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Analysis of fiscal sustainability and its impact on enhancing economic growth in Iraq for the period (2004-2021)

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Abstract:

The research aims to analyze and measure the reality of the Iraqi economy for the period (2004-2021)by applying the concept of financial sustainability and its indicators on economic growth. The paper's problem lies in the weak implementation of financial sustainability and indicators in most financial decisions in Iraq, negatively impacting economic growth in most economic sectors in Iraq. The paper started from the hypothesis that the weak implementation of financial sustainability in most of Iraq has contributed to the weakness of economic growth. The validity of the hypothesis has been proven using a standard model known as the Multiple Regression Model (ARDL), the study has yielded several results, the most important being the inverse relationship between the budget deficit as an independent variable and economic growth as a dependent variable. The budget deficit reached (59%) of the "gross domestic Product" indicating a deviation from the 3% deficit defined by the Maastricht treaty to ensure deficit coverage. Iraq's deviation from this percentage will lead to a decrease in economic growth. The paper also revealed an inverse relationship between public debt as an independent variable and economic growth as a dependent variable due to Iraq's violation of the golden rule, which dictates allocating debt to the investment side rather than consumptive spending.

Paper type: Research paper**.**

Keywords : Budget deficit, Public debt, Economic growth, Tax gap, Fiscal sustainability, Oil revenues,.

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1. Introduction:

Sustainability is an important financial concept for many economists and international organizations in recent years because of the economic and social challenges that the world has witnessed. Iraq is one of these countries that suffered from the problem of inefficiency in the use of resources. Iraq still depends on its revenues oil in the rate of 85% compared to other resources. This imbalance led to an increase in financial debt to more than 53% of gross domestic product (GDP). So, the government finds it difficult to provide sufficient revenues to meet the needs of society, which exposes it to the risk of economic collapse especially since most debt is used for consumption, not for investment. It led to Iraq's departure from the principle of the golden rule of the Maastricht treaty, especially in light of the decline amid the political and economic crises that Iraq went through**.**

1.1. Literature review :

There are some previous studies that addressed the concept of financial sustainability as follows:

Ismail's study (2022) demonstrated the importance of the relationship between financial sustainability and the budget deficit by analyzing the general budget using the descriptive analytical aspect. the research is based on the hypothesis that financial sustainability has positive effects on the path of sustainability in Iraq. The most important finding of the research is that the rule of controlling public spending is the most important that must be applied in Iraq because of the advantages and positive effects it has achieved on all of Iraq's overall variables.

Hassan's study (2022) indicated to provide a statement the impact of financial sustainability on economic growth. the analytical approach was used based on data issued by official authorities in Iraq. the research hypothesis was that indicators of financial sustainability affect the achievement of economic development in Iraq. the study concluded that it is necessary to finance investment expenditures for economic projects in order to diversify the resources of economic sectors that will reduce waste in foreign reserves. The researcher concluded that it is necessary to reduce the control of the oil sector over the gross domestic product in Iraq.

the Noiran,(2021) the study aimed to test the economic relationship between financial sustainability and public debt in Jordan, using the method and statistical analysis for the period (2000 - 2020). the study stated that financial policy in Jordan faces unprecedented challenges and imbalances that have contributed to weakening the ability to achieve financial sustainability. the study showed that the Jordanian government relies on borrowing in general due to lack of resources and the influence of regional conditions. the research hypothesis was Jordan's inability to achieve financial sustainability in most years of the study. the research also recommends increasing reliance on self-resources to cover the state deficit, and reducing reliance on borrowing to finance productive projects

Bn dieas (2021) analyzed the relationship between financial sustainability and taxes in Algeria, through the use of financial sustainability and its indicators that can be relied upon to avoid the government's financial turmoil and crises in the future. the paper is based on the hypothesis that enhancing financial sustainability in Algeria is linked to rationalizing spending and diversifying taxes. to prove the hypothesis, the research relied on the Multiple Regression Model)ARDL(model. the research found that the financial situation in Algeria is not consistent with sustainability, as the government did not undertake to rationalize spending and diversify sources of income, especially taxes.

Al-Amouri's study (2020) indicated and analyzed the relationship between financial sustainability and economic growth in Algeria for the period (1990-2018). As for the research hypothesis adopted by the research, Algeria can achieve financial sustainability in the medium and long term by relying on its production capabilities of crude oil, relying on this. the researcher recommends increasing the per capita share of the gross domestic product, as it has a good impact on the lives of individuals and on the economic structure of the government.

Safwat's study (2017) indicated and analyzed the relationship between financial sustainability and the public budget deficit through the analytical aspect. the paper 's hypothesis assumes that rationalizing spending has a direct and indirect positive effect, and is related to increasing the government's capacity and practicing its financial activity in society. the most important conclusion reached by the research mechanism is that the government in Iraq does not have a long-term spending strategy, as it raises spending when it is intended to do the opposite, and that spending is flexible towards the rise but not flexible towards the decline. the researcher recommends achieving consistency between the state's financial policy and public debt management, through exchanging information that contributes to achieving the requirements of financial sustainability.

Abdel Rahman (2016) indicated and analyzed the relationship between financial sustainability and taxes using the Multiple Regression Model (ARDL) model. the study concluded that financial sustainability in Indonesia was consistent with the tax policy, through the government following a sustainable financial policy that contributed to reducing the distorting costs of taxes that affect financial sustainability in Indonesia.

The problem of the research is that the government of Iraq does not implement financial sustainability indicators well in most financial decisions, which caused a decline in economic growth in most economic sectors. The goal of the research is to apply financial sustainability indicators that will contribute to reducing the negative effects of the deficit and government debt, which negatively affect economic growth in Iraq.

1.2.Material and Methods:

In this section, the theoretical literature between financial sustainability indicators and their impact on economic growth is presented in addition to using the Multiple Regression Model (ARDL) for the period (2004-2021) to prove or deny the research hypothesis that assumes that there is no causal relationship between financial sustainability indicators and long-term economic growth. Financial sustainability indicators can be presented as independent variables, and economic growth as a dependent variable from table (1).

Table1 :Description of the standard model

Dependent variable Economic growth	independent variables fiscial sustainability
Economic growth (GRO)	Budget deficit (BUD)
	Government debt (DGD)
	Tax gap (TG)
	Oil revenues compared to other revenues (ROIL)

1.3. Research hypothesis:

The research hypothesis assumes the existence of a causal relationship between financial sustainability as an independent variable, and economic growth as a dependent variable. The research hypothesis assumes the following:

1. There is an inverse relationship between the budget deficit and economic growth.
2. There is an inverse relationship between public debt and economic growth.
3. There is a direct relationship between the tax gap and economic growth.
4. There is a direct relationship between oil revenues and economic growth.

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2. The concept of fiscal sustainability:

The sustainability of public finances has become one of the most prominent topics on the international scene, because it reflects the future challenges that public finances may face due to the increasing level of deficit and public debt resulting from the excessive level of current expenditures at the expense of investment expenditures, which leads to an exacerbation of the financial burden that generations can bear. Which limits the levels of community well-be. Failure to use fiscal policy tools in an irregular manner could push the economy towards dangerous trends that could lead it towards the government being unable to fulfill its financial obligations towards members of its society or towards not achieving financial sustainability.

(Abdel Raouf,2021) Public debt is considered sustainable if the economy is able to repay the debt without exhausting individuals by paying taxes and the government crowding out the private sector by raising interest rates on funds prepared for borrowing by individuals. The first beginning to analyze and use the concept of financial sustainability was in the year (1923) when the problem of public debt facing France began to increase significantly, and the English economist (John Neymar Keynes) pointed out the necessity of the French government following a sustainable financial policy. According to most economists, the problem of financial unsustainability appears when the public debt ratio reaches higher than the gross domestic product, and when government revenues are insufficient to finance the costs associated with the new monetary issuance of public debt. Some economists have argued that financial sustainability is linked to the government's financial solvency(Abdul-Aziz, 2020).

the definition of financial sustainability, many economists disagreed about giving a unified definition of financial sustainability due to different points of view. Some economists linked the definition of financial sustainability to the state’s ability to repay debts and the quality of revenues in the present and future (temporary budget constraint), in other words, the government’s ability to implement its financial policies from Exposure to the risk of financial default (Abdul Azim,2015)

the other definitions, it based its definition of financial sustainability on the controlling financial rules that were issued in accordance with the Maastricht Treaty for the European Union countries. Some economists, such as Blachard, have explained that public finances are in a sustainable position when the debt-to-GDP ratio remains constant, but in the event of changes or emergency events, the ratio must return to what it was the first time without the need to reschedule debts or do By borrowing to cover the shortfall in the government budge. (Yilmaz ,2007).

the International Monetary Fund defines financial sustainability as proving the ratio of debt to the gross domestic product or specifying a ratio that should be targeted. The International Monetary Fund has left this ratio open based on the economic strength of the government, which varies from one country to another, on which future expectations are built in light of the policy that is being implemented. Agreed upon for a limited period, usually five year.

the reason why the countries of the world seek to become sustainable, so that they can borrow to cover their financial deficits on fair terms and low interest rates. the government's loss of its financial sustainability leads to a decline in other countries' confidence in it due to its weak ability to repay its debts, which leads to creditors stopping lending to it or lending to it, but at high interest rates. In addition to the above, there are many factors that affect the government's financial sustainability, including the amount of money the government owns. Of its resources or market power, as well as its international alliances(Al-Mamouri, 2020)

P-ISSN 2518-5764
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2.2. Fiscal sustainability indicators:

2.2.1.Debt to GDP ratio:

It is considered one of the most important indicators that give a picture of the total public debt, and reliance has been placed on this indicator, which is a basic condition for joining the European Union according to what was stated in the Maastricht Treaty in the year (1992). the debt percentage in this indicator must not exceed 60% of Gross Domestic Product, exceeding this percentage is considered an indicator of the risk of increasing debt and the inability to repay it there is another opinion by some economists that the debt ratio should not exceed 70% of the gross domestic product. the decrease in the value of the index indicates the strength of the government and its economy in repaying the public debt (Kazim, 2016).

2.2.3.The ratio of the budget deficit to the gross domestic product:

It is one of the important indicators that leads to reducing the general budget deficit by reducing government spending, especially consumer spending. The European Union countries warned, in accordance with the Maastricht Treaty, that the spending ratio should be 3% of gross product, and when the budget deficit increases with increased spending, it leads to a decrease in the impact of public spending as well as tax cuts. Especially since the budget deficit requires large funds to cover it, which crowds out the private sector and raises interest rates. (Al-Ani, 2017)

2.2.4.Tax gap index:

This indicator measures the difference between targeted taxes and actual taxes. The use of this indicator increased after two books by economist Blachard in the year (1990). Taxes are considered one of the important financial tools that the government uses to cover its expenses. This indicator helps reduce the government's dependence on the deficit to meet its expenses, but increasing the rate of taxes on individuals leads to the collapse of the private sector, and thus the government will lose an important part of its revenues that individuals used to pay in taxes (Hassan, 2018).

2.2.5.Oil revenues compared to other revenues:

Oil revenues play an important role in sustaining the financial situation of oil-producing countries by financing the government's general budget. There are two indicators used to clarify the role of oil revenues in strengthening the financial situation. The first is the ratio of oil revenues to public revenues, while the second indicator is the ratio of oil revenues to public exports, which reflects the degree of the government's dependence on oil revenues to finance its expenditures (Ahmed,2021).

2.2.6.The concept of economic growth:

Economic growth is represented in the sense defined by the economist Kuznets as a continuous and relatively regular increase in the gross domestic product, or average output, and economic growth is achieved by ensuring a continuous increase in national income at real prices over time, and thus increasing the incomes of individuals and wealth of the nation. All of this is demonstrated by developing society's productive capabilities, material and human, and raising the level of production efficiency by increasing the productivity of the labor component. In this context, we point out that achieving economic growth is linked to population growth rate, so the greater the economic growth rate, the better the population growth rate, because this leads to raising the standard of living of individuals. the goal of economic growth is also coupled with another goal, which is environmental protection. Achieving high rates of growth must be done while minimizing the actual costs of obtaining products, such as environmental costs. According to Kaldor, the economic growth rate must reach 6-7% and is measured by the growth rate of the gross domestic product (GDP). Kaldor stipulated that the economic growth rate be greater than the population growth rate (Khabazi, 2017).

P-ISSN 2518-5764
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2.2.6.1. Comparison between growth and economic development:

1.economic development refers to the rise in real national income due to structural changes in the economy, While the concept of economic growth refers to the increase in the value of everything produced within the economy.

2.the scope of development is broader compared to the concept of growth, the scope of economic growth is narrower compared to the scope of development .

3.economic development is a coordinated process, growth is the final outcome after a period of these processes.

4.The concept of economic development is generally used in developing countries, While the concept of growth is used in developed countries.

5.Development is a fast process, Growth is a slow process.

6.Economic development is not possible without growth , Economic growth is possible without development.

7.Economic development requires government intervention as all development policies are shaped by the government , Economic growth is an automatic process that may or may not require government intervention (Aouni,2017).

3.The economic relationship between financial sustainability indicators and economic reality:

3.1.the relationship between the budget deficit to economic growth:

There are many theories that explain the relationship between growth and the budget deficit, the most important of which are Keynesian and classical theories. The classical theory sees that there is no relationship between growth and the budget deficit because of its belief that the budget deficit leads to an imbalance in the economy due to the high interest rate on funds prepared for borrowing that the government uses to fill the deficit. In addition, the classical theory assumes that the economy balances automatically based on the assumptions of the theory or What is known as the invisible hand As for the Keynesian theory, which explained the existence of a direct relationship between the budget deficit and economic growth, especially after the Great Depression in (1929) and the increase in the volume of unemployment, the Keynesian theory worked to increase the amount of the budget deficit, which leads to stimulating aggregate demand to get out of the economic recession crisis (Ismail, 2022).

3.2.The relationship between public debt to economic growth:

Economic studies have shown that there is a relationship between public debt and economic growth, and there are several different trends regarding the economic relationship between the two variables. The first trend confirms the presence of a negative impact of public debt on economic growth according to the classical and neo- classical theory. The reason for this is that public debt constitutes a burden on the economy. In general, which disturbs the automatic balance, public loans lead to a reduction in the volume of private savings, which reduces investment. (Elham, 2020). As for the Keynesian theory, which declared that levels of public debt are not as important as other economic factors that affect the relationship inversely, such as the interest rate, low interest rates make the economic growth rate higher than debt and contribute to achieving growth, and the opposite happens when the interest rate is high, which It leads to a rise in the debt ratio higher than economic growth (Al-Shallal, 2021).

3.3.The relationship between the tax gap to economic growth:

Taxes are considered an important source used by fiscal policy to increase economic growth, especially after increasing government intervention in economic affairs. The relationship between economic growth and the amount of taxes is a direct relationship that contributes to increasing economic growth when the taxes paid by individuals are directed towards serving individuals and increasing the amount of their economic activity.

P-ISSN 2518-5764
E-ISSN 2227-703X

The Laver Curve is the best evidence of this. The relationship between economic growth and taxes becomes an inverse relationship when the government targets a certain amount of taxes that negatively affects individual activity, which increases the decline in economic growth. (Al-Rawi, 2019).

3.4. The relationship between oil revenues to public:

There is a direct relationship between oil revenues and economic growth, especially in oil-producing countries that rely mainly on oil imports to cover their expenses, which contribute to increasing economic growth. There is another economic opinion that these countries' heavy reliance on this source of revenues makes them vulnerable to economic crises or what is known. The Dutch disease is due to its neglect of many economic resources that were invested would contribute in one way or another to increasing economic growth(Ali,2019).

This is confirmed by many economic reports and studies on developing countries, especially when oil markets are exposed to a decline in prices, which contributes to a decline in economic growth. There are some examples of some developing countries that have diversified their sources of income, including Malaysia, Indonesia, Chile, Korea, India, and China(Al-Khatib, 2014).

4. Analyse the results of the model used:

The relationship of economic growth to financial sustainability variables:

$$gro = F(BUD \text{ ، } DGD \text{ ، } TG \text{ ، } ROIL) \quad \textbf{(1)}$$

$$gro = B_O + B_1 BUD - B_2 DGD - B_3 TG + B_4 ROIL + UT \quad \textbf{(2)}$$

4.1: Data rest:

According to the Phelps-Perron test, it appears that the financial sustainability indicators as independent indicators, including the budget deficit, government debt, tax gap, and oil revenues compared to public revenues, were stationary at the original level of the data (Level), and the same applies to economic growth as a dependent variable. Therefore, all data do not suffer from the unit root, and therefore we accept the alternative hypothesis (H1), which states that there is a counteraction relationship between financial sustainability indicators as independent variables and economic growth as a dependent variable when the probe ratio is less than 5%, and we reject the null hypothesis (H0), which states that there is no counteraction relationship. Common between independent and dependent variables.

Table2:Philips-Peron test

	At Level				At First Difference		
Variables		With constan	With constan & Trend	Without constan & Trend	With constan	With constan & Trend	Without constan & Trend
bud	I(0)	0.1288	0.1031	0.0313	0.0000	0.0003	0.0000
dgd	I(0)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
roil	I(0)	0.0221	0.0323	0.7796	0.0000	0.0000	0.0000
tg	I(0)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
gro	I(0)	0.0279	0.3132	0.0052	0.0000	0.0000	0.0000

Source: Prepared by the researcher based on the (Eviews 10) program

4.2.Tests of the autoregressive lag (ARDL) model:.

After conducting a stationary data test, it was found that the variables were stationary at the level of the time series. through this, we can conduct an ARDL model test on these variables, which is one of its most important conditions for all data in the series to be stationary at the level, or to be a mixture between the level and the first difference, as in The table above.

P-ISSN 2518-5764
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Table3:Results of testing the ARDL model for economic growth (GRO)

Variables	Coefficient	Std. Error	t-Statistic	Prob	
GRO(-1)	0.044238	0.111175	0.397912	0.7026	
BUD	0.945913	0.240863	3.927177	0.0057	
DGD	-2.348680	0.287570	-8.167336	0.0001	
ROIL	-0.089585	0.129198	-0.693395	0.5104	
TG	4.148575	0.890114	4.660725	0.0023	
Adjusted R-squared	0.992408	Durbin-Watson stat	1.481529	Prob(F-statistic)	0.000000

Source: Prepared by the researcher based on the (Eviews 10) program

From the table above it is clear that the ARDL model works to automatically determine the time lag periods for the dependent and independent variables of the standard models. the amount of time slowdown for the economic growth variable known as (GRO) amounted to one degree of time slowdown (GRO(-1), and as for the rest of the independent variables, see Appendix (1). the results of the economic growth model also showed that the correction coefficient test (Adjusted R- squared) was explained by the amount (99%) of the effect of the independent variables of financial sustainability on the variable of economic growth. As for the remainder of the percentage which amounted to (1%), its explanation was attributed to other variables that were not included in the economic model. As for the value of (F-statistic), it was significant according to what we are referring to is the value of (prop), which reached (0.000000), which indicates the significance of the economic model when the value of (Durbin-Watson stat), which reached (1.766636), is greater than the value of (F-statistic), which indicates that the model is free of the problem of spurious regression.

4.3. Bounds test for counteraction:

Table4:Bound Test results for economic growth

Test- Statistics	Value	k
F-statistics	25.20599	4
		Critical value Bounds
Significance	I(0) Bounds	I(1)Bounds
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Source: Prepared by the researcher based on the (Eviews 10) program.

The bounds testing program made it easy for the researcher to test counteraction, by comparing the value of (F-statistics) extracted from the table above, which amounted to (25.20599), higher than the value of the two lower bounds, which represents (I(0) Bounds, and the higher, which represents (I(1). (Bounds) at a significant level (5%), which indicates the existence of a counteraction relationship (long-term equilibrium relationship) between economic growth (gro) as a dependent variable and financial sustainability as independent variables that included (budget deficit, government debt, Tax gap, Oil revenues.

P-ISSN 2518-5764
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4.4. Model test estimated parameters (in the short run) and unconstrained error correction factor (UECM):

This test shows estimation of parameters to reveal the degree of influence of the independent variables of financial sustainability on economic growth as the dependent variable and one of the Kaldor square variables, by determining the type of short-term relationship between the variables, whether it is a direct or inverse relationship according to the sign of the value of the coefficient (Coefficient). This test also measures the speed The model returns to the long-run equilibrium state through an unconstrained error correction variable (UECM).

Table5:Estimation results of the short-run error correction model for economic growth

Variables	Coefficient	Std. Error	t-Statistic	Prob
GRO(-1)	2.638287	0.0000	15.098349	0.0000
BUD	0.945913	0.102288	9.247518	0.0000
DGD	-2.348680	0.177244	-13.251103	0.0000
ROIL	0.089585	0.072648	1.233140	0.0053
TG	0.0002	0.598758	6.928636	0.0002
CointEq(-1)	-3.594050	0.223211	-16.101602	0.0000

Source: Prepared by the researcher based on the outputs of the variables in the (Eviews 9) program.

From the table above it is clear that there is a direct, short-term relationship between the budget deficit as an independent variable and economic growth as a dependent variable. Increasing the budget deficit by one unit leads to an increase in economic growth by (0.94) at a significant level of (0.0000) assuming other factors remain constant. The explanation for this is that the budget deficit pushed the Iraqi government to follow an expansionary financial policy, which led to an increase in public spending, especially current spending (salaries and wages), as Iraq allocates 80% of the budget to current spending, while the remaining percentage is allocated to investment spending, which encourages... The Iraqi government agreed to increase oil production, given that Iraq is an oil rentier country to cover the deficit. The relationship of public debt as an independent variable to economic growth is an inverse relationship. Increasing debt by one unit leads to a decrease in economic growth by (-2.348680). The fact is that public debt exists to cover the budget deficit and that most of the debt goes to paying salaries and wages and not to establishing important investment projects that contribute to increasing economic growth. There is also a direct relationship between oil revenues as an independent variable and economic growth. Increasing oil revenues by one unit leads to an increase in economic growth by (0.089585), since the Iraqi economy depends very heavily on oil revenues, any increase in oil prices and quantities will lead to an increase in economic growth, which is what happened. As for tax revenues as an independent variable and economic growth as a dependent variable, they have a direct relationship. Increasing tax revenues leads to an increase in economic growth by one unit (0.0002), since the Iraqi government has moved towards increasing this resource, especially in light of the oil crises, to reduce the severity of the shocks to which the oil sector was exposed. The results in the table above showed that the value of the error correction factor reached (-3.594050), which is a negative and significant value at the probability level (0.000), which reflects the existence of an equilibrium relationship moving from the short-term to the long-term.

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4.5. Testing of long-run estimated parameters:

In this test, the estimation of variables in the long term is clarified and the degree of influence of the independent variables of financial sustainability on economic growth as a dependent variable is revealed, as well as the type of relationship between them is determined.

Table6:Results of estimating the error model and the long-term relationship of the economic growth model

Variables	Coefficient	Std. Error	t-Statistic	Prob
BUD	1.544179	0.079387	19.451287	0.0000
DGD	-0.086799	0.031255	-2.777112	0.0274
ROIL	0.161238	0.057816	20788832	0.0270
TG	-0.870486	0.180588	-4.820281	0.0018

Source: Prepared by the researcher based on the (Eviews 10) program

From the above table, it is clear that there is a direct relationship between the budget deficit as an independent variable and economic growth as a dependent variable. Increasing the budget deficit by one unit leads to an increase in economic growth (1.544179) and at a level of significance (0.02). The budget deficit contributes to stimulating the productive sectors by increasing production in the long term, especially after most producers became certain that consumer spending would rise. As for the relationship of public debt as an independent variable to growth Economic as a dependent variable, it is an inverse relationship. Increasing public debt by one unit leads to a decrease in economic growth (-0.08) at a significance level (0.027). The majority of the debt is spent on paying the obligations of the Iraqi government, including wages, salaries, and services, which do not contribute sufficiently to increasing growth. The economic impact in the long term, especially since Iraq is like other neigh boring countries in its weak production flexibility, in addition to Iraq exceeding more than 60% of its public debt to GDP ratio, which weakens the ability of the Iraqi economy to pay its debts and emerge from the economic crisis. As for the relationship of oil revenues as an independent variable to economic growth, it is a direct relationship. Increasing oil revenues by one unit leads to an increase in economic growth (0.16) at a significance level of (0.0270). The explanation for this is that Iraq depends on the oil sector for its economic growth (60-70). %) than other sectors, despite the global oil price crises that weaken the strength of its economic growth. The relationship of tax revenues as an independent variable to economic growth is an inverse relationship. Increasing tax levels will negatively affect individuals' ability to pay, leading to the loss and closure of most commercial professions, which negatively affects economic growth.

4.7.Diagnostic tests for estimated residuals:

To obtain correct and accurate results from previous model tests, we will work on diagnostic tests as follows:

4.7.1Testing the autocorrelation problem:

This test is used to verify the extent to which the estimated model is free from the problem of residual correlation.

Table7:Results of testing the autocorrelation problem (LM) for the economic growth model (GRO)

Breusch-Godfrey Serial Correlation LM Test			
(F-statistic)	33.40215	Prob- F(2,5)	0.0813
(Obs*R-squared)	29.77172	Prob- Chi-Square(2)	0.2000

Source: Prepared by the researcher based on the (Eviews 10) program

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From the results of the test table above, it is clear that the value of (F-statistic) lies at the probability level (0.0813) and is greater than the value of (0.05%). We conclude from this that there is no autocorrelation problem and we accept the null hypothesis (H0) which states that there is no autocorrelation problem in the results of the test table. There is a problem of autocorrelation between random residuals. We reject the alternative hypothesis (H1) which indicates the existence of an autocorrelation problem between random residuals. Therefore, this test enhances the accuracy of the results of the ARDL model.

4.7.2.Testing the problem of heterogeneity of variance (ARCH Test):

This test is used to verify the extent to which the estimated model is free from the problem of difference in variance of the residuals.

Table8:Results of the variance invariance test. Error limits (homogeneity of variance) for the economic growth model

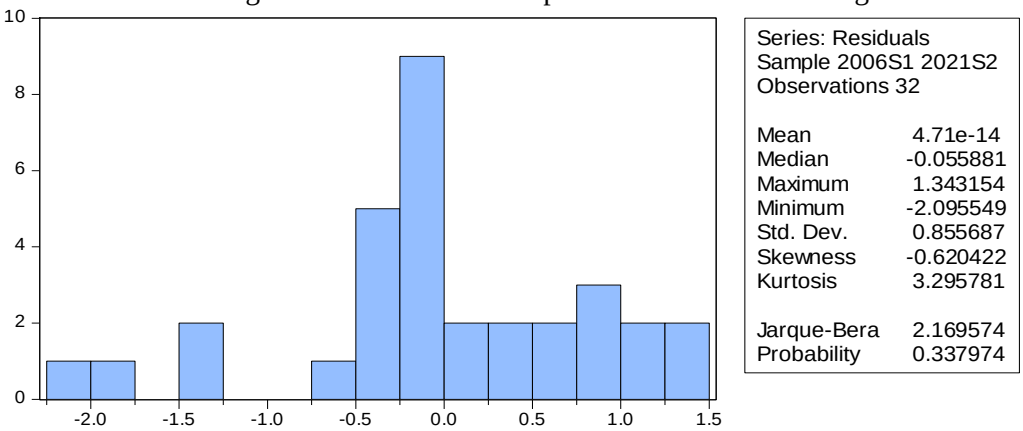
"Heteroskedasticity -Test: ARCH"			
()F-statistic	1.984970	Prob- F(4,23)	0.1305
(Obs*R-squared)	7.185439	Prob- Chi-Square(4)	0.1264

Source: Prepared by the researcher based on the (Eviews 10) program

It is clear from the table above that the results of the ARCH Test show that the value of the F-statistic is at the probability level (0.1305), which is greater than (0.05). This indicates that the model is free of the problem of variance, and therefore we must accept the hypothesis. The null statement states that there is no problem of difference in variance between random residuals, and we reject the alternative hypothesis that states that there is a problem of difference in variance between random residuals and that this test enhances the accuracy of the results of the model (ARDL).

4.7.3.Testing the problem of normal distribution:

Figure 1: Results of testing the normal distribution problem for the economic growth mode



Source: Prepared by the researcher based on the (Eviews 10) program

From the above figure, it is clear that the value of (F-statistic) was at the probability level (0.337974) and thus it is greater than (0.05). This indicates to us that the model does not suffer from the problem of normal distribution. Therefore, we accept the null hypothesis which states that there is no problem in the distribution. Normal, we reject the alternative hypothesis that there is a problem with the normal Buffy distribution, which strengthens this test that enhances the accuracy of the results of the ARDL model.

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5.Conclusion:

The results of the research showed that the budget deficit in Iraq increased by 59% of the GDP, which indicates a significant increase from what the Maastricht Treaty specified as an optimal percentage of 3% of the GDP to ensure coverage of the deficit. almost. Iraq's deviation from the optimal ratio will negatively affect most of its economic activity, including economic growth. The analytical results also showed that a percentage (80-85%) of the budget deficit in Iraq is spent on the consumption side, while the rest of the percentage is spent on the investment side, unlike developed countries where the majority of income is. The deficit amount is invested in the investment side, which contributes significantly to reviving the economy, according to the policy. Intentional disability. As for the public debt in Iraq, it did not exceed more than 60% of the gross domestic product, which made it identical to the optimal ratio approved by the Maastricht Treaty, except for one year from the research period, but most of the debt and the amount were spent on the consumption side instead of investment, which made Iraq violate The principle of the golden rule that stipulates that the debt amount be allocated to the investment side. Otherwise, the government will suffer from accumulating its deficit to a greater extent in the future. The results also showed There is an inverse relationship between debt as an independent variable and economic growth as a dependent variable because most of the debt is spent on government obligations of wages, salaries, and services, which do not contribute sufficiently to achieving economic growth. Increase economic growth in the long term. The results of the econometric analysis also showed that there is an inverse relationship between the level of taxes as an independent variable and economic growth as a dependent variable. Increasing tax levels disproportionately to the economic situation negatively affected individual's ability to pay, especially in times of crisis, which contributed to the government losing part of the tax driving force.

Authors Declaration:

Conflicts of Interest: None

-We Hereby Confirm That All The Figures and Tables In The Manuscript Are Mine and Ours. Besides, The Figures and Images, Which are Not Mine, Have Been Permitted Republication and Attached to The Manuscript.

- Ethical Clearance: The Research Was Approved By The Local Ethical Committee in The University.

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الاستدامة المالية ودورها في تعزيز النمو الاقتصادي في العراق للمدة (2004-2021)

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هذا العمل مرخص تحت اتفاقية المشاع الابداعي نَسب المُصنَّف - غير تجاري - الترخيص العمومي الدولي 4.0
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مستخلص البحث:

تهدف الورقة إلى تحليل وقياس واقع الاقتصاد العراقي للفترة (2004-2021) من خلال تطبيق مفهوم الاستدامة المالية ومؤشراتها على النمو الاقتصادي. ان مشكلة البحث تكمن في ضعف تطبيق مؤشرات الاستدامة المالية في معظم القرارات المالية في العراق، مما اثر سلبا على النمو الاقتصادي في معظم القطاعات الاقتصادية في العراق، لذا انطلقت الورقة من فرضية مفادها أن ضعف تنفيذ الاستدامة المالية ومؤشراتها في معظم القطاعات الاقتصادية في العراق قد اسهم في ضعف النمو الاقتصادي. لذلك لا إثبات صحة الفرضية تم استخدام النموذج القياسي المعروف بنموذج الانحدار المتعدد (ARDL)، وقد أسفرت الدراسة عن عدة نتائج أهمها العلاقة العكسية بين عجز الموازنة كمتغير مستقل والنمو الاقتصادي كمتغير تابع. عامل. وبلغ عجز الموازنة 59% من الناتج المحلي الإجمالي، مما يشير إلى انحراف عن العجز بنسبة 3% الذي حددته معاهدة ماستريخت لضمان تغطية العجز. وانحراف العراق عن هذه النسبة سيؤدي إلى انخفاض النمو الاقتصادي. كما كشفت الورقة عن وجود علاقة عكسية بين الدين العام كمتغير مستقل والنمو الاقتصادي كمتغير تابع بسبب مخالفة العراق للقاعدة الذهبية التي تقضي بتخصيص الدين للجانب الاستثماري بدلا من الأنفاق الاستهلاكي.

نوع البحث: ورقة بحثية

المصطلحات الرئيسة للبحث: الاستدامة المالية ، عجز الموازنة، الدين العام ، الفجوة الضريبية، النمو الاقتصادي