The relationship between government expenditure and GDP in nonoil Iraqi economy

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Abstract

In this paper, the relationship between government ependiture and Gross Domestic Product (GDP) in non-oil Iraqi economy has been examined. This study analyzed the evolution of the government expenditure (consumption and investment) in the Iraqi economy for the period of (1990-2014).It is assumed that non-oil GDP is the indicator that reflects the performance of macroeconomic activity and any decline in GDP is attributed to the increase in the consumer behavior in the government expenditure policy , the proportion of the consumer expenditure,which is financed by oil revenues, and the transformation of state institutions into social security institutions at the expense of investment expenditure. This, in turn, will be clearly reflected in the exacerbating problem of the structural imbalance with the trends of government expenditure, which is not conducive to the development of the production sector. Consequently, the economy will not be able to fulfill the total demand. This study analyzed the development of the government expenditure (consumption and investment) in the Iraqi economy for the period of (1990-2014). In addition, the failure or success of the government expenditure policy in the promotion of GDP was invistigated. The Autoregressive Distributed Lag (ARDL) model was used to measure the effect of the government consumption and investment expenditure on non-oil GDP. As a result, it was found out that there is a significant relationship between consumption expenditure and non-oil GDP in the long and short runs. However, there was no positive effect of investment expenditure on the output of Non-oil GDP in the short run. Additionally, the research has come up with a range of conclusions, including that investment had a weak impact on the growth and stimulation of non-oil production sectors in the period before 2003 and the subsequent period. The research recommended that government expenditure should lead to activities that increase the productivity of the economy.

Keywords: government consumption expenditure, government investment expenditure, non-oil GDP, ARDL model, non-oil revenue.

Introduction

The policy of expenditure is the set of government measures, which aim to create the desired economic changes. Accordingly, the countries ' policies at different levels of progress play a major role in reaching their goals and the efficiency of macroeconomic performance has been dependent on those policies, too.

For the Iraqi economy, it has inherited the cumulative problems of two decades of wars and embargoes, which ended with the destruction of its infrastructure, the depletion of foreign reserves and the accumulation of foreign debts. Therefore, the monetary authority is responsible for financing the government expenditure to contribute and maintain a certain level of consumption by rationing and supplying the ration cards and the promotion of inflation trends.

The financial facilitation of the oil boom after 2003 has created a cushion for the relaxation of the sectors of economy. This was achieved through budgets characterized by consumption with limited prospects of development. This was basically reflected in the maximum allocations of the current budget at the expense of investment budget allocations. That is, the fiscal policy has tended to distribute oil revenue by using it to encourage government employment in poorly serviced and service-dominated jobs. Consequently, this expenditure is reflected in the formation of a consumption pattern,whose goods flow through foreign trade to meet the pattern and requirements of consumer's life and the investment of production has headed towards the extravagance of consumption, which dismantled the system of economic activity through the acquisition of sources of foreign currency and depletion without allowing it to maximize the benefit of the various sectors in the Iraqi economy.

The problem of this research lies in the low level of growth of non-oil GDP. The research proceeds from two hypotheses:

a. The expansionary consumer expenditure and investment activity generated by the budget has little impact on the growth and stimulation of non-oil production sectors in Iraq.

b. The expansionary consumer expenditure and investment activity generated by the budget has strong impact on the growth and stimulation of non-oil production sectors in Iraq.

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The research objectives are:

a. To track the course of government expenditure both investment and current developments during the period of the research to show the extent of failure or success of the fiscal policy in Iraq to stimulate GDP,

b. To know the impact of the current investment expenditure on the growth of non-oil GDP.

The research is divided into three sections. The first section dealt with the theoretical framework of government expenditure and its effect on the total output. The second section discussed the analysis of the evolution of government expenditure in Iraq for the period of (1990-2014), while the third section discussed the estimation of the relationship between government expenditure and non-oil GDP. At the end of the research, a number of conclusions and recommendations were proposed.

Previous Studies

The study conducted by Shahrani and Sadik (2014) explored the relationship between the government expenditure and economic growth in Saudi Arabia expressed in the index of per capita GDP of non-oil. They divided the public expenditure into several categories (housing, education, defense, health care) in the period of (1969-2010). The proposed research found out that the main determinant of economic growth in the short run was the private investment expenditure and the joint integration of the private sector investment and capital expenditure with health care expenses is the main driving forces for growth in the long run. The study recommended that the investment expenditure should be directed towards infrastructure in order to diversify sources of income by increasing the contribution of private sector activity to the overall activity. The continuation of government expenditure in this direction contributes to the continuation of financial sustainability in the medium and long run.

The study titled (Effect of government expenditure on economic growth in East Africa a disaggregated model) proposed by (Gisore, 2014: 8) attempted to verify in practice the impact of government expenditure on economic growth in Eastern Africa for the period of 1980-2010 by using the Levin-Lin-Chu test. This study showed that the government expenditure on health and defense expenditure positively correlates with the economic growth, but the expenditure on

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education and the agricultural sector inversely correlates with the economic growth. This negative relationship between education and agricultural expenditure with economic growth lacks good governance by the government.

The relationship between government expenditure and economic growth in Algeria for the Period (1990-2012) was proposed by Gathbnat, 2015: 1-15. The aim of this study was to test the causality between real total government expenditure and real GDP. The Wagner case hypothesis shows the state of the Algerian economy using the annual data for the period of 1990-2012.The VECM model and the causal test were used in this paper. The results of the joint integration test indicated a long-term relationship between the total government expenditure and GDP in Algeria at a significant level of 5%. The results of the Keynesian causality test also showed a causal relationship of the total government expenditure on GDP. That is, the government expenditure stimulates economic growth.

The focus of the proposed research is to highlight the effects of the consumer behavior on the government expenditure on non-oil GDP in addition to the time and spatial differences.

Section one: The theoretical framework of government Expenditure

The Effect of Consumer Expenditure on Total Output

The consumption or current expenditure is defined as the expenditure necessary to ensure the good conduct of the government administration (public utilities).

Classical philosophy regarded the increase of state intervention part in the national wealth as negative on the growth. "Any expansion of activity would damage the automatic direction and inability to achieve parity between total demand and total supply," (Jabouri, 2014: 235). In his explanation, Wagner explained that the public sector expenditure activity is growing with income growth. Fakner explained that the evolution of public expenditure is a natural consequence of the changing economic and social structure. The growth of aggregate demand meets the public sector part, which leads to the result of the growth of the government sector in the economy, (Dagher, 2010: 114).

The Effect of Investment Expenditure on Total Output

The expenditure policy plays an important role in the growth process and highlights its importance through its influence on the size of investment as one of the determinants of economic growth and the investment expenditure is defined as the amounts allocated by the government to obtain the necessary equipment to increase national production of goods , services, equipment and machines for production infrastructure (Al-Badrani, 2010: 65). The effects of investment expenditure on GDP can be determined by focusing largely on the effects of capital accumulation on expanding production capacity in the economy and thereby positively reflecting income and economic growth (Dagher, 2010: 115).

Section two: The evolution of government expenditure and sources of funding in Iraq for the period of (1990-2014).

1. Course analysis of some items for government expenditure in Iraq during the period of (1990-2014)

2. Analysis of the development of the policy for the period of (1990-2002)

During the period of (1990-2002), government expenditure witnessed a continuous increase in the current prices and the structural imbalances in the economy contributed to the low capacity of government expenditure. This in turn, stimulated the economic growth and the dependence of the Iraqi economy on the oil resource to cover the public expenditure. Additionally, the international demand for oil was reflected on the decline of the oil resource, which coincided with the lack of flexibility of the productive apparatus in front of the increased demand. Consequently, the rate of inflation increased. However, instead of focusing efforts on alleviating those imbalances, the budget showed a significant imbalance, which caused the increase in the operating expenses compared to the investment expenditures. Table (1) explains that the public expenditure decreased significantly in 1994 compared with 1990, with an annual growth rate of 51.2% and the investment expenditure in the same year (1994) shows that investment expenditure reached (179.2) million ID in 1994 with an annual growth rate of 75.2%. , while the current expenditure reached 1110.8 million with an annual growth rate of 42.1%). This means that the current expenditure has not decreased by the same proportion of the decline

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in investment expenditure. The reason for this increase is that the state is trying to maintain the social balance by increasing the transfer expenditure to achieve food security by following the government policy through supporting goods and services to be compatible with the inflation levels and the low real level of per capita income. In 1996, the public expenditure witnessed negative growth rates with annual growth rates of (-7.1%) and (-1.2%) for both the public expenditure and current expenditure respectively due to the adoption of the economic management approach to contain inflationary by reducing the expansion of government expenditure and reducing the budget deficit. Table (1) shows that the period of (1990-1996) was the growth of the total composite expenditure (-0.87%), while the compound annual growth rate of the current expenditure (-0.85%) compared to the compound annual growth rate for the investment expenditure (1997-1992) ; the investment expenditure has achieved positive annual growth rates over the period of (1997-2002). However, the percentage of expenditure investment to the public expenditure did not exceed (20%) as an average during the same period. This period is indicative of fluctuations in both public expenditure and current expenditure. In 1999, the current expenditure decreased significantly to reach (846.1) million ID, from (976.4) in 1998,while the growth rate of the investment expenditure in 1999 was (99.5%). Though the total public expenditure reached a monetary value of (1101.7) million dinars, it is considered to be the lowest annual growth rate of (-0.3%).

The improvement in the allocation of investment expenditure can be indicated through growth rates. That is, the cumulative growth rate of investment expenditure for the period 1997-2002 was 54.3%, while the current expenditure amounted to (80%) during the period of (1990-2002) and the average investment expenditure was (20%). Therefore, the expenditure policy neglected the development expenditure and gave relative importance to consumer expenditure despite the need of the Iraqi economy to correct the structure of the economy characterized by imbalance.

 Figure (1) shows the Evolution of Current and Investment Expenditure Public Expenditure during the period of (1992- 2002).
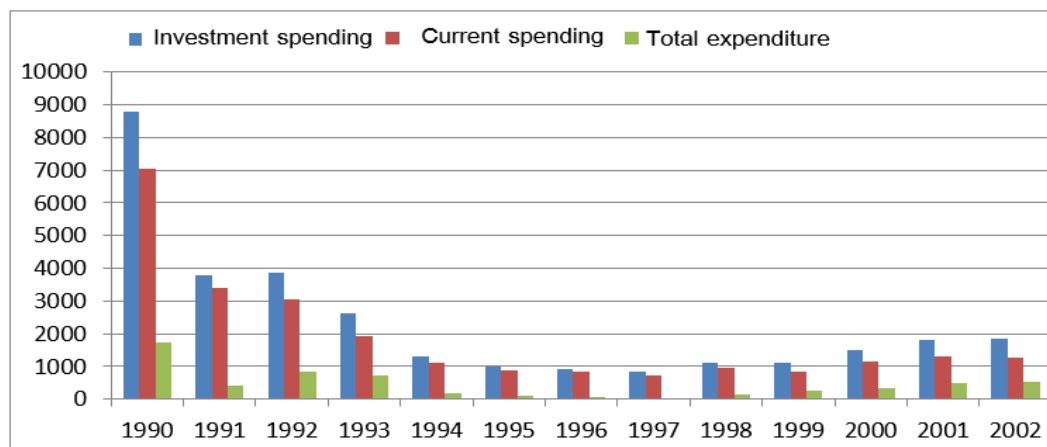
Figure 1. Evolution of Current and Investment Expenditure and Public Expenditure during the Period (1990-2002)

Table 1. Evolution of government expenditure (current and investment) at constant prices for 1988 = 100 for the period (1990-2002) (million ID)

Years	public Expenditure (1)	Annual growth rate%	Compound growth rate%	Current expenditure (2)	Annual growth rate%	Annual growth rate%	Investment expenditure (3)	Compound growth rate%	Compound growth rate%	Rate % 1:2	Rate % 1:3
1990	8795.9	(57.0)		7045.3	-		1750.6	-		80.1	19.9
1991	3788.0	2.3		3388.9	(51.9)		399.2	(338.5)		89.4	10.5
1992	3874.1	(31.8)		3048.5	(10.0)		825.5	106.8		78.7	21.3
1993	2640.8	(51.2)	(0.87)	1917.2	(37.1)	(0.85)	723.6	(12.3)	(0.95)	72.6	27.3
1994	1289.9	(23.3)		1110.8	(42.1)		179.2	(75.2)		86.1	13.9
1995	989.8	(7.1)		868.0	(21.9)		121.7	(32.1)		87.7	12.3
1996	919.2	(9.2)		857.6	(1.2)		61.6	(49.4)		93.2	6.8
1997	834.3	32.4	1.96	722.5	(15.8)	1.8	11.8	81.5	54.3	87.7	12.3

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1998	1104.6	(0.3)		976.4	35.1		128.1	14.6		89.5	10.5
1999	1101.7	38.1		846.1	(13.3)		255.6	99.5		80.4	19.5
2000	1521.7	19.2		1170.2	38.3		351.5	37.5		76.8	23.2
2001	1814.6	1.5		1306.5	11.6		508.1	44.6		72	27.9
2002	1841.5	(57.0)		1289.0	(1.3)		552.4	8.7		70	30

** The annual growth rate was calculated according to the following formula (y2-y1) / y1 * 100). The compound growth rate was calculated according to the following formula*:

$$( ) \, r = \left[\frac{p_1}{p_0} \right]^{\frac{1}{n}} - 1$$

Evolution analysis of current expenditure structure in period (1990-2002)

The main components of the current expenditure of the current budget were transfers, wages and salaries. As explained in Table (2), these expenditures mounted to (1940.4) million ID in the year of 1990, with the ratio of (27.5%) and then in 1991 declined with a negative annual growth rate of 53.7% compared to the previous year, which is a negative annual growth rate of (53.7%) compared to the previous year. This problem is relative to the total current expenditure (26.5%). In contrast, the inputs of goods and services were (215.8) million and by 3% of the total current expenditure, as shown in column (3) of Table (2). This decreased at a negative annual growth rate of (60.8%) in 1994 with a value of (21) million ID. This item (goods and services inputs) continued to decline in 1996 with an annual growth rate of (33.1%) and contribution to the total of the current expenditure (1%). As for the compensation of employees, there was an increase in the years of 1995-1996 with 55.3% and 59% 95% due to the improvement in public revenues and the increase in the cash issue and the entry of the memorandum of understanding into force. During the period of (1997-2002), there were no compensations for employees and the expenditure of goods inputs was negligible in their annual growth rates despite the reform program which was based on several axes including reducing government expenditure to the

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lowest possible level and maximizing the financial resources of the government (Saleh, 2002: 434)

Table 2. Evolution of current government expenditure structure

year	Current expenditure(1)	Annual growth rate%	Employee salaries (2)	Annual growth rate%	Intermediate goods ana servies(3)	Annual growth rate%	Social expenditure(4)	Annual growth rate%	Special programs (5)	Annual growth rate%	Pensions salaries (6)	Annual growth rate%	2:1%	3:1%	4:1%	%5:1	%6:1
1990	7045.3	-	1940.4	-	215.8	-	2431.1	-	1524.1	-	844.2	-	27.5	3	34.4	21.6	12
1991	3388.9	(51.9)	896.7	(53.7)	61.7	(71).	1498.3	(38.3)	573.9	(62.3)	342.9	(59.3)	26.5	1.8	44.2	16.9	10.1
1992	3048.5	(10.0)	619.6	(30.8)	59.8	(3).	1773.9	18.3	295.4	(48.5)	270.6	(21)	20.3	2	58.2	9.7	8.9
1993	1917.2	(37.1)	296.1	(52.2)	53.7	(10.1)	1163.	(34.4)	264.8	(10.3)	130.4	(51.8)	15.4	2.8	60.7	13.8	6.8
1994	1110.8	(42.1)	58.2	(80.3)	21	(60.8)	753.7	(35.1)	195.1	(26.3)	80.7	(38.1)	5.2	1.9	67.8	17.6	7.3
1995	868.0	(21.9)	90.4	55.3	13.8	(34.1)	628.3	(16.6)	90.8	(53.4)	43.6	(45.9)	10.4	1.6	72.3	10.5	5
1996	857.6	(1.2)	144.5	59.9	9.2	(33.1)	551.3	(12.2)	90.	(0.8)	61.6	41.2	19.9	1	64.3	10.5	7.1
1997	722.5	(15.8)	130.5	(9.7)	12.9	40.1	454.4	(17.5)	90.4	0.4	44.	(28.5)	17.7	1.7	61.7	12.3	6
1998	976.4	35.1	144.6	10.8	24.6	90.1	604.1	32.9	175.3	93.9	39.8	(9.5)	14.6	2.5	61	17.7	4
1999	846.1	(13.3)	207.5	43.4	29.2	18.6	454.7	(24.7)	154.3	(12)	36.9	(7.2)	23.4	3.3	51.3	17.4	4.1
2000	1170.2	38.3	229.2	10.3	39.3	34.5	621.6	36.7	232.7	50.8	41.3	11.9	19.6	3.4	53.1	19.9	3.5
2001	1306.5	11.6	293.4	28	47.5	20.6	523.7	(15.7)	346.5	48.8	80.9	95.8	22.5	3.6	40.3	26.6	6.2
2002	1289.0	(1.3)	326.1	11.1	54.3	14.3	478.	(8.7)	342.2	(1.2)	75.2	(7)	25.3	4.2	37	26.5	5.8

Values between arcs indicate negative values.

Analysis of policy directions for the period of (2003-2014)

The total expenditure mounted to (13694) million dinars in 2004 and the annual growth rate was (406.4%), whereas in 2005, the total public expenditure decreased to (9779.6) million with a negative growth rate of (28.5%). In 2007, the current expenditure reached (5176.9) with an annual growth rate of (-12.7%) and 83.2%. In contrast, investment expenditure in the same year reached (1042.4) million ID with 16.8%. It is possible to say that most of the allocations of the current expenditure were directed towards strengthening the security aspect and increasing the salaries of the state employees. Public Expenditure continued to increase during the subsequent period until 2009 and the total expenditure had a negative growth rate of (-14.9%). The investment expenditure also witnessed an improvement in its annual growth rate compared to the current expenditure in 2010. The latter had a negative growth rate (3.3%), while the investment expenditure increased by (57.3%). Nevertheless, it did not exceed 20% on average, while the average current expenditure ratios were (80%) during the same period. Figure 2 shows the graphical presentation of this period.

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Table 3. Evolution of public expenditure in both current and investment at constant prices for the year 1988 = 100 during the period (2003-2014) (ID million).

year	Total expenditure (1)	Annual growth rate%	%Compound growth rate	Current expenditure (2)	Annual growth rate%	%Compound growth rate	Investment expenditure (3)	Annual growth rate%	%Compound growth rate	1:2%	1:3%
2003	2703.7	-		2544.9	-		158.7	-		94.1	5.9
2004	13694.	406.4		11989.2	371.1		1704.8	974.2		87.5	12.5
2005	9779.6	(28.5)		8585.3	(28.3)		1194.2	(29.9)		87.7	12.3
2006	7761.6	(20.6)		6597.3	(23.1)		1164.2	(2.5)		85	15
2007	6219.3	(19.8)		5176.9	(21.5)		1042.4	(10.4)		83.2	16.8
2008	10368.	66.7	5	8060.	55.6	3.3	2307.9	121.4	31	77.7	22.3
2009	8813.7	(14.9)		7283.9	(9.6)		1529.8	(33.7)		82.6	17.4
2010	9444.9	7.1		7038.1	(3.3)		2406.8	57.3		74.6	25.4
2011	11673.7	23.5		8928.5	26.8		2745.1	14.		76.4	23.6
2012	14528.2	24.4		10472.4	17.2		4055.7	47.7		72	28
2013	16161.1	11.2		10683.	2.		5478.1	35.		66	34
2014	14886.4	(7.8)		10182.6	(4.6)		4703.8	(14.1)		68.4	31.6

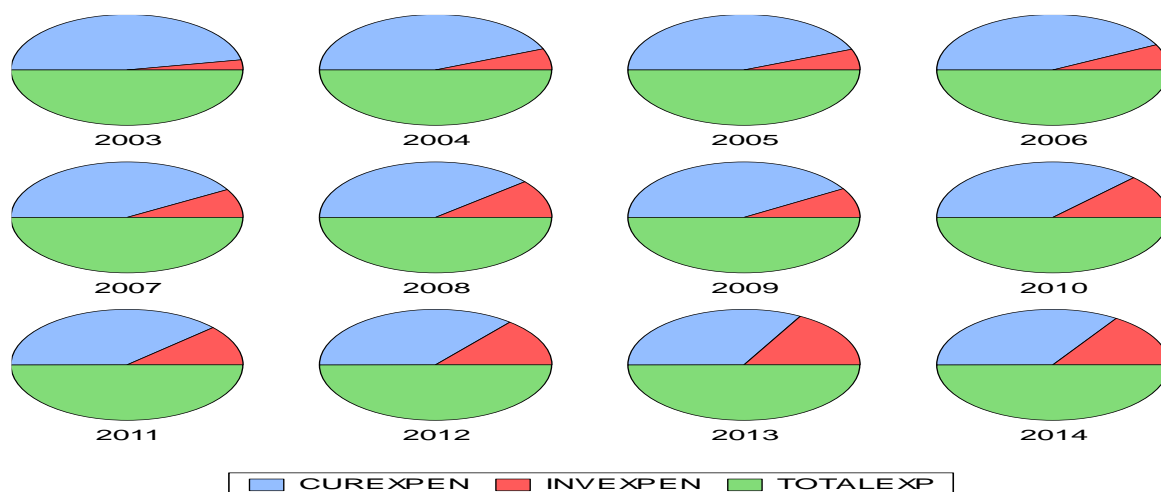** Values between parentheses mean negative values.*

Figure 2. Evolution of current and investment expenditure and total expenditure during the period of (2003 - 2014)

Analysis of the sources of the government expenditure for the period of (1990-2014)

The government requires sufficient financial resources to cover the amount of government expenditure. The resources can come from the national income within certain limits of national financial capacity or the government may resort to exceptional sources and in this study, we will be limited to the non-oil.

Evolution of non - oil revenues during the period of (1990-2014)

A: Non-oil revenues during the period of (1990-2002)

Non-oil revenues include both tax revenues and non-tax revenues with the budget revenues from the profits of non-oil socialist sector institutions. Non-tax revenues include fees received by the public sector for their services to residents and non-residents and the capital income from the sale and lease of state property from land, real estate and equipment.

In 1990, the evolution of public revenues, non-oil revenues and tax revenues with their respective ratios to total revenues was (7165) million dinars. The constituted percentage of the total revenue in general was (84.3%) including tax revenues, which mounted to about (1238) million dinars. The ratio to total public revenues was (14%), (8.3%) of which was used to finance the current

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expenditure. Consequently, it is necessary to target access to a situation with tax revenues covering high rates of current expenditure, especially, in oil countries so as not to affect the (consumption) of the oil resource at the expense of investment expenditure and the rights of future generations. If we approach the idea, we note the inability of this funding source (tax revenues) to finance the current expenditure. In order to mark the effectiveness of tax policy in the Iraqi economy, three indicators were calculated: tax energy, tax burden and the tax effort.

The tax burden in the Iraqi economy mounted to (2.21%) in 1990 and then decreased during the following years and the average rate for the period of (1990-1996) was (1.11%). This indicator did not improve during (1997-2002), and remained low, especially, in the years of 1999-2000. It reached (0.94%) and (0.88%) for the two years respectively and the ratio of the tax burden during the period of (1997-2002) reached to (1.23%), not far from the average tax burden in the previous period. This may be attributed to the circumstances of the economic siege.

 Because of the positive relationship between the oil revenues and the volume of foreign trade in Iraq, the tax system during this period was characterized by low performance efficiency. This is clear from the low rates of tax effort and high rates of waste in the utilization of tax revenues. During the period of (1990-1996) , the tax rate was (0.034) ,which was very low, while the average tax rate during the same period was estimate at (31.41). Thus, the unused tax rate is about 96.6% in the period of (1990-1996). It also indicates the inefficiency of the existing tax institutions

In the period of (1997-2002), the exploitation of the government to the average value of this index is less than the correct one.That is, there is significant waste in the utilization of the tax energy (97%) of the average tax energy during the same period.This shows how the tax revenues were affected by the conditions of the economic blockade.

Table 4. Non-oil revenues, tax revenues, and their proportion for the period (1990-2002)

year	Public Revenu -1	Non-oil Revenu -2	Annual growth %rate	% Compound growth rate	Tax Revenue -3	Annual growth %rate	% Compound growth rate	Government expenditure -4	GDP -5	Current expenditure -6	Non-oil deficit of current expenditure (7)	%1:2	%4:2	%5:2	%1:3	%4:3	%5:3
1990	8491	7165	-		1238	-		14179	55926.5	11357	10119	84.3	50.5	12.8	14.5	8.7	2.2
1991	4228	3529	-50.7		664	-46.4		17497	42451.5	15653	14989	83.4	20.1	8.3	15.7	3.8	1.6
1992	5047	4092	15.9	24.8	1049	58	57.9	32883	115108.4	25876	24827	81.7	12.4	3.5	20.7	3.2	0.91
1993	8997	6864	67.7		2657	153.2		68954	321646.9	50060	47403	76.2	9.9	2.1	29.5	3.8	0.82
1994	25659	21207	209		9331	251.1		199442	1658325.8	171742	162411	82.6	10.6	1.3	36.3	4.7	0.6
1995	106986	100327	373		52707	464.8		690784	6695482.9	605840	553133	93.7	14.5	1.5	49.2	7.6	0.78
1996	178013	156666	56.1		61797	17.2		542542	6500924.6	506102	444305	88	28.9	2.4	34.7	11.4	1
1997	410537	355368	126.8		160212	159.3		605802	15093144	534095	373883	86.6	58.6	2.3	39	26.4	1.06
1998	520430	435231	22.4		202318	26.2		920501	17125847.5	824705	622387	83.6	47.3	2.5	38.8	22	1.2
1999	719065	643666	47.9	3.4	326903	61.6	5.2	1033552	34464012.6	831592	504689	89.5	62.2	1.9	45.4	31.6	0.94
2000	1133034	990617	53.9		443239	35.5		1498700	50213699.9	1151663	708424	87.4	66	1.9	39.1	29.5	0.88
2001	1289246	1103339	11.3		532516	20		2079727	41314568.5	1490866	958350	85.5	53	2.7	41.2	25.6	1.3
2002	1971125	1596275	44.6		852931	60.1		2518285	41022927.4	1762683	909752	81	63.3	3.9	43.3	33.8	2

Table 5. Oil revenues to public revenues, government expenditure, GDP at current prices, deficit and surplus for the period of 2003-2014

Year	Public Revenu -1	Annual growth rate%	Annual growth rate%	Oil Revenue -2	Annual growth rate%	Compound growth rate%	Government expenditure -3	Deficit,Surplus	GDP -4	3:1 %	2:1 %	3:2 %	4:2 %
2003	16015654	-	6.2	15790516		5.8	4901960.8	11113693	29585788.6	326.7	98.5	322	53.3
2004	32988850	106		32625108	107		31521427.9	1467422	53235358.7	104.6	98.8	103.5	61.2
2005	40435740	23		39453950	21		30831141.7	9604598	73533598.6	131.1	97.5	128	53.6
2006	49055544	21		46908043	19		37494459	11561085	95587954.8	130.8	95.6	125	49
2007	54964849	12		53163644	13		39308348.5	15656501	111455813.4	139.8	96.6	135.2	47.6
2008	80616246	47		77589442	46		67277196.6	13339049	157026061.6	119.8	96.2	115.3	49.4
2009	55243526	-31		51752349	-33		55589721.1	-346195	130643200.4	99.3	93.6	93	39.6
2010	70178223	27		66923336	29		61034201.8	9144021	162064565.5	115	95.3	109.6	41.2
2011	103989088	33		102452810	53		79657666.3	24331422	217327107.4	130	98.5	128.6	47.1
2012	119817222	15		117271044	14		105139575.7	14677646	254225490.7	114	97.8	111.5	46.1
2013	113840075	-5		111210715	-5		119127556.3	-5287481	271091777.5	95.5	97.6	93.3	41
2014	105553850	-7		97071979	-13		112192125	-6638275	260610438.4	94	91.9	86.5	37.3

Non-oil revenues during the period of (2003-2014)

The period following the political change has been accompanied by the shifts in the legal infrastructure of the policy. More specifically, the country enacted laws regarding domestic and foreign standards in accordance with the new conditions of the Iraqi economy. For instance, Article (37) of 2003 refers to the suspension of income tax on income sources; real estate property and further reductions in the rates of taxes on the incomes were reduced by no more than 15% (previously was 40%). The tax amendments also included subjecting the public sector employees to tax burdens. In terms of customs taxes, they were suspended and replaced by Iraq's 5% reconstruction (Samurai, 2013: 47). The government also resorted to alternative non-inflationary methods, debt financing and other credit instruments (Obaid, 2014: 311). However, the adoption of the amendments to the tax policy referred to has resulted in the annexation of the treasury bonds and treasury bills and the use of the Central Bank for sale. The course of development can be seen from Non-oil revenues in 2003,which amounted to 225137 million ID including tax revenues of 53513 million ID. The ratio of non-oil revenues to total revenues did not exceed (2%), while this ratio was (0.33%) for tax revenues. In 2007, the annual growth rate of non-oil revenues decreased by 16% (196.7%). However, there was a significant gap between tax revenues and the current expenditure directed towards the provision of services to society in large part. This case indicated the depth and breadth of the phenomenon throughout the duration of the study expressed in the index of the amount of deficit of the current expenditure.

The low efficiency performance of tax system can be indicated by the average tax rate for the period (2003-2014) ,which was 0.030. This rate indicated the size of the great loss in the utilization of tax energy, which previously was 97%.

Therefore, the financing role of other sources of income (taxes) was secondary and the weakness in the tax revenues is due to several reasons (Kamash, 2010: 167)

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Table 6. Non-oil revenues and tax revenues for the period (2003-2014)

Year	Public Revenue -1	Non-Oil Revenue (2)	Annual growth rate%	Compound growth rate% %	Tax revenue(3)	Annual growth rate% %	Compound growth rate% %	Government expenditure -4	GDP(5)	Current expenditure	Non-oil deficit for current expenditure(6)	1:2%	4:2%	1:3%	4:3 %	5:3 %
2003	16015654	225137	-	39	53513	-	38.3	4901960.8	29585788.6	4614079.8	4848448	1.4	4.6	0.33	1	0.18
2004	32988850	363742	61.5		89126	66.5		31521427.9	53235358.7	27597167.9	31432302	1.1	1.1	0.27	0.3	0.16
2005	40435740	981790	170		491570	451.5		30831141.7	73533598.6	27066123.7	30339572	2.4	3.2	1.2	1.6	0.6
2006	49055544	2147501	118.5		593887	20.8		37494459	95587954.8	31870290	36900572	4.4	5.7	1.2	1.6	0.6
2007	54964849	1801205	-16		1762503	196.7		39308348.5	111455813.4	32719836.2	30957333	3.3	4.6	3.2	4.5	1.5
2008	80616246	3026804	68		2918637	65.6		67277196.6	157026061.6	52301181.1	49382544	3.7	4.5	3.6	4.3	1.8
2009	55243526	3491176	15.3		3335125	14.2		55589721.1	130643200.4	45941062.5	42605938	6.3	6.3	6	6	2.5
2010	70178223	3254886	-6.7		1503516	-54.9		61034201.8	162064565.5	45480860.4	43977344	4.6	5.3	2.1	2.5	0.9
2011	103989088	1536278	-53		1408184	-6.3		79657666.3	217327107.4	60925553.4	59517369	1.5	1.9	1.3	1.7	0.6
2012	119817222	2546178	65.7		2311139	64		105139575.7	254225490.7	75788623.7	73477485	2.1	2.4	1.9	2.2	0.9
2013	113840075	2629360	3.2		2518683	8.9		119127556.3	271091777.5	78746806.3	76228123	2.3	2.2	2.2	2.1	0.9
2014	105553850	8481870	222.5		1891538	-24.8		112192125	260610438.4	76741672.6	74850135	8	7.5	1.8	1.7	0.7

Section two: Estimating the relationship between government expenditure and non-oil GDP by using the ARDL

ARDL Template Description

The research is based on the economic theory based on the available data and information on the phenomenon. This data has been collected from the official sources in order to determine the nature of the relationship between government expenditure and GDP without oil. Based on what was presented in the descriptive analysis of the study of the existence of variables can be characterized as follows :

$NOGDP_t = f\,(GC,\ GI)$ .... (1)

Where:

Non-Gross Domestic Product (NGDP): GDP excluding oil.

Consumption Government expenditure (GC): Current government expenditure.

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Investment Government expenditure (GI): Government investment expenditure.

Based on this equation, we could estimate the effect of government expenditure on the GDP (non-oil) in the Iraqi economy during the period of 1990-2014. Thus, the ARDL model can be used to measure the long-term and short-term effects of the government expenditure (current and investment) in GDP. It is assumed that the signals of the parameters (short and long term) are positive for this variable. That is ,there is a positive long-term relationship between this type of expenditure and the local output since the investment and expenditure are directed to the infrastructure supporting.

$$\Delta \ln NOGDP_t = Ln\alpha_0 + \sum_{i=1}^{n} \beta_1 \Delta \ln NOGDP_{t-i} + \sum_{i=1}^{n} \beta_2 \Delta \ln GC_{t-i} + \sum_{i=1}^{n} \beta_3 \Delta \ln GI_{t-i} +$$
$$\lambda_1 \ln NOGDP_{t-1}. + \lambda_2 \ln GC_{t-1} + \lambda_3 \ln GI_{t-1}. + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

Where:

Δ Represents the first difference of the variabl, α0 represents the constant limi, n represents the upper limit of the time lag periods, 1 β and 2β and 3β represent the short-term elasticities, 1 λ, 2λ and 3λ represent the long-term elasticities، t is the study from 1990 to 2014, tε represents the random error limit of the model (Residual).

The relationship between current government investment expenditure and non-oil domestic product.

Unit root test

Table (7) shows the extended Dicky-Voller test of the unit root. It's clear from the results that the non-oil GDP variable has achieved a static status at the level of the original data with a fixed limit and a general trend. P = value (0.0125) which is less than 5% , which rejects the null hypothesis 1 = p h0 with the existence of a unit root in the time series of the non-oil GDP variable, but accepts the alternative hypothesis (p: H1). The current expenditure and investment did not achieve the status of dormancy of the time series at their original level, as the value of P-value) is greater than 5%. This indicates that these two variables will not remain silent , but it is noted that all the three variables (non-oil GDP, current expenditure, investment expenditure) have achieved the status of silence after taking the first difference. The non-oil GDP variable is a class

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I (0) variable, while the current government and investment expenditure variables are combined with the first class I (1). Table (7) shows the Dicky-Fuller Test Results (ADF)

Table 7. Dicky-Fuller Test Results (ADF)

Variable	Level			First differences		
	Fixed limit only	Fixed limit and general direction	Without a fixed limit or a general trend	Fixed limit only	Fixed limit and general direction	Without a fixed limit or a general trend
	P- value	P- value	P- value	P- value	P- value	P- value
LNOGDP	0.8393	0.0125	0.9244	0.0000	0.0001	0.0000
LGC	0.7644	0.1756	0.6898	0.0057	0.0247	0.0003
LGI	0.8913	0.1022	0.8657	0.0000	0.0001	0.0000

The Philips Peron test (P.P) test shown in Table (8) is non-oil GDP stable at a level with a fixed limit and a general trend since the P-value of 0.0125 is less than 5%, which rejects the null hypothesis and accepts the alternative hypothesis. This is clear from the test of Phillips Peron that the variables of the government expenditure (current and investment) are not resident at the level of the original data whether there is a fixed limit only or a fixed limit and general direction or without a fixed limit and a general trend. Consequently, the hypothesis of nothingness (H0) that the variables remain unchanged at their original level is accepted . The rejection of the alternative hypothesis (1>: p (H1, Luck, that all variables have achieved a recipe sleep after taking the first difference time series variables studie. Therefore, the current expenditure and investment expenditure complementary Class I (1) , while the non-oil GDP integrated level (0) I

Table 8. Philips Peron test results (p.p) (unit root test)

Variable	Level			First differences		
	Fixed limit only	Fixed limit and general direction	Without a fixed limit or a general trend	Fixed limit only	Fixed limit and general direction	Without a fixed limit or a general trend
	P- value	P- value	P- value	P- value	P- value	P- value
LNOGDP	0.9351	0.0125	0.9994	0.0000	0.0000	0.0000
LGC	0.7119	0.1756	0.6802	0.0059	0.0270	0.0003
LGI	0.7449	0.0964	0.8656	0.0000	0.0001	0.0000

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Estimating the regression of joint integration according to the (ARDL model) and testing its statistical quality

The estimated ARDL model indicates that the non-oil GDP is the dependent variable. The statistical program automatically determined the time lag of the variables according to the Akiake Criteria (AIC) : two times for the non-oil GDP variable and one-time lag of the government expenditure variable (R-squared = 0.95). The value of the F-Stat (66.1) was statistically significant, and the statistical value of the sample was statistically significant. The value of p.value () was (-1.59%), which is less than 5%. This means that the model is suitable for interpreting the relationship between the independent variables and the dependent one. This means that the model is free from the problem of the intrinsic correlation of the values. The results of the diagnostic tests for the estimated model in Table (9). The model is free of measurement problems, such as the problem of the instability in terms of P-value. The results indicate that the model is sound from the problem of self-correlation. The value of P- value of Chi square (0.1593) is insignificant because it is greater than 5%. This means that the current values are not affected by the previous values. Finally, the distribution test is distributed as normal. The value of P- value.Jarque-Bera is insignificant (5%) as it reached (0.907239), which makes it possible to accept the null hypothesis that the residuals Zaa naturally rejected the alternative hypothesis. Table (9) shows the estimation of the ARDL model for co-integration. Table (10) shows the Residual Diagnostic Tests results.

Table 9. Estimation of the ARDL model for co-integration

Variables	Estimated parameters Coefficients	(t-statistic)	Probability value (P- value)
LNOGDP(-1)	0.824056	5.714769	0.0000
LNOGDP(-2)	0.186867-	1.319941-	0.2044
LGI	0.147611	2.883875	0.0103
LGI(-1)	0.077213-	1.743415-	0.0993
LGC	0.048777	0.871510	0.3956
Constant	2.787911	3.836565	0.0013
R-Squared = 0.95 F-Statistic= 66.10 P- value F- Stat= [0.0000]			
Durbin- Watson =2.7515		Durbin's h-statistic =- 1.981	

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Table 10. Residual Diagnostic Tests

Serial Correlation	0.1593 = P- value. Chi-Square
Natural distribution (Normality)	0.907239= P- value. Jarque – Bera
Inconsistency of contrast homogeneity(Heteroscedasticity)	= 0.1298P- value. Chi-Square

Bound Test for Bound Integration

In order to verify the existence of a common integration relationship between the variables of model (1) (non-oil GDP), the Bound Test has been used. The calculated F-statstic value (5.7) is higher than the minimum and upper values of all levels of morale. Meaning that the rejecting null hypothesis (H0) and accepting the alternative hypothesis (H1) with a common integration between the studied variables. Table (11) show the ARDL Bounds Test for Co-integration.

Table 11. ARDL Bounds Test for Cointegration

Variables	F – Statistics	Cointegration
LNOGDP,LGI,LGC))	5.7	Cointegration
Critical value	Lower Bound	Upper Bound
1%	4.13	5
5%	3.1	4.87
10%	2.63	3.35

Estimating the short-term relationship between the non-oil GDP model variables.

Table (12) shows the results of error estimation and correction model. The results show that the variables corresponded to the expected signs. The indicators of government expenditure (current and investment) are expected to be positive.

The increase in investment expenditure by 1% leads to an increase in non-oil GDP by (0.150). The value of P-value current expenditure parameter of 0.5965 is greater than 5%. This indicates that the effect of the current expenditure on non-oil GDP is not significant. In contrast, the effect of investment expenditure was significant because P the value of the variable investment expenditure is less than 5%. This is due to the deterioration of the business sector in the Iraqi

economy because of wars and siege destruction of the infrastructure, which made government expenditure a weak factor in the real production sector.

Government Expenditure is characterized by a significant imbalance because of the dominance of current expenditure. In the period following the political change, the effects of government expenditure on non-oil GDP did not differ from the period preceding it despite the availability of growth opportunities in the real production sectors and the relatively favorable environment for investment activity. The government has not had a developmental direction, and its expansionist behavior has not led to tangible effects in the commodity production sector. However, the revival of service activities, such as the foreign trade sector and the associated transport sector, was financed by the oil sector, which became weakly linked to the local commodity production sector and expenditure works for a non-resident economy.

Table 12. Estimated Long Run Coefficients

Variables	Coeffcients	t-statistic	P- value
Δ (LNOGDP(-1))	0.177883	1.461840	0.1620
(GI) Δ	0.150833	2.883875	0.0009
(GC) Δ	0.034879	0.871510	0.5965
ECT(-1)	0.362811-	-5.062548	0.0001

Estimating the long-term relationship between non-oil GDP model variables

Table (13) shows the results of the long run ARDL model relationship between the independent variables and the dependent variable

Table 13. Estmated Long Run Coefficients

Variables	Coeffcients	t-statistic	P- value
GI	0.194035	1.656400	0.1160
GC	0.134442	0.872855	0.3949
C	7.684189	12.153492	0.0000
Error correction equation			
Cointeq = NONGDP - (0.1940*GI + 0.1344*GCC + 7.6842)			

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The results show that both variables have a positive effect on the non-oil GDP because their Coefficients are positive. These parameters were not significant, noting that the probability value (Pvalue) is greater than 5% leading to the acceptance of the null hypothesis. The assumption is that the government's current and investment expenditure has no long-term impact on the growth of non-oil GDP. Additionally, the results indicate that the value of the error correction parameter was negative (0.362) and (0.0006) less than (5%). The ECM (-1) indicates that the system is fast moving (36%) toward long-term equilibrium. This is due to any shock that occurs in independent variables. This means that the non-oil GDP takes about (2.8) years (1 / 0.0362) towards its equilibrium value after any shock to the explanatory variables. The prioritization of consumer expenditure at the expense of investment expenditure has damaged the revenue-generating infrastructure projects. Moreover, the implementation of these projects has faced many problems and obstacles, which undermined the impact of investment expenditure in the Iraqi economy. Additionally, it delayed ratification of the laws of the state budget and affected the implementation of most of the investment budget projects

This is to start stages and the end of a large deviation between what is planned and implemented, financial and administrative corruption and low specifications of imported construction materials due to poor quality control (Planning, 2012: 98-99). The government's expenditure policy in its present (consumer) behavior was created by the private sector as a budget spender. This will reduce the desire of the private sector to engage in real productive activities.

The agricultural sector and the diversion industry as long as the oil revenues funded for public expenditure provide unproductive employment opportunities. The economy absorbed that expenditure and resulted in increased expenditure on massive consumer imports without incentives. This is to shift the gap between domestic demand and supply to a real output engine for domestic activities and a catalyst for growth.

3.7 Test structural stability of model variables

The results of the stability test and the CUSUM & CUSUMQ test show that the graph of both tests falls within the critical limits at a significant level of 5%. Thus, the tests confirm that the short and long-term model parameters are stable in time.
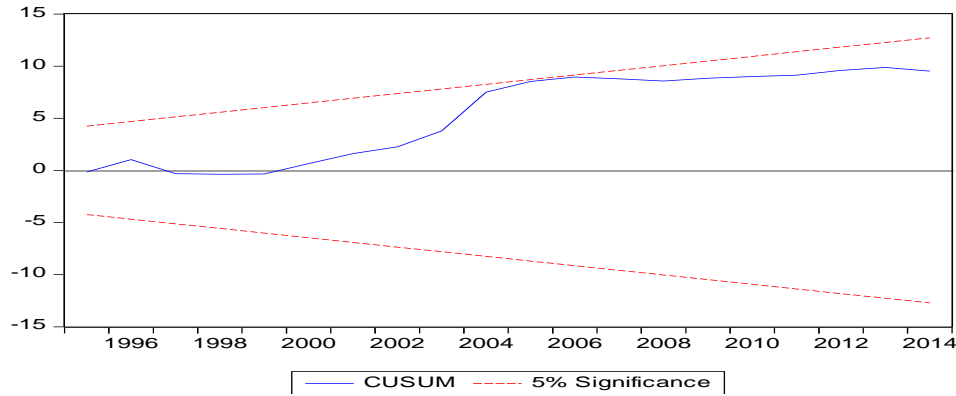
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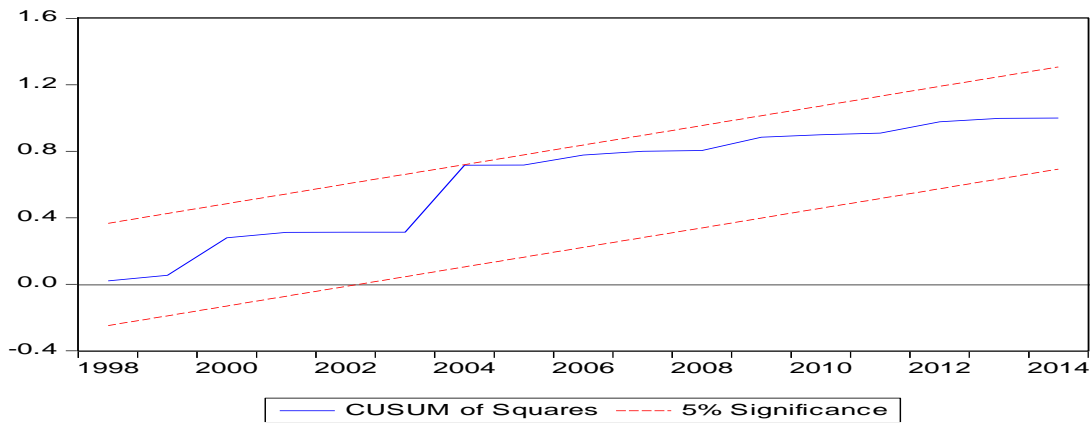**Figure 3. Test the cumulative sum**

Figure 4. Cumulative number of recessive boxes

Conclusions

- The research hypothesis that consumer expenditure and expansionary investment generated by the public budget was characterized by weak impact in stimulating the non-oil production sectors in the period before 2003 or in the subsequent period was accepted.

- Government spending is a priority and financial corruption and poor planning have led to the government's failure to rebuild damaged infrastructure to spur economic growth.

- The expenditure weakness tool of automatic stability (tax) in the financing of expenditure resulted in a very large and diverse demand for the groups of society to the fragility of economic diversification. This will lead to the trend of imports to non-residents to meet demand against the depletion of central bank reserves and damage the production levels in non-oil production sectors

with low competitiveness and the correlation of fiscal policy with the oil revenues in reaching its goals and the continued abandonment of other sources of income.

- The private sector has not been able to occupy the large area left by the public sector.

- The public sector has been characterized by reluctance and lack of an integrated link between their objectives to develop the economy towards real economic development.

- The tax system in Iraq is weak in efficiency and stability. Its one of the reasons for the prevalence of consumer behavior in the economy, so the taxpayer became a function of oil revenues.

Recommendations

- Reviewing the priorities of the expenditure policy by adjusting the structure of government expenditure in favor of investment expenditure to address the inherent imbalance in the structure of the Iraqi economy and create a productive and efficient production structure with the potential to generate added value.

- The diversification of income requires the establishment of a private sector that is locally initiated and integrated with government activity. This will require balancing the wages of public and private sector employees with the adoption of the wage-linkage strategy.

- Reforming the tax system in Iraq and increase its efficiency with the provision of various channels to budget revenues to reduce the dependence of the Iraqi economy on oil revenues characterized by instability as an external variable. The establishment of a tax system gives the competitive advantage of non-oil production and positive impact in the expansion of tax containers and state budget.

- Reducing non-productive employment in government structures and improving the performance of the government apparatus and public projects and linking the cost of productivity to reduce the phenomenon of disguised unemployment, and reducing the dependence of public companies on the budget resources .

Footnotes

The choice of ARDL is specifically due to the advantages of the model over other standard models. There are some assumptions about the data in ARDL. (Meo, 2016). Data must be free of self-correlation. Data should be free of HSK. Data must be distributed naturally. None of the variables studied are stable at the second difference. The data must be stable at the level, or stable at the first difference or stable at the level and the first difference.

A). The ARDL model can be used regardless of the degree of integration between variables (0) or (1) regardless of the dormancy **(Meo, 2016)**

B). The ARDL model takes a sufficient number of lag times to obtain the best set of data from the general frame **model (chai, 2003)**

T). The ARDL model gives the best results for long-term parameters and is a highly reliable diagnostic tests **(Godfrey, 1998, p235) (Chai, 1998, p405)**

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العلاقة بين الإنفاق الحكومي والناتج المحلي الإجمالي في الاقتصاد العراقي غير النفطي

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الملخص

في هذه الورقة، تم فحص العلاقة بين الإنفاق الحكومي والناتج المحلي الإجمالي في الاقتصاد العراقي غير النفطي. وحللت هذه الدراسة تطور الإنفاق الحكومي (الاستهلاك والاستثمار) في الاقتصاد العراقي خلال الفترة (1990-2014)، ويفترض أن الناتج المحلي الإجمالي غير النفطي هو المؤشر الذي يعكس أداء النشاط الاقتصادي الكلي، وأي انخفاض في الناتج المحلي الإجمالي يعزي إلى الزيادة في سلوك المستهلك في سياسة الإنفاق الحكومي، وكذلك نسبة الإنفاق الاستهلاكي والذي يتم تمويله من عائدات النفط، ومن تحويل مؤسسات الدولة إلى مؤسسات الضمان الاجتماعي على حساب الإنفاق الاستثماري. وهذا، بدوره، سينعكس بوضوح في تفاقم مشكلة عدم التوازن الهيكلي مع اتجاهات الإنفاق الحكومي، مما لا يفضي إلى تطوير قطاع الإنتاج. وبالتالي، فإن الاقتصاد لن يكون قادرا على تلبية الطلب الكلي. وقد حللت هذه الدراسة تطور الإنفاق الحكومي (الاستهلاك والاستثمار) في الاقتصاد العراقي للفترة (1990-2014). بالإضافة إلى ذلك، تمت دراسة نجاح سياسة الإنفاق الحكومية أو فشلها في تعزيز الناتج المحلي الإجمالي. وتم استخدام نموذج الانحدار الذاتي (ARDL) لقياس أثر الإنفاق الحكومي الاستهلاكي والاستثماري في الناتج المحلي الإجمالي غير النفطي. ووجد أن هناك علاقة كبيرة بين الانفاق الاستهلاكي والناتج المحلي الإجمالي غير النفطي على المدى الطويل والقصير، في حين لا يوجد تأثير إيجابي للانفاق الاستثماري في الناتج المحلي الإجمالي غير النفطي في الأجل القصير. وقد توصل الباحث إلى مجموعة من الاستنتاجات، منها أن الاستثمار اتسم بتأثيره الضعيف في نمو قطاعات الإنتاج غير النفطي وتحفيزه في المدة التي سبقت عام 2003 والمدة التي أعقبتها، مما زاد إمكانية تعرضه للصدمات الخارجية. وأوصى الباحث بأن يكون الإنفاق الحكومي موجها نحو الأنشطة التي تزيد إنتاجية الاقتصاد وتوفر بيئة ملائمة لنشاط القطاع الخاص من خلال إنشاء هيكل إنتاج فعال قادر على استيعاب الطلب.

الكلمات المفتاحية: الإنفاق الاستهلاكي الحكومي، الإنفاق الاستثماري الحكومي، الناتج المحلي الإجمالي من دون النفط، انمؤذج (ARDL) ، الإيرادات غير النفطية .

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