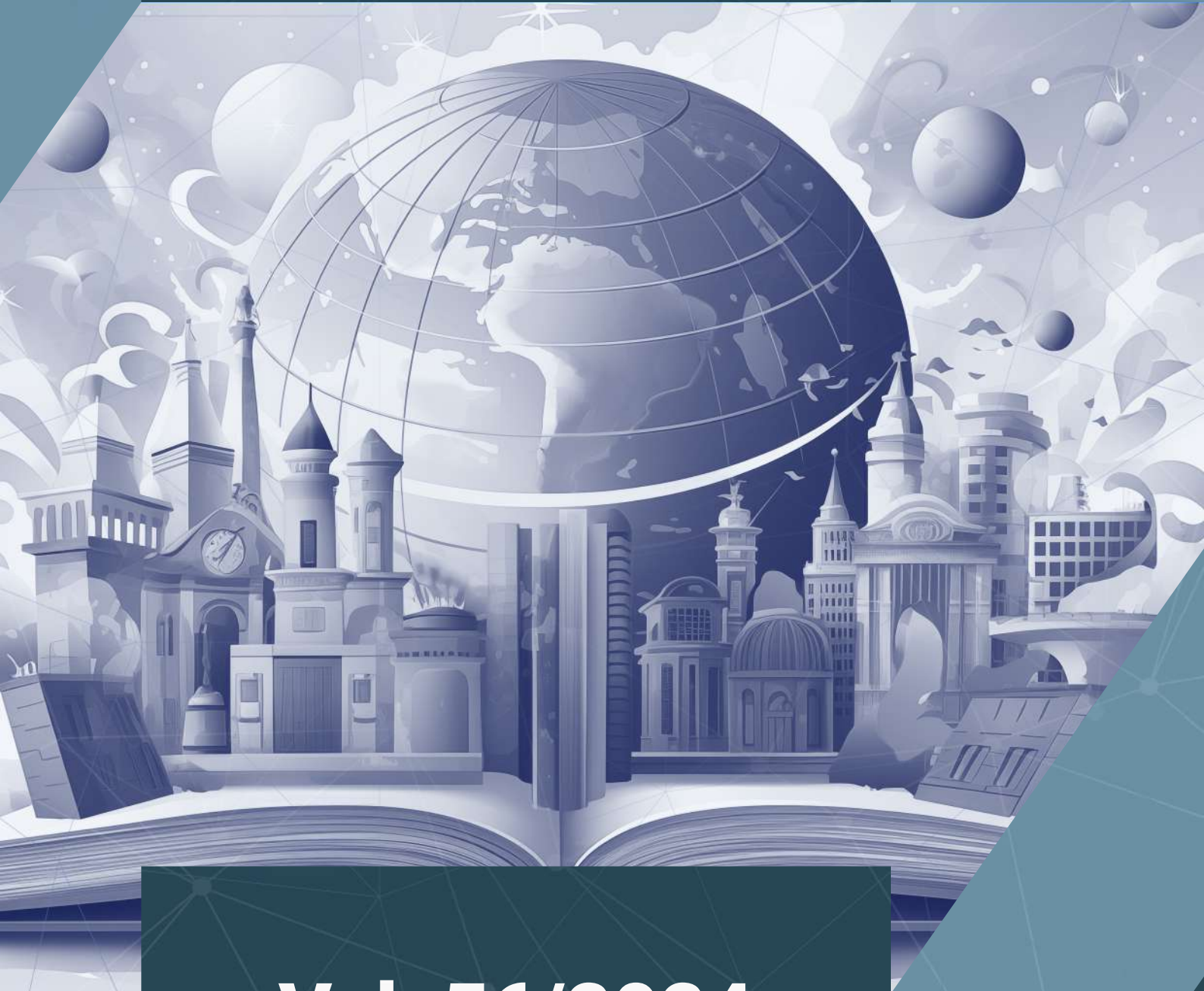




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The Role of Government Spending in Developing the Productive Capacity of The Iraqi Economy

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Abstract. The research seeks to demonstrate the impact of government spending on the productive capacity of the Iraqi economy, as the continuous increase in the volume of public spending and the adoption of the planned deficit method in the budgets of various years must reflect positively on the productive capacity of the country, so the relationship between the two variables was estimated according to the autoregressive distributed lag model (ARDL) as it shows the relationship in the short and long terms and for the period 2004-2022, and among the results obtained is that current spending has a negative impact on the productive capacity index. This means that current spending is unproductive within its vicious circle, that is, money leaks out without generating economic returns for the country. Investment spending has a positive impact on the productive capacity index, as the average investment spending during the research period amounted to approximately (20%) of government spending, which is a very low percentage that was reflected in the weakness of the investment-based structures of the Iraqi economy, and this is what made the productive capacity index of the Iraqi economy It records a low percentage, reaching its best levels (35%), and this is consistent with the weak allocation of financial resources in investment aspects. What supports the analysis is the relationship test, which shows us that investment spending has a positive and significant effect on production capacity, but its parameter reached (0.07), which is a very low percentage. It has almost no effect. However, if a large percentage of financial resources were directed towards investment areas, this would develop projects, increase their ability to produce and productivity, and achieve high rates of GDP growth. Therefore, the research recommends the necessity of directing government spending towards productive sectors in order to improve production capabilities and achieve sustainable development comparable to developed countries, as well as periodically monitoring and evaluating the extent of the productivity of public spending in various economic sectors in order to make it more effective.

Keywords. government spending, productive capacity index

1 - Introduction

Building productive capacities constitutes a key strategy to accelerate structural transformation, promote comprehensive economic growth, and achieve sustainable development. Economies can enhance their ability to grow and develop and reduce their exposure to external shocks, whether economic, political or health, only by strengthening productive resources, entrepreneurial capabilities and productive linkages. The COVID-19 pandemic exposes not only the systemic interconnectedness and interdependence between

countries, but also social and economic fragility and inequalities within and between countries.

Therefore, what helps in building and developing productive capabilities are public expenditures, which are considered one of the financial policy tools that have a significant impact in directing economic and social activity, as increasing public spending to finance public projects in cases of recession is necessary to increase aggregate demand, raise the level of economic activity, increase employment, and move the wheel of the economy. , aiming to achieve the maximum benefit for society at the lowest cost, and this is more effective and beneficial for individuals than the state reducing its expenditures.

Public spending directed towards investment fields helps rehabilitate idle productive capacities, which contribute to increasing productivity and production. In addition, the optimal use of spending in the field of knowledge increases technical and scientific development, which leads to the creation of new economic goods and then the creation of new consumption patterns, as well as It is the responsibility of societies to fight backwardness and accelerate economic and social development. The government's provision of aid and subsidies to local producers and exporters, facilitating loans for them and exempting them from some taxes and fees, all of these measures will work to develop and develop the country's productive capacity.

Since the financial environment of the Iraqi economy is witnessing a continuous increase in public expenditures in exchange for a sustainable decline in public revenues as a result of weak funding sources, we find that the country is exposed to continuous fluctuations, sustainable instability, and clear-cut economic fragility despite high public spending. Therefore, the research came up with the following question: Does public spending A significant impact on the productive capacity of the Iraqi economy?

The research is concerned with enhancing productive capabilities as a very important prerequisite for achieving structural transformation and sustainable development. It is also necessary to build capacity to make the Iraqi economy able to bear the negative consequences of external shocks, whether economic, political, or otherwise. Due to the unstable situation of oil prices, the Iraqi government must take many financial reforms to strengthen its financial resources, diversify sources of financing, and reduce dependence on oil revenues. A country that relies on a single source to finance the general budget and is unable to invest its idle human, natural, material, financial and historical resources is a fragile country that does not even have the capacity to make an economic, social or political decision. Administrative and financial corruption has spread throughout its joints, as the Corruption Perceptions Index shows in the body of the research: This is what drives us to search for the consequences of the increase in public expenditures and whether they are productive or not.

Thus, the research seeks to find effective measures that help the financial and economic decision maker to structure public spending and redirect it in productive areas that contribute to supporting the pillars of the Iraqi economy and make it less affected when local or global fluctuations or crises occur, and to achieve a sustainable and stable financial situation for the government and the economy. The research starts from the hypothesis It means that increasing public spending has a positive impact on the productive capacity index, in addition to the existence of a statistically significant relationship between the two variables. The research aims to achieve: -

- Study the relationship between public spending and the productive capacity index.
- Providing appropriate solutions that would help the financial authority raise

the productivity of public spending.

2- Theoretical framework

2-1 The concept of government spending

This term used to describe the money spent by the government in the economy, as interference in the allocation of resources arose due to the failure of the market mechanism to effectively and efficiently allocate these resources. Economists classify government spending into three main types (J.D.Danladi, K.J.Akomolafe, & O.S.olarinde, 2015).

a- Current expenditures or final consumption expenditures of the government on goods and services for current use to directly meet the individual or collective needs of members of society

b- Capital expenditures or fixed capital formation (or government investment) - government spending on goods and services intended to create future benefits, such as investment in infrastructure in transportation (roads, airports, railways), and health (water collection and distribution, drainage systems Health, communications (telephone, radio, television) and research spending (defense, space, genetics, etc.

c- Transfer payments - spending that does not involve transactions of goods and services, but instead represents transfers of funds, such as social security payments, pensions, and unemployment benefits.

The state's intervention in the economy through spending policy stems from addressing and correcting the weakness in the market mechanism and the private sector. This weakness in the market mechanism in turn leads to an incorrect distribution of resources, which in itself constitutes an obstacle to development. Therefore, redistributing wealth, achieving economic stability, and addressing market failure in Economic policy-making is the main motivation for state intervention and contributing to the creation and distribution of output, and the ones that need state intervention most are the economies of developing countries that are faltering in development, where the public sector's contribution to the gross domestic product constitutes a large proportion .(Glenn Follette, 2010) .

2-2 Purposes of government spending

The majority of studies agree that government spending on the education, health, infrastructure projects, housing, transportation, and communications sectors increases labor productivity, which has a fundamental role in the development process, and at the same time, domestic investment in any economy increases, thus enhancing economic growth. The purposes of spending can be stated. government as follows (Dario, 2008):

a- Supplying goods and services that are not provided by the private sector, such as defence, roads and bridges; Eligible goods such as hospitals, schools, welfare payments and benefits including unemployment and disability benefits.

b- Achieving improvements in the supply side of the overall economy, such as spending on education and training to improve labor productivity.

c- Providing support to industries that may need financial support to operate or expand. The private sector is unable to meet these financial requirements, and therefore, the public sector plays a crucial role in providing the necessary support. For example, transportation infrastructure projects do not attract private financing unless the government provides the necessary expenditures for the industry.

d- To help redistribute income and enhance social welfare.

2-3 The importance of government spending

Government spending is of great importance for increasing the productive capacity of the economy. Capital spending on infrastructure increases capital accumulation, which increases the potential output of the economy. Infrastructure is an important input to production activities and can affect the economy in different ways, either directly or indirectly. It can be interpreted as a set of interconnected structural elements that support the overall framework of the development structure including this as well as the physical component of the interconnected system. It also provides access to both goods and services that enable people's living conditions to be maintained or achieved (Purbo Nugroho & Sofyan Syahnur, 2022).

This means that not only productive activity will create outputs and job opportunities, but the presence of infrastructure also affects the efficiency and smoothness of economic activities in other sectors. Infrastructure is divided into two categories: physical and social infrastructure. Physical infrastructure is needed to directly support economic activities, such as roads, ports, and airports, while social infrastructure increases the efficiency and capacity of the workforce, such as education and health, as capital spending (productive spending), spending on infrastructure such as roads, bridges, and ports and railways and airports. Capital spending is necessary to increase capital in the economy. It creates future benefits by increasing the productive capacity of the economy, allowing it to produce more goods and services. For example, building roads not only absorbs labor and increases the movement of goods and services. But it also stimulates business activity to increase and reduce logistics costs (Dash & Sahoo, 2010).

The government must support these projects by establishing good-quality, reliable, sustainable and resilient infrastructure that the projects need, such as roads, bridges and electric power, upgrading the level of technology and clean and environmentally sound industrial processes, and encouraging the formalization of micro, small and medium enterprises by facilitating access to Financial services and enhancing the capacity of local financial institutions to encourage access to banking, insurance, and financial services for all and expand their scope, as stated in the Sustainable Development Goals among the objectives of the eighth and ninth goals (Kumari, A & Sharma, A. K, 2016).

Government spending contributes to increasing potential GDP. For example, investing in infrastructure creates a multiplier effect on the economy by stimulating business activity and the movement of goods and services. Finally, these investments also increase the productive capacity of the economy in the long run. As Keynesian economists advocate, government intervention is the key to influencing the economy. By changing the fiscal budget (spending and taxes), the government can reduce or prevent the economy from being affected by local and global economic fluctuations (Arestis, P., 2011):

After we have explained the mechanism of the impact of spending on productive activity directly and indirectly, we review the other part of the research, which is related to the productive capacity index.

2-4 The concept of the production capacity index

Although there is consensus on the need to enhance productive capacities to achieve sustainable economic growth and sustainable development, there is no universally accepted definition of the concept itself and the project relies on UNCTAD's conceptual and analytical foundations to measure levels of productive capacities across the three pillars: "productive resources, entrepreneurial capacities, and linkages." Production, which together determine a country's ability to produce goods and services and enable it to grow. and development," and these three pillars are divided into eight categories (Hidalgo, C. A., 2021):

- a- information and communications technologies
- b- structural change
- c- natural capital
- d- human capital
- e- energy
- f- transport
- g- private sector and institutions.

Thus, (UNCTAD, 2006) defines productive capacity as the productive resources, entrepreneurial capabilities, and production links that together determine a country's ability to produce goods and services and enable it to develop and grow. Countries whose economic structures include uncomplicated primary products are usually agricultural products such as materials. Raw materials, wood, and textiles. These countries tend to suffer from continuous underdevelopment and may come close to being fragile countries that lack the ability to make decisions in investing even their primary resources. Therefore, the index provides a measure that can be compared to productive capabilities between different countries (Hidalgo, C. A & Hausmann, R., 2009).

Overall, the index summarizes the state of productive capacities in economies around the world by calculating scores ranging between 0 and 100 (boundaries not included). Comparisons between groups and within groups are based on the latest available actual data up to 2016, while the figures indicating the evolution of PCI scores cover the period 2017-2018, thanks to estimates obtained through time series models.

2-5 The objective of the production capacity index

The overall aim of developing PCI was to support the formulation and implementation of comprehensive, coherent and evidence-based policy-making in developing countries. The index is designed with the aim of improving the quality of trade and development policies by placing the enhancement of productive capacities and structural transformation at the centre. In particular, it helps identify economy-level gaps and constraints that hinder efforts to enhance productive capacities and structural transformation. These structural constraints increase social and economic vulnerabilities to external shocks and undermine countries' ability to respond quickly to emergencies such as the COVID-19 pandemic (UNCTAD, 2021).

Therefore, the index is an important and valuable tool in identifying the main constraints restricting economic development and in reorganizing economic policy actions and interventions, especially fiscal policy. The PCI also serves as a consistent and comprehensive tool for tracking progress made towards achieving sustainable development goals and objectives locally and globally.

2-6 The importance of the productive capacity index (UNCTAD, 2021).

a- PCI helps predict the future economic path of a country, based on the current performance of the level of production capacity needed for a particular economy, and to generate a higher level of GDP in the future.

b- PCI provides more insights into comparisons and analyzes between countries, which can facilitate the exchange of experiences, best and worst practices in enhancing productive capacities and structural transformation.

c- PCI helps in understanding the differences in social and economic performance between different countries and regions, and these differences are usually in the levels of productive capacity between leading countries and other countries.

3- Analysis of the reality of government spending and the productive capacity index of the Iraqi economy

Public spending in Iraq is the basic tool for implementing the priorities of the Iraqi economy in the short and long term, as well as the main tool capable of directing the economy to achieve economic growth, reduce unemployment rates, and revive the individual's standard of living.

We begin to analyze the relationship between government spending and the productive capacity index based on what was stated by the Keynesian theory, which says that public spending (current and investment spending) has a direct impact on growth and development in order to achieve a tangible increase in production and productivity to achieve the welfare of society, as well as address the problems of economic cycles, and this opinion Contrary to what was stated by the classical theory that increased public spending crowds out private economic activity, while the Ricardian point of view confirmed that public spending has no competition for the private sector and there is no competition on the ground. (Facchini & Melki, 2013).

In view of the development of public life, the increase in economic complexities, the increase in the intensity of economic activity, the emergence of abhorrent classism, and living in the illusion of achieving global economic justice through capitalism, I believe that governments should play a very important role in supervising, controlling, and directing natural, material, human, and financial economic resources in a way that achieves the public interest and then the interest of private individual investors. And producers, and this is what matches the Islamic point of view regarding the role that the government must play. Through spending, it must build a decent life for individuals by providing health and educational services and infrastructure worthy of members of society and the ethics of the Islamic economy, which examines the field of enabling all individuals to work and produce.

The Iraqi economy is characterized as a rentier economy, relying to finance its expenditures on crude oil revenues, in exchange for the weak contribution of other funding sources as a result of the failure of the financial management to develop other projects capable of financing its budget. Most industrial and production projects, due to poor planning and management and the absence of support, are completely idle, and continued reliance on Oil revenues mainly finance the general budget, exposing it to many risks and challenges, the most important of which are changes in global oil prices. In contrast to the limited role of both tax and non-tax revenues, this will lead to a weakening of the effectiveness of these revenues, which will negatively affect the financing of the general budget and destabilize economic stability.

Table (1) shows the development of government spending in Iraq for the period 2004-2022 AD

Production capacity index (PCI)%	Percentage Government spending of GDP %	Percentage of investment spending from government spending %	Percentage of current spending from government spending %	Government spending at current prices	the years
23.4	35.8	9.4	90.6	32117491	2004
24.4	39.8	17.3	82.7	26375175	2005

25.8	35	15.5	84.5	38806679	2006
25.5	37.8	19.8	80.2	39031232	2007
27.3	42.2	20.0	80.0	59403375	2008
28.4	41.9	20.0	80.0	52567025	2009
29.8	36.2	27.8	72.2	70134201	2010
31.7	41.3	22.6	77.4	78757666.3	2011
32.2	43.5	27.9	72.1	105139575.7	2012
32.9	47	33.9	66.1	106873027	2013
33	41.4	22.0	78.1	113473517	2014
34.2	36.1	26.4	73.6	70397515	2015
33.4	33.4	23.7	76.3	67067437	2016
34.5	30.1	21.8	78.2	75490115	2017
35.3	42.4	17.1	82.9	80873189	2018
34.5	38.2	21.9	78.1	111723523	2019
31.4	34.1	10.9	89.1	76082443	2020
32.5	30.5	12.9	87.1	102849659	2021
32.7		10.3	89.7	116959582	2022

Source: Prepared by the researcher based on the data contained in the Central Bank of Iraq (Data) and UNCTAD, 2023.

Spending policy after 2003 was characterized by expansionism due to the large increase in oil revenues following the end of economic sanctions, which coincided with the rise in oil prices, at a time when expanding public spending is seen as the mainstay of economic reform policies aimed at restructuring the Iraqi economy, and that it is a sufficient national demand. By improving the standard of living of citizens by increasing wages and salaries, adjusting the salaries of retirees, expanding the umbrella of social care, expanding the base of support for basic goods, and confronting the remaining repercussions of the recent war and the accompanying acts of sabotage and encroachments on public and private property, and the impact of this on economic security and development in the country (**Christopher Foote, William Block, Keith Crane, & Simon Gray, 2004 , P6**).

We note from the previous table that government spending is in a state of continuous growth, and this increase is due to the increase in current expenditures, especially military expenditures, as a result of the deterioration of the security situation, in addition to the adjustment of salaries and job allocations. Public expenditures continued to fluctuate within these levels until they reached their highest level in 2013 AD. The reason for this increase is due to the improvement in oil prices and the increase in oil revenues, which was reflected in the increase in government spending, and the largest share of those expenditures was in favor of current spending at a rate of (66.1%) at the expense of investment spending, which amounted to (33.9%).

In the years (2014-2017 AD), government spending declined due to the decline in oil prices and the decline in oil revenues, which constitute approximately 90% of public revenues. This reflects a decrease in government spending, as well as the deterioration of the

security conditions and the fight against ISIS, which resulted in an increase in military spending, which is part of Current spending, which rose to 78% of government spending.

In the years (2020-2022 AD), Iraq witnessed a double crisis represented by the decline in oil prices as a result of the outbreak of the Corona virus and the decline in global demand for oil. Since the Iraqi economy is a rentier economy, it was greatly affected by this crisis. Despite this, the government had to provide grants and aid to members of society in order to Alleviating the severity of poverty and hunger resulting from the periods of closure and comprehensive ban, so the share of current spending increased to approximately (89%) and the share of investment spending decreased to (11%).

The average percentage of current spending during the study period was approximately (80%), and the average percentage of investment spending was approximately (20%). After 2003 AD, most of the facilities and infrastructure suffered from destruction and sabotage. It was necessary to provide greater allocations for their advancement and reconstruction, in addition to the weakness of Allocation: The largest proportion of investment expenditures is in projects of central structures that have no direct relationship to material production. Administrative and financial corruption played a role in delaying many projects and not completing them, in addition to fictitious projects.

In summary, we find the following:

a- Imbalance in the structure of public expenditures: - We notice an increase in current expenditures year after year, as the average percentage of their contribution during the research period reached 80% of public expenditures, and with the passage of time, current expenditures increase due to factors of inflation and expansion of state facilities unless the reduction of these expenditures is taken into consideration. Considering that, as for investment expenditures, their percentage was (20%) of public expenditures, and this means that most of the public spending is directed towards consumption, and this is contrary to what the growing economies and developed economies aspire to, which is that spending be directed towards investment spending, as this spending structure reflects the imbalanced policy. Wasteful consumerism.

b- The predominance of current spending compared to the weakness of investment spending throughout the study period, and this gives us a clear vision of the reasons for the decline in the productive capacity of the economy and the infrastructure, which is the main pillar in developing and developing the economy to keep pace with global developments in multiple fields and the interest in developing resources and capabilities, and this is what confirms that spending The year in Iraq is of a consumerist nature that repels development, because what is paid to buy goods and services is not recovered through taxes, but rather goes abroad through imports, and this proves the failure to diversify the production base and eliminate the issue of depletion of hard currency.

c- The Iraqi economy has a high marginal propensity to consume at the expense of savings and capital formation, and with the weak flexibility of the production system and the continuous growth in aggregate consumer demand, this leads to inflationary pressures that require intervention and pressure on monetary policy to achieve monetary stability by increasing foreign exchange leaked abroad to pay for imports. In order to meet the needs of local demand for goods and services that are supposed to be produced within the country, the result of this is a decline in capital accumulation and the government's inability to achieve financial sustainability because these expenditures will not return to the country with economic returns and go to developing the economies of the source country, and Iraqi

public spending remains in a vicious circle. Unless it is broken by activating the investment aspects and increasing its shares of public spending.

d- The decline in Iraq's productive capacity as a result of economic structural weaknesses, which led to the Iraqi economy becoming a fragile and weak economy that is more vulnerable to fluctuations and external shocks. This is demonstrated by the decline in the productive capacity index, which reached at its best (35%), and this matches the level reached by investment expenditures. As a low percentage of public spending, reaching at its best (33%), it is natural that the productive capacity index for Iraq is low. A country that does not give importance to the investment aspect will remain throughout history a fragile country with economic dependency on the countries of the world, and this is what makes it lose the ability to make its economic decisions, as it is linked to Its capabilities are comparable to those of neighboring countries and countries of the developed world, and as a result, it is an economy vulnerable to collapse in any global crisis.

4- Measuring the relationship between the current government expenditure index and the productive capacity index using the ARDL model

This study was devoted to estimating and analyzing the relationship according to simple linear regression between the components of government spending (current and investment) and the productive capacity index for Iraq for the period (2004-2022) by adopting semi-annual data and using the Views.12 program, and statistical analysis methods were adopted in accordance with For the Analysis of Time Distributed Lag (ARDL) methodology, Before entering into the estimation and analysis of econometric models, a table must be given with the symbols used in econometric analysis

Table 2: Symbols used in econometric analysis

the meaning	code
Percentage of current expenditure out to government expenditure	Cg
The ratio of investment spending to government spending	Ci
Production capacities index	PCI

The source is from the researcher's work

The stability of the study variables was tested using the Eviews.12 program and performing the expanded Dickey-Fuller (ADF) test in order to determine whether the variables are stable or unstable, that is, they contain a unit root with the integral order determined. After conducting the test for the variables, we obtained the outputs shown in Table (3). :-

Table (3) Expanded Dickey-Fuller unit root test

IRAQ							
Variable	Lag Length	Level			First-Difference		
		A	B	Non	A	B	Non
Cg	I(1)	-0.82	-1.07	0.20	-7.31*	-5.5*	-7.43*
Ci	I(1)	-0.82	-1.07	-0.44	-7.30*	-5.49*	-7.41*
PCI	I(1)	-2.08	-0.93	1.5	-6.37*	-7.12*	-5.91*

a means the regression contains only a secant

b means the regression has a secant and a general trend
non means the regression has neither a secant nor a general trend

* Means significant at 5% significance level

** Means significant at 10% significance level

The source was prepared by the researcher based on the outputs of the Eviews program.¹²

We notice from Table (2) that the time series for all variables (Cg, Ci, PCI) are unstable at the level (Level), so the test was conducted after taking the first-difference of the original series, as they stabilized at a significance level of 5% and will be Integrated security of degree (1)I, whether there is a conclusive or a conclusive and a general direction.

a. Function of the productive capacity index of the Iraqi economy

i. Autoregressive distributed lag (ARDL) model

After testing the stability of the variables, an autoregressive distributed lag model (ARDL) was estimated for the index function of the proportion of current spending from general government spending. The model consists of an independent variable, which is the current spending index as a proportion of government spending (Cg), and a dependent variable represented by the productive capacity index (PCI) plus (U.) The random variable, where the parameter values were calculated according to the following formula:

$$PCI = B_0 + B_1(Cg) +$$

With slow periods (4), we obtained the results as in the table:

Table (4): Results of the ARDL model for the productive capacity index function of the Iraqi economy

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PCI(-1)	0.760973	0.177282	4.292446	0.0002
PCI(-2)	0.141491	0.168415	0.840135	0.4075
CG	-0.072196	0.036276	-1.990176	0.0558
CG(-1)	0.057947	0.049101	1.180168	0.2472
CG(-2)	-0.023596	0.038877	-0.606934	0.5485
C	6.304080	2.933778	2.148793	0.0398
R-squared	0.94	Adjusted R-squared		0.94
F-statistic Probability	113.88 (0.000)	Durbin-Watson stat		2.02

We notice from the above-mentioned table that shows the results of estimating the ARDL model that the explanatory power of the estimated model was (R² = 0.94 (meaning that the independent variables included in the estimated model explain 94% of the changes in the dependent variable) and the value of Adjusted R-squared was (0.94), as well as the model Significant, as the calculated F value was 113.88) and it is significant at the 5% level, meaning that the estimated model is significant, meaning we reject the null hypothesis (H₀: b=0) and accept the alternative hypothesis (H₁: b≠0).

ii. Testing the existence of a cointegration relationship (Bounds Test)

That is, testing the existence of a long-term equilibrium relationship through the Bounds Test, which is shown in Table (5).

Table (5) Bounds Test for the estimated model of the productive capacity index function of the Iraqi economy

Test Stat.	Value	K
F- Stat	4.18	1
Signi.	I0 Bound	I1 Bound
10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Table (5) shows the results of the bounds test, from which we notice that the calculated value of (F-statistics) was greater than the (maximum tabular F) of (4.16) at a significance level of (5%). Therefore, we will reject the null hypothesis and accept the alternative hypothesis, that is, the existence of a long-term equilibrium relationship between Dependent variable and independent variables.

iii. Testing the problem of autocorrelation and heterogeneity of variance

The estimated model to ensure that it is free from the problem of serial correlation using the Breusch-Godfrey Serial Correlation LM Test and heterogeneity of variance in Table (6).

Table (6) Serial correlation test and heterogeneity of variance for the productive capacity index function of the Iraqi economy

Breusch-Godfrey Serial Correlation LM Test			
F- statistic	0.057963	Prop. F	0.9438
Obs*R-squared	4.8071	Prob. Chi-Square	0.9285
Heteroskedasticity Test: Harvey			
F-statistic	1.774422	Prob. F	0.1484
Obs*R-squared	8.216583	Prob. Chi-Square	0.1447
Scaled explained SS	5.636785	Prob. Chi-Square	0.3432

We notice from Table (6) that the estimated model is free of serial correlation, meaning we accept the null hypothesis that there is no serial correlation between the residuals because the value of the F test and Chi-Square are not significant at the 5% level of significance, as we reject the alternative hypothesis of the presence of serial correlation as well as the null of the model. From the problem of heterogeneity of variance because the statistical indicators were also non-significant, meaning that the variance of errors is homogeneous.

iv. Testing the structural stability of short- and long-term transactions

After estimating the error correction formula for the ARDL model, it is necessary to conduct a structural stability test for the short- and long-term coefficients of the productive capacity index function model for the Iraqi economy to ensure that the data used are free of any structural changes in it. This is done through two tests: the Cumulative Sum of Residuals (CUSUM) test.) and the cumulative sum of squares of the recursive residuals (CUSUM SQ) test, as shown in the following figure:

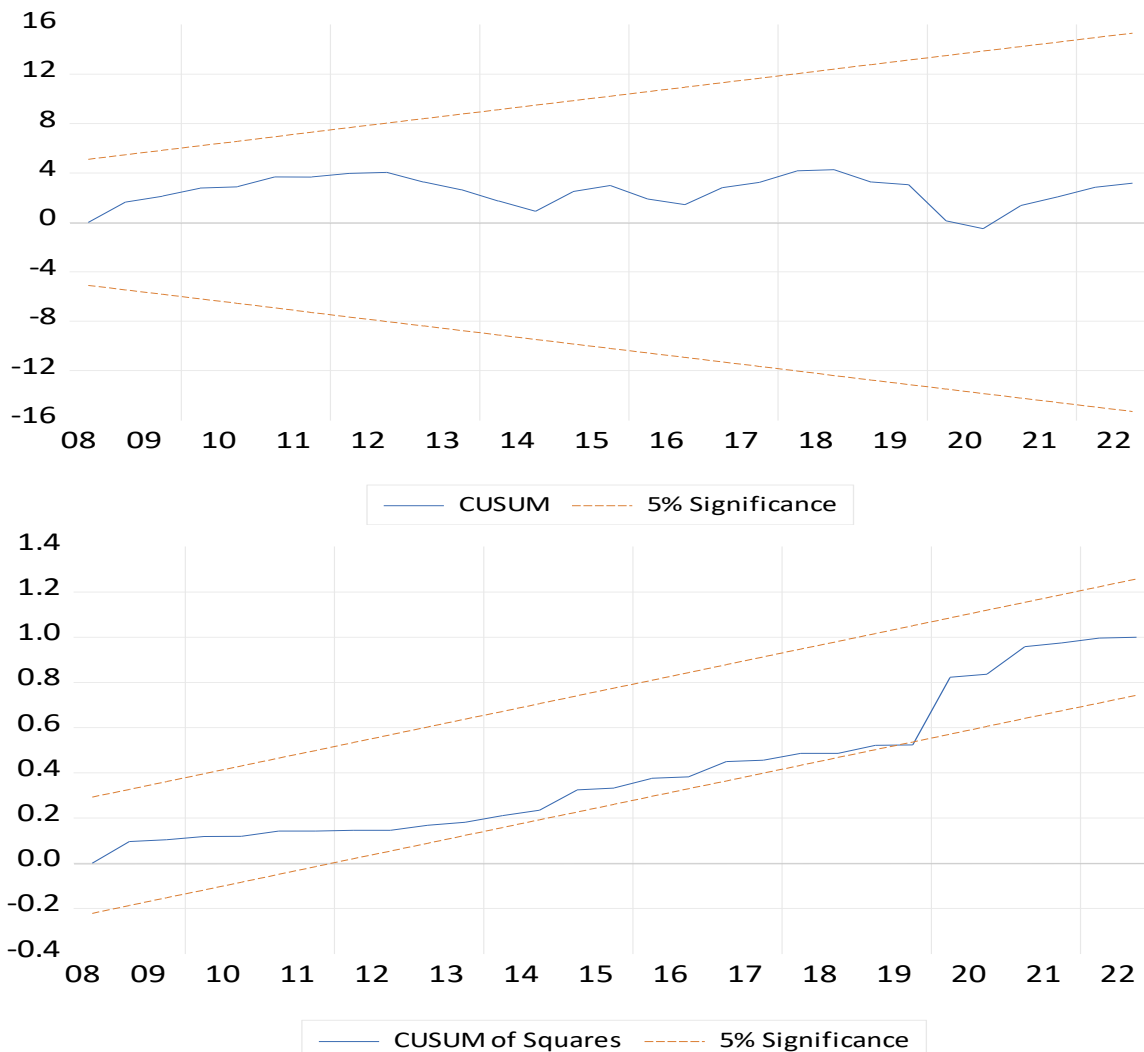
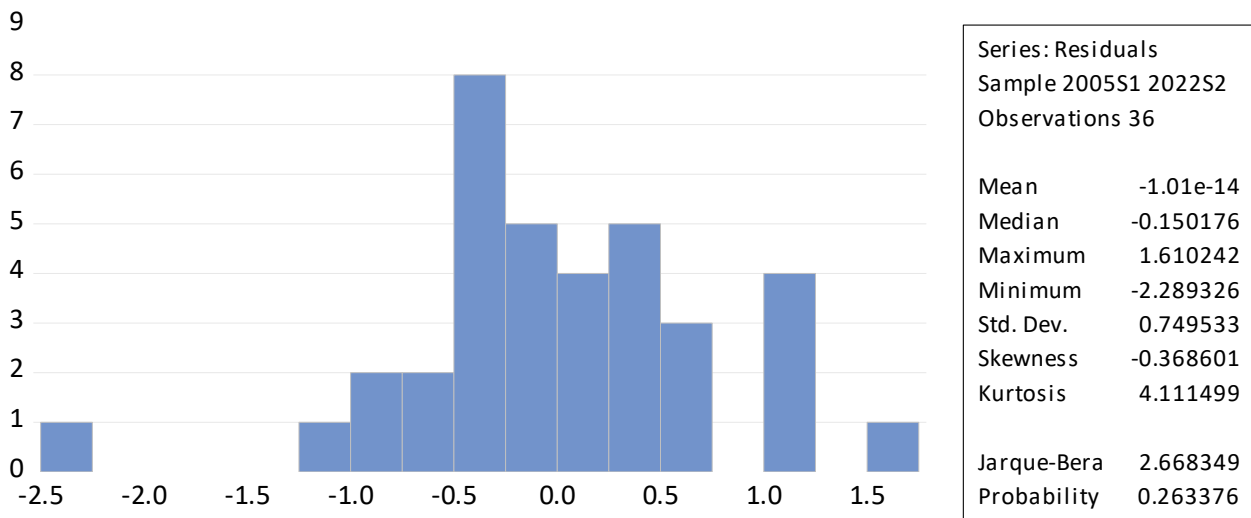


Figure (1) shows the structural stability of the productive capacity index function of the Iraqi economy

It is noted from the figure above that the Cumulative Sum of Recursive Residuals (CUSUM) test statistic fell within the critical limits (the upper limit and the lower limit) at a significance level of 5%. This means that the estimated coefficients of the unconstrained error correction model used are structurally stable across the time period under study, as well. This is the case with the cumulative sum of squares of the recursive residuals (CUSUM SQ), as it fell within the critical limits at the 5% level. It is inferred from these two tests that there is stability and consistency in the model between the short and long terms.

v. Testing the normal distribution of random errors in the histogram.

The normal distribution test (Histogram) indicated that the random errors are distributed normally (normal), since the Jarque-Bera value is (2.66) and the p-value for this parameter is (0.26), which is greater than the 5% level of significance, which indicates the presence of a normal distribution. For random errors, we accept the null hypothesis (H0), which indicates the presence of a normal distribution of random errors, and reject the alternative hypothesis (H1), which indicates otherwise.



Graphical Figure (2) Testing the normal distribution Histogram of the productive capacity index function of the Iraqi economy

vi. Estimating short-term (error correction model) and long-term parameters

According to the ARDL approach and after conducting the estimation, we obtained the results shown in Table (7):

Table (7): Results of the error correction model and the long-term relationship of the productive capacity index function for the Iraqi economy

Short term				
Variable	Coefficien	Std. error	t-stat	Prob
D(PCI(-1))	-0.141491	0.160537	-0.881362	0.3851
D(CG)	-0.072196	0.032346	-2.232011	0.0332
D(CG(-1))	0.023596	0.035185	0.670624	0.5076
CointEq(-1)*	-0.097536	0.030765	-3.170399	0.0035
EC = PCI - (-0.3880*CG + 64.6335) Error correction equation				
Long term				
Variable	Coefficient	Std. error	t-stat	Prob
CG	-0.388001	0.272000	-1.426474	0.1641
C	64.63349	22.06254	2.929558	0.0064

It is clear from Table (7) in the short term that the parameter of the current spending index (Cg) reached (-0.07), which has a negative and significant value at the level of (5%), as a clear indication of the existence of a significant relationship between the current spending index and the productive capacity index, but the relationship What appears in the model is an inverse relationship indicating that increasing current spending by one unit leads to a decrease in productive capacity by (0.07). This indicates that Iraqi current spending, despite reaching high proportions of government spending, did not lead to an increase in productive capacity as a clear indication of leakage of spending. It enters into a vicious circle, causing governments to fall into the illusion of spending productivity. This illusion can be inferred by the lagging productivity of various economic sectors and their weak contribution to the gross domestic product, as well as the low contribution of funding sources other than crude oil to supplying

the country's financial resources, as well as the backwardness of educational and health services. And weak infrastructure.

In the long run, the current expenditure parameter was not significant as an indication of the absence of a significant relationship between the two variables in the long run.

b. Function of the productive capacity index of the Iraqi economy with investment spending

i. Autoregressive distributed lag (ARDL) model

After testing the stability of the variables, an autoregressive distributed lag model (ARDL) was estimated for the index function of the ratio of investment spending to government spending. The model consists of an independent variable, which is the investment spending index as a proportion of government spending (C_i), and a dependent variable represented by the productive capacity index (PCI) plus (U). The random variable, where the parameter values were calculated according to the following formula: -

$$PCI = B_0 + B_1(C_i) + U$$

With slower periods (2), we obtained the results as in the table: -

Table (8): Results of the ARDL model for the productive capacity index function of the Iraqi economy

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PCI(-1)	0.761060	0.177286	4.292842	0.0002
PCI(-2)	0.141389	0.168421	0.839494	0.4078
C_i	0.072293	0.036367	1.987862	0.0560
$C_i(-1)$	-0.058136	0.049240	-1.180655	0.2470
$C_i(-2)$	0.023671	0.038980	0.607257	0.5482
C	2.520255	1.263895	1.994038	0.0553
R-squared	0.94	Adjusted R-squared		0.94
F-statistic Probability	113.88 (0.000)	Durbin-Watson stat		2.02

We notice from the above-mentioned table that shows the results of estimating the ARDL model that the explanatory power of the estimated model was ($R^2 = 0.94$ (meaning that the independent variables included in the estimated model explain 94% of the changes in the dependent variable) and the value of Adjusted R-squared was (0.94), as well as the model Significant, as the calculated F value was 113.88) and it is significant at the 5% level, meaning that the estimated model is significant, meaning we reject the null hypothesis ($H_0: b=0$) and accept the alternative hypothesis ($H_1: b \neq 0$).

ii. Testing the existence of a cointegration relationship (Bounds Test)

That is, testing the existence of a long-term equilibrium relationship through the Bounds Test, which is shown in Table (9).

Table (9) Bounds Test for the estimated model of the productive capacity index function of the Iraqi economy

Test Stat.	Value	K
F- Stat	4.20	1
Signi.	I0 Bound	I1 Bound

10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Table (9) shows the results of the bounds test, from which we notice that the calculated value of (F-statistics) was greater than the (maximum tabular F) of (4.20) at a significance level of 5%). Therefore, we will reject the null hypothesis and accept the alternative hypothesis, that is, the existence of a long-term equilibrium relationship between... Dependent variable and independent variables.

iii. Testing the problem of autocorrelation and heterogeneity of variance

The estimated model to ensure that it is free from the problem of serial correlation using the Breusch-Godfrey Serial Correlation LM Test and heterogeneity of variance in Table (10).

Table (10) Serial correlation test and heterogeneity of variance for the productive capacity index function of the Iraqi economy

Breusch-Godfrey Serial Correlation LM Test			
F- statistic	0.058023	Prop . F	0.9437
Obs*R-squared	4.148587	Prob. Chi-Square	0.9284
Heteroskedasticity Test: Harvey			
F-statistic	1.796662	Prob. F	0.1437
Obs*R-squared	8.295838	Prob. Chi-Square	0.1407
Scaled explained SS	5.648586	Prob. Chi-Square	0.3419

The source was prepared by the researcher based on the outputs of the Eviews program.

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We notice from Table (10) that the estimated model is free of serial correlation, that is, we accept the null hypothesis that there is no serial correlation between the residuals because the value of the F test and Chi-Square are not significant at the 5% level of significance, as we reject the alternative hypothesis of the presence of serial correlation as well as the null of the model. From the problem of heterogeneity of variance because the statistical indicators were also non-significant, meaning that the variance of errors is homogeneous.

iv. Testing the structural stability of short- and long-term transactions

After estimating the error correction formula for the ARDL model, it is necessary to conduct a structural stability test for the short- and long-term coefficients of the productive capacity index function model for the Iraqi economy to ensure that the data used are free of any structural changes in it. This is done through two tests: the Cumulative Sum of Residuals (CUSUM) test. and the cumulative sum of squares of the

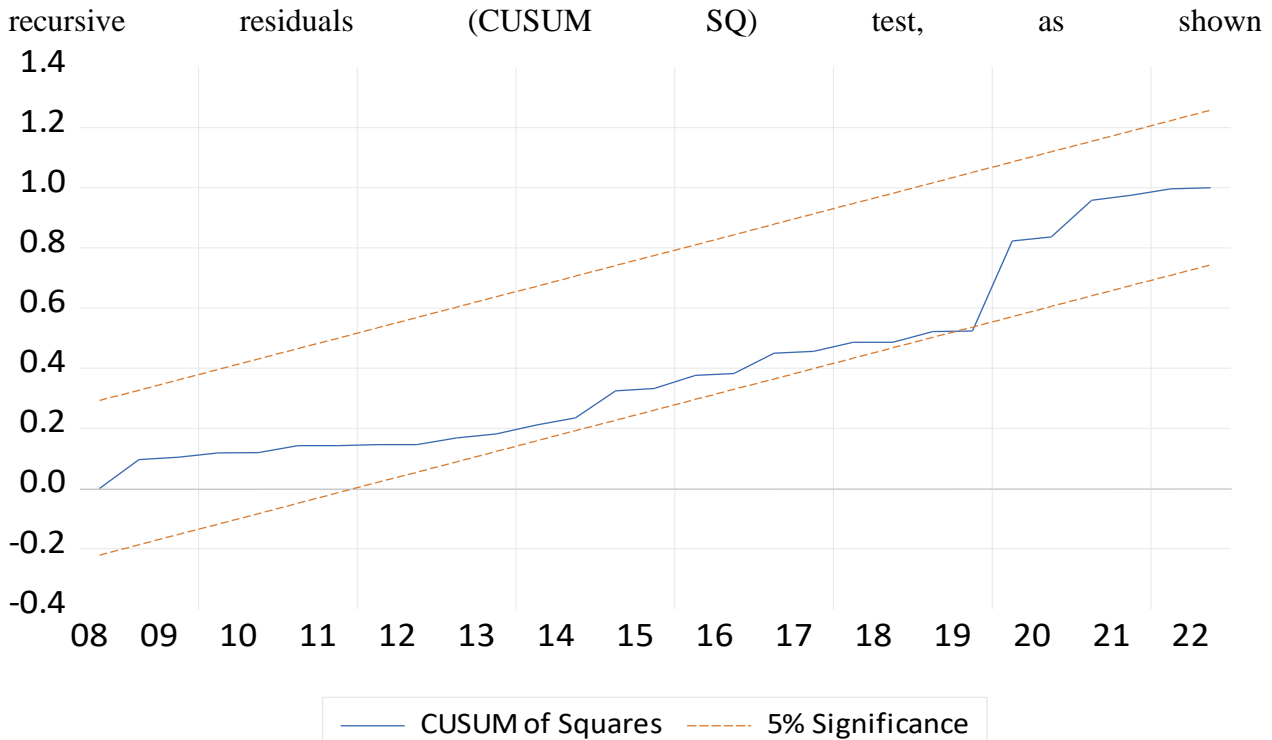


Figure (3) shows the structural stability of the productive capacity index function of the Iraqi economy

It is noted from the figure above that the Cumulative Sum of Recursive Residuals (CUSUM) test statistic fell within the critical limits (the upper limit and the lower limit) at a significance level of 5%. This means that the estimated coefficients of the unconstrained error correction model used are structurally stable across the time period under study, as well. This is the case with the cumulative sum of squares of the recursive residuals (CUSUM SQ), as it fell within the critical limits at the 5% level. It is inferred from these two tests that there is stability and consistency in the model between the short and long terms.

v. Testing the normal distribution of random errors in the histogram.

The normal distribution test (Histogram) indicated that the random errors are distributed normally (normal), since the Jarque-Bera value is (2.64) and the p-value for this parameter is (0.26), which is greater than the 5% level of significance, which indicates the presence of a normal distribution. For random errors, we accept the null hypothesis (H0), which indicates the presence of a normal distribution of random errors, and reject the alternative hypothesis (H1), which indicates otherwise.

vi. Estimating short-term (error correction model) and long-term parameters

According to the ARDL approach and after conducting the estimation, we obtained the results shown in Table (11).

Table (11): Results of the error correction model and the long-term relationship of the productive capacity index function for the Iraqi economy

Short term				
Variable	Coefficien	Std. error	t-stat	Prob
D(PCI(-1))	-0.141389	0.160539	-0.880711	0.3855

D(Ci)	0.072293	0.032438	2.228639	0.0335
D(Ci(-1))	-0.023671	0.035286	-0.670819	0.5075
CointEq(-1)*	-0.097551	0.030777	-3.169641	0.0035
EC = PCI - (0.3878*CI + 25.8352) Error correction equation				
Long term				
Variable	Coefficient	Std. error	t-stat	Prob
Ci	0.387773	0.271679	1.427320	0.1638
C	25.83517	5.553411	4.652127	0.0001

It is clear from Table (11) in the short term that the parameter of the investment spending index (Ci) reached (0.07), which has a positive and significant value at the level of (5%), as a clear indication of the existence of a significant relationship between the investment spending index and the productive capacity index, and that this apparent relationship In the model, it is a positive and logical relationship, as it indicates that increasing investment spending by one unit leads to an increase in production capacity by (0.07), which is a very small percentage that indicates a decline in the volume of investment spending in the Iraqi budgets for previous years. This indicates that Iraqi investment spending, despite reaching Very low percentages of government spending, but it is capable of change if public finance management behaves well in allocating financial resources and directing them towards the investment sector, especially investment in human capital (health and education), in a way that creates a productive and qualified human force capable of raising production and productivity rates and achieving growth rates. High, in addition to investing in various sectors of the Iraqi economy and exploiting idle resources in an optimal and efficient way to achieve the highest productivity at the lowest cost.

In the long term, the investment spending parameter was not significant as an indication of the absence of a moral relationship between the two variables in the long term. As we explained in the short term, the lack of the relationship appearing or the weak effect between the two variables results from the weakness of financial resources directed towards the investment side of the budget.

5-

-Conclusions and recommendations

There is increasing recognition of the importance of productive capabilities in the process of developing the development process and moving the wheel of the economy. There is no simple, unified and global plan that enables fragile and developing countries to address their ongoing development challenges, and that each country needs to design local development policies and strategies that suit its particular social, economic and political environmental conditions and in harmony with Its institutional resources and capabilities, and enhancing productive capabilities is a very important prerequisite for achieving structural transformation and sustainable development to build a strong economy capable of withstanding social and economic crises and fluctuations, and capable of standing up to external shocks.

Among the results obtained is that current spending has a negative impact on the productive capacity index. Although this contradicts economic theory, it matches the economic reality of Iraq. Despite the increase in public spending, it still suffers from the backwardness of most economic sectors to the extent that their contribution to the output is almost non-existent. The

GDP and being satisfied with a single source that is closely linked to global fluctuations exposes the country to the risk of collapse at any time. This means that the Iraqi economy gives importance to current spending at the expense of investment spending during the past years, as the average investment spending during the research period reached approximately (20%) of spending. The government, which is a very low percentage, was reflected in the weakness of the investment-based structures of the Iraqi economy, and this is what made the productive capacity index of the Iraqi economy record a low percentage, reaching its best levels (35%). This is consistent with the weak allocation of financial resources in the investment aspects, and what supports the analysis is the test of the relationship that It shows us that investment spending has a positive and significant impact on production capacity, but its parameter reached (0.07), which is a very low percentage with almost no effect. However, if a large percentage of financial resources were directed towards investment areas, this would help develop projects and increase their ability to produce and be productive. Achieving high rates of GDP growth.

Therefore, the research recommends the necessity of directing government spending towards productive sectors in order to improve production capabilities and achieve sustainable development comparable to developed countries, as well as periodically monitoring and evaluating the extent of the productivity of public spending in various economic sectors in order to make it more effective.

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