The FDI and Many Economical Sectors Impact (Oil, Non-Oil) on Bahrain GDP: (An Econometrics study for period 1990-2021)

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Abstract

Host countries work to attract foreign direct investment by creating an appropriate investment environment that meets the specifications required by multinational companies across continents, through which they seek to compensate for the deficit in local savings, as well as achieving a tangible increase in annual growth rates of the gross domestic product, as When multinational companies with experience and technology operate in host countries, they must train the local workforce in order to contribute to raising economic growth rates. The Kingdom of Bahrain has attracted foreign direct investment as a complement to local investment by transferring expertise and modern technology necessary to train and develop local cadres technically and technologically. Consequently, job opportunities increase, unemployment rates decrease, and production increases for the Kingdom of Bahrain, as Bahrain has entered the competition to attract foreign direct investment worldwide. Not only that, most of the investment is directed to important economic sectors such as the manufacturing and extractive industries sectors, and even part of the foreign trade sector, and therefore their study of their impact on the gross domestic product and the analysis of economic relations shows the strength of both the effects of investment and economic sectors side by side in developing the Bahraini economy to keep pace with global changes in the field of energy and economic competition, despite the high progress in the field of investment at the international level that preceded it in this context. Since the investment coming into the Kingdom of Bahrain during the study period is low when compared with countries in the world that attract foreign direct investment, the research aims to measure the direct impact of foreign direct investment and some economic sectors on the gross domestic product using the Evives 12 program, and important results were obtained from the estimation.

Keywords: Economy, Economic Sectors, Gross Domestic Product, Econometric.

Introduction

The fourth world, which is referred to as the petro-states, has a global influence in controlling global energy as a result of controlling production, which leads to controlling the prices of petroleum and crude products. In the twentieth century, oil became one of the largest sources of energy in the world after the development of modern technologies based on petroleum products, which led to the pressure to increase production to meet global demand, and since production capabilities are limited in oil-producing countries, including the state of Bahrain, has turned to foreign companies to increase their investments in developing production techniques. Which was reflected in an increase in employment, improvement and development of the economy, development in economic sectors such as manufacturing and extractive industries, and an increase in exports. This in turn is the result of an increase in direct or indirect foreign investment in all economic sectors as a result of the measures taken by these countries, including Bahrain, by creating laws that help provide a suitable environment for investment in its economy to revitalize it, push the wheel of economic development forward, and generate a strong economic surplus to confront global economic crises in the event of falling prices, which have occurred and been repeated several times in the past term.

The Research Importance

The importance of the research stems from the fact that direct and indirect foreign investment and the important economic sectors mentioned above have an impact on the economy, as investment and the aforementioned economic sectors, especially foreign direct investment, as it is an external factor from its host country, are directed towards areas of economic development. Therefore, the Kingdom of Bahrain has endeavored with all force to develop Its economy by attracting foreign investments in its various economic sectors, which led to the development of sectors in the areas of production technology, increasing

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the employment process, increasing economic growth, and diversifying the economy to confront global crises.

The Research Problem

Since the economic nodes in the State of Bahrain were previously one of the most important problems that hinder the process of economic development as a result of the backwardness of its structures compared to other countries in the Gulf Cooperation Council, which led the Kingdom to attract direct and indirect foreign investments to develop its economy and get out of the backwardness of production processes to use modern technologies in operations. Production and therefore, it was necessary to study the impact of foreign direct investment and some important economic sectors on the gross domestic product.

The Hypothesis Research

The research hypothesis is based on the vision that (Foreign direct investment, manufacturing and extractive industry sectors and exports have a direct impact on the gross domestic product in the Kingdom of Bahrain)

The Objectives Research

An economic theoretical description of the research.

Analysis of economic importance.

Estimating a regression model for the impact of foreign direct investment and some important economic sectors on gross domestic product and analyzing all economic relationships according to the assumptions of economic theory.

Theoretical Framework

Due to the scientific technological progress and great technical expertise, as well as the huge capital contained in transcontinental companies in their host countries, which requires the presence of a stable, attractive investment environment in which the conditions for embracing foreign direct investment of all kinds are met, most countries of the world have begun to create a suitable investment environment to attract Foreign investment, eliminating bureaucracy in all its forms, and dealing with clear transparency before the owners of these companies in order to compete seriously to gain their investment advantages .

(1)

Description of the foreign direct investment situation and economic sectors in Bahrain

We can describe the Bahraini economy as one of the economies that attract foreign direct investment as follows:

• **Productive goods are characterized by being limited and not diversified**, as this leads to obstructing foreign investment coming into the Kingdom, especially the industrial and agricultural sectors (2)

• **The significant decline in the measure of the degree of economic openness** of the legislative environment and the necessary transparency, despite the preparation of a special law for the legislative environment necessary to attract foreign direct investment. (3) .

• Giving a large and effective role to the leading oil sector in order to advance social and economic development, as well as developing and developing industries related to this important sector, as there are limited sources of income in order to stimulate and stimulate foreign direct investment.
There is difficulty in applying local legislation and the degree of transparency provided to facilitate the work of foreign companies in the Kingdom (4).

- **Government agencies and their existing development goals** bear the responsibility of the Kingdom of Bahrain being weak and lacking in clarity, as this situation is considered one of the obstacles that directly affect increasing the attraction of foreign direct investment and income-related diversification (5).

- Giving a major role to the public sector in the government of the Kingdom of Bahrain, in light of the declining role of the private sector with regard to advancing economic development and establishing a fair and rapid system that ensures the implementation of pioneering and important projects, thus increasing exports and diversifying sources of income in order to increase the attraction of foreign direct investment (6).

- **The sharp weakness in the degree of the private sector's contribution to the gross domestic product, as well as the development of related exports, despite the availability of the necessary capabilities and capabilities to mobilize its own savings and its rapid response to development and investment requirements, as this hinders the increase in attracting foreign direct investment coming into the Kingdom** (8).

- **Deadly routine in implementing procedures for licensing the establishment of some foreign investment projects coming into the Kingdom.**

- **Land rents in industrial areas are high in light of the central government’s control over the investment markets needed to produce important goods necessary for export.**

- **The difficulty of collecting data and information related to decision-making by the foreign investor.**

- Weak public productivity and high unemployment rates, despite the presence of the distinguished public sector in light of the labor market In some sectors, there are restrictions imposed on the entry of foreign direct investment, as well as other restrictions imposed on the right to ownership of investment projects available in the Kingdom.

- **The absence of joint programs between the Kingdom and the Gulf Cooperation Council countries to encourage promotional campaigns that attract foreign direct investment.**

- Financing new investment projects faces obstacles related to their urgent need for local banks in the Kingdom of Bahrain (9).

- **Multiple investment projects suffer from the presence of administrative and financial corruption in all its forms, as well as the general weakness of the institutional culture in the Kingdom.**

- **Investment opportunities in the field of industry, tourism, and services are limited, in addition to the lack of economic feasibility studies related to these sectors** (9).

- **The Kingdom of Bahrain seeks to provide a suitable investment environment to attract foreign direct investment to protect incoming foreign capital, as well as the stability of local capital in light of what businessmen and economists continuously confirm about the presence of cowardly capital** (9). However, it seems that most countries emphasize the security aspect more than other aspects, which capital prefers in order to compare one environment with another in this regard.
The Data

Since our study is concerned with the impact of foreign direct investment and some economic sectors on the gross domestic product (GDP), our data will be in this direction and we can identify it through the following table:

*Table 1* shows the gross domestic product, direct investment, and some economic sectors and their annual growth rates for the period (1990-2021)

Value: million dollars, percentage of change and growth rate%
From the table above and an analysis of the annual growth rates of sectors and investment, the following is revealed:

The highest positive annual growth rate of exports was about 88.75% in 2016, and the lowest positive annual growth rate was about 10.94% in 2013.

The highest positive annual growth rate of imports was about 39.18% in 2011, and the lowest positive annual growth rate was about 5.154% in 1999.

The highest annual growth rate of the extractive industry was about 86.64% in 2000, and the lowest annual growth rate was about 1.501% in 1990.

While the highest annual growth rate for manufacturing industries was about 73.64 in 2006, while the lowest annual rate was about 1.094% in 2001. From this, the conclusion is that exports had the highest annual growth rate, and this is due to the increased demand for the manufacturing and extractive industries that make up the industrial sector of the Kingdom of Bahrain.

With regard to the fluctuation and instability of annual growth rates for the years of study in question 1990-2021, it goes back to wars, such as the Second Gulf War... and the economic crises that the global economy has experienced in general and the economies of the Gulf Cooperation Council countries, the Kingdom of Bahrain in particular, as well as the Corona pandemic and its effects. Major negative effects on the entire global economy. As for the gross domestic product and its growth rates, it appears to have fluctuated during the years of study, as the highest positive annual growth rate reached about 18.7% in 2004, and this is due to the Kingdom of Bahrain’s need to diversify the economy away from oil for the purpose of economic liberalization. This is a method different from what exists in the Arab Gulf countries in light of Bahrain’s possession of great oil wealth and heavy industries, as well as the expansion of the banking economy, While the lowest positive annual growth rate of GDP was about 2.17% in 2019, this is due to the decline.
in global oil prices from an average of 34.71 US dollars per barrel in 2018 to about 26.64 US dollars per barrel in 2019. The annual growth rate data was represented in a graphic form to illustrate the behavior of the annual growth rate of gross domestic product, foreign direct investment, and the economic sectors referred to in the table, as follows:

**Figure 1** shows the annual growth rate curves of Bahraini GDP, foreign direct investment, and economic sectors.

![Time Series Plot of GDP.Gr; FDI.Gr; Exp.Gr; Ext.Ind.Gr; Ind.Trns.Gr](Image)

Source: from data from Table 1 and using a program Minitab 17

We notice from the figure above that the annual growth rates of GDP, exports, extractive industry, and manufacturing industry are fluctuating, but the curve of the growth rate of foreign investment is more fluctuating in the Bahraini economy, and this is due in its entirety to the violent events, demonstrations, and political crises that have affected in one way or another, in addition to the global crises that have surrounded the economy. Global.

**The Estimation and the Analysis**

Testing the hypothesis in this research requires estimating a simple regression model with the effect of foreign direct investment on exports, the extractive industry sector, the manufacturing sector, and then the gross domestic product. Therefore, there will be one independent variable and dependent variables, and we will understand them as follows:

**First: Description of the Model**

**Dependent Variables**

Gross Domestic Product, which we symbolize as GDP, is estimated in millions of US dollars.

**Independent Variables**

The foreign direct investment variable, which we symbolize as FDI, is represented in millions of US dollars.
Exports, which we symbolize as Exp. Estimated in millions of US dollars.

The extractive industry, which we symbolize as Ext.Ind, estimated in millions of US dollars.

The manufacturing industry, which we symbolize as Ind.Trans. Estimated in millions of US dollars.

Second: Formulating the Standard Model

The standard model of the relationship of the impact of foreign direct investment on the gross domestic product in the Kingdom of Bahrain takes the following mathematical form:

\[ GDP = \beta_0 + \beta_1 FDI + \beta_2 Exp + \beta_3 Ext. Ind + \beta_4 Ind. Trans. U \]

Where:

\( \beta_0, \beta_5 \): Parameters

U: Random Variable

We expect that the sign of the economic relationship will be positive, according to what economic theory assumes.

The Estimation

The regression model of the impact of foreign direct investment on GDP will be estimated using the Eviwes 12 program, and the results were obtained as in the following table:

Table 2 shows the results of estimating a regression model of the impact of foreign direct investment and the described economic sectors on Bahraini GDP.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>2385.317</td>
<td>411.9790</td>
<td>(5.789898) 1%</td>
</tr>
<tr>
<td>FDI</td>
<td>0.191180</td>
<td>0.289438</td>
<td>(0.660522) 25%</td>
</tr>
<tr>
<td>EXT</td>
<td>1.458288</td>
<td>0.154702</td>
<td>(9.426422) 1%</td>
</tr>
<tr>
<td>TRANS</td>
<td>3.609956</td>
<td>0.321849</td>
<td>(11.21629) 1%</td>
</tr>
<tr>
<td>EXPORT</td>
<td>0.035113</td>
<td>0.030687</td>
<td>(1.144202) 10%</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.991696</td>
<td>Mean dependent Var</td>
<td>19246.50</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.990466</td>
<td>S.D dependent Var</td>
<td>12115.17</td>
</tr>
<tr>
<td>S.E of regression</td>
<td>1182.949</td>
<td>Akaike info criterion</td>
<td>17.13201</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>37782934</td>
<td>Schwarz criterion</td>
<td>17.36103</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-269.1121</td>
<td>Hannan-Quinn criterion</td>
<td>17.20792</td>
</tr>
<tr>
<td>F-statistic</td>
<td>(806.1340) 1%</td>
<td>Durbin-Watson statistic</td>
<td>(1.659631) 5%</td>
</tr>
</tbody>
</table>

Source: Estimating the model using data from Table 1 and a program Eviwes 12
Interpretation Of the Estimated Mode

It was shown from the estimation that the external (independent) variables of the model varied in significance when measuring the significance with the t-test. From the estimation, the significance of the regression coefficients of the constant and each of the coefficients of the extractive industries and manufacturing industries variable was proven at a 1% significance level with limits and confidence of about 99%, which shows the strength of their influence. The errors committed were almost negligible, while the regression coefficients for the variables of exports of goods proved significant at the 10% level of significance. While the significance of the foreign direct investment variable was proven at a significance level of 25%, which means that these two variables are less able to influence as a result of the errors committed, but despite that, they are theoretically acceptable, and all the parameters of the independent variables have a positive relationship, which is consistent with economic theoretical hypotheses, and that the impact of manufacturing industries had a stronger impact on GDP, while the extractive industries parameter was less strong than it, and the rest of the variables varied in the strength of their impact on GDP. The weakest variable in this model is the exports variable and then the foreign direct investment variable. The estimation also showed that the significance of the model as a whole and the significance of the multiple determination coefficient R^2 were confirmed at a significance level of 1%, which indicates that the variables in the model chosen in estimating economic relations affect the quality of reconciliation, as the multiple determination coefficient R^2 reached about 99.2%, which means that About 99% of the changes occurring in the gross domestic product are caused by these independent variables in the model, and from the strength of the influence it is clear that the manufacturing and extractive industries have the greatest impact, while the rest of the coefficient, which amounted to less than 1%, is due to other variables that did not enter the model, while the overall correlation coefficient was About 99.9%, which indicates that all the paired points for the independent variables and the dependent variable are very close to the regression line, and this indicates a strong relationship.

It is clear from the estimation that the model is free of the problem of autocorrelation between random residuals, as the D.W test showed its significance at a significance level of 5%, as the calculated test value fell between the two critical limits:

\[ D_u < D.W > 4-D_u \]

Both the partial correlation between the independent variables and the autocorrelation were tested, as shown in the following table of estimation results:

Table 3 shows the partial correlation and autocorrelation tests.
From the table above, it was shown that all the fluctuating values in the data used do not have a problem of partial correlation between the independent variables, nor a problem of autocorrelation, as all values fell between the two critical limits except for some of them, but they were significant in all the tests that were conducted on them, at a significance level of 1%.

The statistical criteria for the model were estimated, which reinforces our point in estimating the model by not being afflicted with econometric problems, which are shown in the following table:

Table 4 shows the values of the statistical criteria for the estimated model.
It is clear from the estimation of statistical standards that what matters to us is that the data and its distribution be homogeneous and free from distortion. Among these important standards are as follows:

**Skewness**

The degree of skewness means the degree of asymmetry or deviation from symmetry. If the curve of the distribution of the general shape of the data has an end to the right of the center of the distribution that is longer than the left end, then the distribution is called right-skewed, meaning that the skewness is positive and the skewness extends between -3 on the negative side and +3 on the negative side. The positive side is when the skewness in the scale disappears when the difference between the median and the arithmetic mean is equal to zero, and thus the distribution is moderate and homogeneous, and since the skewness values for all variables are positive and even less than the value of +3, therefore the data was moderate and the distribution was homogeneous.

**Kurtosis**

It measures the normal value of the height of nine frequency distributions with respect to a point curve, where the height of the peak of a normal distribution is equal to 3, so the distribution is flat when it is less than 3, and it is pointed when the distribution is 3. From the evaluation it is clear that it achieves varying flatness between the moderate and pointed distribution. Our trend is toward The moderate distribution and the values are very close to the moderate distribution.

**Jarque-Bera**

This test is used to determine whether the statistical distribution of results with unknown mean and variance is normal, as it is measured by (P-value). The closer it is to the correct one, the more evidence that there is insufficient evidence against the basic hypothesis of the test (the null hypothesis), and since all values are in The probability ratio number is positive, some of which is close to one and some of which is less, but they are all positive, and therefore the distribution in them is approximately normal.
Conclusions and Recommendations

First: Conclusions

The researcher reached the following conclusions

Exports had the highest annual growth rate, due to the increased demand for the manufacturing and extractive industries that make up the industrial sector of the Kingdom of Bahrain.

The fluctuation and instability of annual growth rates for the study period 1990-2021, as this is due to wars, such as the Second Gulf War, and the economic crises experienced by the global economy in general and the economies of the Gulf Cooperation Council countries, the Kingdom of Bahrain in particular, as well as the Corona pandemic and its related effects. A huge negative impact on the entire global economy.

The fluctuation of GDP growth rates during the study period, as a result of the Kingdom of Bahrain's need to diversify the economy away from oil for the purpose of economic liberalization. This is a method different from what exists in the Arab Gulf countries, in light of Bahrain's possession of great oil wealth and heavy industries, as well as the expansion of the banking economy.

It was shown from the estimation that the external (independent) variables of the model varied in significance when measuring the significance with the t-test. From the estimation, the significance of the regression coefficients of the constant and each of the coefficients of the extractive industries and manufacturing industries variable was proven at the 1% level of significance, with confidence reaching about 99%, which shows the strength of its impact is that the errors committed are almost negligible, while the regression coefficients for the variables of exports of goods have proven to be significant at the 10% level of significance. While the significance of the foreign direct investment variable was proven at a significance level of 25%, which means that these two variables are less able to influence as a result of the errors committed, but despite that, they are theoretically acceptable, and all the parameters of the independent variables have a positive relationship, which is consistent with economic theoretical assumptions, and that the impact of manufacturing industries was stronger. had an impact on the GDP, while the extractive industries parameter was less strong.

The rest of the variables vary in the strength of their impact on the gross domestic product, and the weakest variable in this model is the exports variable and then the foreign direct investment variable.

The estimation showed that the significance of the model as a whole and the significance of the multiple determination coefficient $R^2$ were confirmed at a significance level of 1%, which indicates that the variables in the model chosen in estimating economic relations affect the quality of reconciliation, as the multiple determination coefficient $R^2$ reached about 99.2%, which means About 99% of the changes occurring in the gross domestic product are caused by these independent variables in the model, and from the strength of the effect it is clear that the manufacturing and extractive industries have the greatest impact, while the rest of the coefficient, which amounted to less than 1%, is due to other variables that did not enter the model, while the overall correlation coefficient was The percentage is about 99.9%, which indicates that all the paired points for the independent variables and the dependent variable are very close to the regression line, and this indicates a strong relationship.

The estimation showed that the model is free from the problem of autocorrelation between random residuals, as the D.W test showed its significance at a significance level of 5%, as the calculated test value fell between the two critical limits.

Second: Recommendations

Since Bahrain possesses great oil wealth and heavy industries, continuous research is required to find non-conventional energy sources that are alternative to traditional energy sources - oil, since oil is depleted...
energy - for the purpose of the Bahraini economy being an integrated economy in terms of the presence of depleted traditional energy. And alternative non-conventional energy in light of the manufacturing and extractive industries that the Kingdom of Bahrain enjoys.

References


Ministry of Industry, Commerce and Tourism, Investment Law in the Kingdom of Bahrain, Bahrain, 2016


[The Arab Investment Guarantee Corporation, the investment climate in the Arab countries, 2009 editions]


The Economic and Social Commission for Western Asia (ESCWA), Annual Review of Developments in the Field of Globalization and Regional Integration in the Arab Countries, 2007, pp. 19-18.

Hussein Abdel Mutallab Al-Asraj, Mechanisms for Stimulating Foreign Direct Investment to Arab Countries, research submitted to Zagazig University, Egypt, pp. 22-23, from the website-- http://www.gdnet.org


