

Estimation of the Effect of the Government Expenditure Growth Rate on the Rate of Inflation in the Iraqi Economy for the Period (1991-2015)

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Government expenditure represents one of the controlling financial policies in the economic affairs and management of the economic cycle in order to achieve price stability, raise the rate of output growth and decrease the level of unemployment. The price stability represents one of the macroeconomic goals that all countries seek without exception, regardless of the economic philosophy adopted by each country; in addition to this is raising the productive capacity and reaching the actual output to the level of the expected output, that is, the level of output related to the natural unemployment rate or what is sometimes called the Non-inflationary unemployment rate. The restriction of government expenditure ($G=T+\Delta B/iP+\Delta M/P$) is one of the main indications of the transformation in government expenditure from an independent variable to a dependent variable of a set of basic variables in the national economy. The general nature of government expenditure in the Iraqi economy during the research period 1991-2015, is consumer spending during two different periods in the economic direction of the Iraq state; it represented the first period 1991-2003, while the second period represented was 2004-2015, which deepened this consumption trend. The problem of inflation in the Iraqi economy is one of the most serious problems facing developed countries; so how is the situation in a developing country like Iraq?

Key words: *Government spending, non-inflationary unemployment rate, Philips curve, unexpected inflation.*



Introduction

A study of the effect of government expenditure on the Iraqi economy on the most important economic problems, namely inflation, reveals the nature of the general trend of government expenditure, or rather the nature of the general direction of financial policy in two different periods in the orientation or the philosophy of the political economy of the Iraqi state; on the one hand, it reveals the relationship that connects the rate of growth in government expenditure and the rate of inflation, and on the other hand, and is there anything to confuse this relationship? In addition to this, what other economic policies have reduced the impact of these economic problems?

The impact of government expenditure on inflation in Iraq has become a subject of controversy among academic economists. From this point of view, research into the relationship of government expenditure to inflation has become a scientific necessity to find out the truth of the matter, and, is there a relationship in the first place between government expenditure and inflation?

In addition to determining the importance of economic policies, the most prominent of which is monetary policy, and has it been able to reduce the impact of government expenditure on inflation? The answer to these questions requires the researcher to adopt the standard model known as the Autoregressive-Distributed Lag (ARDL) to estimate the relationship between government expenditure and inflation, and the reason for our adoption of this model is due to the difference in the time series of the main research variables: government expenditure (G) and inflation (INF) as the time series of government expenditure, has stabilised at the general level $I_{(0)}$, while the time series of inflation stabilised at the first difference $I_{(1)}$; the results were different from the traditional belief in the Iraqi economy of the nature of the relationship between government expenditure and inflation.

Research Problem: In some countries (including Iraq), the effect of government expenditure is summarised by the rise in prices without an increase in the level of output, which causes the coexistence of unemployment and inflation.

The Research Hypothesis: the devoting of the productive trait to the structure of government expenditure creates a state of stability between the general level of prices and the rate of use.

The Importance of the Research: The importance of the research stems from the measurement of the nature of the relationship between government expenditure and inflation.

Research Objective: To study the effect of government expenditure on inflation on the Iraqi economy.

Research Limits: The research deals with the variable of government expenditure and inflation in the Iraqi economy during the period 1991-2015.

Research Methodology: The researcher used the descriptive, graphical and analytical methods to prove the research hypothesis.

The Research Structure: The research was divided into three sections: the conceptual framework for government expenditure and inflation was discussed in the first section, while the second section dealt with government expenditure and inflation in the Iraqi economy for the period 1991-2015, while the third section dealt with estimating the short and long-term relationship between government expenditure and inflation according to the Autoregressive Distributed Lag (ARDL), due to the different degrees of constancy of the time series of research variables.

The First Section: the conceptual framework for government expenditure and inflation

First Requirement: the conceptual framework for government expenditure

Government expenditure or government spending is defined as spending on public goods and services such as spending on health, education, security, and agricultural irrigation projects; however, government expenditure is categorised into general consumer spending, public investment spending, and transfer expenditure (Ahuja, H. L, 1980).

Government expenditure is also considered as the expenditure that is spent by the state to purchase goods and provide services with the aim of maximising production and creating income as well as providing transfer payments to the family sector during the economic cycle, such as unemployment compensation (Gordon, RJ, Okun, AM , & Stein, H.1980).

Barakat, Abdel Karim Sadiq, and others (1986) defined government expenditure as the expenditure practised by public bodies, whether it was central or local, or common law persons who spend their cash resources with the intention of satisfying public needs. It is clear from the above that government expenditure has a liquid cash directed during a specific period of time to achieve specific goals that fall within the traditional functions of financial policy; this is allocation, distribution, and stability in order to achieve the short-term goal of the national economy, which is to raise the rate of economic growth and reach the long-term goal of achieving economic prosperity.



Often, spending policies are expansionary when the government seeks to achieve a set of objects, and on top of these goals is to bring the actual output to the expected output stage (Backhouse & Medema, 2009). The increased role of the government largely reflects the growing growth in demand for public services, and the main concern was and still is, the impact of the growth of the public sector on the overall growth capacity; however, one of the most important functions of public spending is to support economic growth by developing production capabilities and stimulating the optimal use of economic resources. (Al-Faris, Abdel-Razzaq, 1997).

Therefore, government expenditure mostly represents an expansionary policy as a significant leverage that plays a major role in solving economic problems, such as economic stagnation and raising the level of use and output in order to reach the actual output to the expected output threshold; however, government expenditure may create pressure on the interest rate and that the high-interest rate causes a decrease in the level of total consumption, increase the level of total savings and raise the value of the foreign currency due to the high level of demand for the currency. This is as a result of the desire of foreign investors to increase their investments due to the high return achieved from external investment, which generates a high exchange rate. A decrease in the level of external demand for local commodities, which affects the overall level of actual output in the economy, is affected in general by the actual real output level in the economy; this means that the effect of the interest rate due to increased government expenditure leaves negative effects on the output, and a financial policy must have coincided with a monetary policy that is able to eliminate price distortions and raise the level of output.

According to German economist Adolf Wagner, the expansion of the economic role of countries is due to three main reasons: Manufacturing, modernization and technological economic development, and all these reasons lead to an increase in the need for public authorities in order to ensure protection, legislation, and regulation. Also, the growth of national income leads to an expansion of spending on welfare and education, Wagner's law can be drafted as follows: (Aib, Walid Abdel Hamid, 2010)

$$\frac{G}{Y} = f\left(\frac{Y}{N}\right)$$

The government has the funding to do the spending, which depends on several sources: taxes, borrowing from the public and borrowing from the central bank, so it is the real government budget entry that takes into account the general level of prices, and this restriction reflects the government's funding of its annual expenditures, according to the following mathematical formula: (Dadkhah, K. 2009)

$$G = T + \frac{\Delta B}{iP} + \frac{\Delta M}{P}$$

As:

G: government expenditure

T: taxes

$\frac{\Delta B}{iP}$: Loan from the public and the cost of servicing the loan in real prices.

$\frac{\Delta M}{P}$: The real monetary basis, which is the source of government credit from monetary policy.

Therefore, the duties of the government do not have a disagreement on these duties and play a role in raising the level of economic activity, and to execute economic tasks that the private sector does not want to do; however, the government expenditure, which represents a distinctive part in real GDP function is no longer independent according to the government budget, as the level of government expenditure is determined by the level of tax revenue, the level of lending from the public, and the cost of lending from the public. This clarifies to some extent the mutual effects of the economic cycle due to the impact of the level of tax revenue and the ability of individuals to lend to the government at the level of economic activity.

The financial policy is necessary for stability as full employment and price level stability are not automatically achieved in the market economy. Rather, this requires directing public policies. Without this, the economy tends to submit to large fluctuations and even suffers from long periods of unemployment and inflation, and worse still, unemployment and inflation may exist at the same time. (Musgrave, R. A., Musgrave, P. B., & Bird, R. M. 1992) Also, financial policy, through government expenditure programs, determines the range of government intervention to stop at limited activities such as, infrastructure or activities that the private sector is reluctant to engage in or whose entry is at less than socially desirable levels; however, the field is open to the private sector and without competition from the government to engage in other activities that it can carry out more efficiently and in a manner that supports and promotes economic growth (Andrew, Atef William, 2005).

In any of the modern industrial systems, there is no field of economic life in which the government has interfered, and there are three main tools that the government can use to influence private economic activity that can be identified: (Samuelson, P. A., & Nordhaus, W. D. 2009).

1- Taxes on income, goods, and services, thereby reducing financial resources for private activity and providing them to the public sector.



2- Spending on some goods and services such as roads, education, and security, in addition to government transfers (social security and health care support), which leads to providing resources for individuals.

3- Discriminatory regulations and controls in directing individuals towards the turnout or reluctance of some economic activities. The Keynesian revolution has changed many concepts regarding the balance of the public budget and government intervention during the economic cycle, since changes in government expenditure and the public budget deficit can help support the stability of a larger economy. Instead of budget balance, there must be deficits in the public budget during the economic recession and the shift towards budget surplus when there is concern about inflation (Guarini - Astrop, James, Richard L. 2006).

In a more accurate sense, the Keynesian School prioritised economic equilibrium over financial equilibrium during the economic cycle; this is one of the essential Keynesian ideas that allowed the government to intervene to manage total demand and address the short-term market imbalances with non-automatic adaptive policies.

The second requirement: the conceptual framework for inflation. Technically, inflation means the continuous increase in the general level of prices, and that the price increase implicitly means a decrease in the true value of monetary demand. In theory, economic analysis refers to some sources that increase inflation and positively reflect on the value of money and with the increase in the amount of money and high prices (Barro, RJ 1997). The inflationary or deflationary gap can be measured through the monetary stability indicator, which if its value exceeds one, this means that the economy suffers from inflation, and the source of changes; this the amount of money, and if its value is less than one, this means that the economy suffers from stagnation and the source of changes is the result according to the following mathematical relationship:

$$E = \frac{\Delta MS}{\Delta GDP}$$

Since inflation is the continuous rise in the general level of prices, this does not mean that the rise is in all prices, as some of them may decrease, but that the general trend must be upward and continuous; the three main potential sources for measuring prices are: (Abjadman, Michael, 1990):

CPI: Consumer Price Index.

CPP: Product Price Index.

IDP: Implicit index (the effect of price changes on the gross domestic product).

The expectations of the public play a major role in increasing inflation and creating confusion in measuring the inflation gap, because if the expectations are rational, the difference between the actual rate of inflation and the expected rate of inflation is small and does not affect their decisions in production and use; the prediction error is the net random number of inflation according to the following mathematical equation: (Blinder & Baumol, 2009)

$$\text{Actual Inflation} - \text{Expected Inflation} = \mu_t$$

It is obvious from the above that the rise in the general level of prices (inflation) has many causes and creates a lot of negative results that are mainly summarised in the decrease in the real value of money, which raises the level of monetary demand to face the continuous rise in prices; this enters the money into a permanent decline cycle as long as the inflation problem persists, and the effect of inflation on production decisions automatically affects the aggregate supply function; this effect on aggregate supply leaves a circular effect on the price level, which continues to maintain itself.

The Second Section: government expenditure and inflation in the Iraqi economy (1991-2015).

The First Requirement: government expenditure (1991-2015).

As shown in Appendix No. (1), the government expenditure cycle witnessed negative and positive growth rates. In 1991, the rate of government expenditure growth was negative (-87.6%) and this was due to the economic blockade imposed on Iraq at the end of 1990, the lack of oil exports, the decline of the only financial resource for Iraq as a rentier country affected by the external oil market, the growth rate of government expenditure increased in subsequent years due to the dominance of financial policy on monetary policy, the adoption of public budget funding in the manner of funding the deficit with cheap cash policy or bank overdrafts and the movement towards building the infrastructure that collapsed due to the military aggression on Iraq; however, expenditure policies or financing with deficits generated high inflationary waves that caused a decrease in the real value of government expenditure, which harmed the efficiency of real government expenditure. In 1996 the rate of government expenditure grew negative (-43.5) and continued the fluctuating growth between ups and downs, which resulted in the instability of the general growth rate of government expenditure; however, the final outcome of the policy trend of government expenditure was feeding inflationary waves by increasing aggregate demand on the one hand and weakening the production base on the other hand. The years 2004-2015 was the period of the new orientation of financial policy, and provided opportunities to businesses to practice economic activities.



In spite of the emergence of a market economy model, the spread of democratic political participation and the departure of Iraq from the Eastern despotism model, public spending behaviours in the budget still represented the rentier state model and this model has provided distorted excesses in justice at the expense of productive efficiency; this has become a cost of democracy in the political economy in Iraq. On this basis, a social welfare function has been dedicated in Iraq, which in its essence is a dedication to the rural community. This is in terms of its elaboration of a disordered system of individual social incentives in which consumption and speculation values outweigh production ethics, investment, and loyalty to productive work; the rentier state model that sponsors political democracy produced a social welfare function that is summed up by the fair distribution of the income of oil rents at a time when unemployment was common, especially in the sectors of real production.

Public spending increased dramatically between 2003 to 2004, as the rate of growth in government expenditure jumped from 94.6% to 555.19%, largely reflecting the continuation of the old approach to spending policy despite the new trend of the state's gradual withdrawal from economic activity, leaving sufficient space for the private sector, and liberalising the banking sector. The adoption of market mechanisms raised the efficiency of economic activity but the Iraqi state continued the policy of non-productive employment of the workforce, which caused large increases in annual public spending. This turned into more like a fixed premium in the public budget, as the positive growth in the rate of government expenditure continued throughout 2004 - 2015, except for the year 2005 due to the deterioration in the security situation and the year 2009 due to the global financial crisis, the decline in oil prices and the continued growth of government expenditure until the years 2014-2015. However, this was due to the decline again in oil prices and the continuation of this decline until now, but the expansion in public spending and its simultaneous effect with the rate of inflation was through monetary policies related to maintaining the value of the foreign currency; this was able to a large extent to reduce inflation rates, despite the significant rise in the level of government expenditure, as we will explain in the second requirement.

The Second Requirement: Inflation during the Period (1991-2015)

The pursuit of cheap monetary policy or the method of funding inflationary deficits as a result of the dominance of financial policy over monetary policy during the period (1991-2003), contributed to the rise in inflation rates and reaching large levels, as inflation rates continued to rise despite the relative decline in some years; the inflation rate reached its peak in the year 1994, when it exceeded the barrier of 492%, as indicated in Appendix No. (1), and the reason is due to the increase in government expenditure on shattered infrastructure projects and a decrease in the commodity supply. This has coexisted in cases of unemployment and inflation, meaning that the Iraqi economy exposed the result of the

economic blockade to a negative supply shock, characterised by high prices on the one hand, and an increase in the unemployment rate on the other hand; this is because the supply shock caused a decrease in the volume of raw materials imported from abroad, which caused an increase in the prices of capital goods and raw materials for the purpose of production and an increase in wage rates. This means inflation in the payment of costs, in addition to inflation in attracting demand and monetary policy, did not play a role in countering accelerating inflation; on the contrary, high inflation rates were fuelled by their subordination to fiscal policy, and the rate of inflation decreased during the year 1996 as it reached (-15.4, due to partial lifting of the embargo on Iraq and the signing of the Oil-for-Food Memorandum; then it continued to rise and fluctuate down to an inflation rate of 32.5%.

During the period 2004-2015, the inflation rate continued at the same pace and the Iraqi economy in 2007 witnessed the highest inflation rate during the second period due to the partial liberalisation of prices; the most prominent of these were fuel prices and financial liberalisation for the banking sector, according to the Paris Club agreement related to reducing the debt incurred by Iraq in exchange for reducing government expenditure in support for basic commodities. Foremost of these is the ration of food and the high rates of financial corruption in the Iraqi state institutions. However, the new orientation of monetary policy and its use of unconventional measures represented by open market operations (foreign currency auction) led to a law in preserving the external value of the Iraqi dinar. It adopted the basic inflation index instead of comprehensive inflation, by excluding the main paragraphs from the consumption basket represented by lighting and fuel, controlling the levels of cash liquidity and reducing the impact of increased government expenditure that caused an increase in the level of aggregate demand. These measures played a major role in reducing inflation rates and reaching acceptable levels.

Comparing the current inflation rates with high unemployment rates, indicates that the Iraqi economy is floundering in the phenomenon of inflationary stagnation and that the dominance of the marginal services sector in the components of economic activity, has become known in its effects on the composition of the Iraqi labor market and the ability to employ or have productive use. The percentage of underemployment (Incomplete Employment) exceeds 22% of the components of the workforce, which indicates the extent of penetration of the weak productive services sector in the formation of the Iraqi economy. Also, this marginal sector has the ability to expand and constantly absorb the workforce and disable it, which means a continuous deterioration in the productivity of the goods and services sector that generates double inflationary pressures, including pressures on the real exchange rate according to the known economic impact (Effect Blassa-Samulson) (Saleh, Mazhar Muhammad, 2006).

The Third Section: estimating the relationship between the growth rate of government expenditure and the rate of inflation for the period 1991-2015 according to the ARDL model.

The First Requirement: The time series of the government expenditure growth rate and inflation rate will be according to the Dicky - Fuller Augmented test.

For the extensive Dickey-Fuller test on the time series of economic variables, the time series of government expenditure growth rate, inflation rate and unemployment rate for the level and the first difference (with a fixed limit or a fixed limit and a general trend) were tested at the level of 5%. So it became clear that the time series of the rate of growth of the government expenditures is static at the general level, i.e. it is integrated from degree I (0); the time series of the inflation rate was not static at the general level and became static after taking the first difference to it i.e. it is integrated from degree I (1) and does not suffer from the root of the unit; this means the possibility of rejecting a null hypothesis ($H_0: B = 0$) indicates the unit root problem and accepts the alternative hypothesis ($H_0: B \neq 0$), which states the time series constancy. This is also that the economic meaning of unit root tests for the time series of economic model variables is to obtain real estimates of the relationship between model variables and not spurious regression; this is reflected in the lack of a logical relationship between model variables while the coefficient of determination R^2 of the false relationship is very high. In addition to this is avoiding the occurrence of the problem of self-correlation between model variables i.e. correlation between random variables in the model, where unit root tests measure the constancy of the time series of model variables and show the significant relationship to this constancy between time series. As shown in the following tables, it is noted that all tables are sourced from the statistical program (Eviews 9).

Table 1: D.F time-series test at the general level and first difference

Integration	Level / Different 1		Time series	
	Constant. Liner Trend	Constant		
I(0)	4,947,351	4,626,942	Δ G	
I(0)	2,771,812	2,648,005	INF	
I(1)	4,236,836	4,348,515	INF	
	4,394,309	3,737,853	1%	Critical Values
	3,612,199	2,991,878	5%	
	3,243,079	2,635,542	10%	

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

The Second Requirement: The Time Series Constancy of Government Expenditure Growth and Inflation will Remain According to the Philips - Perron Test.

For the Philips-Byron test on the time series of economic variables, the time series of the government expenditure growth rate and the inflation rate for the level and the first difference (with a fixed limit or a fixed limit and a general trend) were tested at the level of 5%; so it became clear that the time series of the government expenditure growth rate was

constant in the general level, i.e., it was integrated from degree I (0) and the time series of the inflation rate was not constant at the general level and became constant after taking the first difference to it, that is, they were integrated of degree I (1) and did not suffer from the unit root. This means the possibility of rejecting the null hypothesis ($H_0: B = 0$) that the unit root problem exists and the hypothesis is accepted Alternative ($H_0: B \neq 0$) which provides for the constancy of the time series as shown in the following tables, noting that all tables are sourced from the statistical program (Eviews 9):

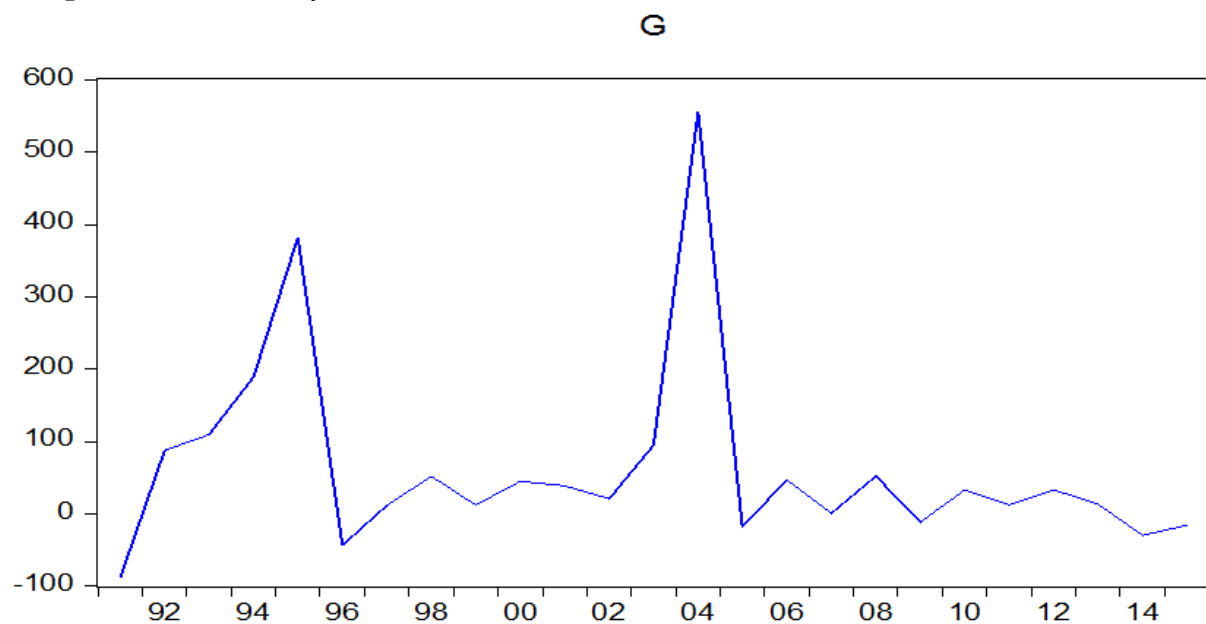
Table 2: P.P time-series test in general level and first difference (1991-2015)

Integration	Level / Different 1		Time series	
	Constant. Liner Trend	Constant		
I(0)	5,044,349	„626,942	Δ G	
I(0)	5,213,332	2,149,305	INF	
I(1)	5,626,589	6,238,104	INF	
	4,394,309	3,737,853	1%	Critical Values
	3,612,199	2,991,878	5%	
	3,243,079	2,635,542	10%	

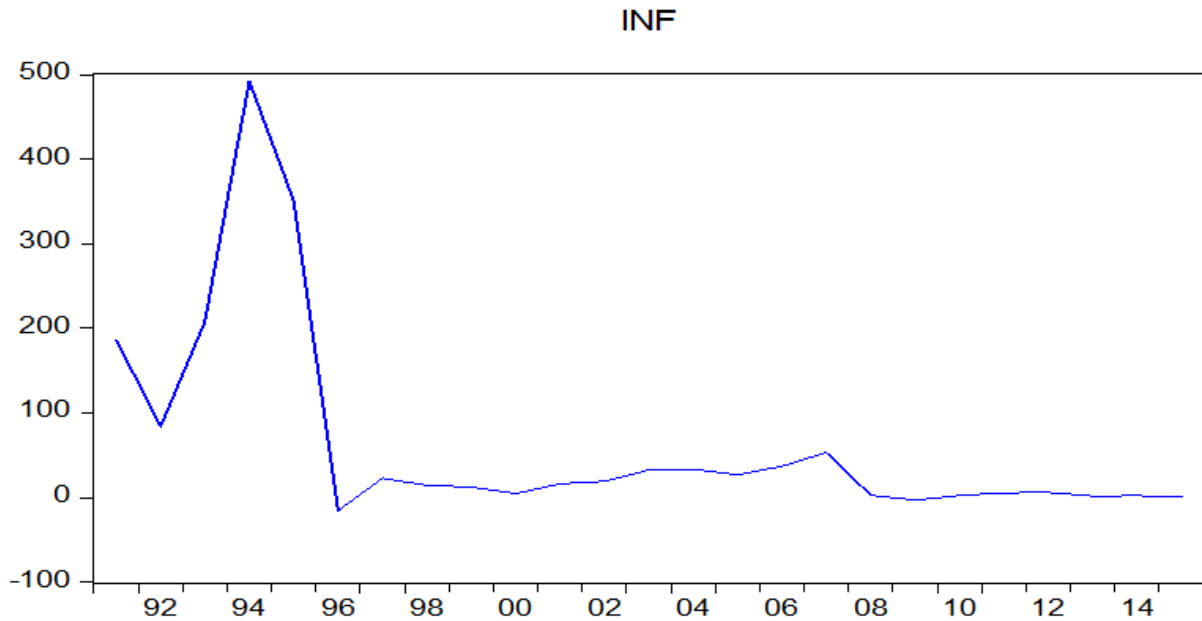
Source: Prepared by the researcher, based on the Eviews 9 statistical program.

The constancy of the time series of economic variables can be illustrated by the following graphs, and the source of these graphs is the statistical program (Eviews 9):

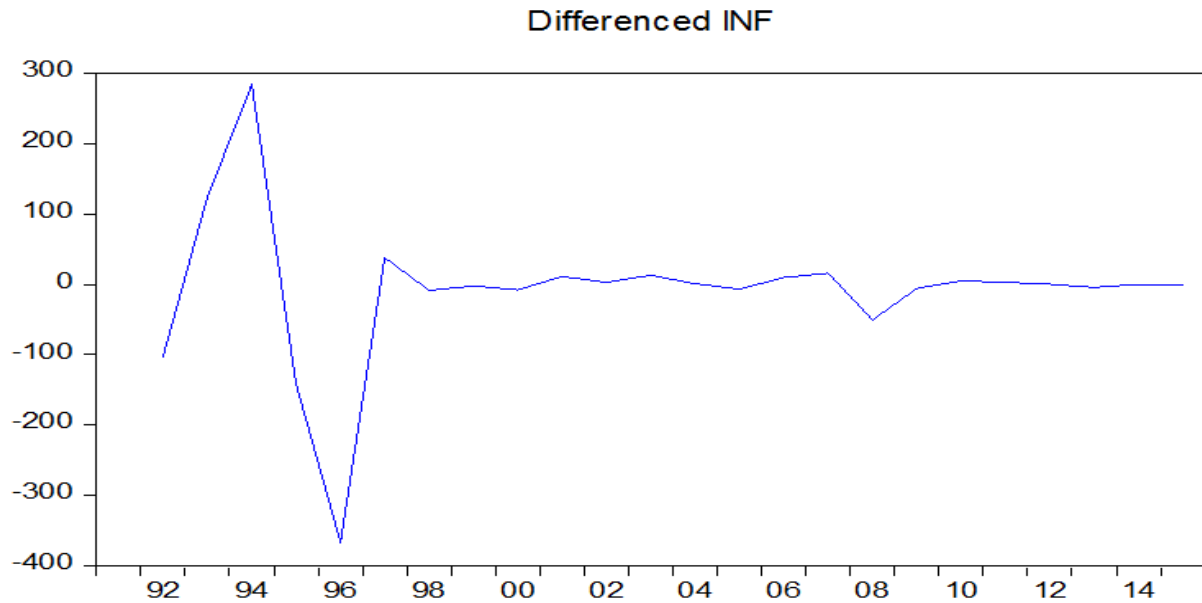
Graph 1. The constancy of Time Series in Level for ΔG



Graph 2. Constancy of Time Series in Level for INF



Graph 3. Stationary of Time Series in 1st difference for INF



The Third Requirement: estimating the relationship between the rate of growth in government expenditure and the rate of inflation:

Because the time series constancy of the government expenditure growth rate remains at the general level and the time series constancy of the inflation rate is at the first difference, we use the ARDL self-regression slow distributor to confirm a long-term relationship and

balance between model variables, and that the economic meaning of the ARDL self-regression slow distributor model is the verification of the presence and lack of the existence of a long-term relationship between the dependent variable (inflation rate) and the independent variable (government expenditure growth rate). It is clear from Table (3) that there is no long-term relationship between the dependent variable (inflation rate) and the independent variable (the rate of government expenditure growth) as the value of F measured in the Boundary testing according to the ARDL model is not statistically significant at the level (5%) as it reached (3.35). This is less than the critical value at its minimum (3.62) alone and the highest value reached is 4.16 and this means accepting the null hypothesis which states that there is no long-term relationship between the dependent variable (inflation rate) and the independent variable (the rate of growth in government expenditure). The relationship between model variables will be estimated according to the ARDL model according to the following steps:

1- Estimate the long-term relationship between the government expenditure growth rate and the inflation rate according to the ARDL self-regression slow distributor model.

Table 3: ARDL Model Boundary Test Results (Government Expenditure Growth Rate and Inflation Rate)

K	Value	Test Statistic
1	3,355,200	F- Statistic
Critical Value Bounds		
The highest rate	The minimum rate	Significance
3.51	3.02	10%
4.16	3.62	5%
4.79	4.18	2.5%
5.58	4.94	1%

2- A Wald test of the short-term relationship between the dependent variable (inflation rate) and the independent variable (government expenditure growth rate)

Table 4: The Wald test of the short-term relationship between model variables

Wald Test:			
Test Statistic	Value	df	Probability
t-statistic	1,659,397	21	0.1119
F-statistic	2,753,599	(1, 21)	0.1119
Chi-square	2,753,599	1	0.0970
Null Hypothesis: C(2)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C (2)	0.262436	0.158151	

In the Wald Test, as long as the value of the Chi-square is not significant in terms of the probability value (0.0970), it indicates that there is no short-term relationship between the dependent variable (inflation rate) and the independent variable (government expenditure growth rate).

Therefore, the summary of the standard analysis can be illustrated by saying that the asymmetry of the time series of the variables under consideration, forced the researcher to use the ARDL self-regression slow distributor model by testing the boundaries to indicate the long-term relationship and the Wald Test to confirm the short-term relationship; the results came contrary to the traditional belief about the nature of the relationship between the rate of growth of government expenditure and the rate of inflation due to the overlapping effect of monetary policies on the rate of inflation and unemployment as presented in the folds of the second section.

Conclusions

- 1- Government expenditure was not independent but was constrained by several main variables in the general economy, namely tax revenue, the amount of loans provided by the public, the interest rate on loans, and credit provided by monetary policy and according to the government expenditure record $G = T + \Delta B / iP + \Delta M / P$
- 2- On the theoretical level, there was confirmation of the relationship between government expenditure and inflation; government expenditure played an adaptive role to address fluctuations in economic activity and brings the actual output to the expected output level or the so-called Non-accelerating inflation rate of unemployment (NAIRU).
- 3- There was a predominance of the consumption nature of government expenditure, which had become a reason for the low efficiency of government expenditure in its impact on the level of employment and output and the prevalence of the phenomenon of persuasive unemployment and underemployment.

- 4- Monetary policy played a restrictive role to address the problem of inflation, as it restricted the impact of the rate of government expenditure growth on inflation through its wages, represented by the foreign currency auction. This was the main reason for removing price distortions and preserving the external value of the local currency, since most consumer goods are imported from the external sector.
- 5- The variation of the monetary policy role after 2003 from what it had before the 2003 impact on the role of government expenditure influenced the rate of inflation; also the priority of monetary policy tackled inflation over the unemployment account.
- 6- Due to the distinctive role of monetary policy as a result of the differing economic trends of the Iraqi state, the standard model used is the ARDL self-regression slow distributor, clarified according to the boundary test; there is no long-term relationship between the rate of government expenditure growth and the rate of inflation, and according to the Wald test, there is no short-term relationship between the rate of government expenditure growth, the rate of inflation and the rate of unemployment. This is contrary to the traditional belief for the role of government expenditure on inflation and unemployment.

Recommendations

- 1- Improving the efficiency of government expenditures' techniques by adopting a modern model for the general budget in order to address the problems of inflation and raise the level of employment in order to reach the actual real output to acceptable levels of the possible output and reduce the actual unemployment rates.
- 2- The necessity of coordination between the financial policy of government expenditures and monetary policy to address the problems of inflation and unemployment in the Iraqi economy.
- 3- Diversifying the sources of financing government expenditures with the aim of creating a balance between the main sources of financing (the oil resource, taxes, loans from the public, loans from the banking sector) that will be the reason for addressing the continuous increases in aggregate demand, high level of prices, and reducing levels of unemployment.



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Appendix No. (1)

The growth rate of government spending, the rate of inflation and the unemployment rate in the Iraqi economy, 1991-2015.

years	<i>G</i>	ΔG	IN
1990	141791	-	-
1991	17497	-87.6	186.3
1992	32883	87.9	83.7
1993	68954	109.6	207.6
1994	199442	189.2	492.1
1995	960784	381.7	351.3
1996	542542	-43.5	15.4-
1997	605802	11.6	23
1998	920501	51.9	14.7
1999	1033552	12.2	12.5
2000	1498700	45.	4.9
2001	2079727	38.7	16.3
2002	2518285	21.0	19.3
2003	4901961	94.6	32.5
2004	32117491	555.19	33.6
2005	26375175	-17.8	27
2006	38806679	47.13	37
2007	39031232	0.57	53.2
2008	59403375	52.19	2.7
2009	52567025	-11.5	-2.8
2010	70134201	33.41	2.4
2011	78757668	12.29	5.6
2012	90374789	33.49	6.1
2013	106873000	13.30	1.9
2014	93350769	-29.8	2.2
2015	113692464	-15.7	1.4

Reference

- 1- Central Bank of Iraq - General Directorate of Statistics and Research - annual releases 1991-2015.
- 2- The Iraqi Ministry of Planning, the Central Bureau of Statistics and Research - separate annual releases.

Appendix (2)

Structural stability testing of the ARDL model estimated for the long and short-term relationship between the dependent variable (inflation rate) and the independent variable (government expenditure growth rate) by conducting the cumulative sum of the recursive residuals (CUSUM). It is noted that if the drawing is between the critical limits at the level of 5% according to the time frame, in this case, the alternative hypothesis that the time series of the variables of the model is estimated according to ARDL is accepted.

