



Analysis and measurement of the impact of some fiscal policy indicators on the general budget deficit in Iraq for the period (2004-2021)

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ABSTRACT

Fiscal policy occupies an important place among the economic policies of all countries, regardless of their nature, philosophy, and economic systems, because of its vital and effective role in influencing macroeconomic changes through its various tools used to address various economic problems, including the most important of which is the problem of the general budget deficit, as it is considered among the most important economic problems. The centrality that has direct effects on the economic performance of developing countries and Iraq among them, especially in recent years, after taking the path of deficit in general tends towards increasing and what follows from the increasing negative effects of its means of financing, including high indebtedness, and accordingly, the study aims to identify the most important policy indicators Finance that directly affects the determination of the public budget deficit, and a statement of the impact of those indicators in containing or mitigating the public budget deficit in Iraq

Keywords:

fiscal policy Tax burden , public debt , budget deficit

Introduction:

The public budget deficit is among the most important economic problems faced by many developed and developing countries alike, because of its direct effects on the performance of economic activity, especially in the last years of the past century, after the general deficit trend tended to increase, as well as The increasing negative effects of its financing methods, especially the high volume of public debt, so it was necessary for developing countries to focus on fiscal policy tools to address these imbalances and adopt the deficit policy as a tool to raise economic growth rates and achieve economic stability. Iraq is among the developing countries suffering from a significant increase in the volume of Unplanned and undirected public spending with a decrease in the size of the tax base, which in turn led to a decrease in the volume of tax revenues due to its complete dependence on unstable (oil) rent revenues due to its association with fluctuations in oil prices in the global market, which prompted him to resort to searching for other sources to finance the public budget deficit Including public borrowing.

Research problem:

The research problem lies in the weak effectiveness of the fiscal policy in Iraq in containing the public budget deficit, as well as the government's weak ability to control financial and administrative corruption and its repercussions on the public budget deficit in Iraq.

Research importance:

The importance of the research lies in how to determine the public budget deficit, identify the most important indicators of fiscal policy, and indicate the extent of its effectiveness in containing or mitigating this deficit.

Research hypothesis:

The research is based on the hypothesis that "the fiscal policy tools have a significant impact on reducing the general budget deficit in Iraq."

Research aims:

The research aims to:

Determining the most important fiscal policy indicators that directly affect the determination of .1 the public budget deficit in Iraq.

Statement of the impact of these indicators in containing or mitigating the general budget deficit .2 in Iraq.

First: the concept of fiscal policy

Fiscal policy occupies an important place among other policies because of its great and effective role in economic life through its impact on macroeconomic variables. The concepts of fiscal policy have multiplied and developed according to the state's intervention in economic life. The concept of fiscal policy reflects the aspirations and goals of society in achieving stability. Therefore, fiscal policy can be defined as representing all policies related to public expenditures and public revenues in order to achieve general goals (Al-Ani, 2018: 22). Fiscal policy can also be defined as a set of measures drawn for the state's revenues and expenditures in order to achieve the desired goals, whether economic, social or any other goals (Safwat, 239: 2019), meaning the use of public expenditures, taxes and public debt to achieve a set of goals, including raising Economic growth rates, reducing unemployment rates, and achieving stability in the general level of prices, as well as the equitable distribution of income and wealth (Making, 1971: 6), so it is a method or financial action program adopted by the country through the use of some tools represented by public expenditures and public revenues to achieve certain goals (Making, 1971: 6).

Fiscal policy is usually linked to the cyclical fluctuations of the economy, as it is either in line with the direction of the economic cycle, as in the boom phase an expansionary fiscal policy is adopted through increased spending and lowering tax rates, and in the phase of recession a contractionary fiscal policy is adopted by reducing spending and increasing tax rates (Theinadtlio, 2016: 75), and these policies differ in developing countries from those in developed countries. their domestic revenues (Manasse, 2006: 8), while the developed countries that have succeeded in facing economic cycles adopt a fiscal policy that is opposite or counter to the direction of economic cycles because of the improvement in their financial situation on the one hand, and enables them to face the challenges that hinder investments on the other hand (Abdullah, 2019 : 46), in other words, it managed to manage the deficit during periods of economic recession and manage the surplus during periods of prosperity (Al-Obaidi, 2016: 24).

Second: the most important indicators of fiscal policy

The fiscal policy has several indicators. In this paragraph of the research, we will address two main indicators, namely the tax burden indicator as a percentage of GDP, and the total public debt indicator as a percentage of GDP, as follows:

Tax burden index / gross domestic product .1

The tax burden index is one of the most important indicators that show the extent of the state's intervention in economic life and measure the effectiveness of the tax system by estimating the amount of tax revenue expected to be obtained (Amoh, 2019: 13), and this indicator is also one of the important things that the tax policy maker takes into consideration It reflects the government's dependence on direct and indirect taxes in financing the public budget deficit.

The tax burden, or the so-called tax retrospective, can be defined as the sum of the taxes borne by taxpayers during a certain period of time relative to the gross domestic product (Talha, 2019: 2), as it represents the process of tracking the final distribution of the tax starting from the legal taxpayer (the tax legislator) and ending "With the economic taxpayer (tax payer) (Safwat, 2019: 101).

The index of the total public debt / gross domestic product .2

Public debt is one of the main sources approved for financing the public budget deficit in developing and developed countries alike as one of the tools of fiscal policy (Al-Saadi, 2020: 4), and the state usually

resorts to borrowing when its public expenditures are greater than its public revenues for several reasons, including (Al-Ani , 2018: 129):

When exceptional circumstances occur in the country, such as wars and natural disasters. .a

To finance infrastructure projects that are characterized by large investments, high costs and long duration. .b

Influencing the amount of money supply as one of the tools of monetary policy. .c

This indicator is measured by dividing the total public debt into the gross domestic product, through which the country's ability to borrow is determined when that ratio does not exceed 60% (Dahiya, 2007: 151).

Third: The relationship between fiscal policy indicators and the general budget deficit

The relationship between the indicator (tax burden / gross domestic product) and the general budget deficit: .1

Since tax revenues play an "important" role in the structure of public revenues, especially in developed countries, the decline in these revenues has a major role in the occurrence of deficits in the public budget, not to mention what developing countries are going through from the weakness of the role of tax revenues in this area due to the fragility of systems Tax evasion, which contributed to the increase of many phenomena, including: tax evasion, informal activities, financial and administrative corruption, weak tax base, underdevelopment of tax systems, large number of tax exemptions and allowances, and these phenomena, in turn, weakened the financial resources of the public budget, which contributed to increasing the deficit. (Muhammad, 2018: 66), and here it can be said that a rise in the tax burden index (tax revenues / gross domestic product) leads to a reduction in the public budget deficit, and vice versa.

The relationship between the indicator (public debt / gross domestic product) and the general budget deficit: .2

The nature of the relationship between public debt as a percentage of GDP and the public budget deficit is determined according to the nature of the state's financial situation. When there is a failure in public revenues to meet the requirements of public spending, this leads to an increase in the public budget deficit and thus an increase in the volume of public debt and then an increase in the burdens incurred on it. of interest and installments, as well as "failure to keep up with public expenditures with public revenues, especially if the real resources are limited, which leads to a continuous exacerbation of the deficit (Palestinian Monetary Authority, 2012: 15).

Fourth: The reality of fiscal policy indicators and the general budget deficit in Iraq for the period 2004-2020

Table (1) includes an analysis of the reality of fiscal policy indicators in Iraq as a percentage of the gross domestic product.

Table (1)

Analysis of the reality of fiscal policy indicators in Iraq as a percentage of the gross domestic product For the period 2004 - 2021. (million dinars)

Time series	gross domestic product (1)	tax revenue (2)	Public debt (3)	Public budget deficit/surplus (4)	Rate 2/ 1 (5)%	Rate 3/ 1 (6)%	Rate 4 / 1 (7)%
2004	53235358	159644	133957688	865248	0.3	251.6	1.6
2005	73533589	495283	123732743	14127716	0.7	168.3	19.2
2006	95587954	593887	109525270	10248868	0.6	114.6	10.7
2007	111455823	1397991	95239535	15568219	1.3	85.5	14
2008	157026062	985838	79416689	20848808	0.6	50.6	13.3
2009	130643200	3334819	83653350	-380368	2.6	64	-0.3
2010	162064565	1532438	80433816	-613084	0.9	49.6	-0.4

2011	217327117	1783593	78846859	21352110	0.8	36.3	9.8
2012	254225490	2633357	76857329	14303855	1.0	30.2	5.6
2013	273587527	2876856	73399347	855927	1.1	26.8	0.3
2014	266332655	1885127	77381219	-18091968	0.7	29.1	-6.8
2015	194680973	2015010	109215405	-10809594	1.0	56.1	-5.6
2016	196924143	3861899	126674451	-24876290	2.0	64.3	-12.6
2017	221665714	6298273	137343116	1143889	2.8	62	0.5
2018	268918876	5686213	128510798	20768988	2.1	47.8	7.7
2019	277884870	4014536	133057028	-4156587	1.4	47.9	-1.5
2020	219768798	4718190	99069559	-12882754	2.1	45.1	-5.9
2021	301439534	4536242	91312000	6231805	1.5	30.3	2.1

Source: - Central Bank of Iraq, Economic and Statistical Data, General Budget, 2004-2021.

a. Ministry of Finance, Public Debt Department, 2004-2021, Baghdad, Iraq.

b. Percentages of the researcher's work.

By noting Table (1), the following can be followed:

Evolution of the relative tax burden index (taxes / gross domestic product):

From the observation of table (1) column (5), we can see a decrease in the contribution of taxes to GDP during the study period, as it reached its highest rate (2.8%) in 2017, while its lowest rate was in 2004 by (0.3%), and this is due to the decline in tax revenues due to the failure to activate tax laws and the weakness of tax agencies, in addition to that reliance on oil revenues as a main source in enhancing public revenues and financing public spending, and this means a decrease in the tax burden index.

Evolution of the relative index of total public debt (public debt / GDP):

From column (6) in table (1), we can see that the relative index of total public debt / GDP has risen in some years of the study, and it has exceeded the safety stage or the prescribed percentage of (60%) of GDP according to the Maastricht Treaty of 1993, as it reached its highest percentage by (251). 6% of GDP in 2004, and this is due to the mismanagement of public debt, as well as the accumulation of debts incurred by Iraq due to the wars it fought and the economic blockade imposed on it after its invasion of Kuwait in 1990, to decline after that gradually to its lowest level by (26%). 8% in 2013 due to the reduction of those debts, the cancellation of part of them and the payment of the other part.

The relative importance of the general budget deficit/surplus (deficit/surplus ratio/GDP): When observing column (7) of table (1), it becomes clear to us that the general budget in Iraq was in a discrepancy between a surplus and a deficit due to its heavy dependence on oil revenues, as the ratio of the general budget surplus / GDP in 2005 was about (19.2%) and This is due to the increase in oil revenues resulting from the rise in oil prices, while the deficit-to-GDP ratio in 2014 was about (-6.8%). On the other hand, it caused a decrease in the volume of public revenues. While the percentage of the surplus to GDP in 2018 was about (7.7%) due to the rise in oil prices and the increase in the volume of public revenues.

This discrepancy in the relative importance of the general budget deficit / surplus / GDP is mainly due to several factors, the most important of which are financial and administrative corruption and miscalculation of public expenditures, as well as dependence on oil revenues in the formation of GDP and its subjection to fluctuations in oil prices in the global market.

Fifth: Measuring the impact of some fiscal policy indicators on the general budget deficit in Iraq for the period 2004-2021

Standard description of the model: The effect of some fiscal policy indicators on the budget deficit in Iraq is measured through the co-integration method in order to find the long-term equilibrium relationship in the Eviews12 program, and the study data covers the time period (2004-2021), and the independent variable and the dependent variable are determined within Standard Model and describe them as follows:

Dependent variable: The dependent variable includes the general budget deficit/surplus/GDP (Y), which is a percentage. .a

The first independent variable: It is expressed as the tax burden indicator variable / gross domestic product (X1), which is a percentage. .b

The second independent variable: It is expressed in the indicator variable of the total public debt / gross domestic product (X2), which is a percentage. .c

After determining the independent and dependent variable, the functional relationship of the variables included in the model can be formulated, which takes the following form:

$$Y=f (X1,X2)$$

The symbol (f) indicates that the public budget deficit/surplus/GDP (Y) is a function of both the tax burden/GDP (X1) and the total public debt/GDP (X2).

Testing the stability of time series for study variables by Phillips Peron (PP) .2

The Phillips-Peyron test will be performed to see if the time series of the variables used in the model are static or not, as shown in the following table (2):

Table (2)
PP test for study variables

	At Level		
	X1	X2	Y1
With Constant	-3.0556 0.0497 **	-8.6598 0.0000 ***	-2.3380 0.1723 n0
With Constant & Trend	-3.6596 0.0546 *	-6.2610 0.0005 ***	-3.4690 0.0754 *
Without Constant & Trend	-0.6953 0.4006 n0	-5.1931 0.0000 ***	-2.1375 0.0349 **
	(First - difference)		
With Constant	-11.7692 0.0000 ***	-4.1672 0.0062 ***	-8.3418 0.0000 ***
With Constant & Trend	-10.7500 0.0000 ***	-2.8322 0.2071 n0	-11.0769 0.0000 ***
Without Constant & Trend	-7.7530 0.0000 ***	-4.9597 0.0001 ***	-6.3361 0.0000 ***

Notes: a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant

Source: prepared by the researcher based on the outputs of Eviews.12

As it is clear from the results of the previous table (2) and through the application of the Phillips-Perron test (PP) that the variable (y1) has stabilized at the first difference in the absence of a categorical and

general trend of the time series and at a significant level (5%), while it was found that the time series of the variables The economic (x1, x2) was stable at the level, as well as after taking the first - difference of the original series of the aforementioned variables. General or without categorical and general direction.

Estimation of the ARDL Autoregressive Model .3

After conducting the time series stability test and ensuring the integrity of the time series at degrees (I0) and (I1), it became possible to apply the (ARDL) methodology to test co-integration (limit test method), especially since the model is very appropriate in terms of application with the research sample of (72) View quarterly data for the period (2004-2021).

Bound Test results for the first model: .a

To test the extent of a long-term equilibrium relationship (existence of cointegration) between (y1) as a dependent variable and the independent variables (x1, x2), the (F) statistic was calculated through the bounds test as shown in Table (3) below

**Table (3)
The results of the cointegration test for the variables of the study according to the limits test methodology**

Test Statistic	1%	5%	10%
F-statistic	8.231465		
Significance level	10 Bound	5 Bound	11 Bound
	2.63	3.35	3.87
	3.1	3.87	4.38
	3.55	4.38	5
	4.13	5	

Source: prepared by the researcher based on the outputs of Eviews12

It is clear from Table (3) above that the calculated (F) value amounted to (8.231465), which is greater than the maximum and minimum tabular values at a significant level (1%, 2.5%, 5%, 10%), which means rejecting the null hypothesis and accepting the alternative hypothesis, and this leads us to believe that there is a cointegration relationship between the independent variables (X1, X2) and the dependent variable (Y), that is, there is no equilibrium relationship in the long run, and then the possibility of estimating the short and long term elasticities of the estimated model, as well as the possibility of estimating the significance of the error correction parameter under There is a cointegration relationship between each of the independent variables (x1, x2) and the dependent variable (Y).

The results of estimating the short and long term elasticities and the error correction parameter .b

After confirming the existence of a long-term equilibrium relationship between the variables according to the bounds test, the short and long term estimates for the estimated model parameters and the error correction parameter should now be obtained.

**Table (4)
The results of the short-term estimation between the variables of the study**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D	0.239836	0.100488	4.763806	0.0000
D(X1	0.144961	0.090851	1.836823	0.0002
D	25.221133	4.530676	5.566747	0.0002
D(X2	-14.62886	5.649573	-2.589375	0.0122

CointEq	-0.401351	0.068259	-5.879809	0.0000
			R²= 0.73	Adj.R²=

Source: prepared by the researcher based on the outputs of Eviews.12

It can be seen from the results of Table (4) above regarding the estimation of the relationship between (Y) as a dependent variable and the independent variables (X1, X2) in the short term. X1, which represents the ratio of the tax burden / GDP by one unit, leads to an increase in the budget deficit ratio / GDP (Y) by (0.239836) units, while the relationship between (X2) and (Y) is direct and significant at the level of (1%)) Also, that is, an increase in the ratio of the total public debt / GDP (X2) by one unit will lead to an increase in the budget deficit ratio / GDP (Y) by (25.221133), as it is clear that the error correction parameter (CointEq(-1)) It was negative, significant, and less than the correct one, and it amounted to (-0.401351). This means that (40%) of the short-term errors are automatically corrected over time to reach the state of equilibrium in the long term, or in other words, about (40%) of the imbalance The shock of the last year has been corrected in the current year, which confirms that there is a long-term equilibrium relationship between the variables of the study, as we note that the explanatory power (R2) For the estimated model, it amounted to (0.73), meaning that the independent variables of the estimated model (X1, X2) explain about (73%) of the changes in the dependent variable (Y), while the remaining (27%) are random variables that the model did not take into consideration, and these variables represent The effects of a random variable on the dependent variable.

Table (5)

The results of estimating the long-term function between the variables of the study

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.545855	0.698407	0.781571	0.0003
X2	0.239836	0.097516	1.711283	0.0000
	-0.275112	1.228722	0.223901-	2360.8

Source: prepared by the researcher based on the outputs of Eviews.12

It is clear from Table (5) of the long-term analysis of the ARDL model for the variables of the study

that:

That (Y) is associated with a direct relationship with (X1)), that is, when X1 increases by one unit, it leads to an increase in Y2 by (0.54).

)Y) is associated with a direct relationship with (X2), ie when X2 increases by one unit, this will lead to an increase in Y2 by (0.23).

Autocorrelation and heterogeneity of variance test in the ARDL model .4

The estimated models are tested to ensure that they are free from the problem of autocorrelation (serial correlation between values) by using the Breusch-Godfrey Serial Correlation LM Test and using the Heteroskedasticity Test: ARCH to ensure that the estimated models are free from the problem of heterogeneity of variance at a significant level (5% for the relationship between the variables.

Table (6)

Autocorrelation and heterogeneity of variance test results

Breusch-Godfrey Serial Correlation LM			
F- sta	1.367630	Pr	0.2628
Obs*R-squ	3.062434	Prob. Chi-Sq	0.2163
Heteroskedasticity Test: A			
F-sta	1.620512	Pr	0.1471
Obs*R-squ	10.81195	Prob. Chi-Sq	0.1470

Source: prepared by the researcher based on the outputs of Eviews.12

We note from Table (6) above that the estimated study model is devoid of the autocorrelation problem according to the (Breusch-Godfrey Serial Correlation LM Test) i.e. accepting the null hypothesis which states that there is no autocorrelation problem in the estimated model, because the

values of (Prop.F) and Prob. Chi-Square)) were not significant at a significant level (5%), and then we reject the alternative hypothesis, as well as it is clear that the estimated model is free from the problem of heterogeneity of variance, as the two values of Prob. Chi-Square)) and ((Prop.F) are not significant at the level (5%) according to (Heteroskedasticity Test: ARCH).

Conclusions and suggestions

First: conclusions

The increase in the indicator of the volume of public debt / gross domestic product in some years .1 of the study, and this is considered a negative indicator of the Iraqi economy due to its violation of the safety ratio, which indicates poor management of public debt and the failure to direct it in the correct and effective economic direction.

The increasing deficit in the public budget due to its dependence on oil revenues, which are .2 subject to fluctuations in oil prices in the global market, with the weak contribution of other sources of revenues, especially tax revenues, which were characterized by their weak contribution to the formation of the gross domestic product due to the weakness of their bases and the stability of their tax prices.

The standard results of the study showed the following: .3

There is a positive and significant effect in the short term at a significant level (1%) between .a each of the tax-to-GDP ratio, the public debt-to-GDP ratio, and the general budget deficit/surplus to GDP. When the tax burden ratio increases by one unit, it leads to an increase in the tax burden ratio. Deficit/surplus/GDP by (0.23) units, and an increase in the ratio of total public debt to GDP by one unit leads to an increase in the deficit/surplus/GDP ratio by (25.22) units.

There is a positive and significant effect in the long term at a significant level (1%) between each .b of the tax/GDP ratio and public debt/GDP, and the deficit/surplus of the general budget/GDP. When the tax burden ratio increases by one unit, it leads to an increase in the tax burden ratio. Deficit / surplus / GDP by (0.54) units, and an increase in the ratio of total public debt / GDP by one unit leads to an increase in the ratio of deficit / surplus / GDP by (0.23) units.

Second: Proposals

The need to draw up a financial policy based on objective scientific studies that take it upon itself to manage the public budget deficit and manage the public debt by directing it towards the investment sectors that contribute to achieving real rates of economic growth in order to raise the country's ability to pay off debts and achieve financial sustainability.

Reconsidering the tax system by addressing its administrative and legislative problems related to tax bases and tax rates in a way that encourages private investment on the one hand, and increases tax revenues on the other hand, as well as combating tax evasion and reducing or limiting informal activities.

Attempting to reduce or reduce the public budget deficit by controlling public spending, reducing dependence on public debt, and finding other non-inflationary means of financing in dealing with the public budget deficit.

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