for the shock of government revenues, it means fluctuations in public revenues as a result of external influences that fall outside and the will of the financial authority, such as an increase or decrease in the price of the country's exports (as happens in the change in oil prices in oil countries), or are fluctuations that occur in government revenue sources due to adjustment With unexpected shocks to the economy, such as low tax revenues during periods of economic recession or rise during the economic recovery (Al-Kubaisi and Al-Obaidi, 2017: 4).

Three - Monetary Base

The cash basis is called high-strength cash or cash reserves and consists of the issued currency (banknotes and auxiliary coins) outside the banking system in addition to the banks 'cash reserves, i.e .:

Cash reserve = cash basis = currency in circulation + bank reserves of cash

Through the monetary reserve, the central bank can control the liquidity of commercial banks and their lending capacity, and thus their amount, to change the money supply (Al-Douri and Samurai, 2013: 122).

Or is the reserves of banks and the currency in circulation, or is the currency issued and the reserves of banks with the central bank and the last obligatory deposits and surplus, and it became clear that the currency in circulation is shared between the money supply and the cash basis when adding them to the banks 'reserves with the central bank the result is the monetary basis, and if added To current deposits to the currency in circulation, the result is money in the narrow sense, and if you collect the currency in circulation to all deposits then that is money in the broad sense (Ali,: 2).

The balance sheet report of the monetary authorities includes the following (Al-Hajjar, 2009: 75):

MBt =NFAt + NDCGt + COEt + CCB ∓OIN …….. (1)

As:
NFAt = net foreign assets

NDCGt = net local receivables from the government
COEt = receivables on formal bodies
CCB = Receivables from commercial banks
OIN = net of other items

The conformity (1) can be reformulated in the form of a change or by the values of fluxes and take the following form:

Δ MBt =ΔNFAt +Δ NDCGt +Δ COEt +Δ CCB ∓ ΔOIN …….. (2)

The elements of conformity (1) represent the monetary base sources and at the same time the factors affecting them.

MBt = NFA + DC
As DC represents domestic credit which is equal to:
NDCG + COE + CCB DC =

From the last equation we conclude that the monetary basis increases with the increase in net foreign assets (NFA (foreign currencies + cash gold) or increased domestic credit DC)).

The economy of the special case, such as oil countries, the net foreign assets are the mainstay of the monetary basis, because the government relies on oil to finance its spending, and it will exchange foreign currency with the central bank to obtain sufficient amounts of local currency to spend at home, and the money issuance will increase accordingly (Ali, 2012: 15).

The central bank cannot control the monetary basis because it cannot avoid accumulating foreign assets with it, and the latter is governed by oil resources and the government's disposal of them, but nevertheless it has a means of borrowing from banks and absorbing more liquidity by offering its remittances at high interest rates and thus the net maturity in the balance sheet will decrease over time With interest payments continuing and when the banks fail to accept the central bank’s tools, the net result of that policy will be inflationary (Ali, 2012: 17).

It has become clear that there is no difference between requiring the government to deliver all export resources to the central bank immediately or sell it as foreign currency as needed, because the monetary basis is influenced by government spending only (Ali, 2012: 17).

The monetary authorities can, through effecting changes in monetary policy tools, affect the total supply of money through changes that occur in both the money creation multiplier and the monetary base, and this is evident through the following equation (Abdel-Al, 2014: 73):

$\Delta M = mM\ (\Delta MB)$ ……. (3)

As:
M: Money supply
mM: multiplier of money creation
MB: monetary base

When monetary authorities use the tools of open market operations and the rebate rate, they affect the cash reserves or total deposits of commercial banks and thus affect the monetary base.

The monetary base or the monetary basis is an important part of the money supply because the increase in it will lead to a double increase in the money supply with the stability of other factors, and this is perhaps the reason for which the monetary base is called High Power Money () (Abdel Hamid, 2010: 263) .

Fourth - The Evolution of Public Revenues in Iraq for the Period 2004-2018

The general revenues in Iraq have witnessed significant increases during the study period, and this is a result of the significant increase in the prices of petroleum products, and since oil revenues constitute a large percentage of public revenues, and in some years more than 90% of that, the impact of these revenues has been evident on the volume of annual spending.

Table 1: Evolution of general revenues and oil revenues in Iraq for the period 2005-2018 (Billion dinars)

The percentage of the contribution of oil revenues to general revenues	Annual growth in public revenues	Oil revenue	General revenue	**year**
97.85	33.27	28337	28959	2005
98.80	70.01	48641	49232	2006
97.50	5.72	50747	52047	2007
98.60	54.19	79132	80252	2008
93.68	-31.21	51719	55209	2009
96.11	25.92	66820	69521	2010
98.09	43.84	98090	99999	2011
97.60	19.47	116597	119466	2012

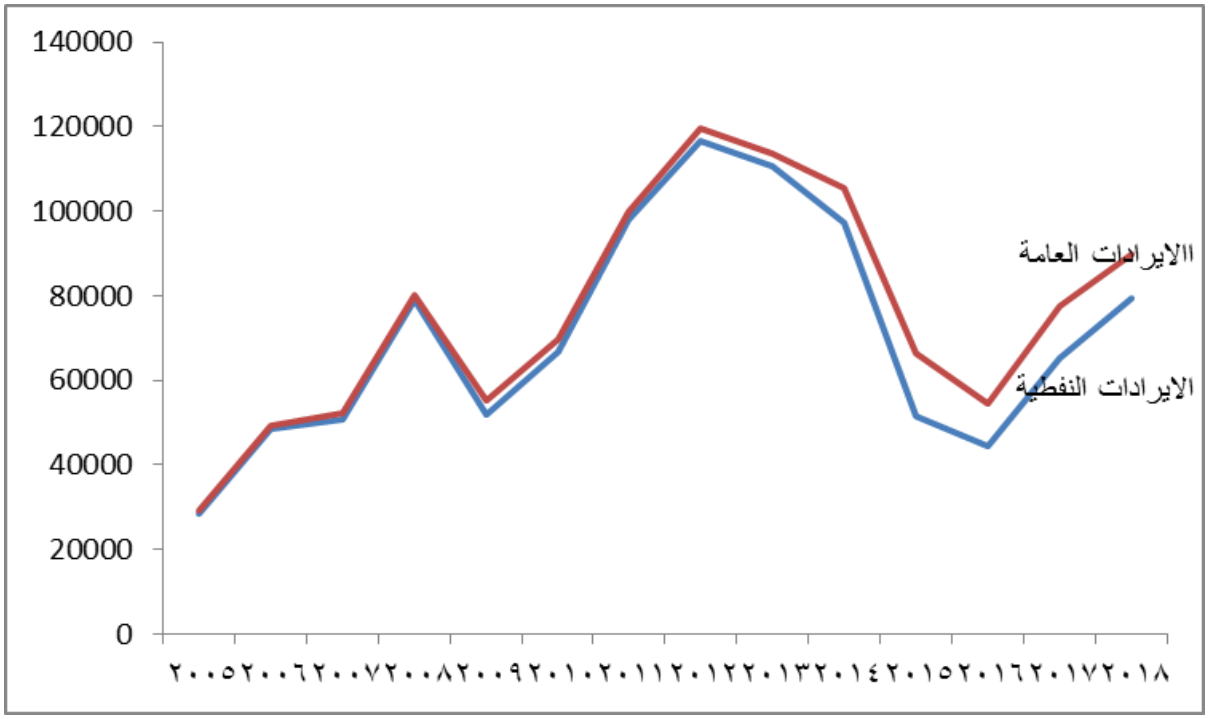
97.28	-4.77	110678	113767	2013
92.11	-7.37	97072	105387	2014
77.20	-36.93	51313	66470	2015
81.36	-18.14	44267	54409	2016
84.14	42.14	65072	77336	2017
88.73	15.91	79535	89641	2018

Source: Prepared by the researcher, relying on:

Central Bank of Iraq, Department of Statistics and Research, annual bulletin for the period 2005-2018.

Figure (1) shows the path and direction of both public revenues and oil revenues if he notices that the two curves walk in the same direction, which shows the syndrome of oil revenues and public revenues. An increase, which was reflected in the increase in public revenues, which indicates that the rest of the revenue types do not constitute a very limited percentage of the volume of public revenues.

Figure 1. The path of general revenues and oil revenues in Iraq for the period 2005-2018



Source: Using data from Table (1).

We also note from Figure (1) that the public revenue curve has moved away from the oil revenue curve during the period 2004-2018, which means that the proportion of non-oil revenues in public revenues has increased and this is a positive indicator towards reforming

the general budget structure in Iraq, but the proportion of oil revenues is not It is still high, which requires further reforms to reduce dependence on oil revenues.

Fifth - The Evolution of the Monetary Basis for the Central Bank of Iraq for the Period 2004-2018

The Central Bank of Iraq knows the monetary basis that it represents the cash issued in circulation (except for cash in the treasury of the Central Bank), in addition to the commercial bank deposits with the Central Bank in the Iraqi dinar (Annual Bulletin, 2017: 5), as the monetary basis in Iraq witnessed a remarkable development during the study period The fact that the monetary basis consists of:

Monetary basis = net foreign assets with the central bank + net domestic assets with the central bank. Since the Central Bank of Iraq monetizes the foreign currency obtained by the Iraqi Ministry of Finance into the Iraqi currency, the net foreign assets in the central bank budget are increasing, Table (2) shows the sources and uses of the monetary basis for the Central Bank of Iraq for the period 2005-2018.

Table 2: Sources and uses of the cash basis in the Central Bank of Iraq for the period 2005-2018 (Billion dinars)

2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	Sources and uses of the cash basis
67161	60506	62591	57888	66231	73259	63391	58,698	53810	45270	42859	28808	17521	13795	Monetary basis (a + b)
														reference
76368	57326	52618	62810	75435	88611	79968	69,379	57185	49792	58718	38217	25973	17366	A- Net foreign assets at the Central Bank
92-07	318-0	99-73	492-2	92-04	153-52	16577-7	10,681-	37-53	452-2	1585-9	940-9	845-2	35-71	B- The net local assets of the Central Bank
67161	60506	62591	62591	66231	73259	63391	58,698	53810	45270	42859	28808	17521	31795	users
4049	40343	4207	42075	3607	34995	3059	28,287	2434	21776	1849	14232	10968	9113	A - Currency outside

8		**5**		**2**		**4**		**2**		**3**				**the banks**
26663	**20163**	**20516**	**20516**	**30159**	**38264**	**32797**	**30,411**	**29468**	**23494**	**24366**	**14576**	**6553**	**4682**	**B- Bank reserves (1 + 2)**
22896	**16269**	**17359**	**17359**	**26347**	**32629**	**27606**	**26,541**	**26303**	**21101**	**2812**	**13176**	**5605**	**3539**	**1- Deposits included in the monetary base**
3767	**3894**	**3157**	**3157**	**3812**	**5635**	**5191**	**3,870**	**3165**	**2393**	**21554**	**1400**	**948**	**1143**	**2- Monetary assets in Iraqi dinars**

Source: Prepared by the researcher, relying on:

Central Bank of Iraq, Department of Statistics and Research, annual bulletin for the period 2005-2018.Table (3) shows the development of the monetary basis for the period 2005 - 2018 according to sources, as 2015 witnessed a negative annual growth of 0.125 - due to a decrease in the net foreign assets of the central bank resulting from a decrease in public revenues in foreign currency, while the highest annual growth in 2007 reached 0.644.

Table 3: Net foreign and domestic assets, monetary basis and annual rate of change for the period 2005-2018 (billion dinars)

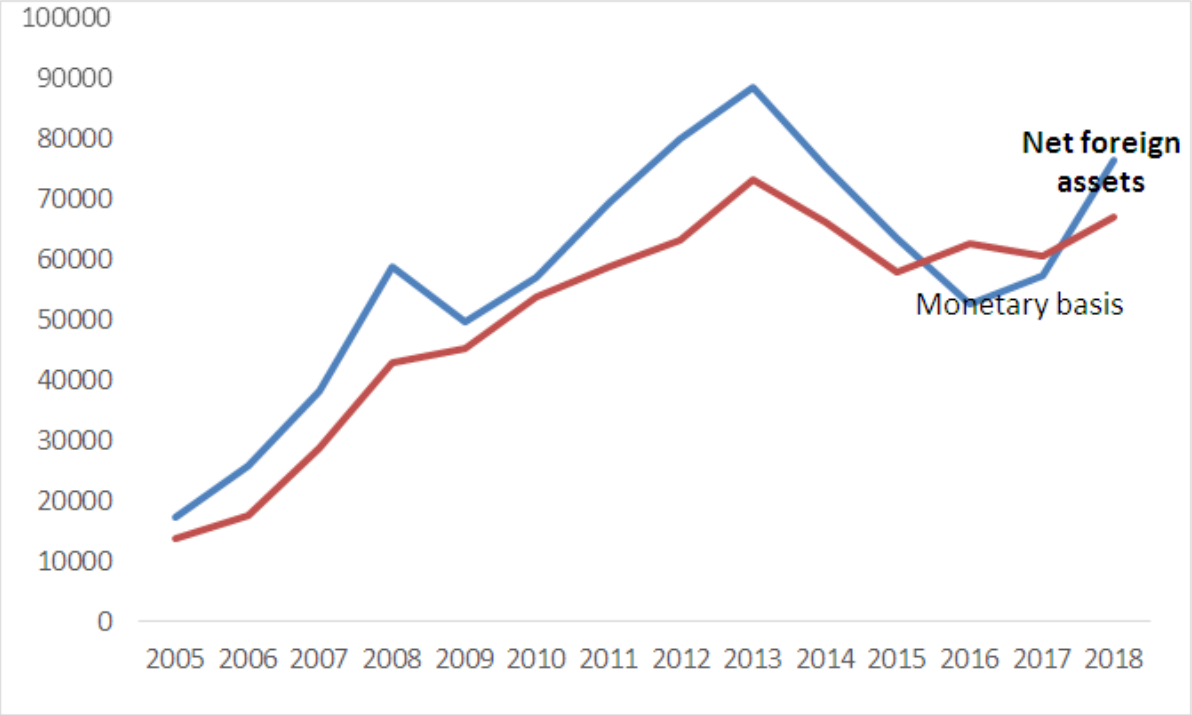
Annual rate of change	Monetary basis	Net Arab assets	Net foreign assets	year
-	13795	(3571)	17366	2005
0.270	17520	(8196)	25716	2006
0.644	28808	(9409)	38217	2007
0.487	42859	(15982)	58841	2008
0.056	45270	(4522)	49792	2009
0.188	53810	(3398)	57208	2010
0.090	58698	10681	69379	2011
0.079	63391	(16577)	79968	2012
0.155	73259	(15352)	88611	2013
-0.095	66231	(9215)	75446	2014
-0.125	57888	(5,618)	63506	2015
0.081	62591	9,973	52,618	2016
-0.033	60506	3,180	57,326	2017
0.109	67161	(9207)	76368	2018

Source: Prepared by the researcher, relying on:

Central Bank of Iraq, Department of Statistics and Research, annual bulletin for the period 2005-2018.

Figure (2) shows the path of the monetary basis and the net foreign assets, as we note that the two curves are moving in the same direction in most years of study, which shows the correlation between the two variables, with the exception of the year 2005 as the size of the net foreign assets increased on the monetary basis as a result of the decrease of the central bank's commitment to net domestic assets From 9973 to 5618 billion dinars.

Figure 2. Path of monetary basis and net foreign assets in Iraq for the period 2005-2018



Source: Based on table 3 data.

Figure (2) shows the path of public revenues with a monetary basis in Iraq for the period 2005-2015, as it turns out that the trend is a trend towards increasing for both directions, which confirms the effect of changes in government revenues on the monetary basis.

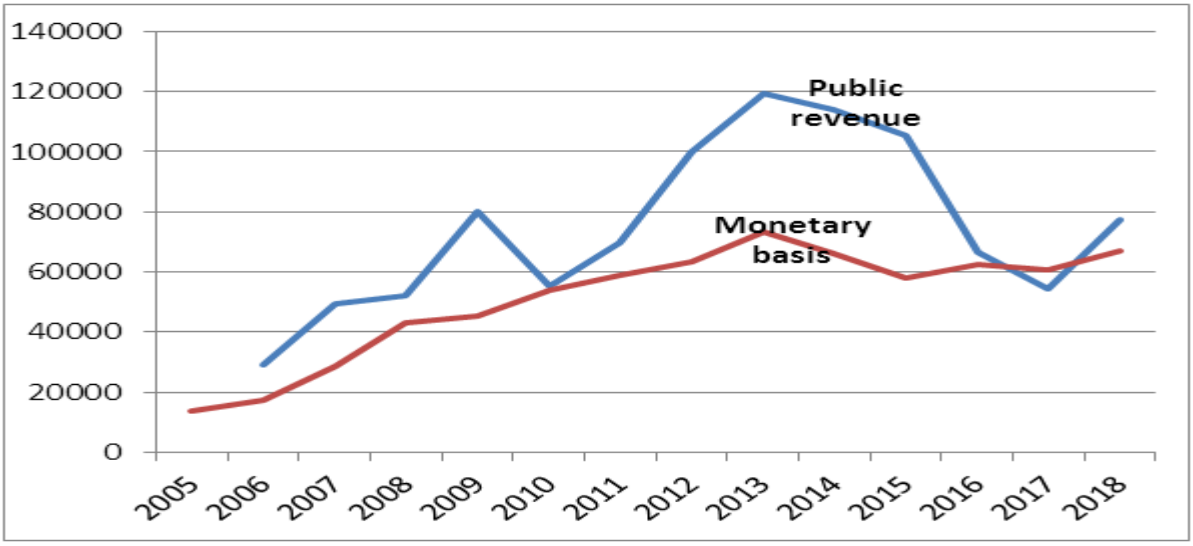
Table 4: Government revenue and monetary basis in Iraq for the period 2005-2018

Annual rate of change	**Monetary basis**	**Annual growth in public revenues**	General revenue	**year**
-	13795	33.27	28959	2005
0.270	17520	70.01	49232	2006
0.644	28808	5.72	52047	2007
0.487	42859	54.19	80252	2008
0.056	45270	-31.21	55209	2009
0.188	53810	25.92	69521	2010
0.090	58698	43.84	99999	2011
0.079	63391	19.47	119466	2012
0.155	73259	-4.77	113767	2013
-0.095	66231	-7.37	105387	2014
-0.125	57888	-36.93	66470	2015
0.081	62591	-18.14	54409	2016
-0.033	60506	42.14	77336	2017
0.109	67161	15.91	89641	2018

Source: Prepared by the researcher, relying on:

Central Bank of Iraq, Department of Statistics and Research, annual bulletin for the period 2005-2018.

Figure 3. Path of general revenues and monetary basis in Iraq for the period 2005-2018



Source: Based on table 4 data.

Table (4) and Figure (3) show the path of both government revenues and the cash basis in Iraq for the period 2005-2018 as the two curves path was taking in general towards the

increase with the exception of 2009, as public revenues decreased significantly due to the repercussions of the global crisis, but the monetary basis was not affected A lot of decrease in net foreign currency due to the fact that the central bank's obligations in net domestic assets have decreased.

Sixth - Standard Analysis

Standard results will be analyzed and estimated that explain the relationship between the financial variable which is government revenue R) and the cash variable which is the monetary basis (M0) and explain the direction of the relationship and the mutual effect between them using the joint integration model and the error correction vector model.

Results of Data Stability Test

Table (4) shows time series stability test according to the PP (Phillips and Perron-Peron test) for both government revenue (R) and monetary basis (M0), and since the p.p test is more efficient than the ADF test, therefore these two series have been tested according to P.P test The test results were as follows: -

Table 4: P.P's choice of levels and differences for both government revenue and monetary basis in Iraq for the period 2004-2018

The first differences		levels		variable	
fixed border and a general trend	Without a fixed border and a general trend	fixed border and a general trend	Without a fixed border and a general trend		
-9.038	-8.468	-2.825	1.237	R	
-7.957	-5.699	-1.642	2.583	M0	
-4.0139	-4.0139	-4.0139	-4.0139	%1	Level of significance
-3.4369	-3.4369	-3.4369	-3.4369	%5	
-3.1426	-3.1426	-3.1426	-3.1426	%10	

Source: Prepared by the researcher, based on the Eviews 9 program output.

It is noted from Table (4) that the series of the two variables is unstable in the level without a fixed term and a general trend or the presence of a fixed term and a general trend and at the level of significance 1% 5%, 10%.

Since the two strings are unstable in the level, the first difference of these strings was taken and it was found that they settled at the first difference without a fixed limit and a general trend or with a fixed limit and a general trend and at the level of significance 1%, 5%, 10%.

Co Integration Test

After testing the stability of the time series of the study variables, it was found that they are unstable in the level and that they are stable in the first difference according to the PP test. This paved the way for the existence of a common integration between these two variables and according to the Johansen - Juselias Co integration test JJ, which is more efficient. From the two-step Cranger test, especially in small samples or when there are more than two variables in the test and Table (5) shows the results of the Johannes-Geselios test of the government revenue variable with a cash basis.

Table 5: Testing the joint integration of the government revenue variable and the monetary basis in Iraq using the Johannes - Gelius method

1- Impact test			
Great value	The critical value is at 10%	**Impact test** λ trace	The hypothesis of nothingness
0.065936	**10.47457**	**11.86039**	**r=0**
0.004542	**2.976163**	**0.742055**	**r < 1**
2test Great value λMax			
Great value	The critical value is at 10%	**Impact test** λ max	The hypothesis of nothingness
0.065936	**9.474804**	**11.11833**	**r=0**
0.004542	**2.976163**	**0.742055**	**r < 1**

Source: Prepared by the researcher, based on the results of the statistical program (Eviews 9).

Table (5) shows the results of the (JJ) test for both the impact test (trac) and the maximum value test (Max) for the government revenue variable and monetary basis. The results confirmed for the impact test of (11.86039) that it is greater than the critical value of (10.47457) when the level of significance 10%, which means rejecting the null hypothesis (H0: B = 0) that there is no vector for joint integration (r = 0) and thus accepting the alternative hypothesis, which means there is more than one vector of joint integration (r = 1) and the results of Table (5) indicate that The null hypothesis cannot be rejected by the existence of a second vector of joint integration, as the calculated value of the impact test was (0.742055) while the critical value was (2.976163) respectively, which means accepting the null hypothesis, and this means that there is a long-term balance relationship between government revenue and the monetary basis.

As for the test of the maximum value, it confirmed the existence of a single vector of joint integration, as the results showed in Table (5) that the calculated value of the potential rate (11.11833) is greater than the critical value (9.474804) at the level of significance of 10%, which means rejecting the null hypothesis (H0: B = 0) that there is no vector for joint integration (r = 0) and accepting the alternative hypothesis of having a single vector for joint integration (r = 1), this result also confirms the existence of a long-term balanced relationship between the two variables which means that they do not move away from each other so that they show similar behavior .

VECM Vector Test Results

After that both government revenue and the cash basis were tested according to the joint integration model and it was found that there is a common integration, but determining the direction of this relationship in the short and long term requires an estimate of the Vector Error Correction Model- VECM to know about the relationship between the two variables and analyze the behavior of The relationship in the short term. Table (6) shows the results of testing the causal relationship in the short and long term between government revenues and the cash basis.

Table 6: Results of the Vector Correction Model Test in Iraq for the period 2005-2018

R	M0	Explanatory variables
0.001441 (0.00149) [0.96704]	0.001681 (0.00058) [2.91806]	C
-0.010558 (0.00607) [-1.73894]	-0.007395 (0.00235) [-3.15147]	er-1
0.000426 (0.19664) [0.00217]	0.343880 (0.07600) [4.52473]	M0 (-1)
0.016289 (0.19364) [0.08412]	0.306167 (0.07484) [4.09092]	M0 (-2)
0.289987 (0.07801) [3.71744]	-0.007489 (0.03015) [-0.24841]	R (-1)
0.241622 (0.07761) [3.11317]	-0.009939 (0.03000) [-0.33134]	R (-2)
0.277306	0.477055	R^2
0.015829	0.006118	S.E
12.20202	29.00943	F

Source: Prepared by the researcher, based on the outputs of the 9Eviews Program.

Table (6) shows the relationship between the government revenue variable and the monetary basis, so the first equation indicates the role of the explanatory variable of government revenue and its relationship to the monetary basis as a variable that follows the existence of the relationship between them. The two variables, in other words, the changes in government revenues explain the changes in the monetary basis, as the calculated value of (F) (29.00943) was statistically significant at the level of significance of 5%, which confirms the existence of a short-term balance relationship between the explanatory variable and the dependent variable.

Conclusions and Recommendations

Conclusions

1- By analyzing the data for the path of both government revenues and the monetary basis, it was found that the two variables are moving in the same direction, meaning that the relationship is direct.

2- Likewise between the path of oil revenues and the monetary basis, the direct relationship between the two variables, which confirms the relationship of influence from oil revenues to the monetary basis.
3- The results of the joint integration model showed the existence of the relationship between government revenues and the monetary basis, which confirms the effect of government revenues on the monetary basis in Iraq, which was confirmed by the vector error correction model.
-4 The results of the error correction vector model showed that there is no long-term balance relationship between monetary revenues and the monetary basis, since the error correction parameter was not significant, and this is through monetary policy tools.
4- The currency window plays a major role in linking the monetary basis to public revenues through currency auctions conducted by the central bank, as the net foreign assets are witnessing significant increases in the central bank budget.

Recommendations

1- The government should work to increase the diversity in income sources because this will reduce the dependency of the monetary basis on public revenues and increase the ability of the central bank to control the money supply.
2- The Central Bank of Iraq should activate its monetary policy tools more in order to control the components of the cash basis and the money supply so that it is not subject to changes in public revenues.
3- The currency window greatly affects the monetary basis by monetizing revenue in foreign currency. Therefore, the monetary authority in Iraq should exercise a greater oversight role in limiting auction operations.

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