Measurement and Analysis of Financial Discipline Indicators and Their Impact on Some Indicators of Financial Sustainability in Iraq for the Period (2004-2021).

Nidal Hasan Jahil[1], Mohammad Mudlul AL-Sultani[2]

Abstract

The issue of financial discipline is considered one of the important topics that has received wide attention in many developed and developing countries alike, in order to enhance financial sustainability in a better way that contributes to achieve the desired economic development goals, as financial discipline is considered one of the most important modern tools in influencing financial discipline in any country all over the world, and its economic effects have emerged through global experiences, but its applications differed from one country to another due to the nature of the economic and social system prevailing in each country, and this is what has clearly appeared in the Iraqi economy through the lack of commitment to implementing standards and foundations related to financial discipline. In addition, there are many obstacles that prevent the application of these standards. Thus, the role of financial discipline in enhancing financial sustainability in the Iraqi economy was looked at, and the most important obstacles that represent an obstacle to the progress of financial discipline work were looked at and what it may be exposed to in the future by studying indicators of financial discipline in Iraq and demonstrating their impact on financial sustainability.

Keywords: *Financial Discipline, Financial Sustainability.*

Introduction

Public money is the main pillar in the construction of any state, which has a major role in the development and increase of the economic and social activity of the state, so the states have given great attention to the preservation of these funds and their maintenance from loss and tampering and are keen to be spent in the aspects specified in the general budget of the state.

That is why these countries have worked to establish specialized systems to control these funds through the use of international financial rules, which play a major role in financial discipline to maintain the government's financial position and thus ensure access to achieving financial sustainability for future generations and reduce the aggravation of the financial burden of those generations by adjusting the growth rates of public spending that these expenditures are thoughtful and appropriate to the growth rate of public revenues, which leads to the fact that the ratio of deficit to GDP is known and studied in advance and cannot be exceeded not only for the short term but also for the long term.

First Chapter: Research Methodology

The Search Problem

The research problem revolves around how to enhance financial sustainability through financial

---

[1] College of banking and Financial Sciences, University of Babylon, Iraq. Email: Nath1978al@gmail.com
[2] College of banking and Financial Sciences, University of Babylon, Iraq. Email: bus.mohammed.madlool@uobabylon.edu.iq

discipline, as the Iraqi economy suffers from financial indiscipline due to the adoption of a financial policy that lacks rational and rational spending of public revenues.

Research Hypotheses

The research is based on the main hypothesis that financial discipline leads to the optimal use of available financial resources and can lead to improving and raising the effectiveness and efficiency of financial management in achieving its goals in maintaining its financial capacity, which prevents and reduces the aggravation of the budget deficit in order to avoid the risk of financial default and maintain financial sustainability.

Research Objective

The research aims to diagnose the levels of financial discipline and financial sustainability in the Iraqi economy,and assess the impact of financial discipline in promoting financial sustainability ,indicating the extent of the Iraqi government's ability to achieve financial sustainability and the problems and obstacles that prevent that goal.

Research Methodology

In order to achieve the research objective and confirm its hypotheses, the descriptive, analytical and standard approach was adopted by studying the role of financial discipline and enhancing financial sustainability in Iraq for the period (2004-2021).

Limits of Research

The spatial boundaries of the research are the Iraqi economy, and the temporal boundaries of the study are the duration (2004-2021)

Research Structure

To take note of the aspects of the research, it was divided into four demands followed by conclusions and recommendations as follows.

The First Requirement: The theoretical framework of financial discipline.

The Second Requirement: The theoretical framework of financial sustainability.

The Third Requirement: Features of the relationship between financial discipline and financial sustainability. The relationship of fiscal discipline to the state budget.

Fourth Requirement: Measuring the impact of financial discipline indicators in some indicators of financial sustainability in Iraq.

The First Requirement: The Theoretical Framework of Financial Discipline

Definition of Financial Discipline

 Fiscal discipline is defined as a set of systems that guide the government in calculating public spending in line with public revenues, determining the deficit, public debt and tax burden ratios in order to ensure financial sustainability and promote macroeconomic stability, provided that the fiscal deficit does not exceed 3% of GDP (GDP), which means that total expenditures do not exceed the amounts specified in the budget, i.e. expenses are estimated in light of the available financial capabilities.(Ibraheem and Hamad,2022:407)

Fiscal discipline is defined as the ability of a government to maintain the health and integrity of its financial operations in the long term (Farage and Al-Ani,201846). Financial discipline is also defined as

the re-engineering of overhead expenses and the techniques of allocating financial resources, especially operational, that is, raising the degree of adequacy of the return of the expense itself compared to the cost of collecting the corresponding revenue. (Krojan,2015:155)

The Importance of Financial Discipline

The importance of financial discipline is manifested by the following points.

1-Financial discipline contributes to reducing the financial problems suffered by most countries, especially the deficit in the general budget and its repercussions on the economy and society.

2-To preserve public resources from waste and extravagance through the serious work of governments on the need to limit the growth of public spending due to the high risks of being unproductive spending (the best expenses are the least) . According to what financial economists see. (Unis,2004:47)

3-The importance of fiscal discipline is becoming increasingly important in promoting long-term growth, as curbing the deficit and achieving a surplus in the general budget is a form of saving, and with the rise of the latter, state-owned assets will increase and national income will rise in the future.

4-Fiscal discipline makes it possible to contain the deficit in the general budget instead of resorting to tax increases to secure more funds, and then maintain a stable financial environment compared to increased uncertainty.

Financial discipline creates the necessary foundations for creating a stable and predictable economic environment.

5-Financial discipline creates the necessary foundations for creating a stable and predictable economic environment.

Indicators of Financial Discipline and Its Measurement

Public Revenue Indicator

This indicator is one of the most important public finance indicators in the budgets of countries, and the relationship between public revenues and public expenditures reflects the percentage of each of them in the government's general budget during a specific year, the high rate of public spending on public revenues reflects the presence of a deficit in the government's annual budget, so financial discipline cannot be achieved, as some countries prepare their budgets with deliberate deficits, but in the case of high rates of public revenues over their expenses, they express a surplus in the government's general budget, so the philosophy of fiscal policy makers is to increase public spending more than public revenues, or vice versa, this is due to several factors, either for weak abilities Tax revenues should not be less than the limit that enables the government to carry out its duties, taking into account the tax burden of the economy as a whole, which expresses the part of GDP deducted to the government in the form of taxes.(Aib,2010:11)

 It can be seen from Table (1) that the ratio of public revenues to GDP exceeded the specified percentage (35%), with the exception of the years (2015, 20016 , 2017), in which the specified percentage reached (34.14% ‚27.62% ‚34.89%) consiquently.

General Expenditure Indicator

The volume of public spending and the way it is financed is one of the main determinants of economic stability, as the increase in operating expenses with the inflexibility of the production system to absorb the increase in aggregate demand exacerbates inflationary pressures.(Hassan,2016:19) The degree of

fiscal discipline can be shown by comparing the estimated volume of public spending with what has actually been implemented, if the actual public spending is equal to or less than the estimated spending, then there is a state of fiscal discipline, but if the actual spending exceeds the estimated spending, we are facing a state of fiscal indiscipline.(Badawi,2011:5-6).

The indicator of the growth of public expenditures to GDP growth shows the degree of state intervention in economic and social life, which is an indicator reflecting the degree of satisfaction of public needs by the state and the extent to which the spending policy succeeds in redistributing national income. Studies have differed on determining the optimal amount of government spending that has an active role in achieving an acceptable growth rate for the economy, and if government spending increases beyond the optimal limit, this spending will be negative for the economy. Some studies have indicated that the optimal size of public spending out of GDP ranges between (25% - 35%) in most developed countries. In Iraq, which is one of the developing countries where the State plays a major role in economic life, the percentage (30% - 35%) can be considered a fairly appropriate percentage, especially since Iraq suffers from a significant reduction in services, high rates of poverty and unemployment, as well as reducing the role of the private sector in economic activity, which can carry out many activities instead of the public sector, and then reduce the financial burden on the public budget, in other words, it is aimed at achieving financial discipline that leads to economic stability. On the other hand, the continuous and unaccounted increase in public spending will in turn generate negative effects represented by rising prices that will be followed by successive waves of inflation, because the increase in public spending under the inflexible productive apparatus and unable to meet the increase in aggregate demand caused by the escalation of public spending will lead to these waves of inflation. Also, increasing expenditures at a rate that exceeds revenues will have a negative impact on national savings. (Saqir,2005:118).

When noting Table (1), public expenditures took an increasing path during the study period, with the exception of some years because they were characterized by exceptional circumstances , the ratio of public expenditures to GDP reached its highest percentage during the study period (60%) in (2004) and its lowest percentage (30%) in (2018), which indicates that the levels of financial discipline within the allowed percentage (30% – 35%), represented the years that achieved financial control proportional to the optimal size during the (2004 , 2006 , 2009 , 2010 , 2019) having achieved a percentage of (60%, 41 %, 40 %, 40 %, 40%) consequently.

Public Debt Indicator

The volume of public spending and the way it is financed is one of the main determinants of economic stability, as the increase in operating expenses with the inflexibility of the production system to absorb the increase in aggregate demand exacerbates inflationary pressures. The degree of fiscal discipline can be shown by comparing the estimated volume of public spending with what has actually been implemented, if the actual public spending is equal to or less than the estimated spending, then there is a state of fiscal discipline, but if the actual spending exceeds the estimated spending, we are facing a state of fiscal indiscipline. (Ismaeel and Jomaa,2018:81).

When noting Table (1), we note that during the years (2004) and up to (2007), respectively, the ratio of total public debt to GDP exceeded the standard ratio of this indicator, which amounted to (254.89% ، 151.85%،91.08 % ،69.36%) respectively, which implies a rise in indebtedness despite the fact that the Iraqi government has settled previous debts with the IMF and the World Bank, as the two institutions that the Security Council resolution obligated Iraq to deal with and considered them the gateway to the Paris Club to solve the problem of external indebtedness (Ali and Ahmad ,2018:118). On the other hand, the high percentage of this indicator during the above-mentioned period is due to the government following a fiscal policy with an expansionary approach coupled with the lack of public revenues and

their limitations due to the financial crises experienced by the Iraqi economy during the study period, As for the years (2008-2021), the ratio of public debt to gross domestic product was (37.65%) (3.36%), respectively, the percentage of the indicator was within the acceptable ratio on the impact of benefiting from the financial surpluses achieved as a result of the increase in oil revenues due to the increase in export volumes due to the rise in oil prices on the international market, in addition to the decline in inflation rates, as the Iraqi economy ranked first in terms of low inflation levels among the group of Middle East and North Africa countries according to the World Economic.(Central Bank of Iraq,2014:79) Prospects report, as well as following a fiscal policy with a deflationary-austerity approach during that period. It is noted that in recent years, the fiscal policy in Iraq has been directed to internal borrowing to meet the financing needs of the general budget through the issuance of remittances.(Central Bank of Iraq,2016:61) It is necessary to adhere to this indicator and not exceed the specified percentage in order to achieve financial discipline and progress towards rationality and governance of financial management, to avoid and avoid the burdens of the upcoming budgets. But if this percentage increases at rates higher than safe rates due to the government's continued trend towards deficit financing, in this case the indicator is dangerous for the Iraqi economy, and then the government policy should be reviewed not to borrow excessively, especially external loans, because this makes the economy dependent on other countries and the conditions that accompany these loans, as well as the inability to achieve financial sustainability.

Indicator of Deficit or Surplus in the General Dudget

The Maastricht agreement of the European Union specified the budget deficit ratio not to exceed (3%) of GDP, and to apply this in the general budget in Iraq, the ratio of the deficit in the general budget to GDP should not exceed this ratio, as can be seen from Table (1), which shows the general budget in Iraq during the study period (2004- 2021), that during the period (2004-2014) the ratio of surplus to GDP was recorded (1.63%) and the reason for this is due to the deteriorating security situation, which resulted in the suspension of many projects and other public expenditures, and the surplus continued to increase during the years (2006-2008) and the year (2008) was the year of financial abundance for Iraq, where the percentage of surplus of GDP(13.28%) and the reason for this abundance is due to the rise in world oil prices until it reached (91.72) dollars per barrel due to the mortgage crisis that started in the United States of America and then reflected its effects on the countries of the whole world .In 2009, the ratio of surplus to output was The gross domestic product (3.19%), but in 2011, the surplus reached its highest percentage during the study period, where the surplus-to-GDP ratio was recorded at (13.97), and the reason for this was the recovery of world oil prices, where it reached (106) dollars per barrel, and world oil prices continued to recover during the years (2012-2014), in which the budget recorded a surplus and its percentage of GDP (1.44% , 2.52% , 8.20%) respectively, in 2012, the surplus - to-GDP ratio decreased by (2.52%), as it exceeded the set percentage within this indicator, and the budget did not achieve financial discipline during this year and the year after as a result of the country's war against terrorist gangs , As for the years (2015-2016), when the general budget achieved a deficit of (2.02%) and (6.43%) of GDP, respectively, there was a deficit due to the decline in world oil prices, reaching (47) and (39) dollars, respectively, in addition to a significant increase in military spending due to the deteriorating security conditions, but in (2017-2018), due to the improvement in world oil prices, it reached (51) and (68) dollars per barrel, respectively,

The country's general budget achieved a surplus of (1,845,840) and (25,696,645), respectively, and decreased from the standard ratios (3%) within this indicator, where in (2017) it was (0.83%), while in (2018) it recorded (9.56%).

In 2019, the general budget achieved a deficit of (1.51%) of GDP, the reason for this is due to the fact that the government increased the volume of its public spending by providing new appointments that

increased the fiscal deficit in the country. As for (2020), the deficit reached (5.86%) of GDP due to the decline in world oil prices on the one hand and the global health crisis represented by the corona epidemic on the other hand , which led to an increase in public expenditures, and in (2021) the budget achieved a surplus of (0.20%) of GDP, this is due to the decline in Corona delinquency and the rise in oil prices globally, as shown in Table (1) and as follows:

Table (1) Indicators of Iraq's Financial Discipline.

Year	Ratio of Public Expenditure to GDP (30%)	Ratio of Public Revenues to GDP 35%)(	Gross Public Debt to GDP (60%)	Ratio of surplus or deficit to GDP%
2004	60	61.96	254.89	1.63
2005	36	55.08	151.85	19.21
2006	41	51.31	91.08	10.72
2007	35	48.99	69.36	13.97
2008	38	51.11	37.65	13.28
2009	40	42.26	46.77	2.02
2010	40	42.90	39.97	3.19
2011	32	46.01	27.74	13.97
2012	36	46.90	22.85	11.44
2013	39	41.60	19.80	2.52
2014	31	39.50	23.50	8.20
2015	36	34.14	43.55	-2.02
2016	34	27.62	50.58	-6.43
2017	34	34.89	53.53	0.83
2018	30	39.62	35.49	9.56
2019	40	38.10	28.57	-1.51
2020	35	29.30	30.72	-5.86
2021	34	36.22	3.36	0.20

Source: Republic of Iraq, Central Bank of Iraq annual economic report for the years (2004 - 2021).

The Second Requirement: The Theoretical Framework of Financial

Sustainability

Definition of Financial Sustainability

The element referred to by various definitions of sustainability is the element of equity or justice,and there are two types of equity are the halves of humangenerations that have not yet appeared and that these interests have not been taken into account in the development of economic analyses , because they did not take into account market forces, as for the second half, it concerns those living today who do not have equal access to natural resources, so sustainability must take into account these two types of equity in order to achieve justice between generations.(Taraf and Hasanain,2012:5-1) There are multiple definitions of financial sustainability and for the ease of defining financial sustainability, it must be fragmented into sustainability and then financial sustainability.sustainability is the optimal exploitation of resources, human activities and wealth in a way that does not affect the capabilities or energy of natural resources for the benefit of future generations (Al-Rifi,2015:257) Because the future is all that is awaited and quality after the present time .(Abid Al-Lateef,2012:11).

The main advantage of the concept of financial sustainability lies in the quality of keeping the thing for the long term, and financial sustainability has multiple concepts, some of which were based on the link between financial sustainability and the time limit of the budget * while other concepts are oriented depending on the rules of Public Finance in determining what financial sustainability is, despite the multiplicity of definitions, but they agree on the condition of achieving financial sustainability, which requires that countries achieve a

budget surplus sufficient to repay the size of public debt in the future, The concept of financial sustainability in general involves achieving the principle of liquidity and solvency.financial liquidity means the availability of financial resources to meet financial obligations as they mature. solvency means the ability of the state to meet its financial obligations.(Aish and Solaiman,2021:7).

The methodology of the International Monetary Fund in defining financial sustainability is based on fixing the ratio of public debt to gross domestic product(GDP) at a certain level , or setting a certain percentage to be targeted (but left the door open to this ratio) and this scenario is considered a basis on which to predict the future under policies that are consistent for a certain period , usually five years.in this case , the fund considers financial policies sustainable,if they manage to achieve stability in the ratio of public debt to GDP(4), as the European Union Publications Office defined financial sustainability as "the ability of the state to service its debts in any way any time". (Abid Al –Azeez and Ali,2016:183)

Financial sustainability is also defined as the ability to achieve sufficient net income to cover accumulated debt and obligations(6) or is it "the ability to avoid being over-leveraged by the government. (European Union ,2019:32

Financial sustainability is also defined as the ability to achieve net revenues sufficient to cover the accumulated debt and its obligations (United Nations, 2006: 26). Or it is the ability to avoid excessive debt by the government (Blanhard, 1990: 8).

The Importance of Financial Sustainability

The issue of financial sustainability is one of the vital topics that are of great importance to financial policy makers through the statement of the financial position of the state and its financial solvency in the face of financial crises and the extent of its ability to meet its debts, especially external ones, and the reality in which financial sustainability is part of financial policy. (Al-Jumaili and Mijbil,2022:131).

The great and important role of financial sustainability in improving the performance of a financial institution can be summarized by the following:

Enhancing Access to Capital

By adopting aspects of financial sustainability in periodic reports and the performance of the institution or financial organization, which results in better institutional strategic performance, which in turn will be reflected on its performance in the direction of improving investment returns and the ability to attract capital, especially in long-term financing methods and providing better financing conditions.

Correction of Business Plans and Risk Management:

Knowledge of how to manage sustainability leads to the identification of risks in an integrated manner, and this leads to the development of strategies that suit and mitigate risks, which enhance the financial institution's ability to strategic planning for the long term and also helps investors and analysts to identify the possibility of the financial institution or organization to achieve its investment goals. (Ibraheem and Al-Ani, 2020:20)

Profitability and Growth

This is done by creating financial value for the financial institution through the availability of appropriate opportunities to raise income, reduce costs, manage risks, strengthen measures and encourage cooperation with stakeholders to contribute to their deeper needs, which in turn is reflected in directing investments and stimulating competitiveness and innovation. (European University,2008:12).

Financial Sustainability Indicators

 Among the issues that have become more controversial is the issue of the sustainability of the public

finances of countries, and the future challenges that the public finances of debtor countries may face as a result of the escalation of debt levels during the Twenty-First Century and the three decades preceding it. This has led international institutions to develop criteria through which financial sustainability can be analyzed through several composite indicators, and these indicators take into account the historical development of fiscal policy variables, especially domestic public debt, budget deficit and taxes. (Mohamad and Hassein ,2016:149)

Assessing the financial sustainability of financial institutions is extremely important through the use of financial indicators to indicate the extent of their ability to continuity and sustainability in meeting their financial needs to cover their expenses and improve the services provided to beneficiaries, these indicators are a reflection on the ability of the financial institution and its ability to achieve goals, in the long term, these indicators are measured on These indicators show weaknesses and strengths to enable senior management to make appropriate decisions in achieving future goals. (Tomas and David ,1995:1)

These Indicators Are as Follows:

Indicator of the Ratio of Public Debt to GDP

This indicator shows the total public debt burden on the Iraqi economy, the state of financial sustainability in the country and the extent of the state's ability to bear and service debts by comparing the percentage of output growth with the percentage of public debt growth. Table (7) shows the size of public debt, its growth rate and its ratio to GDP.

While in (2004) the ratio of public debt to GDP reached (254.98%), which is the highest level reached by the value of public debt and its ratio to GDP during the study period, which is as is known as a result of the debts inherited by Iraq and the compensation of the second Gulf War resulting from it before (2003) after that, the percentage of this indicator gradually decreased to (2013) where it reached the lowest level reached by the value of public debt and its ratio to GDP during the study period, and the public debt recorded negative growth rates in this period, unlike the GDP, which recorded positive growth rates, as a result of the increase in Iraq's revenues from the sale of oil and the openness that the country witnessed to As a result, the growth rate of GDP increased by more than the growth rate of public debt, which means that financial sustainability was achieved in this period.(Al-Sultani,2021:41) In 2014, the ratio of total public debt to gross domestic product increased by (23.50%) as a result of the exposure of the Iraqi economy to double problems (the entry of terrorist gangs into some provinces and low oil prices) these problems made the country borrow from home and abroad to finance military operations in addition to providing salaries for employees that require large sums through administrative sagging in most ministries of the state, so the relationship between public debt and GDP became reversed in that period. The public debt increases as the GDP decreases, as the total public debt to GDP increased to (43.55%).

After the stabilization of the situation and the liberation of the provinces from the crimes of terrorist gangs, the ratio began to gradually decrease, the total public debt reached the gross domestic product in 2016.

With regard to the year (2017), the ratio of public debt to gross domestic product increased to (53.53%), due to the inability of the government to repay the debts incurred as a result of falling oil prices, declining government revenues and increasing the deficit in the general budget on the one hand, and increased military expenditures due to the war on terrorism on the other hand, which led to an increase in public debt and its percentage of GDP as well as the decline in GDP growth rates during that period, in (2018) the ratio of total public debt to GDP decreased to (35.49%) due to the improvement of the security and economic conditions and the increase in oil prices. This fluctuation continued between high and low for (2019) until the indicator of total public debt to GDP for the same year reached (28.57%). the reason for the decline is attributed to

the improvement in security and economic conditions, the decrease in the volume of military public spending and the improvement in crude oil prices globally. In 2020, the total public debt decreased due to Iraq's obligation to pay dues on an annual basis. In 2021, the total public debt to GDP increased by (33.56%), and this explains the set of economic and social problems that faced Iraq during that period of protests and the spread of the corona virus, which paralyzed economic life.(Rasheed and Jomaa ,2021:379).

Although there is no consensus among various international organizations regarding the determination of the minimum levels of these indicators. The latter suggested that the debt-to-GDP ratio (25% to 30%), while the international mitigation organization was set between (20% to 25%), and from this we conclude that the debt-to-GDP ratio was acceptable during the years (2011 ,2012 , 2013 , 2014, 2019 , 2020) that is, achieving financial sustainability during those years and achieving the debt - to-GDP ratio indicator, but in the first years of the study, it reached dangerous stages as well during the period (2016 – 2017) due to political conditions and low oil prices,the failure to achieve the Financial Sustainability Index, which is contrary to the achievement of the standards of the IMF and the International Debt Relief Association, (Salih and Sulaiman,2021:210-211).

Table (2) Public Debt-GDP Ratio Index (1 million dinar).

Year	Gross public debt to GDP (25-30%) (5)
2004	254.89
2005	151.85
2006	91.08
2007	69.36
2008	37.65
2009	46.77
2010	39.97
2011	27.74
2012	22.85
2013	19.80
2014	23.50
2015	43.55
2016	50.58
2017	53.53
2018	35.49
2019	28.57
2020	30,72
2021	33,56

Source: Ministry of Finance Public Debt Department data for the years (2004 – 2021).

The Tax Gap Index

This indicator is called (Blanchard) and also named Tax liability,developed by one of the classical thinkers (Oliver Blanchard), shows what changes are taking place in the amount of government spending, because the government is most often obliged to government spending programs and government transfers as opposed to tax revenues.(Mohamad and Hussein,abid:155)

This indicator separates the achieved tax revenues from the tax burdens necessary for the level of financial sustainability, i.e. the possibility of the ability of taxes to cover government spending, or the extent to which the ratio of public debt to GDP can be stabilized. (Al-Baghdadi,2021:427).

This indicator indicates that the total tax received to output should cover the total government spending, and this total includes servicing the public debt from the proceeds of GDP growth, since the tax gap is the difference between the actual taxes received to GDP (t) and the amount of the target value of taxes (t) needed to stabilize the domestic public debt to GDP.

If the target tax yield (T) is greater than the actual tax yield (T), then the tax gap is positive, and therefore we are in a situation of financial unsustainability, and here it is required to reduce government spending or increase the ratio of tax revenues to GDP to the target level (T). this indicator depends on the idea of maintaining the required ratio of public debt to GDP, and it follows that tax policy should aim to reduce the difference between:

The ratio of the target tax to GDP = the ratio of government spending to output (without interest payments) + (real interest rate - GDP growth rate) × the ratio of public debt to GDP.

It is often noted that the amount of tax revenues obtained annually is not enough to finance the expenditure burden, which leads the government to find sources of revenue, therefore, this indicator helps to monitor and analyze the development of tax revenues, calculating that it is an important tool of fiscal policy and financing government spending, but it does not indicate that it is a sufficient condition to judge the sustainability of fiscal policy, as this percentage cannot be applied to oil countries, because the size of GDP is large due to oil revenues, meaning that obtaining a tax commensurate with (GDP) is unfair to taxpayers.(Alejard,2004:536)

As long as fiscal policy operates in a dynamic environment and the changes that we do not take into account are significant over time, government expenditures and transfers may change in the future as a result of cyclical movements in output, for example, in times of deflation, government spending-to-output ratios rise, as well as there may be government contracts that may show their effects on fiscal policy.(Robert and Alexander F and Gernot,2002:265).

Income Gap Index

It is one of the indicators that tests the impact of the combination of fiscal policy behavior of an agreement, taxes, output growth and changes in the public debt-to-GDP ratio on financial sustainability, by estimating the Blanchard index of the level of target tax revenues that must be achieved and measuring the gap between the achiever and the plan. If the current revenue gap is negative, this indicates a situation in which financial sustainability is achieved, and vice versa, if the current revenue gap is positive, this indicates a situation in which financial sustainability is not achieved.

The tax gap indicator is based on the separation of the "existing tax burden from the sustainable tax burden". The indicator indicates the level of tax burden required to stabilize the debt-to-GDP ratio it is known the level of expenditure, the trajectory of GDP growth and the primary balance of debt, if the ratio is negative the indicator indicates that the tax burden on the economy is too low and cannot stabilize the debt-to-GDP ratio. (International Organization.2021:17).

The Third Requirement - The Features of The Relationship Between Financial Discipline and Financial Sustainability

The concept of financial discipline was linked to financial sustainability rules and improved financial performance to improve local finance performance .Liuta et al(2012) proposed a metrology methodology for assessing the financial capacity of local budgets by calculating an integrated indicator consisting of three components (financial capacity , financial independence ,financial adequacy), which allows identifying problems of local budgets, their causes, as well as identifying ways to demonstrate the efficiency of financial relations. In addition to modern financial analysis methods and the need to evaluate government balances, assets and liabilities and analyze the general budget based on them.(Katarina and Nataliya,2021:34).

Fiscal sustainability is one of the important elements in financial stability, and it is mainly related to the deficit, its financing and its ratio to national income, as the fiscal deficit is a reality, and fiscal sustainability

represents the state in which the state is able to service its debts without the need to make changes in fiscal policy or influence various government activities .(Groof and Al-Omarawi,2020:113) It should be noted that there are many concepts that have dealt with the topic of financial sustainability extensively, as the latter discusses the types and consequences of adjustments to fiscal and monetary policies to avoid debt default, and more broadly, analyses of financial sustainability include discussions about financial policies, not However, it can be said that they agree that the basic condition for ensuring the sustainability of public finances is the extent to which the state is able to continue to implement policies determined by the public finances to finance various public spending programs without being exposed to cases of financial default and default.(Alnewairan ,2021:186), All this means the continuation of the government's spending and revenue policy in the long term without resorting to excessive public debt by following the rules of fiscal discipline and not to burden future generations with the consequences of current decisions, where the need for fiscal discipline is highlighted to curb bias in fiscal policy that leaves costs on the economy.(Mohamad and Hussein ,abid:105).

The Relationship Of Financial Discipline To The State Budget:-

Fiscal discipline is defined as monitoring the general budget and the extent of implementation of its items approved by the legislative authority and maintaining the legality of spending, that is, the process of fiscal discipline is the duty of elected members of the authority in order to preserve the will of the people in the sustainability of Natural Resources and not to waste public money and limit the amounts contained in the general budget and direct it to achieve the required goals, according to the point of view of the scientist of Public Finance Richard mosgrave, fiscal discipline is mainly the financing of the deficit for ongoing operations, that is, the state must cover current expenditures by current revenues only.(Yilin,2003:5).

Fiscal discipline also expresses the state of optimal balance between public revenues and public expenditures in the economy, since in the absence of fiscal discipline, public spending exceeds public revenues, prompting the government to rely on the central bank to finance the deficit or borrow money, which leads to a devaluation of the national currency and inflation in the economy.

Within the framework of the relationship between fiscal discipline at the long-term level and the general budget, it can be explained from two sides (Depenola,30).

 *The lack of fiscal discipline will lead to an increase in the deficit in the general budget with the inflexibility of the production system, which will generate various effects, the most important of which is the reduction of savings in the whole economy, which will reduce national income in the future, which is reflected on economic stability.

 *It should be noted that the expected increase in public debt in the future in the general budget will increase interest on a long-term level, which will negatively affect investment, together with reflecting on economic growth and stability. Figure (3) shows three stages in the general budget in which financial discipline is achieved:

During the Planning Stage: - At this stage, revenues and overhead expenses are estimated, as well as the expected financial effects of administrative decisions are measured, as well as debt management.

During the Balancing Stage: Several things are taken into account, the most important of which is that the budget is approved in a timely manner and the structural balance of current revenues and expenditures is achieved, that is, current expenses must be financed from current revenues.

During the Acomplishing Stage: Counter-cyclical mechanisms are adopted, and structural balance is maintained.

Fourth Requirment: Measuring the Impact of Financial Discipline Indicators on Some Financial Sustainability Indicators.

Time Series Stability Testing

The first step is to test the stability of the time series of the model variables and find out whether the variables are stable or not. this is done through the extended Dickie Fuller unit root test. the results shown in Table (3) were obtained. after the Dickie Fuller test, it turned out that the time series of the variable (X1, X3, Y1) was stable at the level at a 5%% whether with a cutter or with a cutter and direction or without a cutter and direction.

Table 3: Stable Results of Time Series.

UNIT ROOT TEST RESULTS TABLE (ADF)					
Null Hypothesis: the variable has a unit root					
At Level					
		X1	X2	X3	Y1
With Constant	t-Statistic	-3.1249	-2.3116	-1.5863	-2.9065
	Prob.	*0.0297*	*0.1714*	*0.4832*	*0.0499*
		**	n0	n0	**
With Constant & Trend	t-Statistic	-4.1769	-3.3448	-3.5807	-3.3119
	Prob.	*0.0083*	*0.0680*	*0.0402*	*0.0731*
		***	*	**	*
Without Constant & Trend	t-Statistic	-0.7120	-0.8714	-1.9697	-2.2200
	Prob.	*0.4044*	*0.3349*	*0.0475*	*0.0265*
		n0	n0	**	**
At First Difference					
		d(X1)	d(X2)	d(X3)	d(Y1)
With Constant	t-Statistic	-4.6148	-2.9233	-2.8201	-3.2390
	Prob.	*0.0004*	*0.0480*	*0.0616*	*0.0220*
		***	**	*	**
With Constant & Trend	t-Statistic	-4.6307	-3.0615	-2.7470	-2.4080
	Prob.	*0.0023*	*0.1240*	*0.2225*	*0.3723*
		***	n0	n0	n0
Without Constant & Trend	t-Statistic	-4.5600	-2.9492	-2.5736	-3.3283
	Prob.	*0.0000*	*0.0037*	*0.0109*	*0.0012*
		***	***	**	***
Notes:					
a: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1% and (no) Not Significant					
b: Lag Length based on SIC					
c: Probability based on MacKinnon (1996) one-sided p-values.					

Source: Researcher's preparation based on the outputs of the programme (Eviews12)

Second: Determination of optimal slowing time

Table (4) shows, after determining the optimal slowing duration, that the optimal slowing duration according to the standard of Acake, Schwartz and Hannan Quinn is one slowing period.

Table (4) Optimal Slowing Duration.

VAR Lag Order Selection Criteria						
Endogenous variables: X1 X2 X3 Y1						
Exogenous variables: C						
Date: 10/11/23 Time: 12:41						
Sample: 2004Q1 2021Q1						
Included observations: 68						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-762.1526	NA	71854.60	22.53390	22.66446	22.58563
1	-327.1822	805.9746*	0.320073*	10.21124*	10.86404*	10.46990*

Source: Researcher's preparation based on Eviews 12 outputs

Third: Joint Integration Test in Accordance with Johansson's Methodology

Note through Table (5) After conducting the joint integration test according to the Johannesen methodology, it is found that there is a common integration between the model variables, where according to the Trace test (Maximum Eigenvalue) there is one beam for joint integration, and this indicates the long-term relationship between the model variables.

Table 5: Johansen Joint Integration Test.

Date: 10/10/23 Time: 21:46				
Sample (adjusted): 2004Q3 2021Q1				
Included observations: 67 after adjustments				
Trend assumption: No deterministic trend (restricted constant)				
Series: X1 X2 X3 Y1				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.443322	69.77339	54.07904	0.0011
At most 1	0.271610	30.52695	35.19275	0.1462
At most 2	0.107218	9.293421	20.26184	0.7086
At most 3	0.024978	1.694790	9.164546	0.8373
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.443322	39.24643	28.58808	0.0015
At most 1	0.271610	21.23353	22.29962	0.0699
At most 2	0.107218	7.598632	15.89210	0.5962
At most 3	0.024978	1.694790	9.164546	0.8373
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* Denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Published: preparation of the researcher based on the outputs of the program (Eviews12)

Fourth: Estimation of the error correction model (VECM)

Looking at Table (6) after estimating the error correction model, it is noted that the determination coefficient (R2) reached (88%), which means that (88%) of the changes in the dependent variable are caused by changes in the independent variables and (12%) are caused by variables not included in the model, it is also noted that the value of the test (F) reached (90.23), which is significant at the level of (5%), and this indicates that the model as a whole is significant, we also note that the error correction parameter in the short term or the so-called (structural adjustment speed) reached (0.47 -), which is significant at the level of (5%), that is, deviations in the short term are corrected by (47%) towards the long-term value, and this percentage is very good and needs half a year to return To the equilibrium position.

Table (6) Estimation of the Error Correction Model (VECM).

VECTOR ERROR CORRECTION ESTIMATES				
DATE: 10/10/23 TIME: 22:02				
SAMPLE (ADJUSTED): 2004Q3 2021Q1				
INCLUDED OBSERVATIONS: 67 AFTER ADJUSTMENTS				
STANDARD ERRORS IN ( ) & T-STATISTICS IN [ ]				
COINTEGRATING EQ:	CointEq1			
X1(-1)	1.000000			
X2(-1)	-0.581107			
	(0.07936)			
	[-7.32230]			
X3(-1)	0.507737			
	(0.07889)			
	[6.43562]			
Y1(-1)	0.010370			
	(0.01247)			
	[0.83147]			
C	-15.43502			
ERROR CORRECTION:	D(X1)	D(X2)	D(X3)	D(Y1)
COINTEQ1	-0.579550	-0.010908	0.557674	-0.476190
	(0.08519)	(0.07530)	(0.10908)	(0.21362)
	[-6.80267]	[-0.14487]	[5.11249]	[-2.22914]
D(X1(-1))	1.538652	-1.036444	-1.683566	2.309117
	(0.90780)	(0.80233)	(1.16233)	(2.27626)
	[1.69492]	[-1.29180]	[-1.44844]	[1.01443]
D(X2(-1))	-1.235718	1.721967	2.051327	-2.396504
	(0.92217)	(0.81502)	(1.18072)	(2.31228)
	[-1.34001]	[2.11278]	[1.73735]	[-1.03642]
D(X3(-1))	0.931952	-0.974429	-1.004256	2.176363
	(0.92246)	(0.81528)	(1.18109)	(2.31301)
	[1.01029]	[-1.19521]	[-0.85028]	[0.94092]
D(Y1(-1))	-0.061989	0.012112	0.074486	0.789546
	(0.02290)	(0.02024)	(0.02932)	(0.05742)
	[-2.70707]	[0.59849]	[2.54052]	[13.7509]
C	-0.399229	-0.049432	0.334948	-0.485653
	(0.15497)	(0.13696)	(0.19842)	(0.38857)
	[-2.57621]	[-0.36091]	[1.68810]	[-1.24984]
R-SQUARED	0.717962	0.578107	0.663152	0.880905
ADJ. R-SQUARED	0.694844	0.543526	0.635541	0.871143
SUM SQ. RESIDS	56.83913	44.39833	93.17968	357.3632
S.E. EQUATION	0.965292	0.853136	1.235935	2.420416
F-STATISTIC	31.05654	16.71729	24.01807	90.23930
LOG LIKELIHOOD	-89.55921	-81.28394	-106.1184	-151.1499
AKAIKE AIC	2.852514	2.605491	3.346819	4.691042
SCHWARZ SC	3.049949	2.802926	3.544254	4.888477
MEAN DEPENDENT	-0.298507	-0.358507	-0.086940	-3.369701
S.D. DEPENDENT	1.747422	1.262729	2.047252	6.742739

Source: Researcher's Preparation Based on the Outputs of The Programme (Eviews12)

Analysis of the Estimated Equation

D(Y1)=-0.476*(X1(-1)-0.581*X2(-1)+0.507*X3(-1)+0.0103*Y1(-1)-15.435)+2.309*D(X1(-1))-2.396*D(X2(-1))+2.176*D(X3(-1))+0.789*D(Y1(-1))-0.485

It is noted through the estimated equation that the estimated parameters of the independent variables

were non-significant at the level of 5%, and there is a direct relationship linking the expenditure index with the debt index, which is consistent with economic theory, as the increase in the expenditure index with the stability of the revenue index means an increase in expenditures without being offset by revenues in order to cover these expenses, which leads to the state's tendency towards debt in order to meet the increase in expenditures, while it is noted that there is an inverse relationship between the Revenue Index and the debt index, which is consistent with economic theory, because diversifying and increasing the financial resources obtained by the state leads to reducing the debt in the budget, while The relationship is direct between the budget deficit and surplus index and the debt index because an increase in the budget deficit leads to an increase in the state's indebtedness, which is also consistent with economic theory .

After conducting the self-correlation test, it was found through Table (7) that there was no problem of self-correlation between the variables, as the probability of testing reached (0.9159), which is greater than (5%), which means rejecting the alternative hypothesis and accepting the hypothesis of nothingness, which confirms the absence of the problem of self-correlation.

**Table (7)** Self-Correlation Test of Study Variables.

VEC Residual Serial Correlation LM Tests							
Date: 10/13/23 Time: 10:50							
Sample: 2004Q1 2021Q1							
Included observations: 67							
Null hypothesis: No serial correlation at lag h							
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	8.944886	16	0.9157	0.550525	(16, 165.6)	0.9159

Source: preparation of the researcher based on the outputs of the program (Eviews12)

It can be seen from the following Figure (1) that the estimated model is stable, since all points are within the critical limits, and therefore the model is stable at a 5% morale level and free from standard problems.

Figure (1) Stability of the Estimated Model.
Inverse Roots of AR Characteristic Polynomial
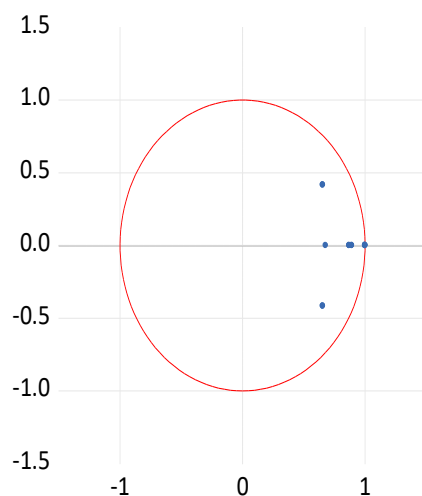
Source: preparation of the researcher based on the outputs of the program (Eviews12)

Conclusions

1. The decrease in the rates of implementation of the general budget, especially in investment projects, which is due to the security and political conditions in which Iraq passed during the study period or the delay in approving the budget or not approved at all by the legislative authority, as happened in 2014.

2. The inefficiency and effectiveness of the methods of preparing general budget estimates, as Iraq still depends on balancing the control items and the failure of ministries to accurately assess their needs and request an amount of allocations greater than their ability to spend them, usually increasing those allocations on the current side at the expense of the investment side.

3. The size of the indebtedness borne by the Iraqi economy has increased, as the ratio of public debt to GDP reached (92.7%) during the average study period, and the bulk of it is due to external debt.

4. The lack of special rules for the management of public revenues achieved within certain ceilings can only be exceeded in crisis situations, as the ratio of public revenues to GDP exceeded the specified percentage (35%), with the exception of the years (2015, 20016, 2017), in which the specified percentage reached the percentage of (34.14% ‹27.62% ‹34.89%) respectively.

Recommendations

1. The optimal use of the achieved financial surpluses and directing the increase towards investment areas, sovereign wealth funds, hedge funds, or so on, which has a positive impact on economic stability and then financial discipline.
2. Progress towards rationalization and governance of public expenditures, to avoid and avoid the burdens of the upcoming budgets.
3. To achieve financial sustainability through financial discipline, the financial policy in Iraq is directed to internal borrowing to meet the financing needs of the general budget through the issuance of remittances.
4. The achieved taxes are not enough to finance government spending, which necessitates the development of the tax apparatus, the imposition of new taxes and the diversification of sources of income.

Sources

First: Arabic sources

Books

Ahmed Abu Bakr Ali Badawi, (2011), Traditional and Contemporary Concepts in Public Finance Management Economic and Technical Department Arab Monetary Fund, UAE, Abu Dhabi.

Paul Krugman, (2015), End This Depression Now, Translated by Amira Ahmed mbabi, First Ddition, Hindawi publishing house, education and culture, Cairo.

Hamed Al-Rifi, (2015), (Environmental Economics – Environmental Problems – Economic Development – Sustainable Development), First Edition, House of University Education, Alexandria.

Amer Taraf and Hayat Hassanein, (2012), International and Civil Responsibility in Environmental and Sustainable Development Issues, First Edition, Glory of the University Foundation for Studies, Publishing and Distribution Beirut.

Karim Aish and Najia Suleiman, (2021), Financial Sustainability (Concept-Theory-Policy), Publications of the Arab Democratic Center for Strategic, Political and Economic Studies, First Edition, Germany-Berlin.

Mansour Milad Younis, 2004)), Principles of Finance, Technical Institution for Printing and Publishing, Tripoli-Libya.

Walid Abdel Hamid Ayeb, ((2010), Macroeconomic Effects of Government Spending Policy, Hussein Modern Library, Lebanon.

Economic Journals, Bulletins and Research

United Nations,Economic and Social Commission for Western Asia - ESCWA, (2006), World outlook and forecasts ESCWA region monetary and financial forecasts, No. 3, No. 26 .

Inas Mohammed Rashid Ahmed Ibrahim Juma, (2021), Analysis of the Impact of Public Debt on Government Spending and Economic Growth in Iraq a Study Under the Impact of Public Budget Laws on the Iraqi Economy for the Period (2020-2008), Journal of the Iraqi University, Faculty of law and Political Science, Vol. (52), issue (3).

Bassem Abdul Hadi Hassan, (2016), The Financial Dimension in the Development of Some Monetary Variables in Iraq for the Period (2015-2003), Al Bayan Center for Studies and Planning Publications Series.

Thamer Ali Al-Noiran, (2021), Analysis of the Sustainability of Public Debt in Jordan, Journal of North African Economics, Faculty of Science and Human Studies Shaqra University, Saudi Arabia,

Hussein Mehger Faraj, Imad Muhammad Ali ANI, (2018), The Role of Financial Discipline in Achieving Economic Stability in Iraq for the Period (2004-2016), Iraqi Journal of Economic Sciences, Mustansiriya University Faculty of administration and economics, issue (59).

Daigam Ghadab Ibrahim and Khalaf Mohammed Hamad, (2022), Analysis and Measurement of the Relationship Between the Public Debt base of Financial Discipline and the Federal Budget Deficit in Iraq, Tikrit Journal of Administrative and Economic Sciences, Faculty of Administration and Economics , Tikrit University, Vol. (18) No. (60) Part (2).

Emad Mohammed Abdul Latif, (2012), Internal Government Debt and its Impact on Monetary Policy (Iraq case study), Al-Mustansiriya Journal of Arab and International Studies, issue (39).

Aomro Hisham Mohammed and Imad Hassan Hussein, (2016), Financial Rules Between the Requirements of Discipline and Financial Reality in Iraq, Al-Mustansiriya Journal of Arab and International Studies , Vol. (13), issue (62).

Ahoud Hamoud Saleh and Ahmed Abdullah Salman, (2021), A Future Strategy on the Reality of Financial Sustainability Indicators in Iraq, Al-Kut Journal of Economics and Administrative Sciences, Faculty of Management and Economics for Economic, Administrative and Financial Studies, Al-Kut University, Vol. (13), No. (93).

Firas Tahreer Mohammed Al-Jumaili and Ismail Hammadi Mojbel, (2022), The Impact of Financial Sustainability on The Problem of Budget Deficit in the Iraqi Economy, Fallujah University Faculty of Management and Economics, Journal of Business Economics, Vol. (3), Issue (5).

Muhammad Saqr, and others, (2005), The Reality and Prospects of Fiscal and Monetary Policies in Developing Countries, Tishreen University Journal for Scientific Studies and Research, Economic and Legal Sciences Series, Vol. (27), issue.

Mohamed Karim Grof and Saleem El Amraoui, (2020), Measuring and Analyzing the Impact of Financial Sustainability Indicators on Economic Growth in Algeria, Knowledge Aggregates , Institute of Business Economics and Management , Volume (6), Issue (2), serial number (11).

Marwa Fathy Sayed Ahmed al-Baghdadi, (2010), Indicators of Financial Sustainability and The Risks that Threaten it in Egypt, Journal of Legal and Economic Research , Faculty of Law, Benha University .

Maytham Luaibi Ismail and Ahmed Hamid Juma, (2018), Analysis of Internal and External Public Debt Management and its Impact on Reducing the Cost of Debt in the Iraqi Economy for the Period (2005-2015), Iraqi Journal of Economic Sciences, issue (57).

Huwaida Ismail Ibrahim and Imad Muhammad Ali ANI, (2020), The Investment Portfolio and its Role in Enhancing tThe Financial Sustainability of Some Financial Institutions in Iraq, Baghdad University, Faculty of Management and Economics.

Wahid Abdul Rahman banaf and Abdul Aziz Abdul Majid Ali, (2016), Assessing Financial Sustainability in Saudi Arabia, Arab Economic Research Journal,vol. (75), No. (1).

Yasin Nadeb Ali Khalil Al-Sultani, (2021), Analysis of the Reality of Financial Sustainability in Iraq for the Period (2004-2019), Journal of the Faculty of Management and Economics for Economic, Administrative and Financial Studies, University of Babylon, Vol. (13), No. (1).

Annual Reports

Central Bank of Iraq, Annual Report, 2014, p.79.

Central Bank of Iraq, Annual Report ,2016, P. 61.

Second: Foreign Sources

European Economy Institutional Papers, Economic and Financial Affairs, Luxembourg Publications Office of the European Union, (2019), p (32)

European University Association, Financially sustain abl, https://eua.eu/resources/publications/651:fifnancially sustainableuniversities-towards-full-costing-in-european-universiti es, (2008), p (12).

Nadiya, D., Katarina, V., Olga, D., & Nataliya, PMm, Assessment of the level of local budget financial decentralization: Case of Ukraine. Public and Municipal Finance, (2020), 9 (1), p(34).

Oliver J. Blanchard, Suggestions for a new set of fiscal Indicators, OECD working paper no.79, OECD Publishing, (1990), p (8).

Olola depenola, Fiscal Discipline and Determinants in Nigeria, A Proposed Phd Thems, African Economic Research Consortium P (30).

Stavins, Robert N. & Wagner, Alexander F & Wagner, Gernot"Interpreting Sustainability in Economic Terms: Dynamic Efficiency plus Intergenerational Equity", Resources for the Future, (2002), p (265).

Wheelen Tomas L., and Hanger J., David "Strategic Management and Business Polices", 5th ed., Addison -Wesles pub compans, (1995), p (1),

Yamauchi, Izquierdo Alejard"Fiscal Sustainability ISSUES for Emerging Countries", the Egyptian Center for fiscal Sustainability-the Case of Eritrea, IMF Working paperm, (2004), p (536).

Yilin Hou, Fiscal Discipline as A Capacity Measure of Financial Management by SubNational Governmentsl, (2003), p (5).