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OPTIMIZATION OF GOVERNMENT INVESTMENT IN CAPITAL ACCUMULATION IN THE IRAQI ECONOMY FOR THE PERIOD 2004-2020

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Abstract
This article aims to study the optimality of government investment in capital accumulation in the Iraqi economy, focusing on the impact of taxes and non-oil revenues. The research problem lies in the fact that government spending, despite its increase after 2004, did not contribute sufficiently to raising the efficiency of the Iraqi economy and achieving social justice. The researcher used a number of statistical programs, namely (Microsoft Excel vs. 16, SPSS VS. 25, Eviews Vs. 12, Smart Pls 4). The results showed that increasing taxes negatively affects investment decisions, which hinders capital accumulation and reduces the efficiency of government spending, which requires improving investment efficiency and directing resources towards productive sectors such as agriculture and industry. The research came out with a number of recommendations, the most important of which is re-evaluating the tax system to reduce tax rates and enhance tax exemptions for investors, which contributes to attracting investment and achieving sustainable development. Balanced tax policies should also be formulated to ensure the achievement of government revenues without a significant negative impact on capital accumulation.

Keywords: Optimization of government investment, capital accumulation, Ihori model.

Introduction

Evaluating the various activities of the public sector has gained great importance in the fields of scientific research for a long time because of its importance in identifying the direction taken by governments in disposing of the money collected through taxes or other resources that the government obtains as financial revenues spent on people within the economy, and that this evaluation of these economic activities will be subject to consideration by the people and thus an evaluation of the ruling governments. According to this evaluation, the fate of governments will be in continuing or not in the political process. If the results of the evaluation are good, this means that governments are acting rationally in spending the financial resources that are the people's money, and thus obtain

the people's confidence in voting for them in the upcoming elections. However, if the results are bad, this means that the current government has lost the people's confidence.

From here, it is necessary to identify the methods and approaches through which the work of the government can be evaluated, and here we mean its various economic activities. The evaluation of government sector activities is at two parallel levels. The first level lies in efficiency, meaning the amount of efficiency achieved from the use of financial resources. There are three indicators through which the efficiency of government activities can be measured- :

Output. - Employment. - Capital accumulation. - The second level is social justice, meaning that this government spending, in its two aspects of consumption and investment, has social justice been achieved or not? There are two indicators to measure social justice, which are : -

Income distribution. - Welfare. - The Iraqi economic plan after 2003 followed an expansionary financial policy based on increasing government spending through financial resources that come primarily from oil resources. This spending was accompanied by some fluctuations, up and down, because it is organically linked to oil revenues and thus global oil prices, which fluctuate between rising and falling based on the level of global demand and supply and other factors. However, in the general trend, there was a steady increase in government spending, whether it was consumer spending or general investment spending. As for government investment spending, there were significant increases compared to before 2003, and this increase in general government investment spending was supposed to contribute to the process of capital accumulation in the Iraqi economy, i.e. contribute to increasing the productive capacity of the Iraqi economy in non-oil sectors, but this did not happen? That is, this general investment spending did not contribute to raising the efficiency of the Iraqi economy in generating goods and services, and more precisely, it did not contribute to the accumulation of public capital in various important economic activities such as agriculture, forestry, quarries, mining, manufacturing, construction, transportation, storage, etc.

From here, it is necessary to identify the most important sector of economic activities in the Iraqi economy to which government investment spending contributed the largest percentage, and whether this sector is the most important sector that can be directed directly or indirectly to accelerate the accumulation of capital in the Iraqi economy, and thus there is a possibility to raise the efficiency of the Iraqi economy through directed government investment spending. The state's regular spending to carry out its basic duties is financed through taxes, but this financing through this channel will lead to a number of well-known negatives, as taxes distort the optimal allocation of economic resources and also reduce overall economic indicators, including output, employment and economic growth. All this happens in light of the financial resources coming from taxes going to unproductive spending that does not accumulate capital. The important question here is what happens if a portion of these public revenues collected from taxes, as is the general rule (or from other rentier financial resources, for example in oil-producing countries, including Iraq) is allocated to contribute to the accumulation of capital in various economic sectors in

agriculture, forestry, fishing, transportation, mining, manufacturing, trade, and others. Accordingly, it can be said that directing taxes or rentier financial resources towards government investment spending will reduce the negative effects of taxes, i.e. it will work to reallocate economic resources in their optimal form, as well as raise employment and output rates, and contribute to achieving economic growth and development, and perhaps reaching prosperity and achieving social justice. All of this comes from increasing the accumulation of total money and expanding the country's productive capacity.

From the above, the optimal direction of government investment spending can be achieved in increasing the country's wealth.

First: - Research Methodology

 Research Problem

The process of poor direction of economic financial resources that come from taxes or through oil rent financial resources is a major reason for not achieving economic growth. This is clear and evident through the failure to direct public investment spending in Iraq and through the general budget to achieve capital accumulation in the Iraqi economy. Consequently, government investment spending did not bear good fruits at the level of total capital accumulation and did not achieve expansion in non-oil production capacity within the Iraqi economy.

 Research Hypothesis

Determining the optimality of government investment spending according to the standards of mathematical models for economic growth and achieving good rates of growth in non-oil output, employment and capital accumulation is what makes government investment spending have a good impact on the Iraqi economy. This depends on knowing how the optimal path can be for this impact.

 Research objective

The Ihori model is one of the best mathematical models that tried to investigate the presentation of public investment and the impact of financial policy on economic growth and capital accumulation. Trying to apply this model in the Iraqi economy enables us to identify the ideals of public investment spending, which has expanded in the last two decades, but this expansion has not contributed to achieving the desired accumulation in the opinion of money.

Second: - The theoretical aspect of the research

1) The Ihori model in public investment and economic growth

Stating the impact of financial policy on economic growth through public investment is completed by differentiating between two types of capital accumulation, namely capital for the economic life cycle, which arises from traditional economic activities and events. This is the first, and the second type is transferred capital, which comes from the educational process and investment in human capital, as well as a set of accumulated experiences that are formed across generations and are passed on from one generation to another.

Ihori, the Japanese scientist, designed a mathematical model to show the impact of the accumulation of human and material capital on growth in output. This model can be

explained by the following equations (Ihori, 2001:131-135), (Ihori:2017:122), (Buyse e al, 2013: 13), (Buyse e al, 2017: 15):-

$$Yt = AK_t^{1-\propto} H_t^{\propto} \dots\dots\dots\dots (1)$$

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$$r = \frac{\partial Y}{\partial K} = A(1-\propto)K^{-\propto} \dots\dots\dots\dots (2)$$

$$h = \frac{(Y - rK)}{H} = \frac{\partial Y}{\partial K} = A\alpha K^{1-\alpha} \dots\dots\dots (3)$$

Where r is the rate of return achieved from physical capital and is the first derivative of equation (1) in terms of K physical capital and h is the rate of return achieved from human capital and is the first derivative of equation (1) in terms of (H) human capital. Here we can combine these three equations and show the effect of taxes on contributing to the formation of capital in a qualitative manner as in the equation: -

$$1 + \{1 + r|\sum[1 + (1 - t)r]\}K = \frac{1 + h}{[1 + (1 - \emptyset b)h - \delta]\rho} \dots\dots\dots\dots (4)$$

From the above equation, we notice on the left side that there is a positive relationship between human capital and taxes, i.e., increasing income taxes leads to the accumulation of human capital and, as a final result, leads to increased economic growth. As for the right side, it shows that there is a negative relationship between taxes and physical capital, i.e., increasing taxes leads to a reduction in the accumulation of physical capital and thus a reduction in economic growth, which is consistent with the logic of economic theory.

2) Criteria for the optimality of public investment spending

There are criteria through which the optimality of public investment spending can be determined, namely (Brihi; 2022; 129-130):-

The ratio of government investment spending is higher than the marginal propensity to save private

In order for the relationship to be positive between economic growth and government spending, this criterion must be applied. This criterion can be demonstrated through the following:-

If we symbolize the gross domestic product with the symbol (Y) and government spending (G) and g represents the ratio of government spending to the gross domestic product and Ig is general government investment and λ represents the ratio of general investment spending to government spending S is the marginal propensity to save t is the tax rate from income and K is physical capital ΔK is the addition or change in capital and α is the ratio of output to capital and then the equations are as follows:-

$$S=s(1-t)y\dots\dots\dots\dots(5)$$

$$G=gy\dots\dots\dots\dots..(6)$$

$$\Delta K = I \dots\dots\dots\dots\dots (7)$$

$$Ig = (\lambda G) = \lambda gY \dots\dots\dots\dots (8)$$

$$\Delta K = I = S(1 - t)Y + \lambda gY \dots\dots\dots\dots\dots\dots (9)$$

$$W = \frac{\Delta K}{K}$$ بالتعويض

$$W = s(1 - t)\alpha + \lambda g\alpha \dots\dots\dots\dots (10)$$

$$W = \alpha[s(1 - t) + \lambda g] \dots\dots\dots\dots\dots\dots (11)$$

When the tax rate t equals the spending rate g in the long run

$$g=t$$

$$W = \alpha[s(1 - t) + \lambda t] \dots\dots\dots\dots (12)$$

$$W = [s - st + \lambda t] \dots\dots\dots\dots (13)$$

And by rearranging inside the brackets it becomes:

$$W = \alpha[s + \lambda t - st] \dots\dots\dots (14)$$
$$W\alpha[s + (\lambda - s)t] \dots\dots\dots\dots\dots\dots\dots (15)$$

From equation (15) if the ratio of government investment spending λ is higher than the marginal propensity to save privately, then the relationship is positive between economic growth and government spending, but if it is the opposite, then the opposite is true.

Equality of marginal product of investment in the public and private sectors

The optimality of public investment is considered at the point where the marginal product of public investment MPKG equals the marginal product of private investment MPKP as in the following identity (Karras, 2007:4-5):-

MPKG=MPKP…….(16)

The gross domestic product (GDP) is a function of capital in the public and private sectors, as in the following equation:

Y=f(KG;KP)…….(17)

$$Y = a + a_1 K_G + a_2 K_P \dots\dots\dots\dots (18)$$

where a_1 is the marginal propensity to invest public and a_2 is the marginal propensity to invest privately.

$$\text{If } a_1 = a_2 \dots\dots\dots\dots (19)$$

This means that the increase in public investment has the same effect on the GDP as if there was an increase in private investment K_P, i.e.:

$$F_{K_G} = F_{K_P} \dots\dots\dots\dots (5)$$

Therefore, the last condition leads to the accumulation of capital in the macroeconomy.

The third section: - The applied aspect (the practical aspect)

In light of the challenges facing the Iraqi economy, such as the heavy reliance on oil revenues, it has become necessary to direct government spending towards non-oil sectors, and the application of the Ihori model in the Iraqi economy provides a comprehensive framework for understanding whether it is possible to achieve the optimization of government investment and what is its impact on economic growth and capital accumulation, and the Ihori model is based on measuring the impact of financial policies on economic growth through the investment of physical and human capital.

First: - Testing the stability of time series through the expanded (developed) Dickey-Fuller test

When viewing the results shown in Table (1), we note the following: -

- The time series of GDP is stable (static) across the models (the first model at the first and second difference), while the second model is stable (at the second difference), and the third model indicates that the time series of GDP is stable at the second difference, which indicates that the time series of GDP is stable.
- The time series of physical capital is stable (stationary) as the t-Statistic test value is statistically significant and the probability value is statistically significant at the original level and the first and second difference are all less than 5% across the three models (Intercept, Trend and Intercept, None), but the series is not stable (stationary) at the original

level according to the first and third models, and is also not stationary at the second difference in the second model Trend and Intercept, meaning that the time series data of physical capital enjoy stability.

- The time series of human capital is stable (stationary) only at the first difference in the first model, and also stable at the second difference across the models (Intercept, Trend and Intercept, None), meaning that the time series data of human capital enjoy stability.
- The time series of general capital is stable (stationary) only at the first and second difference in the first and third models, meaning that the time series data of human capital enjoy stability.
- The time series of private capital is stable (stationary) at the second difference through the Trend and Intercept model, which indicates that the time series of private capital enjoys stability. Table (1) Testing the stationary of time series

Model 3 None		Model 2 Trend and Intercept		Model1 Intercept			Time series
Prob*.	t-Statistic	Prob*.	t-Statistic	Prob*.	t-Statistic		
0.9718	1.687961	0.7473	1.598201	0.7159	1.029045	Level	GDP Y
0.4086	0.666781	0.1795	2.937054	0.0384	3.227914	1st difference	
0.0001	5.162452	0.0020	6.001066	0.0023	4.931180	2nd difference	
0.9109	1.026098	0.0227	4.348416	0.6540	1.173588	Level	K physical capital
0.0032	3.333235	0.0296	4.239753	0.0047	4.595327	1st difference	
0.0009	4.001196	0.1238	3.265066	0.0263	3.584014	2nd difference	
0.9232	1.114672	0.7965	1.470186	0.3051	1.945745	Level	Human Capital H
0.0052	3.020674	0.1457	3.103630	0.0451	3.138798	1st difference	
0.0013	3.760866	0.1759	2.997711	0.0384	3.343488	2nd difference	
0.9997	4.135798	0.9998	1.330346	1.0000	3.083410	Level	Public capital
0.8187	0.544238	0.1307	3.199909	0.0000	9.359551	1st difference	
0.0004	4.455547	0.0001	9.563933	0.0004	6.421336	2nd difference	
0.9200	1.089131	0.9999	4.695627	1.0000	4.708695	Level	Private capital
0.9993	3.728514	1.0000	1.901066	1.0000	3.614375	1st difference	
0.9800	1.952005	0.0049	5.530141	0.9958	1.254918	2nd difference	

Second: - Testing the normal distribution of time series

This paragraph included testing the normal distribution using the tests (Kolmogorov-Smirnova, Shapiro-Wilk) to determine the extent of the normality of the distribution of time series of research data (GDP, physical capital, human capital, public capital, and private capital), and through the results shown in Table (2), we see that the results of the Kolmogorov-Smirnov test indicate that the level of significance .Sig for all research variables reached 0.200, which is greater than 5%, indicating that the data follows a normal distribution. We also note according to the (Shapiro-Wilk) test that the level of significance .Sig for all research variables is greater than 5%, indicating that the data follows a normal distribution. This means that the time series data enjoy high normality and are subject to normal distribution, and thus parametric statistics can be used in analysis and testing.

Table (2) Testing the normal distribution of time series data

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
GDP Y	.139	17	.200*	.910	17	.101
physical capital	.128	17	.200*	.935	17	.265
Human capital	.127	17	.200*	.941	17	.332
Public capital	.102	17	.200*	.962	17	.676
Private capital	.165	17	.200*	.899	17	.065
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Third: Applying the Ihori model:

From Table (3), we see that the gross domestic product Y witnessed a significant increase during the research period 2004-2020, despite the Iraqi economy going through many economic, political and security crises, such as the decline in global oil prices, if the gross domestic product rose from 101,845,300 million dinars in 2004 to 195,402,500 million dinars in 2020, and this increase reflects the economic growth driven mainly by oil revenues, which constitute the largest part of the revenues of the Iraqi economy, as well as due to the lifting of economic sanctions and then allowing Iraq to export oil within the limits of its quota set in OPEC.

Table (3) Ihori model in the Iraqi economy for the period 2004-2020

$\frac{1+h}{[1+(1-\emptyset b)h-\delta]\rho}$	$(1+\{1+r\sum[1+(1-t)r]\}K)$	نسبة الضريبة	h rate of return on human capital	Rate of return on physical capital R	A	Human Capital H	K physical capital	GDP Y	Year
67.74547	8650591.023	0.16%	8.27%	0.017%	0.9870024	1,230,835,000	8,650,590	101,845,300	2004
67.78632	17212501.07	0.48%	8.21%	0.008%	0.7028506	1,261,078,000	17,212,500	103,551,400	2005
67.80132	5225251.081	0.54%	8.19%	0.029%	1.309272	1,335,942,000	5,225,250	109,389,900	2006
67.9239	9907301.165	1.10%	8.00%	0.015%	0.9486632	1,393,240,000	9,907,300	111,455,800	2007
67.30818	5907111.134	0.82%	8.96%	0.028%	1.3526775	1,346,238,000	5,907,110	120,626,500	2008
67.61488	11540201.43	2.67%	8.48%	0.014%	0.9571201	1,470,978,000	11,540,200	124,702,800	2009
67.28004	11937001.2	1.15%	9.00%	0.014%	1.0004829	1,473,473,000	11,937,000	132,687,000	2010
67.01802	15799501.23	1.25%	9.43%	0.012%	0.922646	1,514,034,000	15,799,500	142,700,200	2011
66.44308	26043001.33	1.62%	10.37%	0.008%	0.8046243	1,567,823,000	26,043,000	162,587,500	2012
66.3879	20411001.35	1.64%	10.46%	0.010%	0.9471033	1,672,509,000	20,411,000	174,990,200	2013
66.31451	24871301.23	1.05%	10.59%	0.009%	0.8727456	1,690,427,000	24,871,300	178,951,400	2014
66.04896	12785101.25	1.10%	11.04%	0.018%	1.2590302	1,663,589,000	12,785,100	183,616,300	2015
64.63689	20335201.49	1.85%	13.56%	0.013%	1.1805671	1,540,212,000	20,335,200	208,932,100	2016
64.58284	17561601.81	3.07%	13.67%	0.015%	1.2634562	1,500,978,000	17,561,600	205,130,100	2017
64.82656	32330301.71	2.70%	13.21%	0.008%	0.9275703	1,593,443,000	32,330,300	210,532,900	2018
64.6976	34236401.49	1.81%	13.45%	0.008%	0.9342458	1,651,383,000	34,236,400	222,141,200	2019
65.31503	33322601.59	2.41%	12.32%	0.007%	0.8500796	1,585,631,000	33,322,600	195,402,500	2020

As we note from the results of Table (3) that the physical capital K in the Iraqi economy witnessed significant fluctuations during the research period 2004 - 2020, and this is due to the role of the private sector in carrying out some activities

Economic to find economic and financial surpluses in order to finance a number of local investments after the events of 2003, as it is clear that there was a noticeable growth in 2005

to 17,212 million dinars when compared to the physical capital in 2004, which amounted to 8,650,590 million dinars. The physical capital decreased significantly in 2006, reaching 5,650 million dinars, and in 2007 the physical capital increased until it reached its maximum value in 2019, reaching 34,236,400 million dinars. Upon referring to Table (3) and examining it, we note that human capital H increased relatively during the period 2004-2019, as it rose from 1,230,835 million to 1,651,383 million, and this indicates an increase in the number of educated people and the skills available in the Iraqi economy. We also note a slight decrease in 2020, as it decreased to 1,585,631 million. This decrease may be a result of the changes that accompanied this year. We see from the results shown in Table (3) that the fifth column represents (A) and that this parameter plays a vital role in determining how physical capital (K) and human capital (H) affect the gross domestic product (Y), and represents the level of technology or efficiency in the use of physical and human capital, and that the values of this parameter fluctuate significantly between years, indicating instability in production efficiency or technological progress, as the highest value of the parameter was in 2008 (1.3526775), indicating an improvement in production efficiency. After that, the values witnessed a significant decline until 2020, as the lowest value was (0.8500796), indicating that the Iraqi economy uses capital inefficiently, leading to lower than expected production. We also see from Table (3) the rate of return achieved from physical capital R and human capital h, and that the rate of return on physical money is low during the period 2004-2020, as it ranged between (0.007% - 0.029%). We also note that these rates fluctuate from one year to another, reflecting changes in economic conditions in the ethnic economy. As for the rate of return achieved from human capital h, it was higher when compared to the rate of return achieved from physical capital R, which indicates the importance of investing in education and training to stimulate economic growth. In 2017, the rate of return achieved from human capital reached (13.67%), which indicates a period of remarkable growth in the efficiency of human capital investment. The rate was (8%) in 2008, reflecting a significant decline in the expected return on human capital during that year. This discrepancy reflects the impact of the economic and political conditions experienced by the Iraqi economy, as crises and unrest can lead to a reduction in the efficiency of human capital investment, which necessitates improving policies and programs related to human capital to ensure the achievement of positive results in the long term.

When examining Table (3), we find that the tax rate gradually increased from 0.16% in 2004 to 2.41% in 2020, and that this increase negatively affected the accumulation of physical capital, as high taxes reduced investment incentives for the private sector. As for column 9, the equation describes the relationship between physical capital (K) and the rate of return achieved from it (r) and the effect of tax (t), and the increase in the values in this column indicates that there is greater investment in physical capital with a higher return after deducting taxes. When investment in physical capital increases, the values in column 9 increase, reflecting an improvement in productivity and economic growth, while increasing the tax rate leads to a decrease in the values in column 9, which is consistent with the economic theory that indicates that high taxes discourage investment in physical

capital. Column 10 represents the possible side of equation No. (4) in the Ihori model and is expressed by the relationship between human capital (h), consumption rate (δ), and economic factors (ρ). We note the existence of a period of stability and growth between 2004 and 2008, followed by a period of continuous decline until 2016. We also note a slight improvement in values after 2016, indicating some improvements in the efficiency of human capital investment.

Fourth: - The criteria for the optimality of public investment spending are equal to the marginal product of investment in the public and private sectors

When looking at Table (4), we note growth and an increase in public capital, as it rose from 77,100 million dinars in 2004 to 2,278,568 million dinars in 2016, indicating a significant increase in public investments. We also see growth and an increase in private capital, as it increased from 4,011 million dinars to 34,236 million dinars, indicating an increase in private investments.

To achieve public investment spending, the marginal product of public investment MPKG must equal the marginal product of private investment MPKP. This means that resources are used optimally, as there is no room to improve productivity by transferring resources between the public and private sectors. As we can see from the results shown in Table (4), the marginal product of public investment MPKG is not equal to the marginal product of private investment MPKP in the Iraqi economy, which indicates the lack of optimality of public investment spending and the lack of efficiency in allocating resources, as well as that public investments do not achieve the expected returns compared to private investments. It is also clear that the marginal propensity of private investment is higher than the marginal propensity of public investment for some periods, but in the years 2013, 2014 and 2015 it was found that the marginal propensity of public investment is higher than the marginal propensity of private investment. Table (4) Optimality criteria for public investment spending Equal to the marginal product of investment in the public and private sectors

)marginal propensity to invest(	)modern propensity to invest(	Y (GDP(	K_P (Private Capital(	K_G (General Capital(	Year
		101,845,300	4,011	77,100	2004
0.160	0.026	103,551,400	4,430	127,460	2005
0.344	0.181	109,389,900	5,156	167,224	2006
0.260	0.062	111,455,800	5,531	218,427	2007
1.207	0.479	120,626,500	5,908	255,929	2008
0.268	0.091	124,702,800	6,654	350,810	2009
0.511	0.153	132,687,000	7,488	497,765	2010
0.302	0.135	142,700,200	9,362	776,462	2011
0.369	0.265	162,587,500	12,901	1,184,966	2012
0.106	0.637	174,990,200	22,210	1,326,887	2013
0.058	0.091	178,951,400	30,926	1,657,119	2014
0.102	0.182	183,616,300	38,803	1,893,840	2015
1.071	0.679	208,932,100	43,797	2,278,568	2016
0.000	-0.006	205,130,100	15,154,842	9,290,433	2017
0.064	0.037	210,532,900	21,408,043	15,942,556	2018
0.177	0.063	222,141,200	28,064,521	29,802,209	2019
0.166	0.159	195,402,500	7,717,113	7,234,651	2020

The lack of optimality of public investment spending in the Iraqi economy has multiple negative effects on capital accumulation and economic growth, and comprehensive reforms are required to improve the efficiency of spending and direct it towards projects that

enhance productivity and achieve long-term benefits for the economy and society. Since we notice the difference in the marginal propensity for private investment and the marginal propensity for public investment over the research period 2004-2020, we will conduct a multiple regression analysis using the statistical program Smart Pls 4 to extract a_1, a_2, and through Figure (1), we notice that the regression equation was as follows: -

$$Y=142599303.695+3.266K_G+0.363\ K_P$$

It can be said that a_1 (the marginal propensity to invest) was 3.266, meaning that an increase in public investment by one unit (such as one dinar) leads to an increase in GDP by 3.266 dinars. a_2 (the marginal propensity to invest) was 0.363, which indicates that every increase in private investment by one unit (one dinar) leads to an increase in GDP by 0.363 dinars, which confirms that public investment has a greater impact on GDP in this model. This means that every additional unit of public investment contributes a greater increase in GDP compared to private investment.

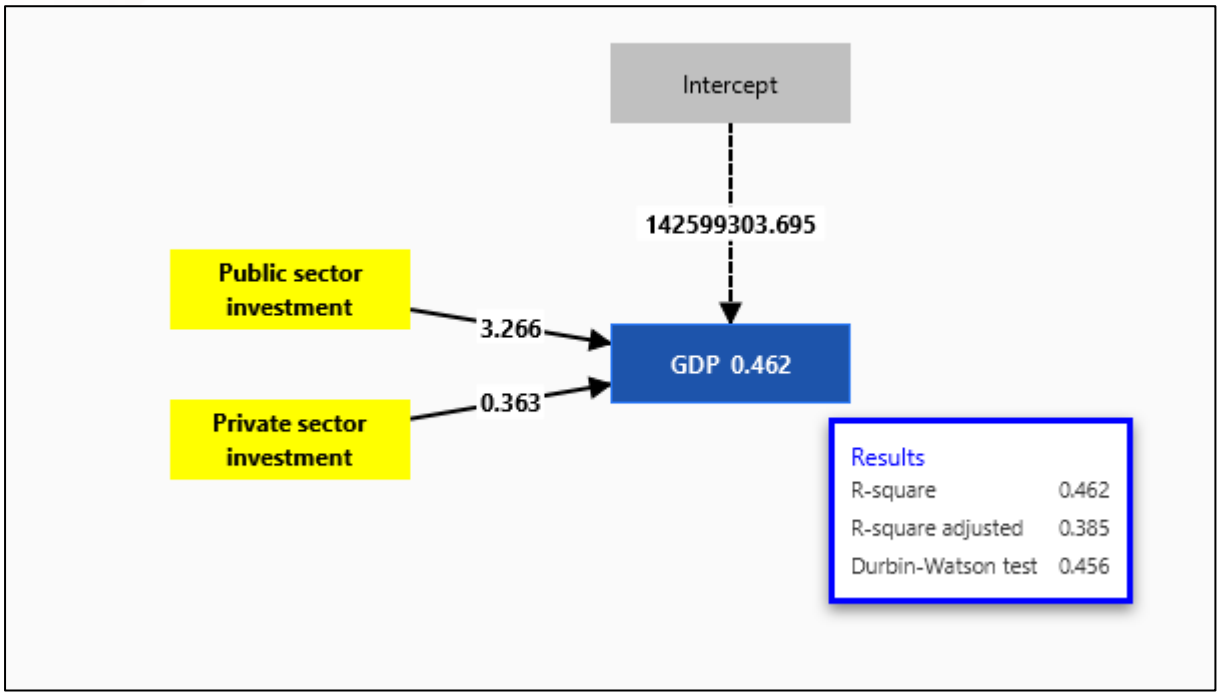

Figure (1) Multiple regression to measure the impact of public and private investment on GDP

Source: Prepared by the researcher based on the Smart Pls 4 program

Section Four: - Conclusions and recommendations

• Conclusions

1. We conclude from the applied side that there are large fluctuations in the marginal propensity for public and private investment, and the inequality of the marginal product of investment in the public and private sectors, which requires a re-evaluation of public and private investment strategies.
2. The imbalance between the marginal propensity for public and private investment leads to the waste of resources and failure to achieve the expected economic returns.

3. The negative effects of economic and political crises have been evident in recent years, such as the global pandemic crisis, as the country witnessed a sharp decline in both public and private capital and GDP.
4. There is no complete optimization of government investment in capital accumulation in the Iraqi economy, despite the efforts made to encourage investment, but corruption and economic challenges hinder the achievement of the desired goals, which requires improving the efficiency of government spending, enhancing transparency, and providing an attractive investment environment to achieve sustainable development.
5. There are great opportunities to improve the efficiency of government investment by redirecting spending towards productive sectors and enhancing public-private partnerships.
6. Increasing taxes negatively affects investment decisions in the Iraqi economy, leading to a reduction in the volume of public and private investments, which in turn reduces capital accumulation.
7. Providing tax exemptions to investors can be an efficient way to attract investments and enhance economic growth, as these exemptions may contribute to increasing the flow of funds towards productive sectors.

Recommendations

1. Providing incentives to local and foreign investors to stimulate economic growth and increase long-term investments. That is, providing tax incentives and facilities to enhance investment in non-oil sectors, which contributes to diversifying the economy.
2. Formulating balanced tax policies that ensure the achievement of government revenues without a significant negative impact on capital accumulation.
3. The need to work to reduce corruption and enhance transparency by implementing efficient internal control systems.
4. The need to develop balanced economic policies in order to encourage investment in both physical and human capital.
5. Work on improving the efficiency of using physical capital and reducing consumption rates to increase returns.
6. The need to develop economic policies aimed at achieving economic diversification and reducing dependence on oil, which enhances the stability of the Iraqi economy.
7. The Iraqi government should re-evaluate the current tax system to reduce tax rates and encourage investment, which helps attract more foreign and local investors.
8. Direct investment spending towards sectors with high economic returns such as agriculture and industry.

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