



Use the budget deficit index to display some economic variables on the impact of financial discipline in the Iraqi economy for the period (2004 - 2018)

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Abstract

The subject of fiscal discipline is one of the most prominent topics that drew wide attention in many developing and developed countries, and at all levels, the concept focuses fiscal that discipline total spending should not exceed prescribed to him in the general budget amounts, or not fiscal deficits exceed a certain percentage of GDP, so that the estimate of government spending in the light of the financial means available and not according to financial need submitted In recent years, public budgets in Iraq have become financially strapped because of the fall in oil prices to levels sessile make insufficient revenue to cover expenses, prompting financial authorities to those deficits financed through cash release, leading to increase the base cash, or using cash reserves at the central bank, or through internal or external debt. By the various units and administrative bodies, in recent years, the public budgets in Iraq have suffered from a fiscal deficit due to the drop in oil prices to low levels, which makes the revenues, insufficient to cover expenses. Which drives the financial authorities to finance the deficit through cash release, this increases the monetary base. Or by using the cash reserves at the central bank or by internal or external debt all of these variables are considered indicators of financial discipline. Therefore, this research focused on knowing the effect of the budget deficit on financial discipline Through the use of the budget deficit index And find out the impact of the deficit on the variables of the Iraqi economy The research reached a set of conclusions, the most prominent of which is that financial variables have a moral effect on financial discipline, and there must be consistency between the fiscal and monetary policies. As the increase in government debt is compensated either by increasing the monetary base, or by reducing monetary reserves until financial discipline is maintained.

Keywords: budget, government, GDP, Iraqi economy, financial discipline.

Introduction

The Iraqi economy suffers from a basic problem, with the exception of not committing suicide in public budgets. The dilemma of spending in the budget sections on the operational aspects of salaries, wages, transfer expenses and government purchases of goods and services has become easily linked to exchange standards, and increased budget surplus due to poor implementation of investment projects, which leads to investment frustration and then deterioration of income levels, and this represents a real deficit despite the rotation The wheel of oil activity funded for spending in economic activities. In recent years, Iraq's public budgets have suffered from a fiscal deficit and oil prices have fallen to low levels that make revenues insufficient to cover the expenses that the financial authorities pay to finance those reservations through a

cash issuance that increases the monetary base, or by using the central bank's cash reserves, or from the path of internal or external religion. Financial discipline, which is one of the prominent issues that concern developed countries to manage the public sector in a way that contributes to achieving economic and development goals. Through fiscal discipline, it enables accurate management of expenditures and revenues to serve specific goals, and is consistent with general budget indicators and within the medium and long-term economic plans. In order to improve the process of financial discipline, it is necessary to improve the legislative side and enact specific legislations to define a specific ceiling for public debt, in addition to enhancing the financial skills of public sector employees who work in the budget department and work around the continuous coordination between financial and monetary policies in relation to the three variables mentioned above, including This includes ensuring financial discipline in the economy. And that is the problem of searching for dependence on renter resources in preparing and financing public budgets in Iraq, which led to indifference to the issue of financial discipline, which means sharp increases in public debt and fiscal deficits, which raised great concerns about the possibility of continued financial sustainability in the economy Iraqi.

Accordingly, the research proceeds from the hypothesis that: "It is possible to achieve financial discipline in the Iraqi economy, but this requires activating the role of financial and monetary variables in a way that contributes to reducing the budget deficit resulting from the failure to apply the standards of that discipline.

1-Conceptual framework for financial discipline:

1-1: Definition of financial discipline: The topic of financial discipline is one of the most prominent topics that have received wide attention in many developing and developed countries, at all levels, and some have defined it as the capabilities of the competent authorities to manage revenues and public expenditures accurately and in a smooth manner that enables them to achieve Planned financial goals, including public budget indicators, and within medium and long-term economic plans, also known as the government's ability to maintain smooth financial operation and long-term financial viability, through a multi-year perspective on budget and mechanisms to maintain financial safety and Financial stability during business cycles (1). It is too early for the government's ability to maintain financial operations in a flexible manner that guarantees financial safety and prosperity in the long run (2). Therefore, it possesses a multi-year perspective as a measure of the ability of fiscal policy to address the deficit resulting from excessive spending (3), as good practices Budget should frame mechanisms that limit economic downturns and unexpected shocks, to form institutional controls that set limits for government financial decisions, and this reflects the effectiveness of financial discipline in specialization and the efficiency of performance and arrangements aimed at adopting a fiscal policy that responds to the requirements of the economy. And when fiscal discipline is not invoked, expenditures exceed the revenues that create a fiscal deficit (which requires public financing) as the government needs financing through debt or money issuance, both of which have long-term negative consequences. The persistent fiscal deficit and the sharp rise in public sector debt over the past three decades in many countries indicate that some fundamental factors are likely to have a major role in them, as all theoretical and empirical literature indicates that the most prominent of these factors is the lack of Adequate financial discipline and weak financial management (4).

In order to implement fiscal discipline, governments need to maintain financial positions consistent with macroeconomic stability and sustainable economic growth. To this end, excessive borrowing and debt accumulation must be avoided. And, at the same time, government policy must be prudent in pursuing resource allocation and distribution objectives. Moreover, it is wise to allow the possibility to respond to both harmful shocks and deal with predictable financial pressures (5).

1-2: Regulations for Implementing Financial Discipline:

There are a set of regulations that accompany the implementation of financial discipline, as follows (6):

- The need to maintain a balanced budget. This means that the budget submitted to Parliament must be balanced. Some states and local governments have enshrined this principle in a so-called "golden rule" that should not vote on the budget if it includes a fiscal deficit.
- The importance of maintaining liquidity. It is not enough to have a balanced budget. During the fiscal year, the government must always have enough cash to pay for the month's expenses. If this is not the case, it will have to obtain short-term loans to bridge the gap and thus will have to pay interest, as liquidity is maintained through a complex system From budget restrictions and control that allow the Ministry of

Finance to keep the two balanced during the fiscal year.

- Maintaining credibility, a balanced budget means nothing if it is not applied. If the administration insists on ignoring spending limits and components approved by the legislature, then we can make sure that fiscal discipline will come out of the window in a very short time. Credibility can also be maintained through a system of internal controls (which verifies management's commitment to the budget) and external audit (as the supreme audit institution evaluates budget implementation and submits a report to parliament at the end of the year).

- Adjusting the deficit and debt (before and after) (7), then the deficit and debt arise from the joint decisions of governments and creditors based on the rules that govern the issuance of debts and prejudice, as well as expectations of who will lose money or who will be forced to adapt in the event of difficulties in payment. This requires consideration of the type and timing of borrowing. Reliance only on pre-restrictions allows borrowers and irresponsible lenders to overcome initial hurdles. Reliance on only subsequent consequences allows irresponsible entities to generate large debt, making application of the consequences difficult.

1-3: The Useful Importance of Financial Discipline:

This importance lies in the following (8):

- Financial discipline is desirable because sound government funding is a prerequisite for macroeconomic stability, as aggregate demand pressures can be avoided, and with it inflation and balance of payments problems; there is room for fiscal policy to counter periodic differences in outputs.

- Financial discipline allows fiscal policy makers to pay attention to the efficiency of the tax system and spending programs, which is good for resource allocation and growth.

- It contributes to providing space to absorb the emerging financial pressures, whether it is expected (such as unfunded public pension obligations) and unforeseen (such as liabilities in emergencies).

- Contributing to curbing the deficit, avoiding excessive public spending and achieving a budget surplus is a form of saving, and thus achieving an increase in owned assets and a rise in national income in the future, as implementing an economic program based on long-term financial discipline along with monetary policy Stabilized, which contributes to long-term growth (9).

- It contributes to getting out of the burden of underdevelopment of financial systems and hyperinflation, in addition to that, fiscal discipline contributes to containing the deficit instead of resorting to increasing taxes to secure more money, and then maintaining a stable financial environment compared to the growing uncertainty (10).

- Financial discipline leads to the adoption of a package of foundations necessary to create a stable and predictable economic environment, but excessive and persistent governments spend more money and continuously more than sustainable financing, and then deficits and resort to borrowing, which lead to large and increasing costs on the economy that exceed its ability to produce The surplus required and sufficient to meet the increasing frequency of debts and services, this results in an increased need for financial discipline to reduce biases in financial behavior that leave costs to the economy, as the bias is divided into three cases (11):

a- The first case is the excessive deficit, which is caused by the fact that governments do not fully absorb the cost of debt, which necessitates a major adjustment in fiscal policy to return to a sustainable path, which leaves negative effects on the economy embodied with additional costs on production due to the uncertainty that discourages the stimulation of new investments and then Long-term growth restriction.

b- The second case is to follow a volatile financial policy, as misuse of fiscal policy generates fluctuations in economic activity, especially on output, consumption and investment, as well as its extraordinary effects on the fluctuations of the business cycle, which are embodied by low rates of growth in the long run.

c- The third case describes the financial policy on a regular basis, as empirical evidence indicates that the fiscal policy that goes along with the economic cycle is negatively reflected on economic performance, as spending increases in times of prosperity greater than increasing taxes, which led to European countries recently when analyzing the budget plans of member countries , Emphasizing the importance of avoiding automatic fiscal policy, as it limits the effectiveness of automatic stabilizers and leaves a financial position that is not compatible with the state of the economy, and then doubles the severity of economic fluctuations.

2- Financial discipline is the ideal solution to reduce the exacerbation of debt:

Some countries have enacted laws related to financial discipline to which public institutions are subject, and one of the most important objectives of the legislation is to establish concepts of financial sustainability, proper management of financial resources, and to standardize the accounting foundations used in all institutions and departments so that financial reports are consistent with each other for the various institutions and departments in the state. In other countries, more than one program has been launched to enhance financial discipline practices in the public sector, and some initiatives focus on training senior leaders in government institutions on concepts and importance of financial discipline, and increasing financial knowledge and skills among public sector leaders and employees.

With repeated deviations from the targets announced in the public budget and for multiple years in many countries, some people question the extent of the fiscal policy response to governments in achieving macroeconomic targets and their role in stimulating priority development sectors? Are there medium or long-term economic plans for which the financial policy of the government is a major focus for them, as some ask, have the methods of preparing the general budget actually evolved to be a program budget that is properly planned in the development of these programs according to controls that estimate revenues and expenditures in the various departments and directorates within the ministry and one institution from On the one hand, or at the level of the various institutions, on the other hand, which enhances the concepts of accountability when deviations occur? Or is the method currently used more similar to the traditional way known to balance items or linear balance with some cosmetic aspects to look like program and performance budgets.

Despite the successes that financial discipline can achieve, there are important aspects that can be worked on to improve financial discipline, perhaps the most important of which is the legislative aspect and the necessity of activating public debt laws with making the required adjustments to the ceilings specified in the laws, and effective accountability regarding the accuracy of estimating revenues and expenditures, and enhancing skills Of financial resources for employees and managers in the public sector, and developing the method of preparing the general budget, especially in aspects related to determining financial allocations for capital projects with priority development, so that these mechanisms are within the disciplined financial policy that contributes to A comprehensive economic plan achieve the desired development goals.

3 - Financial indicators for financial discipline:

3-1: Public debt indicators: These indicators can be clarified according to the following:

a- The relationship between public debt and gross domestic product: The relationship between public debt and gross domestic product is an organic relationship, as the production of this output is funded from self-sources of the contributing units, and external sources from other units, and that the economic sectors, including the government sector, contribute to the production of this output, and the benefits and burdens that are paid to pay the debts One of the items of production costs represents previous loans that may not have contributed to this product now. Therefore, this relationship is measured by two indicators:

The first indicator: The ratio of public debt to gross domestic product, and this ratio is within the limits of safety if it does not exceed 6%. If it exceeds this, then it is a problem, and if it increases a lot, then we have reached the stage of the dangerous crisis.

The second indicator: a comparison of the growth rate of public debt with the rate of growth of domestic output, and the safety situation being equal to or greater than the rate of growth of the domestic product over the rate of growth of public debt.

b- The relationship between public debt and the budget deficit: The main reason for the state resorting to borrowing in a public debt is the budget deficit, which means a lack of public revenues to face increased public expenditures, and the greater the deficit and the longer the public debt increases.

3 – 2 : Debt burden burden indicators: In this regard, there are a set of sub-indicators:

- Index of debt service burdens ratio to total public expenditures.
- The ratio of interest to total public expenditures.

- The interest-to-current ratio index.
- Debt Service to Public Revenue Ratio Index.
- Debt service ratio to current income index.

3 – 3: Index of the citizen's share of the public debt: The per capita share of the public debt is commensurate with its capabilities represented in the average share of the national income, and the ratio is within the limits of safety if the per capita share of public debt reaches 50% of his average income per year.

3 – 4 : Indicators of public financial competence: This indicator is represented by the extent of the ability of public money to face the problem and the risks of increasing debts, and from this it is possible to identify the extent of the public financial ability to face the problem of debts in the future or not, in the sense of bearing the burdens of existing ones and reducing dependence on debts in the future, and is recognized this includes several indicators, the most important of which are:

- The extent of proportionality of the rate of growth in both public revenues and public expenditures, as the situation is sound if the rate is equal in each or the rate of revenue growth exceeds the rate of growth of expenditures.
- The extent to which the interest rate on the public debt is proportional to the rate of growth of the public debt, as an increase in the interest rate or equal to the rate of growth of the public debt indicates rationalization in the management of public debt and the possibility of restraining it, but if the interest rate is less than the rate of growth in public debt At risk.

4 - Public financial indicators in Iraq for the period (2004-2017):

The financial authorities face a set of obstacles that hinder their economic performance, and in order to face that there are a number of measures that the government takes to influence the overall economic performance, which is starting to define the paths of financial policy and the scope of its impact Through the use of the public budget tool to maintain the stability of macroeconomic levels and try to increase growth rates in gross domestic product and reduce economic fluctuations that may be exposed to the national economy.

4–1: Analysis of the structure of public revenues (2004-2018): Through table (1) we note that the total public revenue in 2004 amounted to (32,988.9) trillion Iraqi dinars, and with a contribution rate of 61.7% of GDP, and achieved a significant increase in 2008 amounted to (80,641,041) A trillion achieving a contribution rate in the GDP amounted to (51.3%), and an annual growth rate of (46.7%). The reason for this increase in revenues is due to the rise in world oil prices. In 2009, public revenues decreased by a difference of 25.397.541 trillion dinars from the previous year, when they reached (55,243.5) trillion dinars, with a negative growth rate of (-31.5 %) and a contribution rate to the gross domestic product (42.6%), affected by the global financial crisis and its implications for to oil prices, in the year 2012, public revenues increased, to reach 119,817,200 trillion Iraqi dinars, at an annual growth rate of (10.1%), and a contribution rate to the gross domestic product of (47%), which represents the highest value of revenue during the study period, this increase resulted from in revenue from the noticeable improvement in the security situation, the high quantities of oil produced and the high prices in the international market, as well as the rehabilitation of many government factories outside the service, in the years (2013 - 2014 - 2015 - 2016), public revenues achieved negative growth rates of (-5%, - 7.5% , - 36.8% , -18.1%), respectively, to reach their lowest levels in 2016, reaching 54,409,300 trillion Iraqi dinars, with a contribution rate of 26.2% to GDP, to rise again in (2017) to reach (77.335.900) trillion dinars with an annual growth rate of (29.2%) and a percentage of contribution to the gross domestic product (34%).

It is clear from the above that if public revenues do not grow at a rate that exceeds the increase in public expenditures in the long term, dependent on regular and regular sources, and if public expenditures increase at a rate that exceeds the increase in GDP, the national economy will suffer a prophetic fiscal deficit.

Table (1): Total expenditures and revenues in the Iraqi economy for the period (2004 - 2018) (thousand Iraqi dinars)

The deficit and the surp The actual Total output	Rate of change In deficit and surplus The actual	The deficit and the surp The actual	Expenditure ratio Of the product the local	growth rate Annual %	Total expenses the Actual	Revenue ratio Of the domestic prod	growth rate Annual %	Actual revenue	Total output the local	years
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2.5	-	1,367.073	41.5	-	31,521,427.0	61.77%	-	32,888.50	53,235.4	2004
13	602.5	9,604.258	35	2.2 -	30,831,142.0	54.98%	23	40,435.40	73,534.6	2005
12	20.8	11,561.041	40	21.6	37,494,459.0	51.3 %	21.3	49,055.50	95,588.0	2006
14	35.4	15,656.553	35	4.8%	39,308,470	49.3 %	12	54,964.90	111,455.	2007
8.5	14.6-	13,363.845	37.8	71.2	67,277,196.0	51.3 %	46.7	80,641,04	157,026.	2008
0.26 -	97.4-	0,346,200 -	40	17.4 -	55,589,700.0	42.2 %	31.5 -	55,243,,50	130,643.	2009
0.02	87.2	0,043,999	39.2	26.2	70,134,201.0	43.3 %	27	70,178.20	162,064.	2010
13.8	68.1	30,049,697	32	12.3	78,757,703.0	50 %	55	108,807.4	217,327.	2011
5.77	1.5-	14,678,074	35.5	33.5	105,139,126.0	47 %	10.1	119,817.2	254,225.	2012
1.9 -	63.9-	5,287,511 -	39	13.3	119,127,611.0	41.6 %	5 -	113,840.1	273,587.	2013
3 -	55.2	8,207,512 -	32	30 -	113,473,512.0	39.5 %	7.5 -	105,266.0	266,420.	2014
1.88 -	52.1-	3,927,21 -	60.6	38 -	70,397,510.0	32 %	36.8 -	66,470.30	207,876.	2015
6.2 -	222.5	12,658,13-	60.7	4.7 -	67,067,430.0	26.6 %	18.1 -	54,409.34	203,869.	2016
0.8%	85.4	1,845,855	33.4	12.5	75,490,100.0	34.2%	29.6	77,335.95	225,995.	2017
%3.4	1.2	25,696.63	10.7	6.6	80,873,200	14.1%	27.4	106,569,8	754,901.	2018

The schedule of the researcher's work relying on: - Sarmad Kawkab al-Jamil, Nameer Amir al-Sayegh, economic policies and future scenarios for economic performance, Iraqi Economy Report, Challenges and Options, 2018, p. 21, - Central Bank of Iraq Statistical Bulletin, Baghdad Annual Statistics Department. 2010--2018.

4 – 2 : Analysis of the structure of public expenditures (2004-2018): Public expenditures in Iraq during the period (2004-2018) witnessed several developments that significantly affected their trends in terms of size and aspects of spending, Table (2) shows the level of development of these expenditures, as in 2004 it recorded an amount of (31,521,427) trillion Iraqi dinars, With a contribution rate of 41.5% of the gross domestic product, and the subsequent years witnessed a fluctuation in the volume of expenditures, to record in the year (2008) an amount of (67,277,196.0) with a significant increase from previous years, with an annual growth rate of (71.2%). In 2009 public expenditures decreased to (55,589,721.0) trillion dinars and by (11,687,455) trillion dinars, compared to the previous year with a negative growth rate of (-17.4%) and a contribution rate of 40% of the total output, and with a negative growth rate of (-17.4%), This decline occurred because of the deflationary policy that the government undertook in response to the global financial crisis and the decrease in oil prices, Then, government spending increased again during the years (2010), recording (70,134,201) trillion dinars, and a growth rate of (26.2%), and in (2011) it achieved (78,757,703) trillion dinars, and in (2013) government spending increased To its highest levels during the study period, as it reached (119,127,611) trillion dinars, with a growth rate of (13.3%) and a contribution rate of 39% of the gross domestic product. This improvement resulted in government spending levels for previous years due to licensing round contracts signed with international oil companies, which enabled the government to achieve revenues that helped increase spending, after which public expenditures in 2014 recorded a decrease of 5,654,099 trillion dinars from the previous year, With a negative growth rate of (-30 %) and a contribution rate of local production of (32%), in 2016 the total actual public spending decreased to 67,067,430.0 trillion dinars, achieving a negative growth rate of (-4.7 %), and a contribution rate of 60.6% Of GDP, in (2017), public spending increased again to achieve a growth rate of (12.5%), at a rate of 75,490,100.0 trillion dinars, and a percentage of contribution to the gross domestic product amounted to (33.4%), due to the decline in world oil prices, which led to an increase in the deficits in the general budget, and increased structural imbalances due to the almost complete dependence on oil revenues, as well Due to the pressures caused by the high military spending and the cost of the humanitarian crisis caused by ISIS after entering Iraq in 2014 and its aftermath.

It is noted from the above that there is no clear economic strategy during recent years and therefore the

absence of a clear investment policy in the distribution of resources and the modernization of investment priorities as well as the specific weakness of the absorptive capacity of the economy because of weak infrastructure, as successive governments relied on oil imports to finance their annual budgets.

Table (2): Distribution of public spending amounts according to current and investment spending and the percentage of its contribution to the total expenditures for the period 2004-2018 million dinars

Expenditure ratio	Investment to total	Expenditure ratio	Investment spending	The ratio of current spending to total output the local	Expenditure ratio Operating / total Expenses	Current spending (Operational)	Total expenses	Total output the local	year
5.6%	9.38%	3.014.733	54.6%	90.61 %	29.102.758.0	32,117,491	53.235.4	2004	
%12.2	29.2 %	9.027.985	29.6%	%70.71	21.803.157.0	30.831.142.0	73.534.6	2005	
4.9%	12.58 %	4.715.46	34.2%	87.42 %	32.778.999.0	37.494.459.0	95.588.0	2006	
7.1%	20.36 %	8.000.159.0	28%	79.64 %	31.308.188.0	39.308.347.0	111.455.8	2007	
12.5%	29.37 %	19.754.596	30.2%	70.63 %	47.522.700.0	67.277.196.0	157.026.1	2008	
10.3%	24.36 %	13.536.101	%32.1	75.64 %	42.053.620.0	55.589.721.0	130.643.2	2009	
9.5%	22.18 %	15.553.341	33.6%	77.82 %	54.580.860.0	70,134,201.0	162.064.6	2010	
8.2%	22.65 %	17.832.149	28%	77.35 %	60.925.554.0	78.757.703.0	217.327.1	2011	
11.5%	27.92 %	29.350.503	29.8%	72.08 %	75.788.623.0	105.139.126.0	254.225.5	2012	
%14.7	30.61 %	40.380.804	28.7%	69.39 %	78.746.806.1	119.127.611.0	273.587.5	2013	
13.7%	32.38 %	36.731.839	28.8%	67.62 %	76.741.673.0	113.473.512.0	266.420.4	2014	
8.9%	26.39 %	18.564.671	24.9%	73.61 %	51.832.839.0	70.397.510.0	207.876.2	2015	
7.7%	21.81 %	15.894.009	25.1%	76.30 %	51.173.343.0	67.067.430.0	203.869.1	2016	
7.2%	% 21.82	16.464.461	26.1%	78.18 %	59.025.654.0	75.490.100	225.995.2	2017	
8.8%	23,66 %	24.650.112	28.5%	76.3 %	79.508.071.5	104.158.183.7	278,586,00	2018	

Table of researchers' work relying on data: the Iraqi Ministry of Finance, the General Budget Department, final accounts for the period (1991-2013), the Central Bank of Iraq / General Directorate for Statistics and Research for the period 2004-2012, the Federal Budget Law of the Republic of Iraq for the period 2013-2019 different pages.

4 – 3 : Surplus and deficit in the general budget for the period (2004-2018): From the data of Table (1), we infer that the general budget achieved financial surpluses for the period (2004-2008), to record in the year (2004) a budget surplus of (1.367.073) trillion dinars in relation to the gross domestic product (2.5%). The ratio to (8.5%) in 2008, this surplus resulted from the increase in oil revenues. In the year (2009), the budget declined to achieve a deficit of (-0.346.200) trillion dinars, at a rate of (0.26%) of the GDP, and this deficit is due to the impact Oil prices in the global financial crisis. After that, and for three consecutive years, the budget witnessed the achievement of financial surpluses registered in (2012) the highest surplus during the period of the study with a value of (30,049,697) trillion dinars, with a contribution rate of (13.8%) of the gross domestic product, this increase resulted as we mentioned previously about the marked improvement in The security situation, the high quantities of oil produced and the high price of oil on the international market, as well as the rehabilitation of many government factories out of service, in the years (2014-2013-2016-2015) the public budget recorded a fiscal deficit of (8.207.512-, 5.287.511-,3.927.21 -, 12.658.13 -) trillion dinars, respectively, and a contribution to the gross domestic product with a highest rate of it (- 6.2%) (In 2016), the reason for this deficit is due to a combination of factors, including the absence of strategies and policies for diversification of budget revenues, as tax revenues and other non-oil resources constitute only a small percentage of total revenue as well as low oil revenues and increased military spending due to military operations, in years (2018-2017) The budget resumed achieving surpluses of 1.845,800 and 25,696.6, respectively. The previous values reflect the fluctuation of budget revenues that depend heavily on oil revenues that affect negatively or positively on the budget deficit or surplus.

5 - Indicator of the ratio of public debt, both internal and external, to gross domestic product: Public debt consists as a result of increased government expenditures over revenue earned for a specific period, as the government borrows to finance spending costs. Usually, the government resorted to borrowing to finance the deficit in its public budget and this deficiency occurs in times of recession as the government increases expenditures on government revenue to revive the economy and overcome the recession. This financing is done as mentioned by borrowing (12). The total debts negatively affect the state through what is deducted from the country's gross domestic product to cover the annual burdens, which puts pressure on the resources used in the development of economic sectors, and the matter becomes more complicated when the growth of the sums deducted on the growth in the gross domestic product, and in the case of gross growth GDP is faster than debt growth, as this helps to reduce the burden relatively. And Table (3) shows the total public debt in Iraq according to the classification and its percentage of GDP for the years (2004-2017). We note from its data that the total public debt is in a state of fluctuation between decline and rise, and the rankings of public debt are also fluctuating, as the period (2004 – 2009) witnessed a gradual and rapid decline in external debt, as it decreased after the year (2004) from (174,360,000) One million dinars and a percentage of contribution to the gross domestic product (327.53%) to (66,720,420) million dinars, at a rate of (41.17%) of the gross domestic product in (2010), and this value is the lowest value of debt during the study period due to the high oil revenues and compensation in debt Internal, in the end of 2014, Iraq witnessed a financial and economic crisis due to the poor security situation on the one hand and the increasing volume of spending for The front of terrorism, on the other hand, as well as the drop in oil prices in the global market, as well as the mismanagement of public funds and the expansion of corruption in various institutions, as well as the drop in oil prices to below 30 dollars (13), which negatively affected the financing of increased military spending, which led to The debt problem remains a concern, especially after Iraq entered a fierce war to liberate Iraqi cities. The level of external debt continued to rise until in (2017) it reached (77,742,624) million dinars, and a percentage of the GDP reached (34.44%). The high external debt during the years (2015-2017) is a reflection of the unbalanced financial and economic situation in Iraq as a result of several reasons, most notably the increase in the volume of current and military expenditures and the financing of the displaced (14), as well as the ease of borrowing from external international institutions.

Table (3): Total public debt and its percentage of GDP for the period (2004-2017) million dinars

Rate of change in Total debt Year	Total debt Year	Debt ratio Outer Of the total The resulting the local%	Growth rate Religion Outer	External debt	Debt ratio Procedure Of the product the local%	Growth rate Religion Procedure	Public debt Procedure	Total output the local	year
-	180421688	327.53	-	174,360,000	11.39	-	6,061,688	53,235,359	2004
33.5	119834763	154.00	53.9-	113,240,803	8.97	8	6,593,960	73,533,599	2005
3.8-	115220021	114.63	3.2-	109,574,631	5.91	16.8-	5,645,390	95,587,955	2006
14.8-	98064705	83.32	15.2-	92,870,000	4.66	8.6-	5,194,705	111,455,813	2007
17.6-	80763428	48.60	21.7-	76,307,859	2.84	16.5-	4,455,569	157,026,062	2008
3.7	83780757	57.67	1.2-	75,346,708	6.46	47.1	8,434,049	130,643,200	2009
9.4-	75901226	41.17	12.9	66,720,420	5.66	8.1	9,180,806	162,064,566	2010
4.2	79129249	32.98	6.9	71,682,390	3.43	23.2-	7,446,859	217,327,107	2011
6.6-	73832715	26.47	6.5-	67,285,196	2.58	13.7-	6,547,519	254,225,491	2012
1.5-	72721903	25.03	1.7	68,466,354	1.56	53.8-	4,255,549	273,587,529	2013
5	76386621	25.11	2.3-	66,866,602	3.57	55.2	9,520,019	266,332,655	2014
31.2	100272103	35.00	1.8	68,129,298	16.09	70.3	32,142,805	194,680,972	2015
17.9	118286979	36.02	3.9	70,924,728	23.23	32.1	47,362,251	196,924,142	2016
6	125421420	34.44	8.7	77,742,624	21.10	0.66	47,678,796	225,722,367	2017

Source: Central Bank of Iraq, General Directorate of Statistics and Research, and various publications for several years (2004-2017).

-IMF, Country Report No. 05/294, Iraq: 2005 Article IV Consultation - Staff Report; Staff Supplement, Public Information Notice On The Executive Board

The internal debt was also fluctuating between rise and fall during the study period, as the debt increased slowly, but it witnessed a rapid and increasing growth during the years (2015-2017-2016), as it increased

from (9,520,019) million dinars and a percentage of the gross domestic product (3.57%) In the year (2014) to (32,142,805) million dinars and a percentage of the GDP (16.09) in (2016), and to (47,678,796) million dinars and a percentage of the total output (21.10%) in (2017). The reasons for the increase in the size of the domestic debt can be determined to increase the deficit in the state's general budget, forcing the government to cover this deficit by borrowing, as well as the difficulty of increasing taxes on financiers in the conditions of the recession experienced by the economy during that period, which prompted the government to resort to borrowing as an alternative to taxes in financing the deficit.

6 - Monetary Indicators in the Iraqi Economy for the Period (2004-2017): Table (4) shows the movement of monetary variables, as they appear the pace of money growth tends to decrease after 2012, but the low monetary base is closely related to the contraction of the international reserves of the Central Bank after the decline in oil prices, which means that the money paid by the central bank in exchange for buying foreign currencies from the Ministry The financial has become less than the returns it gets from selling foreign currencies in the currency market, this behavior reflects the correlation between the two sides of the central bank's balance sheet, meaning that the monetary base on the liabilities side finances the central bank's possession of its assets, Here the importance of adopting the central bank's policy of monetary expansion is based on the acquisition of larger assets, either in the form of lending to the government or international reserves. The monetary reserves are increasing from (2004) to the year (2008) due to the increase in government sales of foreign currency to the central bank resulting from the increase in public expenditures, while the monetary reserves decreased in (2009) to record negative ratios (-11.6%) resulting from the crisis The global financial and the decrease in the volume of global exports and oil prices, after which the volume of reserves increased, until its highest amount reached in (2013), reaching (90.647.00) billion dinars, with a change of (10.5%), and in the years (2014-2015-2016) decreased Monetary reserves to record negative ratios of (-14.6, -17.9- and 15-), respectively, affected by low global oil prices and incomes. To the stage of financial scarcity.

As for currency exchange rates, it witnessed a significant decrease after 2003, as it decreased from (1435) dinars against a US dollar to (1190) dinars in (2016), in which the exchange rate became almost stable during most of the study years, and the reason is due to the monetary policies and measures carried out by the bank The central one, including ending the fixed exchange rate system and operating the managed floating exchange rate system, as the exchange rate is determined according to the mechanism of supply and demand controlled by the central bank (15).

Table (4): Monetary variables in Iraq (2004-2017) one trillion dinars

Exchange rate Dinar versus U.S. dollar	Rate The change in Cash reserves%	Cash reserves R	Change in monetary base%	Monetary base MB	Currency in Trading Currency in circulation	Money supply Wide M2	Narrow cash offer M1	year
1435	-	13.652.52	-	12.2	7.2	12.3	10.1	2004
1472	45.7	19.901.40	13.1	13.8	9.1	14.7	11.4	2005
1467	33.5	26.571.76	26.8	17.5	11.0	21.1	15.5	2006
1255	43.8	38.217.00	64.5	28.8	14.2	27.0	21.7	2007
1193	53.6	58.718.07	48.8	42.9	18.5	34.9	28.2	2008
1170	11.6-	51.872..69	5.5	45.3	21.8	45.4	37.3	2009
1170	14.1	59.228.92	18.7	53.8	24.3	60.4	51.7	2010
1170	20.5	71.410.61	9.1	58.7	28.3	72.2	62.5	2011
1166	14.8	82.001.28	7.8	63.4	30.6	75.5	63.7	2012
1166	10.5	90.647.00	15.6	73.3	35.0	87.7	73.8	2013
1166	14.6-	77.363.25	9.6-	66.2	36.1	90.7	72.7	2014
1187	17.9-	63.505.44	12.5-	57.9	34.9	82.6	65.4	2015
1190	15-	53.935.56	8.1	62.6	42.1	88.1	70.7	2016

Source: Central Bank of Iraq, General Directorate of Statistics and Research, annual bulletins, Baghdad.

7 - Measurement and analysis of the equation of financial discipline:

The general formula for this equation is as follows:

$$\Delta D = \Delta MB + \Delta d - e\Delta R \quad (16)$$

As:

ΔD = Change in the annual budget deficit (budget deficit index).

ΔMB = Change in the monetary base, noting that: $MB = C + R$).

$R = (E + R_d + R_t)$ The amounts held by the public in the form of cash, $R = (E + R_d + R_t)$.

E (It represents the excess reserves held by commercial banks.

R_d) It represents the amounts that banks deduct from cash reserves to meet the obligatory reserve on current deposits in the local currency, i.e. meaning (the ratio of the mandatory reserve to current deposits in the local currency).

R_t) The amounts that banks deduct from their cash reserves to meet the mandatory reserve on savings deposits, i.e. (meaning the ratio of the mandatory reserve to savings and long-term deposits in local currency).

Δd = The change in the total public debt, e = Local currency exchange rate.

ΔR = Change in foreign exchange reserves.

The basic idea of the equation above is that fiscal discipline is achieved in coordination between the fiscal and monetary policies, as the central bank can purchase bonds offered by the government, and then increase government debt (Δd), and this explains the positive sign of this variable in the equation of financial discipline, meaning that it can finance deficit in the public budget through the issuance of government bonds. The deficit can also be funded through the issuance of cash and an increase in the monetary base, which explains the positive relationship between the monetary base (ΔMB) and financial discipline represented by the budget deficit. Also, foreign currency reserves (ΔR) can be reduced, and the local currency exchange rate may be reduced against the US dollar (e) If it is necessary for the government to borrow from the reserves for the purpose of financing the deficit in the public budget, this explains the negative relationship between the variable ($R\Delta e$) and financial discipline.

In order to achieve financial discipline, total spending must not exceed the quantities set for it in the public budget, or the fiscal deficit does not exceed a certain percentage of the gross domestic product, so that the estimate of government spending is in light of the available financial capabilities and not according to the financial need presented by the units and various administrative bodies, and this is done by raising the efficiency of spending to the highest degree possible and reducing wasteful and extravagant aspects and trying to achieve a balance between public expenditures and the maximum that can be managed from public revenues, and when the financial discipline is not invoked, the expenditures exceed the revenues that create a fiscal deficit (which necessitates the need for public financing) as the government needs financing through debt or issuance of cash, both of which have long-term negative consequences. To this end, excessive borrowing and debt accumulation must be avoided, the need to maintain a balanced budget, and the need to maintain liquidity, as it is not sufficient to be for you have a balanced budget during the fiscal year, and the government should always have enough cash to pay for the month's expenses.

From all of the above, it is clear that there is a close relationship between the budget deficit and financial discipline, and one cannot imagine one in the absence of the other. This is what prompted us to use the budget deficit index to express financial discipline in the Iraqi economy.

Table (5): variables of the financial discipline formula

ΔeR represents the product of the exchange rate times the change in foreign currency reserves (third independent variable)	ΔR represents the change in foreign currency reserves	e represents the exchange rate of the local currency against the US dollar	Δd represents the change in total public debt (a second independent variable)	ΔMB represents change in monetary base (first independent parameter)	$D\Delta$ represents financial discipline (dependent variable)	year
-	-	1435	-	-	-	2004
67270.4	45.7	1472	33.5	13.1	602.5	2005
49144.5	33.5	1467	3.8-	26.8	20.8	2006
54969	43.8	1255	14.8-	64.5	35.4	2007
63944.8	53.6	1193	17.6-	48.8	14.6-	2008
-13572	11.6-	1170	3.7	5.5	97.4-	2009
16497	14.1	1170	9.4-	18.7	87.2	2010
23985	20.5	1170	4.2	9.1	68.1	2011
17256.8	14.8	1166	6.6-	7.8	1.5-	2012
12243	10.5	1166	1.5-	15.6	63.9-	2013
17023.6-	14.6-	1166	5	9.6-	55.2	2014
-21247.3	17.9-	1187	31.2	12.5-	52.1-	2015
-17850	15-	1190	17.9	8.1	222.5	2016
4284	3.6	1190	6	6.4	85.4	2017
2261	1.9	1190	6.9	2.3	1.2	2018

Source: drawing on tables (4,3,1).

Before conducting the estimation of the equation of financial discipline, we conducted a stability test for the used chain, and we found that all the variables are stable at the level, except for the monetary base variable that settled at the first difference, and this is illustrated in Appendix No. (1). Note that the error correction model was used to test the long-term relationship, and after testing that the model passes the standard problems as in Appendix (2). And to ensure the existence of the long-term relationship between the study variables by applying the ARDL Bounds Test as shown in Appendix (3), we used the error correction model to estimate the long-term relationship (ARDL Cointegrating And Long Run Form), as in Table (6) Below, the results of the long term were significant for the variable of change in the public debt (Δd) and not significant for the other two variables (ΔMB , $e\Delta R$), and the estimated equation was significant according to (F) test, and the explanatory variables explain what percentage (70%) Among the changes that occur in the dependent variable (financial discipline), as shown in Appendix (4).

Table (6): Error Correction Form and Long Term Relationship

ARDL Cointegrating And Long Run Form				
D Δ : Dependent Variable				
Selected Model: ARDL(1, 0, 1, 0)				
Date: 03/21/20 Time: 16:48				
Sample: 2005 2018				
Included observations: 13				
Cointegrating Form				
Variable	Coefficien t	Std. Error	t-Statistic	Prob.
ΔMB	1.114521	2.101102	-0.530446	0.6122
Δd	2.185321	2.598842	0.071309	0.9451
$e\Delta R$	1.002020	0.002147	0.940677	0.3782
CointEq(-1)	-1.432626	0.177123	-8.088316	0.0001
Cointeq = $\Delta D = 17.5603 - 0.7780 \Delta MB + 4.2988 \Delta d + 0.0014 e\Delta R$				
Long Run Coefficients				
Variable	Coefficien	Std. Error	t-Statistic	Prob.

	t			
ΔMB	1.777956	1.413672	0.550309	0.5992
Δd	4.298753	1.745754	2.462405	0.0433
$e\Delta R$	1.001410	0.001374	0.025700	0.3392
C	17.560302	18.910630	0.928594	0.3840

After estimation, we obtained the following formula for financial discipline:

$$\Delta D = 17.5603 - 0.7780 \Delta MB + 4.2988 \Delta d + 0.0014 e\Delta R$$

From this equation, it is clear that the parameters variables indicators affecting the budget deficit as an indicator of financial discipline did not coincide with the logic of economic theory and the formula of the financial discipline formula adopted with respect to monetary base variables (ΔMB). And the changes in monetary reserves are evaluated at the local currency exchange rate against the US dollar ($e\Delta R$) as it is the strongest foreign currency influencing the Iraqi economic reality, as the two parameters were not significant in the regression equation, while the other variable parameter indication, which is the change in the total Public debt (Δd is identical to the logic of economic theory in terms of positive correlation with financial discipline, as we explained earlier, and its parameter was significant in the estimated regression equation.

From here we conclude that financial variables have a significant impact on financial discipline, as increasing the government debt by one unit leads to an increase in the public budget deficit by (4.2988) units, this change in the budget deficit, which will negatively affect the financial discipline requires effective changes in the other two variables (monetary variables) in order to maintain an acceptable level of that discipline. As it is not possible to imagine the existence of financial discipline except with harmony and consistency between the three variables of the equation of financial discipline, that is, to achieve consistency between the fiscal and monetary policies. As the increase in government debt is compensated either by increasing the monetary base, or by reducing monetary reserves until financial discipline is maintained.

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Appendix

The appendices: Appendix (1) stability test

Variable	integrati on rank	Level test			First test differences		
		A	B	NON	A	B	NON
DΔ	I(0)	-6.874*	-7.475*	-7.559*			
ΔMB	I(1)	-2.920	-1.776	-1.513	-5.550*	-5.362*	-5.041*
dΔ	I(0)	-4.425*	- 3.084* *	-3.266*			
RΔ e	I(0)	-2.792	-2.119	-2.290*			
Level 1%		4.88642 6	4.0579 10	2.7549 93	5.1248 75	4.20005 6	-2.792154
Level 5%		3.82897 5	3.1199 10	1.9709 78	3.9333 64	3.17535 2	-1.977738
Level 10%		3.36298 4	2.7011 03	1.6036 93	3.4200 30	2.72898 5	-1.602074

* Meaning moral at the level of 5%

** Meaning moral at 10% level

A test with a general break and trend

B tested with only a breaker

NON testing without interruption and general trend

Appendix (2) standard problem testing

Date: 03/21/20 Time: 16:46
Sample: 2005 2018
Included observations: 13
Q-statistic probabilities adjusted for 1 dynamic regressor

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob...
		1 -0.37...	-0.37...	2.3081	0.129
		2 -0.19...	-0.38...	2.9545	0.228
		3 0.290	0.060	4.5945	0.204
		4 -0.44...	-0.47...	8.9193	0.063
		5 0.094	-0.31...	9.1350	0.104
		6 0.203	-0.27...	10.283	0.113
		7 -0.06...	-0.02...	10.414	0.166
		8 -0.00...	-0.28...	10.417	0.237
		9 0.013	-0.27...	10.426	0.317
		1... 0.003	-0.18...	10.426	0.404
		1... -0.03...	-0.08...	10.516	0.485
		1... 0.014	-0.18...	10.552	0.568

*Probabilities may not be valid for this equation specification.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.575509	Prob. F(5,7)	0.2817
Obs*R-squared	6.883400	Prob. Chi-Square(5)	0.2295
Scaled explained SS	1.844946	Prob. Chi-Square(5)	0.8702
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.165905	Prob. F(2,5)	0.3841
Obs*R-squared	4.134522	Prob. Chi-Square(2)	0.1265

Appendix (3) long-term relationship test

ARDL Bounds Test		
Date: 03/21/20 Time: 16:44		
Sample: 2006 2018		
Included observations: 13		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	32.91533	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Appendix (4) statistical tests

Dependent Variable: ΔD				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FD(-1)	-0.432626	0.177123	-2.442520	0.0446
MB	-1.114521	2.101102	-0.530446	0.6122
DE	0.185321	2.598842	0.071309	0.9451
DE(-1)	5.973185	1.532251	3.898308	0.0059
RE	0.002020	0.002147	0.940677	0.3782
C	25.15735	27.41602	0.917615	0.3893
R-squared	0.702249	Mean dependent var		26.63846
Adjusted R-squared	0.489569	S.D. dependent var		82.18375
S.E. of	58.71573	Akaike info criterion		11.28733

regression			
Sum squared resid	24132.76	Schwarz criterion	11.54808
Log likelihood	-67.36765	Hannan-Quinn criter.	11.23374
F-statistic	3.301909	Durbin-Watson stat	2.719017
Prob(F-statistic)	0.075430		
*Note: p-values and any subsequent tests do not account for model selection.			