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# Oil and Economic Performance in Iraq A Blessing or a Curse!

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## Abstract

The prevailing view refers that Iraq's economic performance has been constrained by the annual influx of oil revenues. This paper aims to verify whether the oil wealth in Iraq is a boon for the economy!. The different relationships are estimated to resolve the evidence. It is assumed that concluded rentier revenues caused harm to the performance of society as much as they benefited the sectors. Empirical work provides an explanation as well as an estimation of performance and growth trends. The adopted methodology is to estimate regression relationships for simple, multiple, and step-wise models. The work reached that 70% of performance and growth depend on oil revenues, in conjunction and equivalence. The total consumption was accompanied by a period of negative contributions of foreign direct investment, with a slight influx of imports. The risky aspect of oil wealth lies in the fact that it is one-sided, with consumption expenditures, not investment, in explaining performance behavior. As for the growth in imports, it largely explains the behavior of economic growth, to the exclusion of other economic variables.

**Keywords:** Resources Curse; Economic Performance; Economic Growth; Consumption; Imports Growth .

**JEL Code:** O25, O43, Q32, Q43, Q48.

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## النفط والأداء الاقتصادي في العراق: نعمة أم نقمة!

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### مستخلص البحث

تفيد النظرة المألوفة أن الأداء الاقتصادي في العراق كان مقيدا بالتدفق السنوي لإيرادات النفط. لذا هدفت هذه الورقة الى التحقق مما إذا كانت الثروة النفطية في العراق نعمة على الاقتصاد أم خلافها! تقدر العلاقات المختلفة لحسم الاثبات، وتفترض أن الإيرادات الربعية أضرت أداء المجتمع بقدر ما نفعت قطاعاته. يقدم البحث التجريبي تفسيراً، الى جانب تقدير اتجاهات الأداء والنمو. المنهجية المعتمدة هي تقدير علاقات الانحدار لنماذج بسيطة ومتعددة وتدرجية. توصل العمل الى أن ٧٠٪ من الأداء والنمو يعتمدان على عائدات النفط تزامنا وتوازنا. وقد رافق الاستهلاك الكلي طيلة مدة اسهامات سالبة للاستثمار الأجنبي المباشر، مع تدفق طفيف للاستيرادات. تكمن خطورة ثروة النفط أنها أحادية-الجانب، توافقت معها النفقات الاستهلاكية وليس الاستثمارية في شرح سلوك الأداء. أما النمو في الاستيرادات فهو يفسر سلوك النمو الاقتصادي بشكل كبير، دون بقية المتغيرات الاقتصادية الأخرى.

**الكلمات المفتاحية:** لعنة الموارد؛ الأداء الاقتصادي؛ النمو الاقتصادي؛ الاستهلاك؛ نمو الاستيرادات.

## 1. Introduction

Late in the past century, notable literature discussed that economies with a high percentage of natural increase in GDP tend to have higher rates of growth. This relationship remains positive even after controlling variables that have found interest in economic growth, such as primary per capita income, trade policy, government efficiency, and investment rates (Sachs & Warner, 1995, 40). The concept of the natural resource curse has crystallized to assert that countries with a great wealth of natural resources tend to grow more slowly than poor-resources countries (Sachs & Warner, 2001, 1).

An impression was spread; the more the state depends on oil resources, the lower its growth rate, for oil revenues absorb capital and labor from other sectors such as agriculture and manufacturing and that easy oil money drives the state to avoid difficult options, such as painful economic reforms and/or limited economic progress outside the oil sector (Weiss, 2003, 13).

Iraq, according to a not-so-far viewpoint, has very limited non-oil sources of income, and has reached the stage of being unable to overcome the oil curse (Looney, 2006, 28–29). The study problem lies in a prevailing conviction that natural resource wealth tends negatively to affect state administration. There is a strong evidence that one type of mineral wealth, oil, has at least three harmful effects: it tends to make authoritarian regimes more permanent, exacerbates certain types of corruption, and aids in ignite violent conflict between people of low and middle incomes (Ross, 2014, 239–259).

Inevitably, the resource curse needs an awareness of how to avoid Dutch disease (Al-Ubaydli, 2017, 1). The core of study is that the abundance of oil in countries such as Algeria, Iraq, and Libya strangled economic and political development (Clark, 2012). It sounds that it is understood, the Iraqi economy, in which political risks have a source of real concern is right, due to its strong linkage to global crude oil prices, and thus the growth of its GDP is vulnerable to oil shocks (Graeber, 2018, p. 1).

This work aims to "examine the hypothesis of resource curse on the Iraqi economy, and to assess the abstract outcome, whether oil was a blessing or a curse for it." The period of economic instability from the 1980s until the demise of the US occupation of Iraq has taken. This period is in contradiction to the 1970s and after the US occupation. Whether or not economic development takes place after, there are no reforms mentioned.

The essence of this view emerges from the risk that any decline or stop oil revenues blow to the economy. Here, to consider the beneficial effect of the oil revenues flows on the economy intimately be harmful to its performance. If this is true, it could be damaging to other sectors of the economy. The hypothesis is the mentioned considerable effect has blackened by a cloud obscured the reality of its role in the history of the actual economy. The study assumes that "oil has played a magnificent role in Iraq's economy, its changes, and its performance, without letting it able to dispense with oil revenues. Here is an attempt to discover the dimensions of the economic changes and their trends with the changes in oil revenues."

Here, the research adopts an Empirical Econometric Methodology with analytical approach to estimate the behavioral relationships that best describe the individual and joint relationships of oil revenues with influencing variables. That has to explain the performance trends and economic growth in Iraq. The next section deals with an overview of economic and performance indicators with oil. The third topic is concerned with econometric modeling and hypothesis testing with a new and uninvolved method of dealing with the explanatory variables of performance. The focus is on the most volatile period in the economy, from 1985-2011 with the methodology of analyzing overall performance with oil. The analysis reaches a best model that explains performance and growth with oil revenues, along with the causation of the form of the derived mathematical relationship. It draws proposals for the role of government with the problem of oil curse on the economy. The conclusion drew a danger of unilateralism of oil with consumption in performance, and with imports in growth.

## 2. Economic Indicators

A glance at the data indicates that most development indicators are not promising. With the slowdown in physical capital formation, the per-capita economy is in constant decline in constant prices and a negative growth rate for non-oil GDP ( $NO_{GDP}G=-9.4\%$ ), with the population increasing at an average annual growth rate of 2.9%, within 1985-2011.

This work seeks to assess a petrodollar tally of economic performance in Iraq. It has noticed that increases in exported oil revenues correspond to increases in total imports. Imports represented 62.5% of GDP for the entire period. Iraq has witnessed import activities for most of consumer goods that have locally stopped. More than 80% of imports after 2003 are consumer goods and products, food, beverages, mineral fuels, oils and lubricants,

manufactures (Lajlaj, 2014, 306–333)., knowing that more than 99% of exports are crude oil.

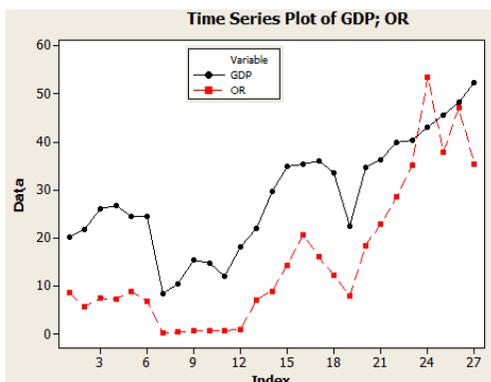
The population doubled within twenty years, from 16 million in 1990 to 32 million in 2010, exceeded 40 million in 2020, with a youthful and broad-based population pyramid. Group under 15 years old constitutes almost half of All. Two-thirds of total reside in urban areas. In this percentage are increasing because of the people concentration in main cities, looking for public services. The case draws a comparative thought about a deterioration in quality available services in rural areas. Increasing migration from the countryside to the cities going on as well (Jassim, 2010, pp. 45–47).

People has two main contributions to economic development: firstly, the overall demand growth with growing markets and continued pyramid expansion of population base. An extension of gender in favor of females, in addition to the environmental shifts in the quality of available services. Secondly it aimed at the supply side an increasing in the workforce, especially the young age categories. It brings about qualitative changes in the supply of jobs (Ministry of Planning-Iraq, 2005, 25).

Data show that Iraq's economy, since the mid-1980s has witnessed a significant slowdown. It has accompanied by a decline in performance, closely aligned with movements in oil revenues. The latter has witnessed annual fluctuations due to movements in global oil prices, as well as the internal conditions of Iraq (Figure 1). Oil revenues occupied the most important source of capital accumulation. It grew at an average rate of 9.3%, faster than the average growth rate of the economy, of 7.2% (Figure 2), as well as great movements matching the changes between them. Both slowed down significantly after 1997. Here, there was a major turnaround in GDP.

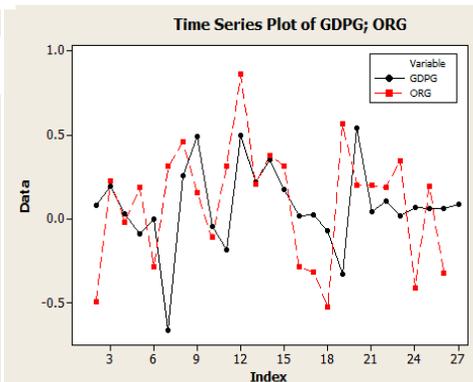
The absolute numbers were in constant prices. Oil revenues represented 53% of total GDP. The shock figures were in years of the full *International Embargo* on the exports of Iraqi oil, as well as the year of the US occupation of Iraq, specifically 1991-1996 and 2003. If one excluded their figures from calculation of total oil revenues, they account for 59.5% of the overall GDP for the study period. It can say the oil of Iraq has become the icon of the economy. A blessing will not repeat. What insists on the analysis is the reality of Iraq's economy without oil, which are the remaining ratios for performance for other sectors of the economy altogether.

**Figure 1: Annual GDP and Oil Revenue, OR in Iraq 1985-2011**



Source: Figure via author.

**Figure 2: Rates of Annual GDPG and Oil Revenues Growth, ORG in Iraq 1985-2011**



Source: Figure via author.

This work tries to diagnose the reality of the economy's performance, with on oil. A situation of expecting, for one reason or another, an imminent depletion, or a cessation of this wealth of grace, such as suspension its exports, failure of markets, or occurrence of external shocks. Here, an attempt made to map the reality of the Iraqi economy, in two tracks: the role of oil revenues in the overall economic performance; and in its growth. A third track reveals the role of these revenues in the economic performance of the non-oil sectors.

It means, of necessity, that natural wealth is a blessing in the economy, as a manna from heaven, which people turn as a curse, but the disease is for relying the government on it. A ready accumulation loses valuable efforts and works and values. Even capital in origin is, in general, a stock and embodied past work in forms of assets. Relying exclusively on wealth referred to harm, it later appears in the shape of a decline in performance, with which the economy lags. The threat seems if that blessing stops, as if it is gone, with the conditions of the international oil market and the global situation. Circumstances become an inferior laboratory for the local economy. Currently, it seems diagnosed as a new case, but it is historical and intuitive in its reality. It needs to test. Therefore, in the next section the analysis proceeds with the economic indicators of Iraq. Section two, econometric modeling of that performance furthermore examines the curse proposal and growth. Finally the work crossing the reality of oil in Iraq economy.

The scene can lead to one of two directions: either effects of economic growth, assuming the availability of development factors; or

deterioration in performance with the absence of the role of the productive sectors. Those prevailed shortly after the 1970s, contributed to the economic advancement. The indicators of the economy after the mid-1980s, unfortunately, divert attention clearly to the second contribution. After 2011, plans were absent, but the economy entered a phase of automatic and random management with the deterioration of domestic commodity production, especially in the agricultural and manufacturing sectors.

The labor force reached 23.4% of the population in 2010 with a high growth rate, continued to 36.1% in 2018. In numbers, the labor force increased from 7.103 million people in 2010 to more than 13 million people in 2018. Unemployment rates continued to be more than a quarter of those numbers. The characteristic that the workforce in Iraq, like the Arab counterparts, has been stigmatized for low productivity and weak participation of women, then the speed of growth is higher than population growth rate and job growth rate (AMF, 2010, 10).

The average value of GDP during (1985-1988) was about 15.048 billion dollars per a year, which is low, with a decline in oil exports during, i.e., the 2<sup>nd</sup> half of the war period of Iran and Iraq (Mahmoud, 2010, 5). After 1990, Iraq witnessed another economic downturn, including the contribution of oil revenues, and GDP formation would necessarily diminish. That is after the imposition of international economic sanctions on Iraq (Al-Jubouri, 2010, 165–169). In 1990 GDP fell to its previous level. During (1996-1990) it has increased slowly. At the end of 1997 did not regain a third of its initial level. It coincided with the including into the oil-for-food & medicine agreement, under the United Nations care (Al-Obeidi & Muhammad, 2011, 37). After the resumption of Iraqi oil exports, it continued to increase, until the beginning of 2003, when there was a second severe decline with the US direct occupation to Iraq, to rise again after the official lifting of the economic embargo on Iraq, high oil prices, and increased oil revenues.

The per capita GDP in Iraq is relatively lower than that of OPEC countries, with high rates of population growth, high rates of unemployment, and low contribution of non-oil economic sectors. throughout 1980-2003. Iraq has witnessed wars, economic blockade, and a US military occupation, lasted till 2011. These circumstances led to a deterioration in security conditions and economic instability.

Deteriorating economic environment, Naturally with the deterioration of governance indicators, led to a decline of productive sectors, retreated their contributions to the GDP. Rapid population growth with total increasing consumption have characterized by a prevalence of a state near-total dependence on oil revenues to finance the state's public budget, and predominance of consumer expenditures on (Central Bank of Iraq, 2018, 39–44).

The average rate of GDP per capita was 1209.25 dinars during 1985-2011 at constant prices of 2005 (Table 1). The rate decreased to less than 1000 dinars during 1990-1996 and in 2003 as well. It required care in standard estimates, therefore this study focused on it.

Table 1: Most Prominent Indicators, GDP of Iraq after Instability

Indications	2017	2018	Growth Rate %
GDP at Constant Prices (Trillion Dinars)	2001.1	199.1	-1.0
GDP at current prices (trillion dinars)	225.7	251.1	11.2
Average per capita share at current prices (million dinars)	6.1	6.6	8.2

Source: Central Bank of Iraq, 2018.

The most brace important productive sectors for each developing economy are agriculture and manufacturing industries. Indeed, they suffered from great neglect over decades, until the end of 2011, the US occupation of Iraq. The negligent sectors were treated as secondary activities. There has been a continuous and serious decline in the contribution of agriculture to the GDP. The industrial sector is no longer able to meet the needs of domestic demand (AMF, 2010, 12; World Bank, 2022, 1).

Therefore, the relative importance of agriculture, along with forests, hunting and fishing as a whole plunged to 1.4% of GDP in 2018 at constant prices, and for manufacturing industries to only 0.9%, while the contribution of crude oil reached 63.7% (AMF, 2018, 59).

That betrays the heavy reliance on the oil sector. It became a dominant and influential contributor to the formation of GDP. Limit activities for manufacturing, plus weak contribution to economic recovery. It has decreased from 11.5% in 1989 to only 0.9%, as mentioned above. The question arises,<sup>(1)</sup> what does that mean?

<sup>(1)</sup> Leaving the remaining 34% to the contributions of the rest sectors, which are entirety service and non-productive, such as: electricity and water, building and construction, transportation, communications and storage, wholesale and retail trade, hotels and the like.

Most of factories have quit, with production ceased due to various reasons. Many are still operating but suffer from difficulties and problems, foremost of which are with poor electricity supplies and high production costs. Thus, consumer imports will prevail. The latter can contribute to performance at the expense of the local productive sectors. In this case, it is possible to imagine the service sector, such as transportation, internal trade, and so on, that is at the forefront of the economic scene.

### 3. Oil vs. Economy

The intensity of oil in GDP is high, the foreign investment inflows so modest, and the inflation level is high, despite its low rates of growth, while keeping the currency value at \$ 1 = ID 1200 for nearly sixteen years.

Foreign trade has, in principle, a notable role in the economy. The capital goods source is needed to implement development projects and produce consumer goods and necessities. Under the political and military circumstances, during the study period, three stages the Iraq economy went through be diagnosed, as data: (1) Through 1980s, eight years of the Iraq-Iran war. The sheet of balance varied between deficits and surpluses intimately with fluctuations in international crude oil prices. Oil exports made up the largest part of total exports; (2) During the economic embargo in nineties of 20<sup>th</sup> century on Iraq, i.e., 1991-2002, the first six years were remarkable with a decrease in the ratios of commodity exports to merchandise imports.

The trade budget deficit in 1996 reached \$ 2.801 billion. There was a relative improvement in the structure of exports, for the oil side. It took place after the implementation of the Oil-for-Food & Medicine Program, reached at the end of 1995. During 1997 the export values increased after restrictions removed, especially for oil. It does not accompany a similar increase. In the proceeds of imports, this led to an increase in the trade balance surplus. Beyond 2003, there was a significant increase in export values as a result of lifting international sanctions and the improvement in world oil prices (AMF, 2004, 3). It is with the increase in the value of imports to meet the needs of economic activity. The result is that exports of crude oil and lubricants until 2010 accounted for more than 95% of the total value of the country's total exports.

Declines of ratios of exports to GDP, and decrease in their coverage of imports, are harmful indicators to economic growth, according to the

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money and insurance, real estate services, and business, such as: banking, insurance, ownership of housing and social development services, and personal & social government services, and personal services.

combination of exports and imports. Commodity diversification within the mix of exports is preferred rather than a single commodity. Concerning imports, it is also preferable to give priority to capital, production and intermediate goods necessary for production. Instead, downsides and risks were arising from mortgaging the local economy with a single commodity market, oil. Geographically, the Iraqi oil exports market to Europe, Asia and the United State of America have diversified, but this market is subject to international cartels.

Therefore, the Iraqi oil exports had characterized with randomness and irregularity, and their subjection to political circumstances, such as international sanctions during 1990-1996, the signing of the Oil-for-Food & Medicine Program agreement, and Western hegemony within the memorandum of understanding to implement that agreement during 1997-2002. In 2003 the occupation occurred, except for 2009, that witnessed a decline due to the 2008 global financial crisis (Al-Dulaimi, 2011, 55–56). However, the Iraq economy remained under the *American Occupation* and *International Sanctions* and interventions.

The relative importance of the Iraqi imports continued till 2018, indicating 38.5% of them were machinery and transport equipment, followed by various goods at 15.8%, manufactured goods by 11.4%, and mineral fuel 9.8%. The remaining percentage has divided into food commodities, beverages, tobacco, non-food raw materials, animal and vegetable oils and fats, chemicals, manufactured goods, and unclassified goods (Central Bank of Iraq, 2017, 71).

The result was, and still the domination of crude oil exports on the Iraqi economy over the past four decades. The average contribution of oil exports to GDP was 21.5% for 1985-1989, increased to 41.1% as an average during 2010-2011, and 64% during 2017-2018. The average percentage of the contribution of oil exports to total exports was 96.2% during 1985-1989, 96.5% for 2010-2011, and 99.9% in 2018. It is a blessing ready to meet the needs. Most of the requirements, as noted in the import table, are consumable. The question is about the size of the output for a community of forty million people, with a broad-based population pyramid. Attention revolves around other side, the consumption spending. It has noticed that it is more consumptive than productive. In this case, the oil commodity, the *Manna from Heaven*, is no longer the case, as it has metamorphosed, perhaps to a *Curse* on the part of the state.

Although post-occupation years after 2011 dominated by somewhat stability, the economic indicators punctuated by a continuous decline. The

GDP for Iraq in 2018 reached about 255 trillion dinars at current prices<sup>(2)</sup>. The non-oil sectors contributed 54.33% of it. The productive sectors i.e., agriculture and with non-oil mining and manufacturing, contributed 8.34% to this percentage, and construction, electricity, and water with 12.92%. The rest of the percent, for the service sector of all kinds, was 78.74%, divided, 39 per cent for the public sector and 61 per cent for the private sector.

The predominance of services over the rest sectors is not emergence but historic. The largest share was of the private sector in non-oil economic activity. For decades, the Iraqi economy has lacked an agricultural and industrial productive basis. 91.66% of non-oil output, i.e., service concentrated in building and construction, electricity, water, and non-commodity activities. The trend of agriculture and manufacturing is in rapid relative decline. Their total output in 2005 did not represent more than 27.8% of services output, down to 11% after 2011, and to 9.3% in 2018.

Services accounted for 60% of the workforce in 2019, agriculture 18%, and for the rest sectors, 22%, which are: mining and extraction, including oil and gas, manufacturing, construction, construction, electricity, and water.

At comparing the services share in output and its share in the workforce, it appears that the average value added per worker in services is higher than in the rest of the sectors except for crude oil and in agriculture, which is very low. The wide disparity in labor productivity between activities, or in the added value of the worker, is one of the features of underdevelopment, as labor productivity levels coincide with development more and more (Ali, 2020). Domination of services and decline in local production, with the characteristic of rent at its peak, it will be natural for oil to dominate national income and its role in the national economy, financing government spending and foreign currency resources.

Oil revenues reached a very high percentage of total revenues of the public budget, and more than half of the GDP. Therefore, reality and future of the economy have become dependent on the international oil market. It

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<sup>(2)</sup> Population for the same year was 38.3 million. The average per-capita product was \$ 5,667 at natural exchange rates. Equivalent to 9.3% of that of the United States of America, 51.6% of the global average; National income was 245 trillion dinars, the average per-capita is 5445 dollars. Iraq is laying among a group of middle-income developing countries, at the lower end of the upper part of this group. These countries were classified into two categories, according to the standard of average GNP per-capita, in current US dollars. The lowest between 1006 and 3955, and the upper between 3956 and 12235. GNI includes the extinction wherever it mentioned, and the difference between it and the GDP is the net returns to factors of production from and to abroad.

could cause a disaster for the economy, commensurate with the dependence of the national income on oil revenues.

This, necessarily means that the blessing of natural wealth may not be manna from heaven. The same is true for the future, with international conditions of the oil market and global conditions that have become a bad test for the global economy. Maybe a new case with the new millennium. It may be a historical case. To reveal the extent of the applicability of the situation, the analysis proceeds beyond the economic indicators with the following sections. Growth of oil revenues with economic growth, the economic performance of oil and non-oil, and the effects, estimates, and evaluation.

This target view is clear from the reality of oil in the economy movement. Oil revenues constitute a very high percentage of the state's total revenues, its budget, as well as the composition of GDP, compared to the situations of all oil-exporting countries. Therefore, it is evident that the reality of Iraq's economy and its future has become dependent on the global oil market, with the international situation of Iraq, as well as the changes in global markets. All of it causes disaster for the economy. This catastrophe of magnitude is necessarily entirely proportional to the extent of the dependence of GNI on annual oil revenues.

#### **4. Econometric Model and Hypothesis Test**

The work period, 1985-2011 has selected for data sample. It comprises the most turbulent years, destabilizing the economy, moving away from stability. It lasted from the mid-eighties, the mid-first-Gulf War with Iran, which weighed heavily. Followed by the II-Gulf War of 1991 to liberate Kuwait from Iraq. Immediately accompanied by the international economic sanctions that ended with the US occupation of Iraq in 2003. During this instability continued to create a state of economic recession. Its GNP continued to progress slowly with negative declines (Table 1). The impact of the 1991 shock and the gradual recovery has noted by relying on domestic resources other than oil, whose export has banned until 1996.

As it is well known, economic performance often has two patterns: direct annual relationships to the responding variable, which is the GDP with the explanatory variables. The second is continuous growth relationships. In the first mode, the work needs to estimate the individual relationships of the explanatory variables in simple regressions. Then, modeling the overall relationship between the continuous variable Oil Revenue, OR with the continued GDP. The work adopts a progressive-step incline method, with forwarding addition and / or backward omission. The

same context assumes for the second mode of growth. The aim is to check the extent of the injury via the oil curse.

Past section diagnosed the performance variables. Rather than the annual oil revenues, population annually increases, and the overall consumption levels. Other economic sectors came next. Annual imports and private and/or public investments, and finally Foreign Direct Investment, FDI. To correct a probable misspecification, the work implements the dummy variable, approximate the non-quantified variables, corresponding to the shifts in the response variable observations. The value of 'one' to the unusual year values (1991-1996 and 2003), and zero value for others.

Replying the central question, the work proposes to test simple regressions to find out the direct relationships, and stepwise regression, modeling the reality of economic performance with oil revenues and the mentioned variables. The data shows unusual values of oil output and revenues, which have pushed relations away from normal paths. Statistically represented by dragging the estimated regression line away from the appropriate directions (Appendix A).

The work adopted the neo-classical Theory of Economic Growth (Meade, 1962, 151) and allowed the variables of foreign trade within the production function. It includes labor and capital formation with its many types: domestic and foreign investments, oil revenue from source, and the factors of time.

$$(1) \quad Y = f(L, K, t)$$

Whereas: L demographic factor, K physical capital, t time measured by the consuming and investing nature of society, has considered by the directional variables of capital:

$$(2) \quad Y = f(L, I, I_{fd})$$

Function (2) assumes total domestic investment and FDI sources for capital. Also, the revenues of the exported Oil Revenue, OR. Consumption, C is a dominant part of the economy, so the contributions of macro variables such as consumption demand and imports M test two components of the production function:

$$(3) \quad Y = f(L, I, I_{fd}, OR, C, M)$$

If GDP considered a measure of economic performance and annual population numbers, then P is an approximate variable of labor,

$$(4) \quad GDP = f(P, I, I_{fd}, OR, C, M)$$

The output of Non-Oil,  $NO_{GDP}$  sectors has not neglected. Assuming that the product is a function for it as well,

$$(5) \quad GDP = f(P, I, I_{fd}, OR, C, M, NO_{GDP})$$

## Methodology

The work collected reliable data and converted in constant prices with 2005=100 for variables except labor. The sample size may be not large ( $n = 27$ ) for the period 1985-2011, it is sufficient to estimate multiple relations, statistically significant at ( $p < 0.05$ ), acceptable with degrees of freedom, sufficient for an accurate relationship strong. Adjusted R-squared coefficient of determination changes a lot with the number of variables. The probability estimates considered to obtain a appropriate model for reality, which reduces the variance of the values from their means and raises the expected probability of values of significance tests, for their effects possibly on the results.

The work used the Ordinary Least Squares method, OLS with all its hypotheses, using the software package, Minitab.MTW-17. Multiple regression adopted the Stepwise Regression method to filter the addition or removal of significant/non-significant variables, in respective, automatically by Minitab at  $\alpha = 0.05$ , that increase the explanatory degree, R-Sq(adj.)

Deductive analysis begins with simple regressions of the expected trends of variables, such as the positive effect relationship of a work item. With capital, the overall domestic capital formation, IT found to be very low-impact, negative, and insignificant:

$$\text{GDP} = 29.50 - 0.000000 I_T \quad (1)$$

(12.27)    (0.98)

$$S = 11.9943 \quad R\text{-Sq} = 3.7\% \quad R\text{-Sq(adj)} = 0.0\% \quad F=0.96$$

When the components allowed government and private investments, individually, the same estimate found. When they together permitted, the second looks positive, but both were non-significant. As values, they represented modest and unproductive proportions throughout the 1980s and beyond. With oil, the features of the assumed state began with direct relationships of economic performance. A simple regression proves that the hypothesis is correct. The annual performance of the economy is highly dependent on oil revenues, with a significant and high correlation:

$$\text{GDP} = 17.9 + 0.713 OR \quad (2)$$

(11.92)    (10.14)

$$S = 5.40554 \quad R\text{-Sq} = 80.4\% \quad R\text{-Sq(adj)} = 79.7\% \quad F=102.82$$

An expected beginning calls for knowing the performance of the other non-oil sectors,  $NO_{GDP}$  combined. Here is the paradox.

$$\text{GDP} = 34.1 - 0.394 NO_{GDP} \quad (3)$$

(6.65)    (-1.15)

$$S = 11.9096 \quad R\text{-Sq} = 5.1\% \quad R\text{-Sq(adj)} = 1.3\% \quad F=1.33$$

The total product of these combined sectors has a negative impact and a non-statistically significant relationship with the output in (Model 3). The regression constant, the intercept, is significantly positive, corresponding to the performance. However, the annual changes of both sides have a negative and weak correlation. These are stimulating results .

In other words, the annual performance was positive, considerably affected by oil revenues, and negative with other sectors. Oil, as a whole, is a good thing for the economy of Iraq, but to the point where other sectors were marginalized. We remind the predominance of the service-consumer nature. It explains the unproductive nature of the economy. Here the question arises: To what extent is this situation worsening? What is the truth about the effects of oil on other sectors?

$$NO_{GDP} = 17.9 - 0.287 OR \quad (4)$$

(11.92) (-4.08)  
S = 5.40554 R-Sq = 40.0% R-Sq(adj) = 37.6% F=16.68

Test of the relationship showed that the oil sector has a negative, statistically significant impact on the performance of the economic sectors, despite the compatibility with the joint annual performance, as noted from the intercept, positively of statistical significance .

Overall Performance Model: A positive effects found. The intercept appeared significantly positive for the probabilistic model (5):

$$GDP = 11.3 - 0.141 P + 0.101 M + 0.436 C - 17.8 I.f.d + 1.03 OR \quad (5)$$

(1.75) (-0.36) (1.10) (2.29) (-4.12) (6.20)  
S = 3.24258 R-Sq = 94.1% R-Sq(adj) = 92.7% F = 66.84

It makes sense when oil and overall consumption only showed positive significant effects. While demographic variable besides imports are the opposite. Negative effects are for FDI. The estimated model may suffer from a miss-specification, while this case, the work resorts to allow the dummy variable, with a value of 1 for the unusual years (1991-1996, 2003), and a value of zero for others.

$$GDP = 7.72 + 0.495 P + 0.0038 M + 0.308 C - 10.2 I.f.d + 0.573 O.R - 8.29 D.V \quad (6)$$

(1.49) (1.40) (0.05) (1.99) (-2.56) (3.17) (-3.69)  
S = 2.56307 R-Sq = 96.5% R-Sq(adj) = 95.4% F = 91.42

The shape of the relationships did not changed much, but for labor. The entry of the rest variables has stopped. Excepted appearance for the dummy variable. An expected of multicollinearity problem between

consumption and population. Probabilistic estimates showed that one and / or both are not significant, suggesting to exclude them.

$$\text{GDP} = 13.9 + 0.466 C - 13.7 I_{fd} + 0.769 \text{OR} - 6.30 \text{D.V} \quad (7)$$

(8.63) (5.29) (-4.72) (6.60) (-3.96)

S = 2.56965 R-Sq = 96.1% R-Sq(adj) = 95.4% F = 135.90

## 5. Better Probabilistic Model

The work proceeds to a stepwise regression by adding forward statistically significant variables and/or increasing the value of R-Sq (adj) to analyses the variables' preference for economic performance, starting with the most contributing (Hansen, 2020, 776).

Stepwise Regression of GDP versus: P, OR, M, C, and  $I_{fd}$ ;  
Alpha-to-Enter: 0.15 Alpha-to-Remove: 0.15. Response is GDP on 6 predictors, N = 27:

Step	8-1	8-2	8-3	8-4
Constant	17.880	14.445	9.958	9.077
OR	0.713	1.236	1.069	0.991
T-Value	10.14	9.49	9.44	8.27
P-Value	0.000	0.000	0.000	0.000
$I_{fd}$		-17.4	-19.5	-16.9
T-Value		-4.41	-6.08	-4.82
P-Value		0.000	0.000	0.000
C			0.42	0.38
T-Value			3.79	3.42
P-Value			0.001	0.002
M				0.120
T-Value				1.62
P-Value				0.119
S	5.41	4.10	3.29	3.18
R-Sq	80.44	89.19	93.34	94.05
R-Sq (adj)	79.66	88.29	92.47	92.97
Mallows Cp	43.2	15.6	3.5	3.1

The fact appeared alongside the hypothesis, with the first addition in (model 8-1), with a positive impact of (0.713) quite significant ( $t\alpha = 10.14$ ). Followed by FDI in the probabilistic model (8-2) significantly with a negative impact. Then total consumption in the third step, and as expected,

with a significant positive impact at ( $\alpha$ : 0.05). Imports have the same direction and significance, but at ( $\alpha$ : 0.06). Model (8-4) represents a GDP function, with consumption being an approximate variable of demography, labor force rather than population. The four variables (Oil Revenues, Imports, Consumption, and FDI) explain more than 90% of the changes in GDP, with a statistically significant positive intercept: Regression Analysis of GDP versus: OR,  $I_{fd}$ , C, and M:

$$GDP = 9.077 + 0.991 OR - 16.9 I_{fd} + 0.381 C + 0.120 M \quad (8-4)$$

(5.48) (8.27) (-4.82) (3.42) (1.62)

S = 3.17786 R-Sq = 94.1% R-Sq(adj) = 93.0%

Step	9-1	9-2	9-3	9-4
Constant	17.880	14.445	9.958	13.903
OR	0.713	1.236	1.069	0.769
T-Value	10.14	9.49	9.44	6.60
P-Value	0.000	0.000	0.000	0.000
$I_{fd}$		-17.4	-19.5	-13.7
T-Value		-4.41	-6.08	-4.72
P-Value		0.000	0.000	0.000
C			0.424	0.466
T-Value			3.79	5.29
P-Value			0.001	0.000
D.V				-6.3
T-Value				-3.96
P-Value				0.001
S	5.41	4.10	3.29	2.57
R-Sq	80.44	89.19	93.34	96.11
R-Sq(adj)	79.66	88.29	92.47	95.40
Mallows Cp	88.2	40.5	18.9	5.1

The first and most prominent element appears the hypothesis variable is oil revenues, OR, which has the most prominent on the level of positive significantly impact, in the first step, (Eq. 9-1) with a high explanatory ability (R-Sq (adj) = 79.66%), alone. It has immediately followed by the significant negative annual impacts of FDI. In the third step (Eq. 9-3), the impact of total consumption appears positively. With the dummy variable allowed to be notable, the annual import variable disappears in the fourth step (Eq. 9-4).

Therefore, FDI was a negative and significant factor affecting the performance of the economy, and with it, the dummy variable, over the other non-quantified variables. The overall performance has explained by Oil and Consumption only, with a large proportion of the changes in the Iraqi economic activities, (3-9). What type of economy in this case without local production or internal activity other than consumption! Is the view differed from the inclusion of explanatory variables, allowing Minitab to step-by-step omit variables do not contribute to the overall explanation (regression 10) for correction if that is wrong ?

Backward elimination Stepwise Regression: GDP. versus P; M; C; Ifd; O.R; D.V. Alpha-to-Remove: 0.1; Response is GDP. on 6 predictors, with N = 27:

Step	10-1	10-2	10-3
Constant	7.718	7.847	13.903
P	0.50	0.49	
T-Value	1.40	1.49	
P-Value	0.177	0.151	
M	0.004		
T-Value	0.05		
P-Value	0.962		
C	0.308	0.311	0.466
T-Value	1.99	2.31	5.29
P-Value	0.061	0.031	0.000
I <sub>fd</sub>	-10.2	-10.3	-13.7
T-Value	-2.56	-2.81	-4.72
P-Value	0.018	0.011	0.000
O.R	0.57	0.57	0.77
T-Value	3.17	3.32	6.60
P-Value	0.005	0.003	0.000
D.V	-8.3	-8.3	-6.3
T-Value	-3.69	-4.04	-3.96
P-Value	0.001	0.001	0.001
S	2.56	2.50	2.57
R-Sq	96.48	96.48	96.11
R-Sq (adj)	95.43	95.64	95.40
Mallows Cp	7.0	5.0	5.1

The software excluded imports (M) and population variables respectively. Both were not significant, despite the positivity. It kept the four candidate variables in (regression 9) the same with their abilities exactly (3-

10). The relevant causal estimation showed that *oil revenues, consumption* in positive terms, FDI, and the dummy variable were negative. In short, the annual oil revenues go to cover consumption needs, and that is the whole fact.

## 6. Oil, Performance, and Growth

Focusing on growth outcomes, satisfaction of economic growth requires a more in-depth explanation. Pilot testing begins with a simple regression. Regression Analysis: GDPG versus NO<sub>GDPG</sub>:

$$\text{GDPG} = 0.0778 + 0.0443 \text{NO}_{\text{GDPG}} \quad (11)$$

(1.58)      (1.10)

S = 0.249731    R-Sq = 4.8%    R-Sq(adj) = 0.8%    F=1.21

Surprise. In growth formulas, the impact of the combined performance of the economic sectors on the GDPG growth is entirely positive but not statistically significant. While the expected consequence has achieved with the oil revenues growth:

$$\text{GDPG} = 0.102 + 0.0293 \text{ORG} \quad (12)$$

(2,56)      (3.95)

S = 0.199259    R-Sq = 39.4%    {R-Sq(adj) = 36.9%}    F=15.60

Growth effects for both together sectors are:

$$\text{GDPG} = 0.103 + 0.0236 \text{NO}_{\text{GDPG}} + 0.0283 \text{ORG} \quad (13)$$

(2.57)      (0.72)                      (3.73)

S = 0.201293    R-Sq = 40.7%    R-Sq(adj) = 35.6%    F=7.90

(Eq. 13) provides a comprehensive description of their role together in overall growth, with their insignificant contribution, in statistical terms of the oil sector, excluding the non-oil sectors combined. The lower the value of [R-Sq (adj) = 32.7%]. The question remains about the impact of the growth of oil revenues on the growth of other sectors. Finding:

$$\text{NO}_{\text{GDPG}} = -0.044 - 0.555 \text{ORG} \quad (14)$$

(-0.17)      (-0.77)

S=1.25254    R-Sq=2.4%    R-Sq(adj)=0.0%    F=0.59

Here is the point. To be fair, regression (14) confirms the negative relationship of the growth of the oil sector with the growth of other economic sectors. It is negatively affects them. We remind that the average

growth rates of oil revenues ( $ORG = 0.092$ ), i.e., 9.2% per year<sup>(3)</sup>, and its counterpart to the growth of other sectors is a slowdown ( $NOGDPG \cong -0.094$ ). This is what made Average overall economic growth rates ( $GDPG = 0.074$ ), slower than oil growth, despite the negative growth of the non-oil sectors ( $\cong -9.4\%$ ). Here, the fatal role, the curse of oil, has become so, is affirmed by the wars, previously predicted, and economic policies explain it.

Before moving on to multiple regression, we test relationship stability for simple regression. Starting with the sample size may be small ( $n=27$ ) sufficient, but the estimated model is statistically significant at a ( $p<0.05$ ) and is acceptable with sufficient degrees of freedom in light of the number of variables. It may provide an accurate estimate of the strength of the relationship. The coefficient of determination, adjusted R-squared, will change a lot as the parameters change. Therefore, a multiplicity of probabilistic estimates considered to obtain a model that is compatible with reality. Allowing the dummy variable did not change the image<sup>(4)</sup>.

Except for the number of total variables, we have a good number of degrees of freedom. A normal distribution is not problematic because the residuals from the estimated regression are normally distributed, and the p-value is fit to determine the significance of the relationship between oil revenue growth and economic growth.

To fit the model well, the work evaluates the data and looks at the chart the data provides to ensure that the sample adequately covers the range of values of oil revenue growth. The model is properly suited to any curve in the data, without excessive fit, and the curve does adequate for the analysis.

The sample size may increase the variance of the values from its arithmetic mean and weaken the expected probability of the values of the significance tests and its impact on the results. To quantify the relationship closest to reality it is preferable to examine the shape of the relationship, linear, quadratic, or cubic, between the growth of oil revenues and economic growth (Eq. 12) as in (Figure 3).

<sup>(3)</sup> Mean of ( $ORG = -0.960643$ ). Ignoring the erratic value of ( $1991 = -27.2787$ ), that led to that counted mean gave the value of  $ORG = 0.0920785$ . Comparable with ( $NO_{GDP}G = -0.0937939$ )

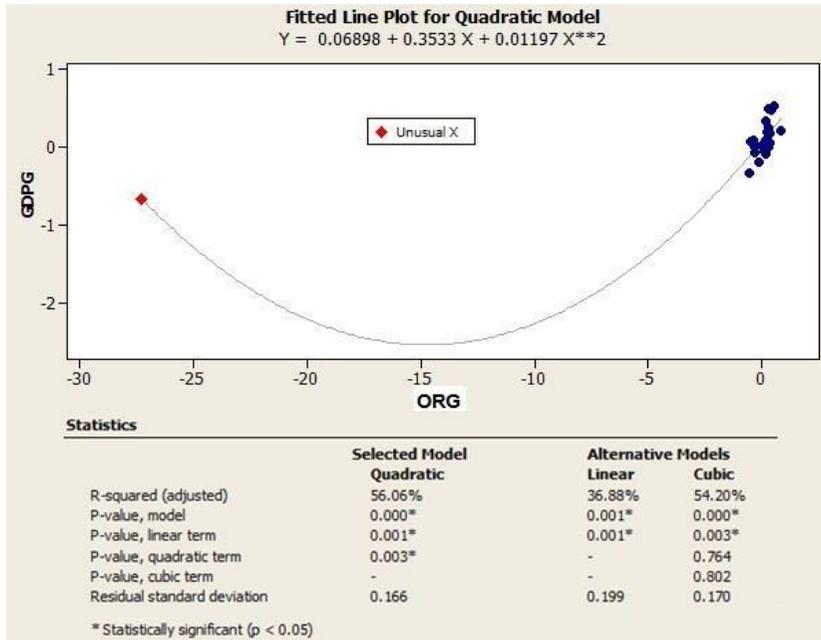
<sup>(4)</sup> 
$$GDPG = 0.0990 + 0.0235 NO_{GDP}G + 0.0288 ORG + 0.0170 DV \quad (13a)$$

$$(2.09) \quad (0.70) \quad (3.51) \quad (0.18)$$

$$S = 0.205672 \quad R-Sq = 40.8\% \quad R-Sq(adj) = 32.7\% \quad F=5.06$$

The work evaluates the data and the suitability of the model in light of the objectives of the study. At some point, the first of which is: the impact of the growth of oil revenues ORG on the measured economic growth GDPG, and looking at the estimated curve confirms that the sample supports the estimate.

**Figure 3: Estimated line of the squared regression model of economic growth on oil revenue growth and statistical tests**



Statistically significant (p < 0.05).  $R-Sq(adj) = 36.88\%$  of linear eq., equal {  $R-Sq(adj) = 36.9\%$  } of (eq. 12).

From the statistical test table, we note that the estimated square regression curve for the second-order growth equation provides a better fit of data:

$$GDPG = 0.069 + 0.3533 ORG + 0.01197 (ORG)^2 \quad (15)$$

(2.00) (3.69) (3.39)

$S = 0.166240$   $R-Sq = 59.6\%$   $R-Sq(adj) = 56.1\%$   $F = 16.95$   $P = 0.000$

The significance of the quadratic relationship supports the stability of the linear relationship, which is quite adequate for the analysis. When evaluating the results, we determine the linear model that Minitab stops at because the quadratic model (X2) and the cubic model (X3) are more

complex with curves to model the relationship between ORG and GDPG. If Minitab chooses the quadratic model, the squared coefficient will be large, to avoid over fitting the data with our model. One of the sample observations contains an unusual ORG value, which can pull the estimated line near it away from other points. This point is marked in red in the model selection report, it is the observations for the years 1991-1996 and the year 2003. Because unusual observations have a strong influence on the results. The case has corrected using a random variable. We turn to multiple regression systems (Gujarati, 2004, 248), to complete the relationships that sum up the variables:

$$\text{GDPG} = 0.148 - 0.9 \text{ PG} + 0.144 \text{ CG} + 0.214 \text{ MG} + 0.0147 \text{ I}_{fd}\text{G} + 0.0284 \text{ ORG} + \dots + 27 \text{ NO}_{\text{GDPG}} \quad (16)$$

$$\begin{array}{ccccccc} (0.21) & (-0.04) & (0.81) & (1.56) & (.46) & (4.00) & (0.09) \end{array}$$

$$S = 0.178080 \quad R\text{-Sq} = 65.2\% \quad R\text{-Sq}(\text{adj}) = 51.3\% \quad F=4.69$$

Only the variable of oil revenue growth is positive - the effects statistically significant. All other variables, including the performance growth of the non-oil economic sectors, have positive impacts, except for population growth. However, all of them are not significant<sup>(5)</sup>. Therefore, letting Minitab decide the possible combination.

The oil revenue growth filters first. It alone explains {R-Sq (adj) = 45.00%} of the growth changes. It has followed by the growth of imports {R-Sq (adj) = 59.53%}, then the positive dummy variable (*Oil, Imports, and the Dummy Variable*). To find out the weakest variables in the contribution to growth relations the work re-estimates the regression relationships by the backward-omission method for the least contributing variables by the value of the specified correlation coefficient and obtaining the alternative formulas, or unique to the significant variables (Model 18).

Stepwise Regression: GDPG versus PG; CG; MG; I<sub>fd</sub>G; ORG; NO<sub>GDPG</sub>; DV. Response is GDPG on 7 predictors, with N = 22. N (cases with missing observations) = 5 N (all cases) = 27. Forward selection. Alpha-to-Enter: 0.25

Step	17-1	17-2	17-3
Constant	0.1360	0.1352	0.1102

<sup>(5)</sup> Allowing the dummy variable did not change the view except for it to appear positive, not significant.

O.R.G	0.0301	0.0299	0.0336
T-Value	4.26	4.94	5.25
P-Value	0.000	0.000	0.000
MG		0.281	0.265
T-Value		2.86	2.77
P-Value		0.010	0.013
D.V			0.128
T-Value			1.46
P-Value			0.162
S	0.189	0.162	0.158
R-Sq	47.62	63.39	67.25
R-Sq(adj)	45.00	59.53	61.79
Mallows Cp	5.1	0.2	0.5

Next to the first step (Eq. 18-1) that includes all the variables, including the dummy variable, in the second step, the population variable is excluded, then the growth variable of non-oil economic sectors, and then FDI. Then it settles in the fifth step to rule out consumption growth, and then the dummy variable. All are positive, not significant.

Stepwise Regression: GDPG versus PG; CG; MG; I<sub>fd</sub>G; ORG; NO<sub>GDP</sub>G; D.V. Backward elimination, Alpha-to-Remove: 0.1. Response is GDPG on 7 predictors, with N = 22. N(cases with missing observations) = 5 N(all cases) = 27

Step	1A-1	1A-2	1A-3	1A-4	1A-5	1A-6
Constant	0.09862	0.10362	0.10346	0.10903	0.11022	0.13520
PG	0					
T-Value	0.01					
P-Value	0.994					
CG	0.11	0.11	0.11	0.09		
T-Value	0.63	0.68	0.71	0.61		
P-Value	0.539	0.506	0.486	0.548		
MG	0.214	0.215	0.216	0.236	0.265	0.281
T-Value	1.58	1.69	1.76	2.17	2.77	2.86
P-Value	0.136	0.112	0.097	0.045	0.013	0.010
I <sub>fd</sub> G	0.012	0.012	0.012			
T-Value	0.38	0.40	0.41			
P-Value	0.709	0.697	0.688			
ORG	0.0321	0.0321	0.0322	0.0324	0.0336	0.0299
T-Value	4.17	4.40	4.59	4.75	5.25	4.94
P-Value	0.001	0.001	0.000	0.000	0.000	0.000

NO <sub>GDPG</sub>	0.002	0.002				
T-Value	0.06	0.06				
P-Value	0.951	0.950				
D.V	0.116	0.116	0.116	0.119	0.128	
T-Value	1.16	1.20	1.25	1.31	1.46	
P-Value	0.264	0.247	0.231	0.207	0.162	
S	0.176	0.170	0.165	0.161	0.158	0.162
R-Sq	68.30	68.30	68.29	67.96	67.25	63.39
R-Sq(adj)	52.45	55.62	58.38	60.42	61.79	59.53
Mallows Cp	8.0	6.0	4.0	2.1	0.5	0.2

Summing up, the latest probabilistic model 18-6 stops when oil revenues and imports grow once again. They alone explain {R-Sq (adj) = 63.39%} of growth rates. The growth of imports outpaced the growth of consumption, with a positive moral impact. According to this formula, we find that economic growth is a function of the growth of the oil sector and the growth of the import sector. Even the dummy variable has ruled out for not being significant. The growth of consumption has not confirmed to have a significant impact with oil on growth, as it has previously shown in the annual performance. Regression Analysis of GDPG versus ORG, CG:

$$\text{GDPG} = 0.0928 + 0.0265 \text{ ORG} + 0.245 \text{ CG} \quad (18a)$$

(2.40)      (3.60)                      (1.66)

N = 26 S=0.192346 R-Sq=45.9% R-Sq(adj)=41.2%

The unfortunate fact is that oil has magnificently fueled the overall economy with financial resources but it has marginalized the role and performance of the productive sectors, due to the exacerbated reliance on allocating their needs on oil revenues and not on their outputs. These results confirm what the work reported first, ready revenues, and the lethal nature of performance. Rising speculation has confirmed by empirical proofs (Abdel-Samad, 2018; Al-Abri, 2020; Al-Mudhaki, 2017; Al-Qasim, 2007; RT-Online, 2011; Washannan, 2015, 20–39).

The oil sector went hand in hand with the non-oil sectors in a symmetrical performance, with the difference being that the last leaves miserable decline with / and due to the oil sector's encroachment on capital formation in the economy. GDP growth rates are slower than other sectors, confirming the harmful unilateralism of oil. Indeed, political risks are a source of real concern for the Iraqi economy, which is strictly associated

with the price movements of crude oil, and that GDP growth is vulnerable to oil shocks (Graeber, 2018, 16)

In this case, the government should support the institutional diversification of other sectors in the economy to allow other sectors to contribute meaningfully to the overall growth of the Nigerian economy (Agbaeze & Ukoha, 2018, 262–270). The relative contribution of oil revenues (Mean of OR / GDP = 0.42) while the average participation of other sectors (Mean of NOGDP / GDP = 0.017), leaving the remaining percentage of public services and non-productive consuming sectors, in the form of public sector salaries and consumer imports. These impacts will be severe in countries that earn 57% of government revenues and more than 94% of export revenues from the petrodollars, such as Nigeria, the largest African oil producer (Lashitew et al., 2020a), to which the same indicators apply.

A resource-cursed state is one in which non-renewable natural resources dominate at least 20% of exports or financial revenues, according to the International Monetary Fund, IMF and tend to negatively impede other sectors of the economy (IMF, 2017). Examples include manufacturing and agriculture, and the movement of capital and labor towards resource sectors is stimulated. Or non-negotiable import activities, and the overall effect lasts for decades (Al-Maleki, 2018).

It may be redundant to conclude that research on diversification performance in resource-rich countries is limited. Nevertheless, recent work identifies empirical patterns in economic diversification using the growth of non-resource (manufacturing and services) sectors per capita ... to assess long-term diversification and then identify links related to diversification policies, including human capital acquisition, public and intellectual capital, and dynamism, well-established (H. S. M. Al-Obeidi, 2022, 90; Lashitew et al., 2020b, 167–168). On economic policy a local work, (H. S. M. Al-Obeidi, 2022, 90) suggested transferring oil revenues to a larger and more diversified economic activity, via creating an appropriate legislative environment for the economic institutions after approving the Federal Oil and Gas Law between the central government and the Kurdish Region.

## Conclusion

The increases of exported oil revenues accompanied by increases in total imports and total consumption, which were recommended for estimation in the oil revenue-gross product model. The domination of crude oil exports over the Iraqi economy throughout the last four decades. An accelerated increase in the average percentage of the contribution of oil exports to the GDP. The average percentage of the contribution of oil exports to total exports was more than 96% during the study period and afterward. Oil contributed just under half of the GDP, and the rest contributed by other sectors. This rest contributed by more than 78% of it to the services sector, leaving only 8% for agriculture and industry together, and about 13% of it for the commodity sector, water, electricity and construction, which is consumer as well. It is one of the features of backwardness, as cited in the first section.

The empirical work found evidence of a significant dependence of the economy's annual performance on oil revenues, with is a significant relationship with a high correlation in the simple linear probability estimate (Model 2), unlike the performance of other non-oil sectors combined, with a negative impact and a non-statistically significant relationship. The economy performance has positively and largely affected by oil sector, and negatively by other sectors. Indeed, oil left a significant negative impact on those sectors (Model 4). Estimates of the overall performance of the variables confirmed that: Oil revenues; Only total consumption left a positive moral effect. While the demographic factor and imports are the opposite, with nugaratory affects appropriately for FDI, as the probabilistic models (6, 7, 8-3, 9-4, and 10-3).

Regarding growth relations, the effect of the performance of the economic sectors found to be positive, but not statistically significant. Oil drew clear positive impacts and moral, in the two simple models (11 and 12), as well as in the multiple regression (13). Moreover, oil has a negative relationship with the sectors of the economy, and it is weak and not statistically significant. The oil sector grew faster than the overall economic growth, including a significant decline in the growth of its productive and servant sectors, which grew at a negative average rate ( $NO_{GDP}G \cong -0.094$ ). The work tested the form of the relationship between the growth of oil revenues and economic growth, so linear regression was a better fit than quadratic or cubic.

The overall relationships in the multiple regression estimates confirmed the only significant positive impacts for oil on economic growth (Model 16). The stepwise regression stopped at the import growth only, a

second variable next to the oil revenues growth in its impacts on the economic growth model (17-2 and 18-6), with an explanatory capability of about 60%. These two variables explain growth changes of this magnitude, and oil alone interpreted  $R-Sq (adj) = 45\%$  (Model 17-1). With the dummy variable, the explanatory capability exceeds 67%.

This work provided proof that the economy of Iraq hit by the oil curse. Changes in the annual performance of the economy, oil contributed about 80%, specifically  $(R-Sq (adj) = 79.66\%)$  of the annual performance of the economy (Model 2). On the other hand, economic growth has been explained by oil growth also, despite the latter's slowdown and stoppage. The stoppage was in the most separate years between oil and GDP. Alone about 45%, notwithstanding the significant halt in oil exports in the years (1991-1996 and 2003), within the period of estimation and econometric work.

As mentioned above, oil explains half of the changes in performance. Any data, any shocks received by the oil sector, let the overall economy in a critical dilemma. The state fails to fulfill the general budget. It is what happened with the Covid19 pandemic. A sixth of the population, or nearly seven million public sector employees, face a real disaster. The problem came to explain the government's inability to provide monthly salaries to employees without borrowing. The solution is to resort to internal and external borrowing. Of course, while reducing other expenditures, specifically investments, and halting them altogether. Estimates of growth may seem otherwise. It is best to know them but not before the overall co-relationship view is complete. Here is a spectacle of the curse of oil in Iraq. The work confirmed the hypothesis by the abundance of oil in Iraq has stifled economic development.

### **Implications and Recommendation**

This study concluded that the Iraq's economy has fallen victim to conflicting opinions. Growing or collapsing one! The financial revenues benefited the annual public budgets and moved the metadata structures. On the one hand, it effectively disrupted the capabilities of infrastructure renewal and development. Those in charge of managing the economy benefited for their own sake, and spread the chaos of waste. The economy began to falter two decades ago. This is one of the main reasons for ending the prosperity that prevailed in Iraq half a century ago. Petroleum provided instant financial resources that revived society for decades. But it deliberately disrupted economic resources, meaning, it hindered labor and

productive capital from going to sustainable development or creating a promising future for next generations. Oil was more of a curse than a blessing.

The demographic variable that has been margined in its effects suggests protecting human capital and developing service sectors such as education and health. Non-oil exports can stimulate the development of intellectual capital, public capital, and commodity products for the public sector, such as water, electricity, and municipal services. Then developing the business roles space on which the private sector relies to be active, producer, and source. Anyhow, the development of the business environment, i.e. investment climate for local investment and FDI is imposed to resume its role and to have positive, non-negative, performance effects as mentioned.

**Appendix A: Data of Economic Variables for Iraq in Constant Prices, 2005 Basic Year\***

Year	GDP	GDPG	ORG	EXo.G	N.O.GDP	M	C	Ifd
1985	20.1840	*	*	*	11.6610	23.165	7.281	0.001
1986	21.8260	0.081352	-0.4950	-0.495001	16.1250	38.001	15.035	0.002
1987	26.0560	0.193806	0.2270	0.226983	18.6810	26.431	9.602	0.010
1988	26.8510	0.030511	-0.0215	-0.021468	19.6310	26.001	10.775	0.000
1989	24.4690	-0.088712	0.1861	0.186112	15.5980	20.873	8.648	0.002
1990	24.4740	0.000204	-0.2857	-0.285652	17.5740	3.579	8.181	0.000
1991	8.2920	-0.661191	-27.2787	0.014478	8.0480	3.579	6.300	-0.002
1992	10.4170	0.256271	0.3146	0.314607	10.0610	2.358	8.561	0.006
1993	15.4770	0.485744	0.4548	0.454824	14.8240	4.156	12.417	0.002
1994	14.7620	-0.046198	0.1541	0.154145	13.9900	2.732	12.941	0.000
1995	12.0590	-0.183105	-0.1092	-0.109195	11.3630	2.025	10.592	0.003
1996	18.0450	0.496393	0.3095	0.309524	17.0370	8.571	14.790	-0.006
1997	21.9940	0.218842	0.8575	0.857486	14.9210	14.335	13.290	0.002
1998	29.6610	0.348595	0.2080	0.208039	20.7300	20.044	18.246	0.012
1999	34.8756	0.175807	0.3734	0.373351	20.6236	24.932	12.134	-0.008
2000	35.3660	0.014061	0.3122	0.312229	14.6440	21.779	11.136	-0.003
2001	36.1810	0.023045	-0.2892	-0.289163	20.1070	26.956	15.501	-0.006
2002	33.6850	-0.068986	-0.3193	-0.319271	21.5010	19.920	17.647	-0.002
2003	22.5350	-0.331008	-0.5249	-0.524906	14.5450	24.915	18.903	0.000
2004	34.7390	0.541558	0.5644	0.564411	16.3960	31.081	30.257	0.310
2005	36.2680	0.044014	0.2007	0.200741	13.3180	30.670	28.721	0.515
2006	39.9520	0.101577	0.1967	0.196738	11.3810	18.330	25.081	0.371
2007	40.5030	0.013792	0.1858	0.185849	5.4100	13.542	27.510	0.914
2008	43.1790	0.066069	0.3452	0.345170	-10.4120	16.044	25.016	1.709
2009	45.6880	0.058107	-0.4097	-0.409733	7.6730	21.187	39.535	1.458
2010	48.3640	0.058571	0.1931	0.193093	1.2520	20.626	39.006	1.258
2011	52.5140	0.085808	-0.3269	-0.326949	17.0100	18.870	38.120	0.597

\* Variables definition, as reported in section 1.

Sources: Arab Monetary Fund, The Unified Arab Economic Report, 2004-2012; Central Bank of Iraq, Department of Statistics and Research, annual bulletins for the years 2003-2012.

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