

## Private, Public Investment and Economic Growth in Iraq, Assessment of Economic Development Avenues

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### Abstract :

This work aims to analyze the role of private investment and public investment in the economic activity and growth for Iraq, 1970-2010, including assessing the possible economic development avenues. The study is based on the theoretical framework for the elements of the performance set of economic literature. Its estimates and also the evaluated probability models implementing an experimental method to select of best approximations. Data of official sources have been used via the 'Minitab-16 software' for the estimates with recent statistics required acceptance tests. The work reached conclusive results. It has been found that the linear relationships of the long-term production function for Iraq apply with the best representation of growth and development factors. They included: public investment, private investment, labor, oil revenue, exchange rates, interest rates, and inflation. All are hypothetically negative except for the first. The work confirmed the absence of foreign direct investment's role. The Cobb-Douglas production function suggests only the first four as statistically significant, but private investment is negative. While oil revenues overwhelmed, being the only source pointing out that it is the source of economic growth. The status proposes reforms of public investments for the short-run, and diversification of sources of long-run growth.

**Key words:** Public Investment, Private Investment, Economic Development, Economic Growth.

**Jel Classification Codes:** R53, R42, O1, O4

### الملخص:

يهدف هذا العمل إلى تحليل دور الاستثمار الخاص والاستثمار العام في النشاط ونمو الاقتصاد العراقي، 1970-2010، وتقييم سبل التنمية الاقتصادية الممكنة. تستند الدراسة إلى الإطار النظري لعناصر الأداء ومجموعة عملية في الأدبيات الاقتصادية. يجري العمل التجريبي بتقدير نماذج احتمالية لحصول علي فضل تقريب. تحليل بيانات المصادر الرسمية المنفذة عبر برنامج Minitab 16 للتقديرات مع الاختبارات الإحصائية الأخيرة المطلوبة للقبول. توصل العمل إلى العديد من النتائج الحاسمة. وجد أن العلاقات الخطية لدالة الإنتاج طويلة -لأجل تنطبق بأفضل لتمثيل لعوامل النمو والتنمية. شملت: الاستثمار العام، الاستثمار الخاص، العمالة، عائدات النفط، أسعار الصرف، أسعار الفائدة، والتضخم. جميعها سلبية افتراضيا باستثناء الأول. أكد العمل غياب دور الاستثمار الأجنبي المباشر. تشير دالة إنتاج Cobb-Douglas إلى أن الأربعة الأولى فقط ذات دلالة إحصائية بالنسبة للأداء الإقتصادي، وظهر الاستثمار الخاص سالب العلاقة. بينما طغت آثار نمو عائدات النفط مشيرة إلى أنها المصدر الوحيد للنمو الاقتصادي. هذه الحالة تقترح إصلاحات في الاستثمارات العامة قصيرة المدى، وتنويع مصادر النمو طويل الأمد.

**الكلمات المفتاح:** الاستثمار العام، الاستثمار الخاص، التنمية الاقتصادية، النمو الاقتصادي.

**ترميز تصنيف مجلة الأدب الإقتصادي الإمبريكية:** R53, R42, O1, O4

## 1. Introduction

The Iraqi economy has witnessed shifts in early indicators of economic growth. According to official records, the public sector has ruled the economy and led it for more than half a century.

The private sector recovered at certain times. In the 1970s there was a development in sectors such as building & construction, production, education, and health. With it the productive sectors such as agriculture and manufacturing. Unfortunately, all of them were struck by a dramatic and deep decline (Ministry of Planning, Iraq 2018). Unemployment rates have risen to unprecedented rates for all levels of society. So the public sector has become a haven for jobs. Today, the government apparatus has grown to four times the original need, and the state budget is no longer able to absorb more\*\*. This situation lasted for nearly two decades, and appointments were suspended years ago, with direct intervention by the World Bank on terms of loans that excess of \$ 129 billion, for an oil country. The dilemma of reliance on imports of consumer goods maintained and worsened. It cannot be said that the economy is a government or a market economy. Both are limited in production. All Investments' types are virtually idle. The economy has reached an inflationary recession, i.e. stagflation.

Initially, public and private investment had crucial roles in the economy. They may have similar roles in growth and development, as they did as the 1960s and 1970s. Today, it is not possible to determine the reality of the role of private and public investment, which are the backbone of economic development wherever they are. Initially, public and private investment had crucial roles in the economy. They may have similar roles in growth and development, as they did during the 1960s and 1970s. Today, it is not possible to determine the reality of the role of private and public investment, which are the backbone of economic development wherever they are.

Research problem: 2019 witnessed and still aggravated turbulence that could destabilize the economy. Any exacerbation of stagnant inflation may have severe consequences. The economy has declined for decades a significant decline in non-oil performance, especially after 2003. This raises the importance of reassessment of economic performance and public and private investment. The economy with its management and governance are handling the most difficult and critical obstacles.

Objectives: This paper aims to "assess the role of private and public investment in the performance of the economy of Iraq and in its economic growth for 1970-2010, and to estimating the subsequent economic development routes." The work also contributes to shape development policy. Realizing the goals necessarily requires providing answers to the importance of the contributions of public and private investment in forming the Gross Domestic Product, GDP within the framework of the total production system, and their importance in growth as well. The paper assesses the importance of Foreign Direct Investment, FDI and the role of oil revenues alongside this. It is also trying to obtain answers to the questions: What's the importance of public investments in the Iraqi economy and what is the role of private investments in it? What is the impact of each of them on economic growth? What are the features of subsequent economic development and economic policies to stimulate them?

Study hypothesis: The study assumes that "public investment and private investment have positive and significant contributions to the performance of the Iraqi economy and similar contributions to economic growth. It assumes that FDI, as well as Oil Revenues, O.R., have positive trends. Inflation, Inf., and interest rates, it, have negative effects, with varied rates potential, the two directions."

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\*\* In the Economic Development Plan 2018-2022, Chapter 3 confirms the continued decline of the role of the agricultural and industrial sector in producing GDP, which would deepen the imbalance in the distribution of the labor force and adversely affect the rates of unemployment and underemployment, and the structural imbalance in the distribution of the labor force: functionally, professionally Educationally, due to the persistent development disparities and the negative repercussions of the phenomenon of displacement in Iraq. The last reason is attributed to the nature of the deteriorating governance system after 2003 (Iraqi Ministry of Planning 2018).

The main target of every economy is development. This requires carefully researched scientific insight and guiding policies for activities and their sectors. The vision is consistent with a clear and well defined strategy for growth. The Iraqi economic environment recognizes the persistence and multiplicity of non-economic problems and their continued accompaniment to development attempts. While marking plans, programs and projects require pre-defined goals, focusing on the assumed growth pattern and ensuring its achievement. Economic plans published on the website of the Ministry of Planning in Iraq are dominated by horizontal grouping of needs, starting from the lowest levels of institutions upwards, with additions in line with population increases. On the ground, according to facts, there is limited random progress in some sectors, and a terrible decline in others.

**Methodology:** This work is based on economic theory and the previous literature for proposing the fit production equations. On the neoclassic economists method, it assumes that production relations with inputs take the form of a Cobb-Duclas production function, with the labor, several patterns of capital and other factors. Capital types are public Investment, Private Investment and FDI. The depended variable, GDP is also a function of: annual Oil Revenues, a fifth independent variable, which inturn shaping high percentage of GNI, ranging about 90%,. Because the Iraqi dinar exchange rates at current values mislead estimates, real exchange rates were obtained. All data are adopted in constant values using CPI a deflator. Therefore, its effect had to be measured as an independent measure of inflation, the seventh factor. The role of interest rates can't be ignored for the three types of investment, therefore the work adopted an eighth supposed explanatory variable.

The mission of obtaining data and completing the series' panel was the most difficult stage for research. Data were collected from the official sources, Ministry of Planning, Central Statistical Organization in Iraq, databases, publications series and periodicals. Other information from World Bank data, United Nations website, and from Groningen University database for post-transfer comparisons. Interest rate data were collected from publications of the Central Bank of Iraq> It is weighted at 2005 prices for all variables, except for labor. Unfortunately, some variables data for the years beyond 2010 are contradictory and could not be accurately reconciled with the predominance, for financial corruption in Iraq (Ali 2008), so estimates stopped. The truth is also, as the figures disclose after this point, values have not changed from what was before it. The situation remains the same till 2017 and continued to be as drown. Modern software Minitab 16.6 was implemented in estimates, applying the OLS method with its estimation assumptions. Estimates depend on the quantitative method of linear and non-linear relations in the logarithms of variables from time-series data and the analysis of the estimation results of production-production equations. The experimental approach was based on theory and economic literature.

**Most Prominent Results:** It can be said that all variables' effects were in assumed directions, foremost of which is public investment, except the negative impact of the private investment significantly in almost all linear, logarithmic estimates and growth equations, the absence of any statistically significant impacts of FDI.

## 2. Reference Review and Conceptual Framework

This work starts with a presentation of previous local works on Iraq. It reviews the most prominent international references on public and private investment, the relationship between them, their impacts on growth. Many experiments are retrieved from different countries.

**First: Previous Work, Locally:** A local study estimated the contributions of both public and private sectors to economic growth and their evaluation of the total fixed capital formation (Ali 2000). The economic returns from the economic growth, achieved by each of them were estimated through a method of sensitivity analysis for three-time phases: 1970-1979; 1980-1990; 1980-1993, then for the overall period. Numerous results were found. all indicate the ways and priorities of treatments

for economic policies, the most prominent of which are: owning effectiveness and the main role by private economy in performance and efficiency, compared to the public sector having the main role in leading and directing stages of economic development towards the highest rates of economic growth in natural conditions. It also ensures the safety and protection of the economy from the risks of abnormal conditions during the last two decades of the last century. Those contents suggested the necessity to support the trends in the balance between the efficiency of the private sector and the social sufficiency of the public sector, in favor of the transition to the efficiency with the reform of both sectors, with the requirements of privatization, particularly for production and distribution activities, non-service or social.

Another local work discussed public and private investment and its importance for development. It stressed the need to improve the public investment quality and climate of private investment in Iraq through the implementation of a government plan to reform state-owned enterprises by coordinating public-private partnerships and closer cooperation between them (Al-Ali & Younis 2003).

A study contributed to the empirical literature on economic growth in Iraq through an analysis of the determinants of economic growth (Hussein & Benhin 2015). It found that the growth of oil revenues has a positive and important impact on economic growth and that public investment and the real exchange rate have significant positive and negative impacts respectively on real GDP. That public investment contributed to economic growth more than private investment. A fourth local work measured that relationship in the long and short term for a group of developing countries and found that public investment has a positive impact on economic growth in the long run compared to the short term, and it Crowding-out private investment in most of the sample countries, while it Crowding-in private investment in other countries. The first one has a positive impact on economic growth in the short term compared to the long term (Al-Ali & Abbasi 2018).

**Second: Public and Private Investment:** There is evidence on links between public investment and private investment in both developing and developed economies, with widespread interest in these links (Martinez - Lopez 2007). It includes private investment in public bonus (Hunt 2012) and public investment with real impacts on private investment, both positive in developing economies and negative in economic recessions (Erenburg 2006). It has been noticed that public government spending affects private investment (Laopodis 2001; Halimanjaya 2017) and various forms of interaction between public and private investment (Munthali 2012; Hunt 2012). For example, the impacts of publicly funded aid on some private investments (Linden 2003), and private investments that support public values in areas such as the arts (Srakar 2012).

On the other hand, cases were found in the literature, public investments crowding out private's in producing capital goods (Xu 2014; Andrade 2016), and in financing public goods such as the climate to benefit investments (Halimanjaya 2017). Instances in which public and private investment interact (Munthali 2012), others in synergy crowding out (Schaller 2018), and a partnership to address challenges such as infrastructure and financial risk management (Allen 2009).

Therefore, it can be said that the two types of investment are synergistic, as long as they work in different fields. That is, whenever public investments are concerned with public structures such as infrastructure and service goods. The closer they get to working in productive and financial investments together, they become crowded. More generally, they are competitive whenever they act in the same field, with or without coordination, even if the goals differ, such as being social versus profitability. They may be incompatible if they work in the same activities and compete with them. The situation is most severe when the goals are profitable for both. In short, they complement each other if the first one focuses on public provision of public material goods and building an investment climate, while the second concerned with market products, taking advantage of the structural of the former.

**Third: Growth Impacts:** Experiences of growth impacts vary according to environmental regulation and policy trends. Many seek about their relative contributions, i.e. of public and private investment in economic growth. They seek estimates on raising their correlation coefficient with output, as well as the separate impact of each one on another. Sometimes, for the long term, the differential impacts of public and private investment on technological progress and economic growth to be estimated. The result is that while private investment contributes more than a public investment to the economic growth of countries like Malawi, public investment in infrastructure tends to attract private investment (Makuyana & Garikai, Nicholas M. Odhiambo 2019).

Efforts are exploring the link between the classified measures of government expenditures and private investment to estimate the long-term relationships between private investment and a different measure of government spending. Government investment in Greece has been found to have a positive impact on private investment. In this way, it is supporting the process of capital accumulation. Government consumption competes with government investment for the same resources, then, it negatively affects private investment (Mamatzakis, 2007)

The broader cases examine the initial and long-term impacts of public investment expenditures on economic growth versus private investment. They find that public investment in infrastructure facilitates private investment, especially in the long run. It promotes economic growth and efficiency. Whereas the informal investment takes place, the results reversed. The long-term effects of public investment on growth tend to be more positive than short-term', at which point the efficiency is in addition to private investment (Odedokun, 1997).

If the focus is on the impact of public investment on private capital formation and economic growth, it may need comprehensive or consistent analysis. In analyzing the long-term interactions between the two types of investment and growth, it is more beneficial to the policies and helping to know the appropriate size for the public sector. Barth with Cordes, 1980 analyzes the long-term effects of public investment on private capital formation and economic growth. The methodology was applied to a developing country that implementing IMF debt stabilization programs, in which public investments have a short-term negative impact on private investment and a long-term negative impact on both private investment and economic growth together (Ghali 1998).

An analysis of public spending and private investment in developed countries, practical results depict the reality in the United Kingdom and the United States of America. Little is done to support the importance of financial measures in explaining forms of private investment, and that outputs and profitability are the only two important variables in explaining the variation in the expected error of private investment in either country (Monadjemi 1996).

Concerning international trade, attention is focused on public spending on durable public good industries, in comparative work for two sectors in two countries and for two periods that allow international labor mobility between them. The relationship between international trade policies, private investment and public spending on industries was reviewed. Because of the movement of international workers, the change of policy in one country also affects the relevant variables in the other, the timing of the change in policy is crucial to growth (Anwar 1991).

Here, the impact of public investment on the economic performance of HIPC's and how it may be understood. A paper provided an empirical analysis to study the relationship between public investment, private investment, and production in a selected group of these poor countries (HIPC's). Their results provided digital support for the competition case, with it a positive relationship between public investment and production (Belloc and Vertova 2006).

An article focused on emerging markets, examined the potential impact of corruption on the determinants of economic growth, namely investment in human, private and public capital, and on governance, directly and indirectly. It was found that the impact of corruption on the level of public investment appears more obscure than other literature suggests. However, it was found that the impact of corruption on the accumulation of private capital is much more detrimental than

previously found, and the impact of corruption on governance is unequivocally negative, which frustrates economic growth (Everhart et al 2009). For a wide range of low- and middle-income countries, a work of the relationship between public investment and growth is examined. It examines the prevailing view in the theories of growth that is that initial increases in public capital lead to increased growth, and subsequent limit increases in growth, in a way that creates distortions in the private sector. The results were not consistent with the non-linear assumption of public investment. Concerns about contempt may be exaggerated in this literature (Kelly 2006). Others evaluated the contribution of public investment in infrastructure to total production, labor, and capital formation in the private sector. It is in the short- and long-term of the Spanish economy. The results of the estimate found positive effects of public investment on long-term private sector variables (De Frutos et al 1998).

The bottom line is that the effects of both types of investments on growth should be similar for the goal of economic growth. They're synergistic in integrating economic performance. It is, exclusively better and favor at the beginning of the development stages. It can become competitive later in investing profitable resources. In this case, it seems that the competitive market mechanism will prevail over them, without resorting to state intervention in favor of public investment. Also, the criterion of efficiency in indogenous growth and contribution to economic growth remain master of the situation. This conclusion may establish the closest view of the experiences of economies in the coming paragraphs.

**Fourth: Economies Experiences:** An important work has found that the pillars of governance that control corruption and achieve political stability, good organization for society and the rule of law enhance public investment and support the impact of private investment on it, in sub-Saharan Africa (Agyei and Nsiah 2017). Public investment spending in infrastructure boosts economic growth. A work on Mexico estimates the Cubb-Douglas production function included public infrastructure capital. The results showed that there is a stable long-term relationship between them. The spending with the formation of private capital have a very significant positive impact on the rate of production growth. Private capital appeared to be affected by public infrastructure, but not affects it (Ramirez 2011). Private investment and production sound to be linked to public investment, while this link is affected by variables, most notably demography, in the economy of the Netherlands (Sturm & Jakob 1998).

To explain the poor performance of public investment in Latin America, it was found that both real and lag public investment; the production gap; sluggish domestic credit to the private sector; as well as the national saving rate are factors with positive and significant impacts on the formation of private capital, and that the standard deviation of the real exchange rate index harms it (Ramirez 2008).

Surely, the public and private governance institutions have implications, which one work calls 'differential' (Lysandrou et al 2016) on the different patterns of foreign investment. It was found that the attraction and growth of FDI depend on the existence of good public governance institutions and are constantly improving; as is the case with foreign portfolios and their development. Another work (Acosta and Loza 2019) highlighted the determinants of the short- and long-term private investment in Argentina, finding that investment decisions in the short-term are determined by returns shocks such as exchange rate, trade liberalization, aggregate demand, and long-term capital accumulation. The latter depends on the developed financial and credit markets. To address the constraints on private finance for "climatic" urban infrastructure in developing countries, the paper of (White and Wahba 2019) examined requirements of regular private finance before being able to study attract green private finance, through main ways to city governments to mobilize private finance. It provides finance even if Hiring required; public-private partnerships; land value collection tools, in light of the requirements, those restrictions on private financing of urban climatic infrastructure were addressed.

It is noted that both public and private investment have their mechanisms. They work within the state's governance and structures and are affected by it. Capital spending may evolve, decline or disappear due to the general trends that may or may not provide the necessary infrastructure to improve the performance of investments in the short and long term.

As for efficiency and other connections, there is a growing consensus that private investment is more efficient and productive than public investment in MENA countries. Private investment has a greater positive impact than public investment on growth and also the relationship between public and private investment is crowding out when increased public investment is linked to increased private investment. Increasing public infrastructure positively affects private investment returns, and stimulates private investment. Discard crowding occurs when the opposite occurs. (Everhart et al (2009)

In a more general case, he found that public and private investment in developing economies complement each other, and the former's 10% increase is linked to an increase in the other of 2%, moreover, the latter, private investment is constrained by the availability of bank credit. In developed economies the opposite case of developing. Public investment refrains from private investment activities. The results show that private investment often influenced by different factors than in developing economies. Erden with Holcombe (Erden and Holcombe 2005) presented A comparative view of the trends of public and private investment in developed and developing economies can be summarized in (Table 1).

Table 1: Relationship between public and private investment in developed and developing economies

Environment	Private investment	Public investment
advanced economies	<b>with each other is crowded</b>	
	Growth of one of them is not related to the growth of the other	
	affected by different factors	affected by certain factors
developing economies	<b>they complement each other</b>	
	10% increase is linked to a 2% increase	
	limited by the availability of bank credit	Refrains from private investment

**Fifth: Theoretical framework** :In a developing rentier economy the pillars of economic development lie in the efforts of institutional structures (Ali 2008). In it, efforts are aimed at improving the overall performance of the various sectors, foremost of which is productivity. It has direct impacts on the economic conditions of individuals through local production (Al-Rawi 2009). The building of local capacities may require stimulating growth in the domestic, private and foreign investment sectors, known as the role of local sectors in economic development (Zaini 2009). Each of them has to base on good governance structures.

These are the indirect factors for local economic development. It is no less important than the growth of the productive sectors, but rather requires the imperative of overall success and good progress in its indicators. The public institutional areas are responsible for the tasks of building a good and scientific investment climate of all kinds and stimulating production (Mohamed and Salim 2013). In improving the indicators structures of governance, there are signs of a deliberate development of the private investment. It is what should be accomplished in legal and physical infrastructures to develop public, private and foreign investments. That refers to the economy, which depends on creating jobs and reducing unemployment rates. This is what the work tries to assess for the Iraqi economy.

### 3. Work Model and Assessment Results

As noticed in the past inquiry, the ratios of private investment and public investment to GDP were around 2%, which is so modest, compared to its global counterparts. The investigation seeks to have an answer to the questions of: How important is the role that private investment can play in the economic growth of Iraq? To what extent should private investment and its role in economic activities be developed for its leadership to embrace development? What is the nature of the current and subsequent developmental role of public investments in development? Then, can FDI share domestic investment in an the economy?

On earth, the mean of the Iraqi's GDP for the studied period amounted \$ 62.705 billion a year, recording an average annual rate, of increase about 6.6%. The mean annual public investment amounted \$ 1.361 million a year, with an average annual growth rate 1.97%. The mean of the private investment amounted \$ 894,000 a year, with an average annual growth rate 1.99%. These numbers are in real terms. It is noticeable that levels of both public and private investment are modest, and they represent a percentages of GDP of no more than 0.2% and 0.1%, respectively.

They were so modest ratios compared to their counterparts in the Middle East and North Africa, MENA, which reached 14.1% of GDP in 1999, continued to grow beyond it (Everhart and Sumlinski 2002, 5). The contribution ratio of public investment to the total of Iraq for 2015 was 44.6% at constant prices. Almost the remaining ratio for private investment..

The contribution to the fixed capital formation 35% in current prices. The deterioration of the activity environment and investment with the continued adoption, or disregard of the policy of dumping vai imported, besides the neutralization of the private sector participation in drawing and implementing the goals of economic policy, were the most important economic challenges in Iraq (Iraqi Ministry of planning 2018).

Notice the aggregate production function (Figure 1) and the economic stagnation accompanying a detour in the size of the labor force (Figure 2) beyond 1990<sup>Y</sup>. The work here depicts the semantic relationships as follow. The estimates implement the OLS method in the regression analysis (t-test values below the estimated parameters' values for all Equatins). The overall regression analysis shows the GDP versus PrI; PuI; FDI; O.R.; L; CPI; R.Exch; and i, presents the regression equation:

$$(1) \text{ GDP} = 7022418 + 4.33 \text{ PrI} - 2.61 \text{ PuI} - 39.6 \text{ FDI} + 506 \text{ O. R.} + 8.49 \text{ L} - 229106 \text{ CPI} - 3300 \text{ R.Exch} + 2615761 \text{ i}$$

(1.06)      (2.24)      (-1.62)      (- 0.67)      (9.25)      (3.62)      (-3.03)

(-5.20)      (5.01)

R-Sq = 94.9%    R-Sq(adj) = 93.6%    F = 73.73

1- **Linear Model:** The work prefers to start with the linear model at first. Assuming a linear production function of the GDP with the two factors of production, labor L and capital K in period t:

$$(2) \text{ GDP}_t = A_t f(\alpha L \beta K)_t$$

Linear production equation stands for:

<sup>Y</sup> In Figures 2 and 3, the extreme value is observed when viewing observation No. 21, which is in the year 1990, the occurrence of the II Gulf War. Then the level of inflation increased and the value of the dinar decreased to 0.052 dinars/dollars from the previous year (2.833). [The real exchange rate of the dollar rose to 7882.2 dinars/dollars per year than it was a year earlier (135.6), at 2005 prices, in the history of the Iraqi economy. Thus, the values of private and public investment in that year swelled in the Iraqi dinar and the boom in the data happened. Its public and private investment numbers were estimated at 25,489,302 and 30,400,814 which are the cause for this boom.

$$(3) \text{ GDP} = A + \alpha L + \beta K$$

Capital factor comprises of three separate types: PrI, private investment; PuI, public investment and; FDI, in which production is a function of, in addition to the labor factor:

$$(4) \text{ GDP} = A + \alpha L + \beta_1 \text{PrI} + \beta_2 \text{PuI} + \beta_3 \text{FDI}$$

As well known, public investments in Iraq are highly dependent on national income, which in turn depends on Oil Revenues, O.R. of around 90%. A fourth component of the production function is assumed not to exceed this revenue:

$$(5) \text{ GDP} = A + \alpha L + \beta_1 \text{PrI} + \beta_2 \text{PuI} + \beta_3 \text{FDI} + \Omega \text{ O.R.}$$

All values, except labor are fixed values at 2005 prices. Reasonably not to overlook the impacts of other macro-variables that affect production formation. As the economic theory, the model assumes an appearance of effects of the annual inflation rates, measured by the CPI; the interest rate  $i$ , the most notable issue leads investments; also the real exchange rate, R.Exch for Iraqi Dinar in Dollars:

$$(6) \text{ GDP} = A + \alpha L + \beta_1 \text{PrI} + \beta_2 \text{PuI} + \beta_3 \text{FDI} + \Omega \text{ O.R} + \pi \text{CPI} + \mu i + \Upsilon \text{R.Exch}$$

Figure -1: The Aggregate Production Function for Iraq 1970-2010

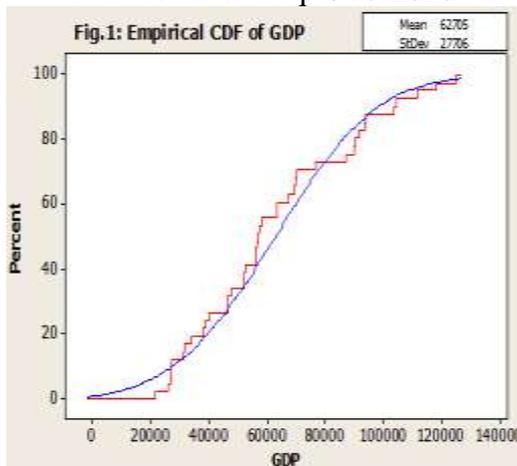


Figure 3: Public Investment, PuI in Iraq 1970-2010

Figure-2: PrI trends in private investment in Iraq during 1970-2010

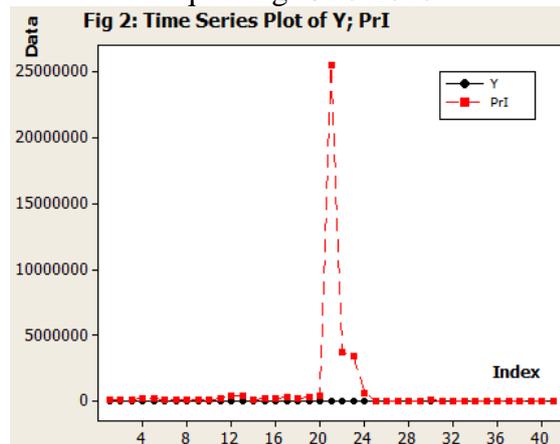
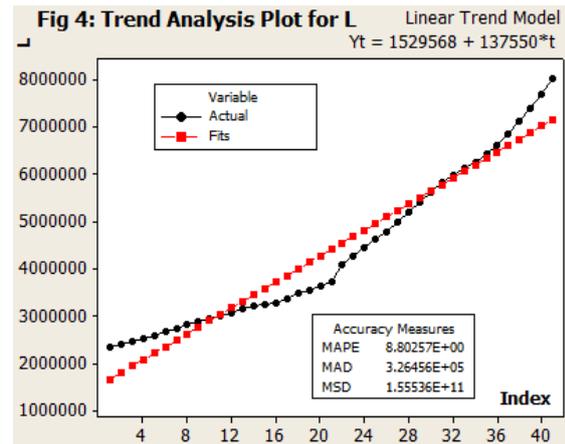
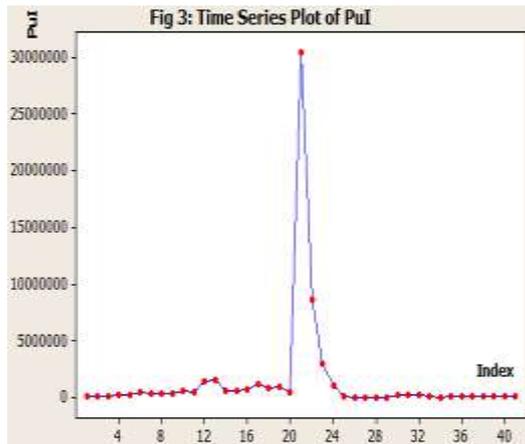


Figure 4: Workforce Growth L in Iraq 1970-2010



Source: The study data fitted for the datasheet of all estimations. They consumed many months for accurate tabulation.

All variables in the linear relationship (Model 6) are statistically significant and in the expected trends in their impact on GDP, except FDI. Its parameter is negative and thoroughly non-significant. Also, government investment appears with negative impacts at significance of 7%. The overall significance of the model estimated is high, ( $F = 73.73$ ). Whatever, it is obvious that oil revenues with a high statistical significance, and that its impacts (precisely its existence) are dominant over the impacts of public investment on the output and overwhelm it. It may be preferable to exclude one of them, which is public investment. But this is a goal variable in this work. However, in case that oil revenues are excluded from the production function, both private and public investment lose their statistical significance and interest rate (see Annex A1). Therefore, the study reported adopting a multi-step front-line estimation, i.e. stepwise regression method for explanatory variables, that contribute to raising the value of the overall correlation determination coefficient. It achieved  $R\text{-Sq (adj)} = 93.6\%$ . At the same time, this method facilitates how to avoid the problem of multicollinearity between those two variables (Model 7).

(7) Stepwise Regression: GDP versus PrI; PuI; FDI; O.R.; L; CPI; R.Exch; i.

Forward selection. Alpha-to-Enter: 0.25. Response is GDP on 8 predictors, with  $N=41$

Step	7-1	7-2	7-3	7-4	7-5	7-6.
Constant	37798303	30829575	30001164	32152559	28651003	6261829
O.R.	693	532	554	545	606	505
T-Value	12.51	10.63	10.96	11.35	10.88	9.06
P-Value	0.000	0.000	0.000	0.000	0.000	0.000
i		1949299	1868312	1952898	2897772	2445863
T-Value		5.69	5.53	6.07	5.06	4.80
PrI			0.63	0.88	0.88	1.19
T-Value			1.70	2.39	2.49	3.76
R.Exch				-1018	-1390	-3188
T-Value				-2.30	-2.98	-4.97
CPI					-110229	-241250
T-Value					-1.96	-3.98
L						8.6
T-Value						3.60
R-Sq	80.04	89.22	90.01	91.29	92.15	94.32
R-Sq(adj)	79.53	88.66	89.20	90.32	91.03	93.32
Mallows Cp	87.1	32.0	29.1	23.2	19.8	8.3

At the level of the correlation determination coefficient itself, the software kept the six explanatory variables in (Form-7), namely: oil, interest rate, private investment, exchange rates, inflation, and labor, significantly in the six estimation equations, respectively. Inflation and Exchange Rate showed the same expected negative signs. The estimate suggests that the (Form 6) passes the test. The difference here is Mallow's CP statisitc (Mallow 1973), the measure of prediction error or bias in the estimated pattern, is above Mallow's test line. It has a value of  $p = 7$  and a value of  $C_p = 8.3$ . Otherwise, the possibility of better characterization with problematic. Functional specification needs to determine the state of public investment in the estimated model for the economy. However, public investment has not had a significant impact on output, especially in light of oil revenues. If the latter is excluded, the production function model is undermined, i.e. violated.

Measurement procedures are to re-estimate in an appropriate standard manner, which includes back-deletion of the variables after they are both included in the estimated model and the gradual retention of the statistically significant variables that draw the best alternative model by contributing the value of the correlation coefficient and the lowest value for the level of significance P-Value. The regression equation-8 estimated by stepwise showed only two probable models, the first combining the eight explanatory variables, in which FDI was not significant. This was deleted in the next step (8-2).

All the seven variables were found to be at a quite good level. In other words, this model includes private investment, which is positive, public investment, which is also significant, but negative. The rest of the variables are significant in trends consistent with economic theory and literature. The model passes the bias error test in variables, in which the value of  $p = 8 + 1 = 9$  is less than the value of  $C_p = 10.13$  of the Mallow table, in which the determination coefficient  $R\text{-Sq (adj)}=93.67\%$ . However, if we exclude oil revenues from the estimate, the public investment variable will not replace it with the assumed positive effects. This case contradicts what the literature indicates, as estimates indicate the reliability of analysis and reliance on (Form 8-2) of the policy.

(8) Stepwise Regression: GDP versus PrI; PuI; FDI; O.R.; L; CPI; R.Exch; i  
 Backward elimination. Alpha-to-Remove:0.1

Step	8-1	8-2
Constant	7022418	7087311
PrI	4.3	4.4
T-Value	2.24	2.31
P-Value	0.032	0.028
PuI	-2.6	-2.7
T-Value	-1.62	-1.71
P-Value	0.115	0.097
FDI	-40	
T-Value	-0.67	
P-Value	0.506	
O.R.	506	505
T-Value	9.25	9.31
P-Value	0.000	0.000
L	8.5	8.5
T-Value	3.62	3.64
P-Value	0.001	0.001
CPI	-229106	-259689
T-Value	-3.03	-4.33
P-Value	0.005	0.000

R.Exch	-3300	-3248
T-Value	-5.20	-5.20
P-Value	0.000	0.000
i	2615761	2665639
T-Value	5.01	5.20
P-Value	0.000	0.000
S	7027110	6968662
R-Sq	94.85	94.78
R-Sq(adj)	93.57	93.67
Mallows Cp	9.0	7.5

**2A- Logarithmic Model:** based on the literature model, assuming the formula for the Cobb-Douglas production function as a form of the GDP function in the labor factor and three types of private, public and foreign direct investment:

$$(9) \quad GDP = A \cdot L^\alpha \cdot PrI^{\beta1} \cdot PuI^{\beta2} \cdot FDI^{\beta3}$$

With the annual oil revenue:

$$(10) \quad GDP = A \cdot L^\alpha \cdot PrI^{\beta1} \cdot PuI^{\beta2} \cdot FDI^{\beta3} \cdot O.R.^\Omega$$

Likewise, inflation and interest rate variables,

$$(11) \quad GDP = A \cdot L^\alpha \cdot PrI^{\beta1} \cdot PuI^{\beta2} \cdot FDI^{\beta3} \cdot O.R.^\Omega \cdot CPI^\pi \cdot i^\mu \cdot R.Exch^Y$$

Estimate (Model-11):

**Regression Analysis:** LOG GDP versus LOG PrI; LOG PuI; LOG FDI; LOG O.R.; LOG CPI; LOG i; LOG R.exch.

$$(12) \quad LOG \text{ GDP} = 9.14 - 0.0690 LOG \text{ PrI} + 0.134 LOG \text{ PuI} + 0.0038 LOG \text{ FDI} \\ t: \quad (1.09) \quad (-0.75) \quad (1.79) \quad (0.27) \\ + 0.0420 LOG \text{ O.R.} + 0.482 LOG \text{ L} + 0.061 LOG \text{ CPI} - 0.0087 LOG \text{ R.Exch} + 0.0442 LOG \text{ i} \\ (2.50) \quad (0.78) \quad (0.46) \quad (-0.14) \quad (0.85) \\ S = 0.209194 \quad R-Sq = 84.0\% \quad R-Sq(adj) = 80.0\% \quad F=21$$

Linearity in logarithmic variable (Model 12) has only two significant factors: public investment, LOG PuI, and oil revenue, LOG O.R. The rest are non-significant, including the intercept. Therefore, the estimation resorted to the method of selecting the moral variables with the gradual addition thereof according to the contribution by raising the value of the correlation coefficient in (Model 13) four stages (equations). Inflation, CPI, alone is the most important variable for annual GDP growth, directly followed by PuI's public investment, oil revenues, O.R, then labor L .. to obtain the probabilistic model (13-4) with an important and positive impact, with a high correlation coefficient and unbiased estimation:

(13) Stepwise Regression: LOG GDP versus LOG PrI; LOG PuI; ... Forward selection.  
Alpha-to-Enter: 0.25

Step	13-1	13-2	13-3	13-4
Constant	17.572	15.332	15.403	9.553
LOG CPI	0.163	0.262	0.235	0.138
T-Value	7.13	11.67	10.06	1.96
P-Value	0.000	0.000	0.000	0.058
LOG PuI		0.168	0.151	0.112
T-Value		6.35	5.91	3.01
P-Value		0.000	0.000	0.005
LOG O.R.			0.0222	0.0386
T-Value			2.58	2.74
P-Value			0.014	0.010
LOG L				0.42
T-Value				1.46
P-Value				0.154
S	0.312	0.220	0.206	0.203
R-Sq	56.57	78.93	82.14	83.13
R-Sq (adj)	55.46	77.82	80.69	81.26
Mallows Cp	49.9	7.1	2.7	2.7

However, (Model 14) cannot be relied upon for the instability of the effects of inflation and its importance in the various probability estimates for the model. The alternative is to estimate all study variables using the back-omission method. Two variables of FDI and exchange rates. Then inflation and interest rates. Surprisingly, this method (Model 14) indicated in step five that omission was discontinued. Four explanatory variables remain private investment; public; labor force; and oil revenue. Strangely, this combination includes the two study-variables. The first is that private investment with significant negative impact, at 5%, unlike its public investment counterpart.

(14) Stepwise Regression: LOG GDP versus LOG PrI; LOG PuI; ... Backward elimination. Alpha-to-Remove: 0.1

Step	14-1	14-2	14-3	14-4	14-5
Constant	9.140	10.169	10.121	7.706	4.939
LOG PrI	-0.069	-0.065	-0.075	-0.114	-0.117
T-Value	-0.75	-0.76	-0.91	-1.72	-1.74
P-Value	0.456	0.455	0.369	0.095	0.090
LOG PuI	0.134	0.137	0.146	0.149	0.163
T-Value	1.79	1.88	2.13	2.18	2.40
P-Value	0.082	0.069	0.041	0.036	0.022
LOG FDI	0.004	0.005			
T-Value	0.27	0.47			
P-Value	0.790	0.643			
LOG O.R.	0.042	0.041	0.044	0.052	0.051
T-Value	2.50	2.61	2.92	5.21	5.04
P-Value	0.018	0.013	0.006	0.000	0.000
LOG L	0.48	0.40	0.41	0.59	0.77
T-Value	0.78	1.32	1.34	3.05	5.55
P-Value	0.443	0.197	0.188	0.004	0.000
LOG CPI	0.061	0.074	0.073		

T-Value	0.46	0.81	0.81		
P-Value	0.645	0.426	0.426		
LOG R.Exch	-0.009				
T-Value	-0.14				
P-Value	0.886				
LOG i	0.044	0.045	0.049	0.061	
T-Value	0.85	0.88	1.00	1.30	
P-Value	0.401	0.388	0.327	0.203	
S	0.209	0.206	0.204	0.203	0.205
R-Sq	84.00	83.99	83.88	83.57	82.78
R-Sq(adj)	80.00	80.59	81.04	81.23	80.87
Mallows Cp	9.0	7.0	5.2	3.8	3.4

So, perhaps, the best-estimated probability model is (14-5), passes the unbiasedness non-estimation with a good correlation coefficient:

$$(14-5) \text{ LOG GDP} = 4.939 - 0.117 \text{ LOG PrI} + 0.163 \text{ LOG PuI} + 0.051 \text{ LOG O.R.} + 0.77 \text{ LOG L}$$

(-1.74)                      (2.40)                      (5.04)                      (5.55)

(Mallows Cp = 3.4) < p = 7.67) <sub>n+1=5</sub>                      R<sup>2</sup>(adj) = 80.87%

This indicates the importance of public government investments and that private investments have not had statistical significance. The more that their impacts on GDP are negative. The production function with the labor input, capital factors, and oil revenues explain 80% of production changes, which is (Formula 5-14) a probabilistic form of (Form 10) i.e. excluding FDI, and it holds important implications for analysis. In one of its cases (14-5-a), the regression of the product on the two variables proves that the private investments are negatively affected and the public investments are morally positive:

$$14-5-a: \text{ LOG GDP} = 7.1 - 0.450 \text{ LOG PrI} + 0.460 \text{ LOG PuL}$$

(49.29) (- 8.10)                      (6.84)

R-Sq = 64.6%    R-Sq(adj) = 62.7%    34.61

**3- Economic growth model** :The growth relations have a different view, according to which the economic growth of Iraq is morally doubled with the growth of oil revenues only. All other economic variables have not been confirmed. All of them have had negative growth relations with economic growth. The (model 15) is shocking, the determination coefficient is very low and has not passed the model's overall significance test:

Regression Analysis:  $\frac{GDP}{GDP}$  versus  $\frac{PrI}{PrI}, \frac{PuI}{PuI}, \dots$  n=8

$$(15) \quad \frac{GDP}{GDP} = 0.166 - 0.0235 \frac{PrI}{PrI} + 0.0365 \frac{PuI}{PuI} - 0.00053 \frac{FDI}{FDI} + 0.149 \frac{O.R.}{O.R.} - 3.51 \frac{L}{L}$$

1.94    -0.42                      0.86                      -0.16                      1.85                      -1.36

$$-0.0190 \frac{CPI}{CPI} - 0.0104 \frac{R.Exch}{R.Exch} - 0.0028 \frac{i}{i}$$

-0.49                      -0.30                      -0.14

S = 0.210240    R-Sq = 22.7%    R-Sq(adj) = 2.7%    F = 1.14

The Stepwise regression model with the forward selection method stressed the importance of oil revenue growth, with a modest impact factor, adding in the second step the labor force growth. These effects were morally negative, then the probabilistic model stopped, the estimated impact of the labor became negative and important (16-2):

(16) Stepwise Regression:  $\frac{GDP}{GDP}$  versus  $\frac{Pri}{Pri}$ ,  $\frac{PuI}{PuI}$ , ... with Forward selection. Alpha-to-Enter: 0.25, with N = 40:

Step	16-1	16-2
Constant	0.05722	0.17916
O.R. ^/O.R.	0.142	0.143
T-Value	2.18	2.25
P-Value	0.036	0.030
L^/L		-3.9
T-Value		-1.74
P-Value		0.091
S	0.204	0.198
R-Sq	11.09	17.80
R-Sq (adj)	8.75	13.36
Mallows Cp	-0.4	-1.0

Almost the same relationship is displayed by the regression method with back-omission.

Growth with lagged variables :The study also did not find growth relationships with the slowing one-year growth for all these variables, except for the growth of public investment significantly and the disappearance of the slowdown effects of private investment completely. This fact underscores the important role of public investment in growth.

#### 4. Economic development Avenues

Three major universe trends prevailed in global economies: many of which focused on two types of investments and the nature of their transformations; literature on the relationship between them in different environments; and a third concerned with their effects, or one of them, on economic growth.

The present work is concerned with the methodology of normative research without limiting it to analysis only. The research assumed that the complementary trend between the two types of investment is what the Iraqi economy needs in the stage of economic recovery, in preparation for the pioneering role of private investment in development. Public investment remains to lay the foundations for infrastructure in light of oil revenues or otherwise. The work found that private and public investment and laborforce with oil revenues have important linear effects on the economy. The point is that public investment has had harmed long-term output (Module 8-2).

Long-term Cobb-Duclas production function showed that public investment and oil revenues only dropped important positive effects (Model 12) with two influence factors of (0.04 and 0.13), respectively. While all other variables were not confirmed to be important. The work estimated two models of this production function, by Forwarding selection and omission method for the significant variables that increase the illustrative ability, as measured by the coefficient of determination.

In the first, it became clear that the variables: labor force, public investment, oil revenues, then inflation .. drawn the best probabilistic model with positive positive effects. It is noted that inflation has a positive role here! (Model 13). In the second, it became clearer that the variables: labor-force, public investment, private investment, and oil revenues gave the best probabilistic model significantly with output, but the sign of private investment is negative (Model 14-5). Both models have a coefficient of determination,  $R^2 = 81\%$  approximately.



noticeable, explaining about 63% of the GDP changes morally. They are also competitive (Equation 5-14).

Finally, the two study variables did not have any growth effects, and the only two variables were population growth and oil revenue growth. However, the linear simple and multiple linear regression state that both public and private investments are negative-impact and insignificant with no correlation and correlation-determination R-Sq(adj)=0.0% (Appendix 2A). Likewise, growth relations have two of the production growth.

$$(16-2) \quad \frac{GDP}{GDP_t} = 0.17916 + 0.143 \frac{OR_t}{OR_t} - 3.9 \frac{L_t}{L_t}$$

(2.25)                      (-1.74)

S=0.198, R-Sq=17.80, R-Sq(adj)=13.36, =Mallows Cp -1.0

As for the estimated logarithmic relationships, the investment relationship of the product was significantly negative, with a low correlation (R-Sq (adj)=18.9%), and the public investment relationship with the result was negative, non-significant and with a correlation close to zero. Their joint relationship simultaneously with the production was negative for the first, positive for the second insignificant, and coefficient of determination (R-Sq(adj)=62.7%). No lagged effects for both.

Policies required for economic development need a comprehensive framework of procedures; measures to implement good governing and a balance between many socio-economic issues and governance; and specialized policies directly related to the development of private and FDI; increase their efficiency and ensure their positive contribution to GDP (Zaini 2009). Specialized policies can be derived from the results of this work. For that, the view can be reduced as follows.

The FDI did not show, in any of the estimates any significant value or importance. This suggests opening the gate to it to take place in development. As for the explanatory variables, they all confirmed estimates by directions and suggest the necessity of developing and expanding two-type investments, and creating their climates. Foremost among them is private investment. The more it grows, the more impacts it will have on the economy and growth. It will be talked about the rest of the variables in a little while. The most important pause here is with the problem of the impacts of public investment.

In light of the estimates of the model (8-2), it confirmed the negative effects of public investment on the output throughout the study period, or more accurately, the general study period. This model is the best probabilistic estimate for the linear output function of the Iraqi economy. To find out the direction of the developments that took place for this negative role of public investment, the study used to divide the study period into two periods. The first is from 1970 to 1989. The second is between 1990 and 2010\*. The study estimated the relationships in model the (8-2) in equations (8-2-A) and (8-2-B).

(8-2-A)<sub>1970-1989</sub>:

$$GDP = - 31465475 - 17.4 PrI + 6.24 PuI + 30.8 L + 533 O.R. - 5826920 CPI + 297969 i - 68170 R.Exch$$

t	-0.91	-1.14	1.73	1.57	7.76	-0.36	0.26	-1.64
P	0.383	0.275	0.109	0.143	0.000	0.723	0.803	0.127

S = 3499301 R-Sq = 96.6% R-Sq(adj) = 94.5% F = 48.05

\* The year 1990 witnessed the II Gulf War after thirteen years of economic blockade, which led the private agricultural and industrial manufacturing sector to rely on Iraq's domestic production capabilities to compensate for imports following the stoppage of Iraqi oil exports, which are shown in the estimation data, and was worth zero Zero for a period of six years 1990-1996 with a limited percentage after it, after the implementation of the oil-for-food agreement and until the third Gulf War and America's occupation of Iraq in April 2003 (the third Gulf War). As Iraqi oil revenues continued to be subject to the supervision and guidance of the Iraq Fund for Development at the United Nations, and until Iraq emerged from the seventh item of the United Nations on December 9, 2017.

(8-2-B)<sub>1990-2010</sub> :

$$\text{GDP} = - 1.15\text{E}+08 + 2.56 \text{PrI} - 0.45 \text{PuI} + 26.8 \text{L} + 356 \text{O.R.} - 115235 \text{CPI} + 903095 \text{i} + 2585 \text{R.Exch}$$

$$t \quad -4.02 \quad 1.54 \quad -0.31 \quad 5.54 \quad 6.34 \quad -1.03 \quad 0.90 \quad 1.82$$

$$S = 5515596 \quad R\text{-Sq} = 98.0\% \quad R\text{-Sq}(\text{adj}) = 97.0\% \quad F = 93.07$$

It is noticed that the Peacewise Estimation Model, a model of the production function, has been given more accurate explanations of the performance of economic variables with the total output:

1. The real exchange rates of the Iraqi dinar: the effects of the whole study period were negative, and this negativity is consistent with the logic of the economic theory, and with other works estimates. Real exchange rate depreciation means the decline of the local currency (dinar) relative to other currencies (the dollar in our case). This was reflected in higher prices, lower consumption and lower production. This is what happened in the first period, and it was shown by estimate (8-2-A) in an economy that was subject to strict laws in favor of domestic production.

In the second period, the real exchange rate effects appeared to be significant as well, but this time they are positive. The decline in the real exchange rate and the deterioration of the dinar's value during this period, accompanied by stagnation and a decrease in the value of GDP to a third, immediately after the second Gulf War, with gradual improvement to 1998 in which it regained its initial level. Of course, with population growth that exceeds 3% annually. This decline was followed by an improvement in agricultural production to undermine the effects of the economic blockade. But it did not overcome the decline in production before this year. As for the effects of inflation, it is negative in both and in part.

2. Oil and labor: It is natural for the impacts of oil and employment to be significantly positive in both total and partial estimates of the duration. But it is abnormal for real interest rates to have a positive with a significant relationship in the output formation. Moreover, this relationship is embodied in the macro and partial levels of estimation. Perhaps the reason is that the real interest rate levels are very low (real  $i = 0.50$ ) by half of one percent in the seventies. It then rose to 6.35 percent until 2005. It jumped in the years 2010-06 between 18-20 percent. Its effects are unclear on the economy that shifts from socialism and central direction to pure rentier economy. It lacks the organized market and the leading country.

3. Private investment, as small as it did not exceed 2% of the GDP, has been associated with the output with significant positive effects, lasting in the forms (7-6) and (8-2). The last model is reassessed in two stages. In the first period (8-2-A) (8-2-B)<sub>1990-2010</sub> a positive-impact. The negative impacts are higher than the positive ones. The reason is the deterioration of the private sector and then the disappearance of most of its productive institutions. The strength of its effects overwhelmed the first period over the entire period. But, as a whole, they have completely disappeared in relations of economic growth, which have been dominated only by oil revenues.

4. Public investments:

A. Linear public investment is linearly negative, unlike the illustrative variables (Model 8-2) ideal. If the two variables include public and private investment only in one linear equation, it sounds that they are complementary. The first effects are positive, the second effects are negative, in imparts not in values. It is a case compatible with literature.

B. Its effects on economic growth are minimal or even hidden. That is, public investment, and with it, a private investment, has important implications for output only, without growth. This work has demonstrated the return of the credit for economic growth in Iraq to the growth of oil revenues, which is the case of the Dutch disease in particular (Ebrahim-zadeh 2003) that afflicted the economy of Iraq.

C. In the Cobb-Douglas production function, the positive trend was significant, after the appearance of oil revenues, in an estimate of all variables (Model 12). In a probabilistic model using the forward selection of the significant variables, the production function was estimated with four exemplary variables, namely: oil, public investment, labor, and inflation. They are all positive, except for the latter, negative (Model 13). This is the best linear model in variable logarithms.

D. The inclusion of all growth variables in one model, and the back-omission of unimportant ones, provided a production function with the two elements of capital (public and private investment), labor, and oil (14-5). In other words, private investment has replaced inflation in (Model 13), with negative effects.

This is the only case where the two types of investment in the Cobb-Douglas production function have significant implications.

E. Finally, the negative effects of public investments in (8-2) are attributed to: the decline in the role of the state and the public sector beyond 1990; the international economic blockade on Iraq (8-2-A)<sub>1970-1989</sub>; and to its deterioration, 2003 and after, on behalf of the American occupation of Iraq. This deterioration lasted absolutely after (8-2-B)<sub>1990-2010</sub>.

## 5. Conclusion

In the context of the normative methodology of the work for policy and development analysis, the quantitative analyzes of this study show that the courses of economic performance and growth reveal new facts about the public and private investment roles and reality, and suggests ways to work. In the long run, all interpretative variables have assumed signals, and so do in the short term.

It was found that public investment has a negative impact, while private investment has a negative impact on a linear relationship. The situation is opposite in the logarithmic relationship. Public investment and private investment continued to have important impacts on the Iraqi economy, measured by performance, i.e. production, as is the case in other economies, despite their small sizes in Iraq\*. But their growth rates did not have an important role in economic growth with the presence of increased oil revenues, and for their growth over four decades. It is an unwarranted condition, unique in its depth with that of the Dutch disease.

Even in the formation of the output, they drew a synergistic view between them, and not a competing opposition, but they urgently need restructuring and renewal for a better rise. The rates of labor force growth and the growth of oil export revenues have positive effects, while the real exchange rate and the volatility of the inflation rate still have expected negative effects on economic growth.

Most of the assessment results suggest developing a climate of private investment, both domestic and foreign. Their growth leaves the effects of economic growth and returns by a large difference. The government should bear the burden of investment in the legislative infrastructure for the investment climate and the physical infrastructure necessary for the genesis and growth of foreign investment and the development of the local private investment sector in productive sectors. The production that contributes to the growth of the GDP. Here, economic and institutional reforms highlight an essential pillar of public sector governance.

The achievement of these foundations means a guarantee of the emergence of the combined economic growth effects of public investment growth, private investment and the workforce, and all other sources of domestic growth other than natural (external exhaustible) oil revenues in which man has no preference.

### A1 Annex:

\* Mean of PrI / Mean of GDP = 894,321/62,704,565 = 0.0143, Mean of PuI / Mean of GDP = 1,361,444 / 62,704,565 = 0.022. Average Ratios of PrI/GDP = 0.019, Average Ratios of PuI/GDP = 0.030

(6-a)

$$\text{GDP} = -11028639 + 4.33 \text{ PrI} - 2.68 \text{ PuI} + 19.4 \text{ L} - 213719 \text{ CPI} - 5009 \text{ R.Exch} + 1279562 \text{ i}$$

$$-0.94 \quad 1.20 \quad -0.90 \quad 5.14 \quad -1.91 \quad -4.48 \quad 1.39$$

$$S = 13077984 \quad R\text{-Sq} = 81.1\% \quad R\text{-Sq(ajd)} = 77.7\% \quad F=24.25$$

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