

PalArch's Journal of Archaeology of Egypt / Egyptology

IMPACT OF OIL PRICE ON ECONOMIC GROWTH IN MENA COUNTRIES

Rana Anbar¹, Faisal Rana²

^{1,2}College of Business, Effat University Qasr Khuzam.

Jeddah Saudi Arabia

E.Mail: rmanbar@effatuniversity.edu.sa

farana@effatuniversity.edu.sa

Rana Anbar, Faisal Rana. Impact Of Oil Price On Economic Growth In Mena Countries-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 18(13), 132-141. ISSN 1567, Mena, Economy, Gross Domestic Product

ABSTRACT

Oil plays a major role in the economy of a given country since it has significant impact on the growth of industry and commerce of the country and that has a direct effect on the economy of the country to an incredible extent. Therefore, this study is done to understand the impact of fluctuations and volatility of oil price on the economy of an oil producing country. The methods used is a quantitative study based on secondary data backed with some primary data from a group of five oil- producing companies from the "World Development Indicators" (WDI) and Bloomberg. The data was taken from a sample of seven oil-producing countries, mainly Jordan, Morocco, Saudi Arabia, Egypt, Tunisia, Kuwait and Oman. Based on the results from the data, it is evident that when the trade decreases, it leads to a decrease in the gross domestic product (GDP) for all the countries, and to a decrease in domestic credit in the private sector. A decline in trade means a decline in living standards and a lower GDP. In conclusion, fluctuating oil prices greatly influence the economy. Accordingly, a diverse economy will greatly benefit from the increase in the sector of exports such as the manufacturing and the export of goods and services boosting the GDP.

INTRODUCTION

Oil energy is the prime mover of economic growth of some countries. This implies that oil is a vital part of economic sustainability. The future economic growth may be depending on it for the near future, as there is a relationship between economy and oil-products. According to Goosen et al.[1], economic growth is accelerated by efficient, reliable and competitive oil suppliers in the oil-producing nations. Any developing country has to have good strategies for obtaining energy requirements for the stability of its economy. However, it is good to note that an efficient utilization of the available oil resources and the longtime sustainability of these resources are of prime importance in economic

development. All the available natural resources should be accounted for in any country, and the ecological as well as the social aspects of these natural resources should meet all the priority needs of the economy. Hence, there is a need for simultaneous and concurrent actions in an oil-producing nation to ensure that long-term decisions have overwhelmed short-term concerns, for the economy to grow and remain sustainable.

Ji and Fan [2] stated that it is also important to note that crude oil is not distributed uniformly across the world. There are regions and countries that are well endowed, while some are not. The Middle East countries have the biggest reserves of oil and these countries include Kuwait, United Arab Emirates, Iraq, Saudi Arabia and Iran. There are also similar reserves that are in Russia. The locations of producing oil and the refineries play an important role in the oil business. When the oil is produced and refined close to a major market, it will be easily transported, and consequently, it will be more attractive as compared to the oil that is produced, refined and produced in a rural area that requires large transportation costs and more logistics to reach a market [3].

It was reported by Aboseoe and Koul [4], as per the year of 2014, the global proven oil reserve was estimated to be at 1652.6 billion barrels. This fact implied that approximately 48.1% of these barrels are found in the Middle East. Saudi Arabia is the second largest share of the reserves with an approximation of 16.1%, while Venezuela ranks first with approximately 17.9%. The heterogeneous distribution of oil determines the global oil production. It is also of importance to note that the consumption of oil varies from one country to another country throughout the world. The dependent factor of this variation is the population of a given country and the income and total spread of the economy in the country. The highest consumer of oil is the Asian Pacific region with approximately 32.4% share of the total oil. In the second position comes the North American Region with 25.3 % share of the total oil reserve. In the third position, there are Europe and Eurasia with approximately 22.1%. The Middle East comes fourth with 9.1% and Africa comes fifth with approximately 3.9% of the total reserve. The global oil consumption grows at an average that is below 0.6% bbls per day or it can be approximated to 0.7% in the bid to reach 88.03 million bbls per day. It has been projected that the global consumption of oil is likely to register a below average growth as per the current situation. In the coming twenty years, oil is expected to be the slowest growing fuel [5].

According to Hamann [6], the linear relationship theory of growth illustrated more oil as a driver of economic growth. The theory postulated that the volatility of the gross national product (GNP) is directly driven by the oil price volatility. The theory had been lingered in the oil market between the years 1948 to 1972 and had many impacts to the countries that exported and imported oil respectively. Between 1948 and 1972, the oil prices and the level of exchange of oil significantly influenced the GDP growth. This indicated that the oil price changes and the oil price volatility have negative impacts on the economy of a nation, though they affect the economy in different ways [7]. The impact of oil prices can be felt after one year, though the volatility of the

oil prices is felt instantly. Hence, the economic growth of a given nation is affected by the price volatility of crude oil in that country.

Furthermore, in the past fourth years or so, the oil prices have been fluctuating up and down. Whenever there is an increase in the oil price, there is an increase in transportation cost and the cost of production. However, the issue of how oil price affects the economy of a country has been part of the ongoing controversial debates among economic researchers and economic policymakers [8-10]. Hence there is need to understand how the lack of a fixed oil pricing policy has affected the modern economy. Taking these concerns into consideration, this study examined the influence of macroeconomic indicators such as (trade, manufacturing added value, oil price, export of goods and services and domestic credit to private sector) on the Middle East and North Africa's (MENA) GDP markets of five countries (Jordan, Morocco, Saudi Arabia, Egypt and Oman).

METHODOLOGY

Model of Study

Economic models are crucial to every research, since they present the relationship between the two variables: the dependent and the independent variable. The model specification of this study is presented using the following analysis (refer to Equation 1):

$$GDP = \alpha + \beta_{DCTPS} + \beta_{EGS} + \beta_{OP} + \beta_{MVA} + \beta_T \quad (\text{Eq. 1})$$

Where

B : coefficient of the variables

GDP : Gross Domestic Product

DCTPS : Domestic credit to private sector

EGS : Export of Good & Services

OP : Oil Price

MVA : Manufacturing Value Added

T : Trade

For GDP, the following index in Table 1 was used:

Table 1. Index used for GDP

Market	Index
Saudi Arabia	Tadawul all share index

Oman	Muscat securities MSM 30 index
Morocco	Morocco Consumer Spending Index
Egypt	EGX 30 Price Index
Jordan	Jordan Corruption Index

Data Collection and Data Analysis

This study used quantitative analysis to illustrate the major determinants of economic growth. This also helped in the provision of relevant information on domestic and private sector credit, the export of goods and services, oil price, the manufacturing value add and trade in different countries. Through this, the relationship between variables and the economic growth is established. The variables were used to measure economic growth in currencies of Jordan, Morocco, Saudi Arabia, Egypt, and Oman.

This study relied on secondary data and was supplemented by primary data. Time series data in terms of quantitative data was collected from secondary sources. The data was obtained from World Development Indicators (WDI) and Bloomberg.

The GDP and the Oil price were extracted from Bloomberg and the rest of the model from the WDI. The data was collected from periods ranging from 1986 to 2015. During this period, the selected economies experienced a continuous growth.

The dependent variable is the GDP growth, while the explanatory variables include domestic credit to private sector, the export of goods and services, the oil price, manufacturing value add and trade growth. For each variable, growth values are obtained in order to quantify the relationship in percentage terms. The collected data is also analysed using ordinary least square (OLS) method.

Result And Discussion

Jordan

Table 2 presented the coefficient analysis of the variable data. Based on the table, only the probability value for the variable T had a significant impact to the GDP at 10% level since the p-value was 0.059.

Table 2. Coefficient analysis for Jordan

	Coefficients	Standard Error	t Stat	P-value
Intercept	3.73702637	1.724676954	2.166797881	0.040399883
DCTPS	-0.070373145	0.172780175	-0.407298725	0.687398666
EGS	0.115466809	0.106713043	1.082030889	0.289991268
OP	-0.001851145	0.027559191	-0.067169789	0.947002986
MVA	0.05428214	0.107632244	0.504329722	0.618628625
T	-0.2223779	0.112641722	-1.974205448	0.059974579

The data of the regression statistic for Jordan is shown in Table 3. The R-square shows that 17% percent of the variations in GDP growth are explained

by domestic credit to private sector, export of goods and services, oil price, manufacturing value add and trade.

Table 3. Regression statistic results for Jordan

Regression Statistics	
Multiple R	0.417181027
R Square	0.174040009
Adjusted R Square	0.001965011
Standard Error	4.875043892
Observations	30

In order to estimate the major determinants of the economic growth for Jordan, the following model is estimated using Equation 1. Employing the OLS estimation reveals that trade (T) is statically significant, implying that these macroeconomic indicators strongly influence economic growth in Jordan. The estimation results indicate that 1 percentage point increase in trade (T) leads to -0.22 percentage point decrease in GDP growth.

$$\text{GDP growth} = - 0.07 \text{ DCTPS} + 0.11 \text{ EGS} - 0.001 \text{ OP} + 0.05 \text{ MVA} - 0.22 \text{ T}$$

Morocco

The coefficient analysis for Morocco data is tabulated in Table 4. Among the five variables, two variables (DCPTS and T) had significance towards the GDP with p-values of 0.079 and 0.004 respectively.

Table 4. Coefficient analysis for Morocco

	Coefficients	Standard Error	t Stat	P-value
Intercept	2.593182691	1.280566917	2.025027086	0.054126032
DCTPS	-0.1067876	0.058250776	-1.833239082	0.079200471
EGS	0.156837826	0.107098022	1.464432509	0.156052913
OP	0.00564141	0.018100254	0.311675767	0.757978399
MVA	0.613024427	0.36032603	1.701304863	0.101808118
T	-0.35043606	0.11333323	-3.092085708	0.004981189

Table 5 displayed the regression statistics for Morocco. The R-square shows that 47% of the variations in GDP growth are explained by domestic credit to private sector, export of goods and services, oil price, manufacturing value add and trade.

Table 5 Regression statistic results for Morocco

Regression Statistics	
Multiple R	0.692577514
R Square	0.479663612
Adjusted R Square	0.371260198
Standard Error	3.205942002
Observations	30

Employing OLS estimation reveals that domestic credit to private sector (DCTPS) and trade (T) are statically significant, implying that these macroeconomic indicators strongly influence economic growth in Morocco. The estimation results indicate that a 1-percentage point increase in domestic credit to private sector (DCTPS) leads to -0.1 percentage point decrease in the GDP growth. Similarly, a 1-percentage point increase in trade (T) leads to -0.35 percentage point decrease in the GDP growth. Using Equation 1, the predicted equation for GDP growth for Morocco is as shown:

$$\text{GDP growth} = -0.10 \text{ DCTPS} + 0.15 \text{ EGS} + 0.005 \text{ OP} + 0.61 \text{ MVA} - 0.35 \text{ T}$$

Saudi Arabia

With reference to the coefficient analysis in Table 6, it was found that the p-value of MVA equals to 0.082 which implies there is a significant relationship towards GDP at 10% level.

Table 6. Coefficient analysis for Saudi Arabia

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.427914556	1.273860116	1.12093513	0.27340688
DCTPS	0.001102276	0.058198523	0.01893993	0.98504561
EGS	0.375978346	0.376609196	0.99832492	0.32808159
OP	0.010892469	0.022363353	0.48706781	0.63062928
MVA	0.326637324	0.180075148	1.81389451	0.0822173
T	0.073000844	0.095338148	0.76570445	0.45131747

The regression statistics for Saudi Arabia is presented in Table 7. The R-square shows that 29% of the variations in the GDP growth are explained by domestic credit to private sector, export of good and services, oil price, manufacturing value add and trade.

Table 7 Regression statistic results for Saudi Arabia

Regression Statistics	
Multiple R	0.540946966
R Square	0.29262362
Adjusted R Square	0.14525354
Standard Error	3.244498206
Observations	30

Employing OLS estimation reveals that manufacturing values add (MVA) statically significant, implying that these macroeconomic indicators strongly influence economic growth in Saudi Arabia. The estimation results indicate that a 1- percentage point increase in manufacturing value add leads to 0.32 percentage point increase in the GDP growth. This is explained in the predicted equation for Saudi Arabia's GDP as below

$$\text{GDP growth} = 0.001 \text{ DCTPS} + 0.37 \text{ EGS} + 0.01 \text{ OP} + 0.32 \text{ MVA} + 0.07 \text{ T}$$

Egypt

Table 8 presented the coefficient analysis of the variable data. Based on the table, only the probability value for the variable T and EGS had a significant impact to the GDP since the p-value was 0.025 and 0.001 respectively.

Table 8 Coefficient analysis for Egypt

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.843521656	0.481090078	3.831967731	0.000804757
DCTPS	-0.015334978	0.025526999	-0.60073564	0.553647569
EGS	0.081687461	0.021295872	3.835835391	0.000796972
OP	0.000367421	0.006433943	0.057106618	0.954933059
MVA	0.380714085	0.072010242	5.286943536	2.01303E-05
T	-0.040183251	0.016749134	-2.39912406	0.024556935

In the regression statistic table in Table 9, the R-square shows that 68% of the variations in GDP growth are explained by the domestic credit to private sector, export of goods and services, oil price, manufacturing value add and trade.

Table 9 Regression statistic results for Egypt

Regression Statistics	
Multiple R	0.826556257
R Square	0.683195247
Adjusted R Square	0.617194256
Standard Error	1.003862591
Observations	30

Employing OLS estimation reveals that the export of goods and services and trade are statically significant, implying that these macroeconomic indicators strongly influence the economic growth in Egypt. The estimation results indicate that a 1- percentage point increase in exports growth leads to 0.08 percentage point increase in the GDP growth. Likewise, a 1- percentage point increase in trade growth leads to -0.04 percentage point decrease in the GDP growth. The estimated major determinants of economic growth for Egypt are as follow:

$$\text{GDP growth} = -0.01 \text{ DCTPS} + 0.08 \text{ EGS} + 0.0003 \text{ OP} + 0.38 \text{ MVA} - 0.04 \text{ T}$$

Oman

The coefficient analysis for Morocco data is tabulated in Table 10. Among the five variables, only one variable (T) had significance towards the GDP with p-values of 0.004.

Table 1 Coefficient analysis for Oman

	Coefficients	Standard Error	t Stat	P-value
Intercept	2.593500462	1.404985562	1.845926772	0.077274176
DCTPS	0.057398254	0.043689627	1.313773023	0.201343121
EGS	0.02196098	0.08886803	0.247119017	0.806917827
OP	0.023372224	0.028585425	0.817627305	0.421613419
MVA	-0.048164185	0.277273198	-0.173706603	0.86355289
T	-0.093738264	0.029889482	-3.136162154	0.004480663

Table 11 displayed the regression statistics for Oman. The R-square shows that 19% of the variations in the GDP growth are explained by the domestic credit to the private sector, export of goods and services, oil Price, manufacturing value add and trade.

Table 11.Regression statistic results for Oman

Regression Statistics	
Multiple R	0.574399038
R Square	0.329934255
Adjusted R Square	0.190337225
Standard Error	3.05986255
Observations	30

Employing OLS estimation, it is revealed that trade is statically significant, implying that these macroeconomic indicators strongly influence the economic growth in Oman. The estimation results indicate that a 1- percentage point increases in trade leads to -0.09 percentage point decrease in GDP growth (refer the equation below):

$$\text{GDP growth} = 0.05 \text{ DCTPS} + 0.02 \text{ EGS} + 0.023 \text{ OP} - 0.04 \text{ MVA} - 0.09 \text{ T}$$

Overall Discussion

From the data, it is evident that when the trade increases, it leads to a decrease in the GDP for all the countries (except Saudi Arabia). The impact of trade on GDP has been debatable for a long time. This findings of this study is supported by Ulasan [11] who stated that trade openness measures are not robustly significantly associated with economic growth. However, Gheorghe et al.[12]disagree and concluded that a decline in trade leads to a decline in living standards and a lower GDP. Empirical study done by Were [13] revealed that trade has positively impacted economic growth in developed and developing countries. Nonetheless, its effect is insignificant for least developed countries.

In addition, it is also discovered that volatile oil prices have a negative impact on the GDP of a country. For example, when the GDP of the United States declined by 0.7% between 1999 and 2001, the decline was attributed to a decrease in oil prices [14]. Such decreases can lead to a country losing billions of dollars if not properly managed.

As for others variable, an increase in the level of export of goods and services and manufacturing value add, results in a positive impact towards a country GDP. It is evident that an increase in the variables, eventually lead to an increase in the GDP of any country.

CONCLUSION

In conclusion, macroeconomic variables have positive and negative impacts on MENA oil price market, depending on the move of the GDP in each country. Comparing the five variables studied, the variable trade had significant impact on all countries except for Saudi Arabia. Apart from trade, the GDP growth in Morocco and Egypt is affected by DCPTS (Domestic credit to private sector) and EGS (export of good and services). As for Saudi Arabia, its GDP growth is only influenced by MVA (manufacturing value added).

REFERENCES

- Goosen, M. F. A., Mahmoudi, H., Ghaffour, N., Bundschuh, J., & Yousef, Y. A. 2016. A critical evaluation of renewable energy technologies for desalination. In *Application of Materials Science and Environmental Materials (AMSEM2015) Proceedings of The 3rd International Conference* (pp. 233-258).
- Ji, Q., & Fan, Y. 2016. Evolution of the world crude oil market integration: a graph theory analysis. *Energy Economics*, 53, 90-100.
- Faghih, N., & Zali, M. R. 2018. *Entrepreneurship Education and Research in the Middle East and North Africa (MENA)*. Springer.
- Falebita, O. A., & Koul, S. 2015. Sustainable development of oil sands and host communities: preliminary system dynamics assessment.
- De Oliveira, R. L. 2017. *The politics of unconventional oil: industrial and technology policy in Brazil, Malaysia, and Mexico* (Doctoral dissertation, Massachusetts Institute of Technology).
- Hamann, S. 2017. *Sustainability and Governance of Palm Oil Development in Sub-Saharan Africa: Evidence from Cameroon* (Doctoral dissertation).
- McCombie, J., & Thirlwall, A. P. 2016. *Economic growth and the balance-of-payments constraint*. Springer.
- Nazlioglu, S., Soytas, U., & Gupta, R. 2015. Oil prices and financial stress: A volatility spillover analysis. *Energy Policy*, 82, 278-288.
- Al-Maamary, H. M., Kazem, H. A., & Chaichan, M. T. 2017. The impact of oil price fluctuations on common renewable energies in GCC countries. *Renewable and Sustainable Energy Reviews*, 75, 989-1007.
- Adams, D., Adams, K., Ullah, S., & Ullah, F. 2019. Globalisation, governance, accountability and the natural resource 'curse': Implications for socio-economic growth of oil-rich developing countries. *Resources Policy*, 61, 128-140.
- Ulaşan, B. 2015. Trade openness and economic growth: panel evidence. *Applied Economics Letters*, 22(2), 163-167.
- Gheorghe, F. V., Simion, A. E., & Zaman, G. 2018. Terms of Trade and Efficiency of External Transactions in Romania. *Romanian Statistical Review*, (2).
- Were, M. 2015. Differential effects of trade on economic growth and investment: A cross-country empirical investigation. *Journal of african trade*, 2(1-2), 71-85.
- Price-Smith, A. T. 2015. *Oil, illiberalism, and war: An analysis of energy and US foreign policy*. MIT Press.

Columns on Last Page Should Be Made As Close As Possible to Equal Length

Authors' background

Your Name	Title*	Research Field	Personal website

This form helps us to understand your paper better, **the form itself will not be published.*

***Title can be chosen from: master student, Phd candidate, assistant professor, lecture, senior lecture, associate professor, full professor**