The Empirical Evidence of Oil Market Volatility and Other Macroeconomic Variables: A Study in Saudi Arabia

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Abstract

The purpose of this study is to investigate the evidence of oil market volatility and other macroeconomic variables in the kingdom of Saudi Arabia. This analysis covers 1990 to 2021, with a continuous covid period from 2019 to 2021 included in its coverage. The study relies on annual data from trustworthy sources, such as the rate of growth in the gross domestic product and the price of oil. The macroeconomic variables are collected and assessed using World Bank data development indicators. The Jarque-Bera test checked the sample's variables for normality. The regression model and second data analysis were needed to determine the variable series' stability. The series was tested for unit roots using the Augmented Dicky-Fuller (1981) test. In the regression model for data diagnosis, an ordinary least squares test was used to determine the variables' positive and long-run relationships. The findings of this study macroeconomic factors play an essential part in forecasting the economy of any country. Our data period is 1991 to 2021, which includes the Covid -19 era when the global economy was at its worst, and almost every country was seriously affected. Our data uses GDP as the dependent variable and oil prices as the independent variable, and the findings demonstrate a substantial positive association. The results also show that adequate growth and high oil exports are predicted over this period, with somewhat lower levels in 2019-21 but improving by the end of 2021. A comprehensive analysis of all macroeconomic indicators in Gulf Cooperation Council (GCC) nations is advised to be carried out. This is the first study to explore the empirical evidence of oil market volatility and other macroeconomic variables in Saudi Arabia to the best of the authors' knowledge. Furthermore, the study's results might be valuable in further extensive investigations of GPD and crude oil in GCC nations.

Key Words: *Oil Market, Gross Domestic Product, Crude Oil Prices, International Business,*

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I- Introduction

In contrast to "internal business," which refers to the movement of goods and services inside national borders, "international business" refers to the flow of products and services beyond national borders. Consumers and governments gain from global trade because it gives access to goods and services that would be unavailable or prohibitively expensive in their home nations (Mehrara, 2007).

There is a great deal of debate over the relationship between trade and GDP and the reverse relationship. The gross domestic product of a nation serves as a broad indication of economic activity. It is used to evaluate the size of an economy and its pace of expansion. The term "gross domestic product" (GDP) is used to describe the total worth of all finished products and services that are produced in a country over a certain amount of time. (Al Rasasi, Qualls, & Alghamdi, 2019) The Gross Domestic Product is used as a strategic tool by policymakers, investors, and enterprises alike. The gross domestic product is a measurement of the total amount of money spent by all entities in a country, including private consumers, private corporations, and public entities. The GDP is reduced by an amount equal to the import total. (Naifar & Al Dohaiman, 2013)

It is hard to overstate a business's contribution to the fight against global poverty and inequality. Compared to their counterparts, nations that are more open to international business expand faster, develop more, boost productivity, and give their citizens more excellent wages and possibilities. Additionally, free trade benefits clients from lower-income families since increased competition leads to a broader range of low-cost items and services. Increased economic integration with the global economy via commerce and global value chains may help accelerate economic development and poverty eradication on a national and worldwide level. The price of crude oil is intent on three critical factors: geopolitics, demand, and supply. Increased oil prices increase the price of imported products and services. What is more astonishing is that the GDP continues to rise consistently. Increased oil prices are connected with increased economic growth, whereas decreased oil prices are associated with decreased growth. Apart from the United States and Japan, where the link between oil prices and GDP is inverse, more than 80% of nations have a positive correlation between oil prices and GDP. This is critical considering crude oil prices are often expressed in US dollars. It makes little difference where users are in the world because users are ultimately exchanging oil for US dollars at the end of the day. Consequently, the price of crude oil is inversely related to the price of the US dollar.

Economic growth has a considerable influence on the demand for petroleum products and crude oil. Transporting goods and minerals consumes an increasing amount of energy in developing countries. The transportation sector relies on petroleum-based fuels such as gasoline and diesel to function internationally. Petroleum is extensively used for various applications, including heating, cooking, and energy generation. According to the International Energy Agency, crude oil and other hydrocarbon liquids account for one-third of global energy use. (Hashim, Ramlan, Razali, & Nordin, 2017) At the start of 2020, 71% of known crude oil reserves (including lease condensate) and 36% of worldwide crude oil output were in OPEX. This group may affect the global oil supply and pricing (OPEC). OPEC can affect oil prices by pressuring its members to adhere to production targets. Each oil-producing country is a member of the Organization of Petroleum Exporting Countries (OPEC). (Mehrara & Mohaghegh, 2011) The Organization of Petroleum Exporting Countries limits its members in order to keep crude oil supply under control. OPEC member quota compliance varies substantially depending on each member's eventual production decision.(Alsufyani & Sarmidi, 2020)

Oil price changes help economies that import and export oil, whereas volatility damages economies that do not acquire or sell oil. For the former, crude oil prices vary negatively, while volatility has a favorable effect on the latter. (Al Aboud) Apart from that, the effect and predictability of oil price fluctuations vary according to one's location within the population distribution. According to a new study, global economic growth suffers disproportionately when oil prices fluctuate. When all the variables are taken into account, the oil

price has a far less influence on economic growth than anticipated. While a rise in oil prices that boosts revenues in oil-exporting countries may be seen positively, oil prices that hurt the economies of oil-importing countries may be viewed negatively. (Khan, 2019) Many believe that since the globe is so dependent on oil as raw material, a rise in oil price volatility would have a significant global effect. This assertion is supported by evidence. According to the concept of irreversible investment under uncertainty, which states that investments that cannot be reversed are postponed, oil price uncertainty harms overall economic activity as customers delay purchases due to increased volatility in the crude oil market. Individuals and companies are postponing expenditure in response to the oil price volatility, which may force the economy to reallocate scarce resources at a major financial cost. (Hemrit & Benlagha, 2020)

Figure 1
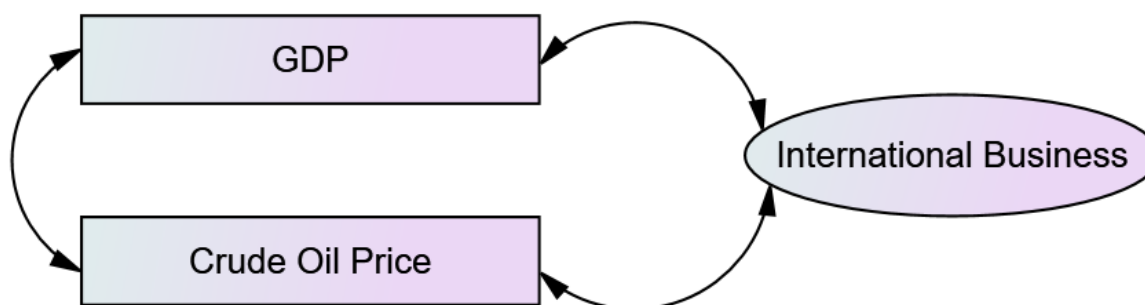
Model Summary of GDP, Crude Oil Prices and International Business

A conceptual hypothetical model summary depicted the relationship between variables, namely GDP, Crude Oil Prices, and International Business in the figure.

Hypothesis

H_1: GDP has significant impact on international business
H_2: Crude Oil Prices has significant impact on international business
H_3: International business mediates the relationship between GDP and Crude Oil prices

This research consists of five sections. As can be seen, it's organized in this way. Section Two will go through all the research on Saudi Arabia's gross domestic product (GDP), its crude oil reserves, and international commerce. In this section, international trade and economic growth have been investigated empirically in connection to oil price volatility. Its third portion covers the period from 1990 until 2021. The research is based on annual statistics from reputable sources, such as the gross domestic product growth rate and oil price. For data creation, macroeconomic variables are gathered and appraised using indicators. The Jarque-Bera test was used to check for normality. The regression model and the second data analysis were required to establish the variable series' stability. The unit-roots of the series were investigated using the Augmented Dicky-Fuller (1981) test. The positive and long-run connections of the variables in the regression model for data analysis were assessed using an ordinary least squares test. Section 4 introduces and discusses an ordinary least squares test for analyzing the positive and long-run relationships between variables in the regression model for data analysis. In section 5, the discussion, and conclusion are presented.

II- Literature Review

What previous studies say about gross domestic product, crude oil, and international business as follows:

Gross Domestic Product,

The non-oil gross domestic product of Saudi Arabia is examined using four macroeconomic indicators. (Mensi, Shahzad, Hammoudeh, & Al-Yahyaee, 2018) This research examines Saudi Arabia's non-oil gross domestic product using four macroeconomic variables. It is recommended that NARDL and causality be used to estimate the non-oil gross domestic product effect. Because the country's non-oil gross domestic product was smaller at the start, this happened. Saudi Arabia's non-oil gross domestic product is the topic of a macroeconomic study. Saudi Arabia's non-oil Gross Domestic Product is the subject of macroeconomic research. Non-oil gross domestic product and causality-in-quantiles techniques are used to examine the influence of non-oil gross domestic product on NARDL (also known as causation in quantiles). Recent gross domestic product shocks caused by factors other than oil have been found to have a significant impact on current gross domestic product.

On the other hand, government investment enhances non-oil gross domestic product rather than decreasing it. Positive inflation shocks boost non-oil gross domestic product, whereas adverse inflation shocks are depressive. The four explanatory components' mean and variance causality and relationship to one another are quantile-dependent. Oil gross domestic product has an impact on macroeconomic measures. These events have harmed the macroeconomic status of a developed nation. Governments, international organizations, and institutional investors prize these assets for their wide range of uses and long-term reliability. The current gross domestic product has been significantly affected. gross domestic product excluding oil is boosted by public spending and depressed by private investment; gross domestic product excluding oil benefits from output shocks. Adverse inflation shocks reduce non-oil gross domestic product, whereas positive inflation shocks increase it. The mean and variance causality of the four explanatory components is quantile dependent. Macroeconomic indices are affected by the oil gross domestic product. The macroeconomic impacts of a developed economy are exceptional. There is no shortage of admiration for them from governments, international organizations, and institutional investors. (Mensi et al., 2018) The report's authors write, "This study explores the dynamic relationship between Saudi Arabia's energy consumption, peak load, and gross domestic product, utilizing time-series data from 1990 to 2015." There are also Granger causality tests and variance decompositions of prediction error. The VAR model predicts that during the next ten years, the total EC, the PL, and gross domestic product will all grow at rates of 7.21 percent, 6.87 percent, and 14.14 percent, respectively. Granger causality is shown for PL, EC, and gross domestic product. According to data, creative shocks account for 29% of the PL. The European Union and gross domestic product account for 10% of the PL. According to research, it is commonly agreed that PL is an essential aspect of a company's development.(Arayssi, Fakih, & Haimoun, 2019) The economic repercussions of the Arab Spring are being assessed using data from the Middle East and North Africa region from 2005 to 2016. In the Arellano-Bond dynamic panel estimate, the logarithm of GDPC change between t and t+1 is employed to evaluate growth between the two time periods. In the aftermath of the Arab Spring, economic development was seen as a dire consequence.

This study looks at the history and trends of remittances to Romania and the influence they have on migration.(Mehedintu, Soava, & Sterpu, 2019) Using Eurostat data from 2008 to 2017, migration is expected to harm remittances 2008 to 2017. Other indicators, such as gross domestic product and gross domestic product per capita, have varied, indicating a reduction in Romania's quality of life. Conclusion: Remittances were and continue to be a reliable source of funds for Romania and other EU impoverished countries. Even though the value of remittances is declining, this is beneficial to their inhabitants. Aside from the negative economic implications, remittances must be considered in light of their excellent economic advantages, including the loss of "brains" and talented persons. Algeria, Angola, Libya, and Nigeria all have asymmetric inflation. (Bala & Chin, 2018) Countries' oil prices are looked at by taking the weighted average of the prices from Brent, WTI, and Dubai. In order to get the results, autoregressive distributed lag (ARDL) dynamic

panels were used (ARDL). The creation of this divide was necessary because of unbalanced consequences. A rise or fall in the price of oil affected inflation, no matter how big or small it was. However, when oil prices fell, the effect was far more prominent. According to our findings, inflation is favorably associated to the money supply, the exchange rate, and gross domestic product but adversely related to food production. Inflation spiked as oil prices fell. Thus, policymakers should be careful when reacting to changes in oil prices. Monetary policy may aid in the reduction of inflation. Finally, to prevent inflation, we recommend that the government increase both the amount and quality of domestic food production. (Stevanović, Vujičić, & Gajić, 2018) The article's primary goal was to estimate gross domestic product using an artificial neural networks (ANN) evaluation of power use. Several energy sources such as renewables, coal, and nuclear were employed to determine how much electricity was consumed. The back-propagation method and a novel learning technique were applied in ANN network training to get the best gross domestic product predicting results. The results indicate that an ANN model with a strong learning strategy can estimate gross domestic product from power use. The results are shocking.

Crude Oil

This article, which covers 1971 to 2010, looks at Saudi Arabia's oil production and economic progress.(Alkhathlan, 2013) In this research, the Autoregressive Distributed Lag (ARDL) model for cointegration was employed to examine Saudi Arabia's economic development. By splitting oil output into industrial usage and export profits, researchers discovered a link between oil production and long-term economic development. Revenue from oil has a significant short- and long-term influence on real gross domestic product. Local production of industrial oil reduces both short- and long-term gross domestic product. How does Pakistan's economic success alter when oil prices fluctuate? Coefficients from 1973 to 2011 are available. (Jawad, 2013) It is possible to study the relationship between two variables using linear regression. There are no problems with prices, supply, demand, GDP, government and private investment, or the country's GDP. It does not matter what the price of crude oil is because it does not affect the trade balance, private sector investment, or public sector investment in the United States. Governments worldwide are having problems with oil supply and demand imbalances, and Pakistan is no different. According to the country's government, improvements in Pakistan's trade balance and more private sector investment are two of the country's main economic goals. This article looks at how social, environmental, and economic concerns all work together to make sure that Saudi Arabia's economy is both competitive and sustainable. (Al-Torkistani, Salisu, & Maimany, 2016).

This project aims to construct a model for evaluating the economic growth and development effects of various emission reduction techniques. The research uses an econometric model of Saudi Arabia's economy from 1980 to 2010. Each country's long-term gross domestic product development path was projected using three environmental mitigation scenarios. The results suggest that policies resulting in more robust pollution reductions resulted in better long-term gross domestic product growth in Saudi Arabia. These data suggest that the relationship between CO_2 emissions and per capita gross domestic product has yet to change. Economic development and renewable energy significantly influence Saudi Arabia's CO2 emissions reduction between 1990 and 2016. (Kahia, Omri, & Jarraya, 2020)The researcher observed that economic development increases CO2 emissions in all models using the FMOLS and DOLS estimators. No other emissions support the environmental Kuznets curve (EKC). Economic development alone will not improve environmental quality since the EKC hypothesis is flawed in most scenarios. Renewable energy has been shown to have zero environmental consequences. In Saudi Arabia, renewable energy consumption and economic growth have a negative and modest impact on CO2 emissions, meaning that renewable energy consumption is inadequate to counteract the adverse effects of economic expansion on environmental quality. This article also discusses the policy implications.

International Business

The study has been scarce on this issue in Saudi Arabia. (Naseem, 2021) Tourism is important to a large number of countries worldwide, and it has been extensively examined for many years. As a result, this study examines the influence of tourism on Saudi Arabia's economic development from 2003 to 2019. Correlation coefficients and unit root tests are used to examine the link between tourism and economic development. To summarize, the number of visitors to a place, the amount they spend, and the amount of money they make all contribute to economic development. The data confirm the premise that tourism boosts Saudi Arabia's economy. Many developing nations' policymakers are under pressure to balance environmental sustainability requirements. (Omri, Euchi, Hasaballah, & Al-Tit, 2019) In this sense, this essay aims to address two concerns concerning Saudi Arabia's environmental sustainability: In Saudi Arabia, the EKC is available. How do Saudi Arabia's economic and human development, foreign direct investment, and trade liberalization benefit the environment? There is an essential link between environmental degradation, per capita income, foreign direct investment, and international commerce, and criteria have been developed. It is advised that Saudi authorities maintain expected levels of these components to achieve the intended environmental benefit (turning points). (Al-Abdulkader, Al-Namazi, AlTurki, Al-Khuraish, & Al-Dakhil, 2018).

One of the most important crops in the world is coffee. It has a positive effect on economic growth in developing and developing countries. More coffee is grown in Saudi Arabia than anywhere else in the world. In Saudi Arabia, little emphasis has been paid to the manufacture of caffeine. A country is constantly researching strategies to maximize net national economic return and export revenue from limited arable land and local market activity. The information comes from 65 coffee plantations and stores in Saudi Arabia's south and southwest. Saudi Arabia's coffee production may rise by 2% to satisfy rising domestic demand and expand its global market share. Increasing Saudi Arabia's coffee production may generate $395.72 million per year, or $138.28 thousand per hectare and $4.94 thousand per ton. As a result, a 1–2% market share, a $395.86 million federal net economic return, and yearly coffee export revenues of $219.43–354.57 million are projected. (AlArjani, Modibbo, Ali, & Sarkar, 2021) Attain the Sustainable Development Goals outlined in the agenda 2030. Global resources, economic power, and creative capacity are all unequally distributed. Economic models and components from Saudi Arabia were employed to investigate these objectives. In contrast to earlier studies, this one statistically models the crucial indicators. Fuzzy and weighted goal planning is used to model Saudi Arabia's SDGs. The strategy is guided by three goals: maximization of GDP, sustainable energy usage, and industrial employment. The target weights were calculated using the row geometric mean. Only 57 percent of the study's objectives were met. Individuals have a 46% possibility of improving their financial circumstances. A 67 percent renewable energy target. Vision 2030 has a 78 percent likelihood of becoming a reality in terms of employment. Saudi Arabia should prioritize a more varied mix of energy sources, including increased investment in renewables such as solar, wind, biomass, and nuclear power. Involve young people in critical decisions. The strategy is simple and can be replicated in any comparable country. (Albassam, 2015) Economic diversification is critical for long-term success. An economy that is heavily dependent on natural resource revenue is prone to insecurity and even collapse. Economic diversity advantages include the creation of jobs, the removal of corruption, and the enhancement of a country's institutional structure and framework. Saudi Arabia has focused on diversification of the economy in each of its five-year development plans since 1970. Some of the indicators used to assess the results of these initiatives include oil exports, oil revenues, and the proportion of oil GDP used to judge the efficacy of government diversification programs. From 1970 through 2013, nine distinct development methods were studied in this research. Despite four decades of effort, oil remains Saudi Arabia's primary source of economic growth. Saudi Arabia's government should concentrate on diversifying the country's economy.

As a consequence of the literature review results, the researcher concluded that there was a paucity of research on the subject and decided to investigate it further; this topic titled " *The Empirical Evidence of Oil Market Volatility and Other Macroeconomic Variables: A Study in Saudi Arabia*."

To investigate the empirical evidence of oil market volatility and other macroeconomic variables: a study in Saudi Arabia. It is evident with unleashing intense and vital literature support that very few studies have applied the OLS model for bivariate study by taking GDP and crude oil prices. Most of the researchers have done multivariate studies by applying the ARDL model. Hence it encourages us to apply the OLS model after cleaning of Data through the Stationary test (ADF) and normality distribution of data (Jarque-Bera test).

III - Data and Research Methodology
Data
This analysis covers 1990 to 2021, with a continuous covid period from 2019 to 2021 included in its coverage. The study relies on annual data from trustworthy sources, such as the rate of growth in the gross domestic product and the price of oil. The macroeconomic variables are collected and assessed using World Bank data development indicators. They are thought to be almost accurate and reliable.

Research Methodology
Two kinds of statistical tests are used to determine the link between two variables, such as the gross domestic product and oil price.

1. Data diagnosis
The Jarque-Bera test examined if the sample's various variables were normally distributed. Before continuing with the regression model implementation, second data analysis was necessary to assess if the variable series were stable or not. The Augmented Dicky-Fuller (1981) test was used to determine whether or not the series has any unit roots.

2. Fitness of model
Following the regression model for data diagnosis, an ordinary least squares test was used to determine the variables' positive and long-run relationships. However, OLS is utilized to determine the parameter values and fitness of the linear regression model. The rationale for using this model is to ascertain the value of R^2 and adjust R^2. Durbin-Watson predicted a substantial link between dependent and independent variables as well.

3. Hypothesis for each data diagnosis

1.1.1.   Normal Distribution

H_0:/ **Gross Domestic Product is normally distributed**
H_1:/ **Gross Domestic Product is not normally distributed**
          And
H_0:/ **Oil prices are normally distributed**
H_1:/ **Oil prices are not normally distributed**

Tests are employed at a 5percent level of significance by using the following statistical formula: -
NB= n *[(√b1)2 / 6 + (b2 – 3)2 / 24]*,
According to this formula, time-series data has NB as the normal distribution, n as the sample size, b1 (skewness coefficient), and b2 (skewness coefficient) as the skewness coefficient (kurtosis coefficient).

1.1.2.   Stationary test

H_0:/ Gross Domestic Product has unit root
H_1:/ Gross Domestic Product has no unit root
And
H_0:/ Oil prices have unit root
H_1:/ Oil prices have no unit root

Model summary

$Y_t = D_t + Z_t + ë_t$

The deterministic component D_t is utilized to characterize the situation in this case.

Z_t and $ë_t$ are both stochastic components, and each has its stationary error process. The unit root of the stochastic component may be calculated by applying the unit root model to the component.
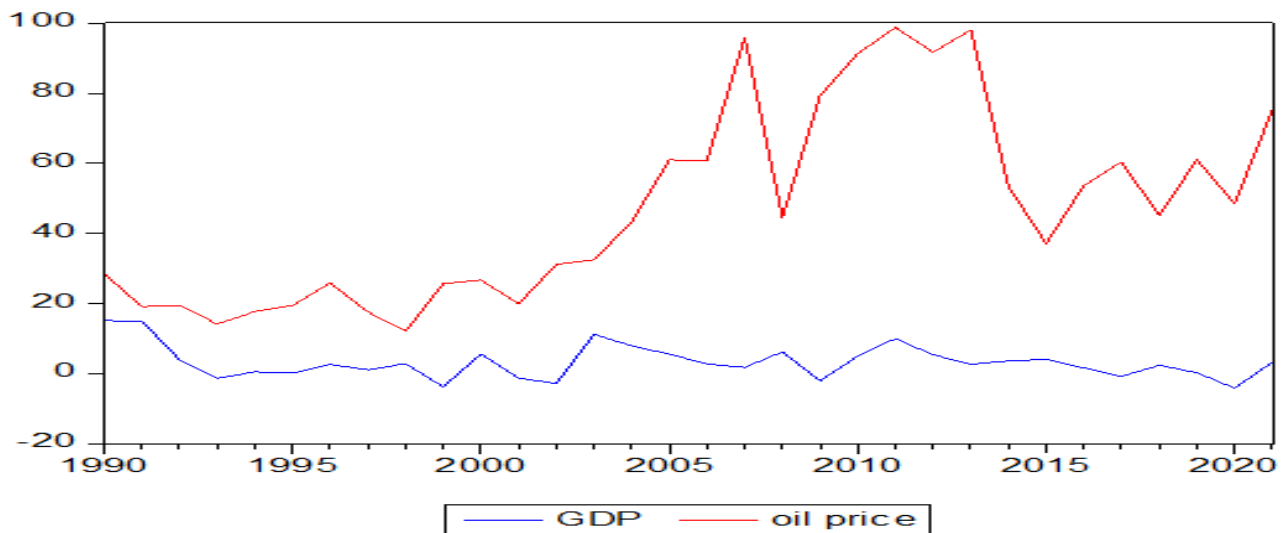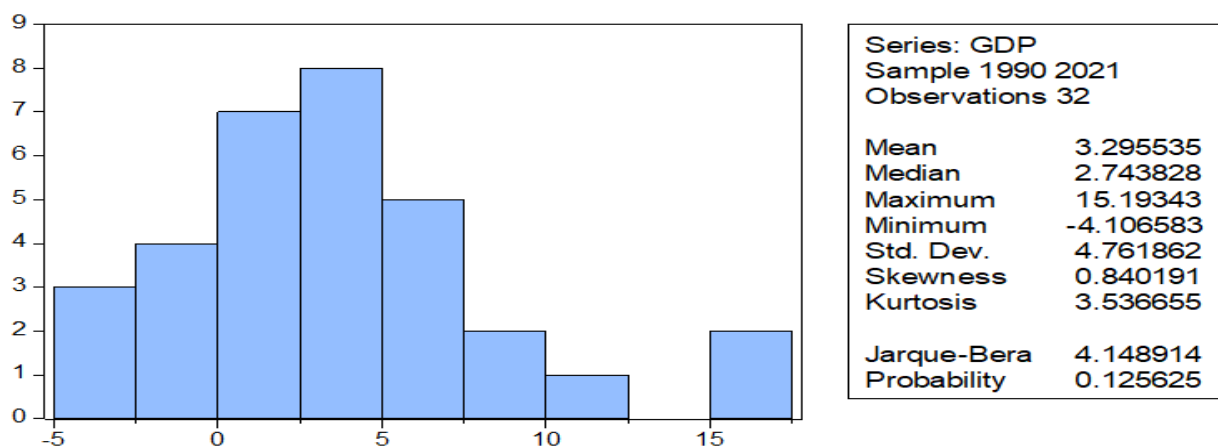
Figure 2

Figure 3

Gross domestic product data are considered dependent variables and must thus follow the conventional normal distribution when examined. If the Gross domestic product data in the series is normally distributed, then the null hypothesis H_0 may be accepted by a statistical test result of $p>0.05$.

Table 1

	GROSS DOMESTIC PRODUCT		OIL_PRICE
Mean	3.295535		47.20938
Median	2.743828		43.98000
Maximum	15.19343		98.83000
Minimum	-4.106583		12.14000
Std. Dev.	4.761862		27.61408
Skewness	0.840191		0.573341
Kurtosis	3.536655		2.089860
Jarque-Bera	*4.148914*		*2.857645*
Probability	*0.125625*		*0.239591*
Sum	105.4571		1510.700
Sum Sq. Dev.	702.9353		23638.66
Observations	32		32

Also, in applying the Jarque-Bera test in the series of oil prices $p >0.05$, the series is normally distributed for further application of unit root tests and regression models.
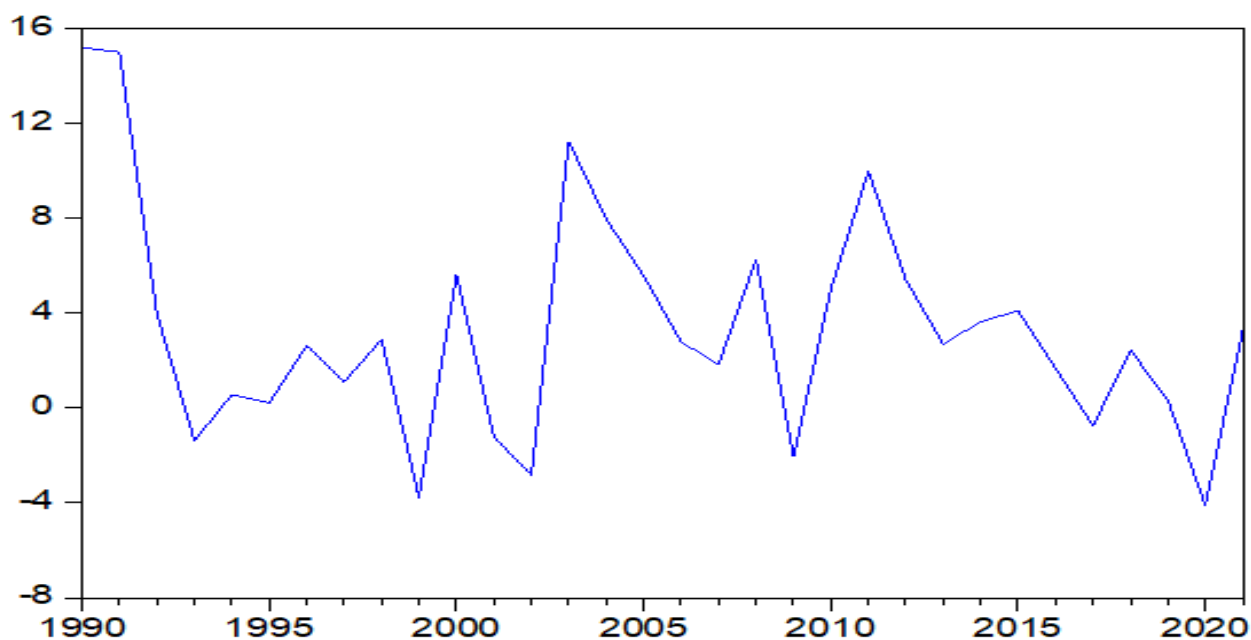
Figure 4

GDP

Table 2

Null Hypothesis: gross domestic product has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.566845	0.0010
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.61916	

*MacKinnon (1996) one-sided p-values.

The necessary $p<0.05$. was attained when the Augmented Dicky-Fuller test was applied to check for unit roots in the gross domestic product series, indicating that the gross domestic product series does not contain unit roots, therefore rejecting the null hypothesis.
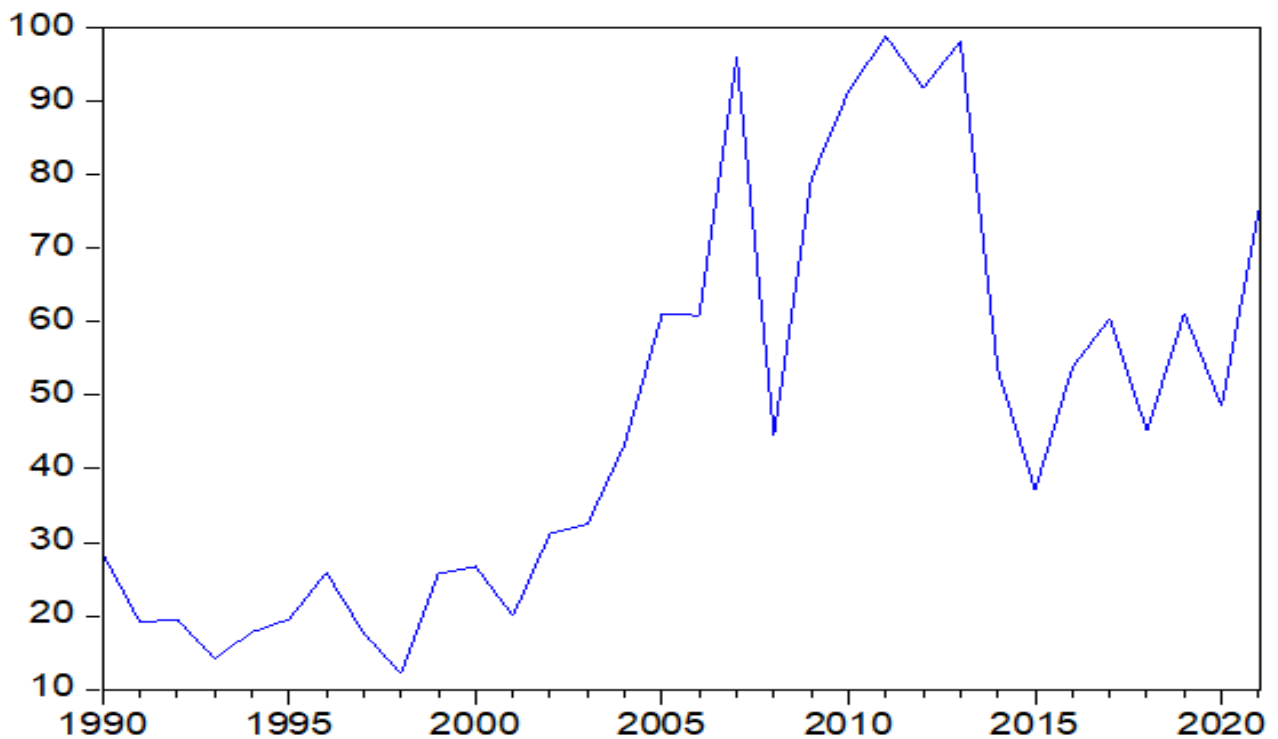
Figure 5

oil price

Table 3

Null Hypothesis: OIL_PRICE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.82776	0.3607
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.61916	

*MacKinnon (1996) one-sided p-values.

While testing the series of oil prices, it was found that the series was not stationary, hence accepting the null hypothesis before converting them into stationary at first difference as mentioned below.
   OIL 1= log(OIL_PRICE)

Table 4

Null Hypothesis: D(OIL1) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		**-6.807862**	**0.0000**
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

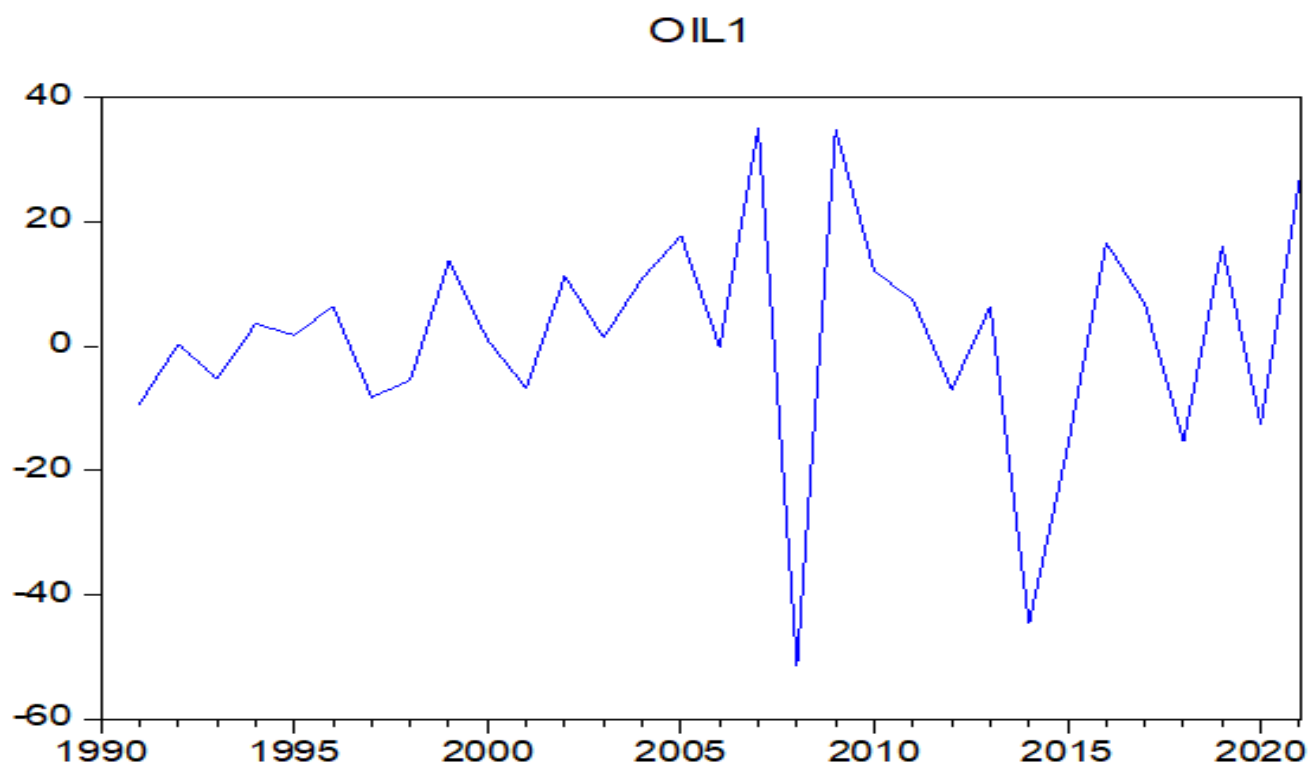*MacKinnon (1996) one-sided p-values.

Figure 6

Table 5

Method: Least Squares
Dependent Variable: **Gross Domestic Product**
Sample (adjusted): **1991 2021**
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OIL1	**0.04433**	**0.042366**	**-1.046434**	**0.0304**
C	2.978561	0.775182	3.842401	0.0006

R-squared	0.866386	Mean dependent var	2.91173
Adjusted R-squared	0.677157	S.D. dependent var	4.30817
S.E. of regression	4.30136	Akaike info criterion	5.81808
Sum squared resid	536.5492	Schwarz criterion	5.9106
Log likelihood	-88.1803	Hannan-Quinn criter.	5.84824
F-statistic	1.095023	Durbin-Watson stat	1.89646
Prob(F-statistic)	0.304005		

IV- Analysis of OLS model:

The stationary OLS model may be used when it has been shown by analysis of the data that every variable follows a normal distribution. First, we will do some preliminary research to see whether the concept will work. Analyzed at a significance level of 5%, the difference between OIL 1 at the first difference and 0.05 was determined to be no more than 0.0304. It was the highest value that could have been discovered. The research came to this conclusion as one of its results. According to the evidence presented, this suggests a considerable link between the independent variable OIL 1 and the dependent variable GDP. The coefficient for OIL 1 may also be found in the table, and it is written as 0.044334. It can be deduced from this that an increase of one unit in OIL 1 will increase to 0.044334 units in GDP. It is a slightly significant increase, but it does not predict a strong relationship because the researchers who carried out this study needed to consider many other factors that could potentially confound the results. Although this does indicate a slightly significant increase, it does not predict a strong relationship. Although this rise is marginally significant, it does not indicate a robust connection.

In addition, the value of R squared is critical for predicting the model that more than 86 percent of changes in GDP are driven by fluctuations in OIL 1 data, as the table indicates. It is because R squared measures the strength of the linear relationship between two variables. This statement's plausibility is bolstered by the significance of the R-squared statistic, which was discussed before. In addition, the Durbin-Watson statistics are under 2, as stated before. Because of this, the OLS model does not find any evidence of serial correlation, and the escalation is very significant even though only one variable can be considered independent of the others.

V- Discussion and Conclusion:

There is a strong positive relationship between the two variables, with GDP functioning as a predictor of a nation's economy. It is crucial to grasp the function of macroeconomic concerns while striving to achieve the desired goals. It is the case for each country on the planet. The researchers have decided to examine this data starting in 1991 and continuing through 2021. This time spans the COVID-19 period, which was the most catastrophic for the global economy and adversely harmed most countries. This period is also included in this time. During this time, the Great Depression also occurred. Directly resulting from this, the company's EXIM policies were thrown into confusion, and the company's financial statements were adversely affected. Before applying the OLS model between the dependent and independent variables, it was essential to evaluate whether a series of variables (oil price) is normally distributed and stationary. This was performed so that the model could be accurately applied. During the analysis of the Jarque-Bera test and the unit root test, it was found that the oil price series was normally distributed at a 5% significance level but was not stationary at the level.

As a consequence of this revelation, the oil price series was altered such that the initial difference was stationary. After a preliminary data analysis, the ordinary least square (OLS) model was used. They considered both factors, with the oil price functioning as the independent variable. According to the study's findings, there is a substantial positive relationship between the two variables. The results indicate that there is also a substantial positive correlation between the two factors. It was shown to be the case. The results indicate decent growth and a high level of predicted oil exports for this period, with somewhat lower levels estimated for 2019-21 and dramatically increasing levels beginning at the end of 2021 and continuing into the following years.

Due to time limits and the restricted number of elements that could be evaluated reasonably, it was not feasible to include any more variables in this study, nor was it possible to leave any room for the research to be expanded in any way. Due to the restricted number of elements that could be studied reasonably, this was the case. These limitations limited the number of objects that could be effectively appraised. If there had been more than one independent variable that might have been included in the experiment, it would have been substantially simpler to predict the study results.

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