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The Impact of Oil Sector on the Global Competitiveness of the GCC Countries: Panel Data Approach

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Abstract

This study explores the impact of oil sector on global competitiveness of the GCC states in a panel data framework for the period from 2006 to 2014. The focus is placed on how the non-traditional factors; *oil rents*, *fuel exports as percentage of merchandise exports*, *oil prices*, and mining sector production impact on the global competitiveness of the GCC nations. The study uses panel data techniques to measure the effect of the oil sector's impact on of global competitiveness of the GCC countries. The results of the regression show that the relation between rent and GCI found to be negative and highly significant whereas the oil prices and contribution of the mining sector in GDP found to have positive relation with GCI at 90% significance level. Finally, fuel exports as percentage of the merchandize exports has insignificant relation with GCI.

Keywords: oil sector, global competitiveness, GCC countries, panel data.

JEL Classification: E31, E37, F11, F14, F43, F62, O47, O53.

1. INTRODUCTION

The Cooperation Council for the Arab States of the Gulf, commonly referred to as Gulf Cooperation Council (GCC), is considered to be among the most influential economic and political partnerships in the world (Colombo et al., 2014). It is a regional partnership that was set up to enhance integration, interconnection, and coordination among the member states. Members of the GCC include Kuwait, Bahrain, Qatar, Oman, United Arabs Emirates, and Saudi Arabia (Puig & Al-Khodiry, 2012). GCC member states depend on oil resources to grow their economies and compete with other nations around the world. The oil boom that was witnessed between the year 2002 and 2008 generated a lot of revenue for all the six members. It is estimated that the average annual revenue was about \$327 billion between the year 2002 and 2007 (Puig & Al-Khodiry, 2012). According to (Difiglio, 2014), the oil revenue has also been very instrumental in enhancing the competitiveness of the nations and promoting economic growth in the region. Oil revenue has positively impacted on various macro and micro-economic indicators such as investments and growth in the region. (Dargay & Gately, 2010), however, noted that there are other pertinent indicators like structure of the economy, labor market and the governance have remained less positive in the Gulf region.

In the last decade, GCC nations have strived to come up with measures and policies meant to ensure that they use their natural resources to remain competitive in the regional and global arenas (Alfaki & Ahmed, 2013). These efforts have resulted in the diversification of the economies and the dependency on oil as their major traded commodity. Other nations in the region have gone ahead to increase the public spending in other aspects of the economy in order to distributed the oil windfalls and ensure future sustainability (Davidson, 2009). Most of the GCC nations have also adopted conservative monetary policies as way of responding to global and local economic changes so that they can remain competitive in the global markets. Although these efforts have been very instrumental in the performance of the region in the global economy, (Hvidt, 2011) noted that all the GCC states still rely heavily on the oil resources to achieve economic growth. The recent global financial crisis has also demonstrated that the GCC members cannot entirely rely on the high oil process for economic growth (IMF, 2012). Therefore, coming up with a merit-based competitive economic structures remain a key issue of focus for most of these nations. This needs a consistent and strong commitment towards economic reforms that can ensure that competitiveness is improved in all the member states irrespective of the current political or economic conditions (Rasmussen & Roitman, 2011). Such reforms begin with the understanding of the current competitive state of each of the member states. Based on the information on the level of competitiveness, the nations can come up with the measures for economic improvement and initiatives that will enhance performance in the global market.

The present study focuses on the impact of oil sector on the global competitiveness of the GCC countries. The issue of global competitiveness has not only been a concern for researchers but also the individual GCC nations in the last couple of years. The recent move by the GCC member states to make economic diversification an important area of focus is in itself an indication of the realization of the fact that oil resources impact on the competitiveness of the region (Hvidt, 2011). A review of the official statement of GCC by (Álvarez, Marin, & Maldonado, 2009) revealed that the actual investments and plans that the member states are focusing on are geared towards ensuring that the nations do not rely entirely on oil. These recent developments

seem to be motivated by the realization that oil has a very significant influence on the performance of the individual member states.

There are several reasons to explore and study the impact of oil on the global competitiveness of the Arab countries that belong to the GCC. The first reason noted by (Kubursi, 1987), “were oil supplies everlasting and the demand for oil strong and continuous, economic diversification would be pointless. The governments of the region would instead need only to ensure the distribution of oil revenues among the population.” (p. 1). In the real world, the oil resources that the GCC nations rely on for economic growth are not infinite. Moreover, previous events have shown that the prices of oil and the demand keep changing from time to time (Hvidt, 2011). By evaluating the impact of oil on the global competitiveness of the GCC states, a clear picture of what is likely to occur when there is a reduction in the oil resources and prices can be painted. The second reason that has made it necessary to look at the global competitiveness of the Gulf region is the simple fact that the reliance on oil revenue crowds out any other economic activity that the countries engage in. As (Seznec & Kirk, 2010) puts it, “the Gulf states’ drama is that it (oil extraction) is not simply another economic activity added to the other existing productive sources within a viable and modern economy, as it is with the Netherlands or, for that matter, Canada, Australia, and the Scandinavian countries. In the Gulf, the oil sector dominates the economy; it is almost the unique source of wealth” (p. 188). The fact that the income from oil is not finite, and that the Gulf nations rely on oil resources as the only source of national wealth, makes it necessary to study the impact of oil on global competitiveness.

The global competitiveness of the Gulf nations has been investigated in previous studies. A review of existing literature revealed that global competitiveness is influenced by several traditional factors including technology, national policies, inflation and productivity (Hvidt, 2013). These factors have direct link on a nation’s competitive position in the global arena. The review also revealed that despite the fact that the scholars have studied global competitiveness on the basis of factors like *technology*, *national policies*, *inflation*, and *productivity*, no study has investigated the impact of oil on the global competitiveness of the GCC nations using the nontraditional factors; *oil rent*, *oil prices*, *fuel exports*, and *mining sector production* as explanatory variables. In this study, the impact of oil sector on the global competitiveness of the GCC countries was done through Panel Data techniques of annual time-series data over the period 2006-2014.

2. THEORETICAL FRAMEWORK

As stated earlier, this study is intended to shed more light on the economic status of the GCC nations by looking at the impact of oil on global competitiveness of the member states. The focus is placed on how the non-traditional factors; *oil prices*, *oil rents*, fuel exports as percentage of merchandise exports and *mining sector production* impact on the global competitiveness of the GCC nations. GCC is an economic and political partnership whose economic performance has been a subject of ad hoc and contradictory interpretations by political scientists, journalists and even economists (Bina & Vo, 2007). At a more popular level, however, GCC has been associated with better economic performance and improved economic status of the member states in the global market until lately when oil prices decreased by 35%. In a broader milieu, most literature on the economic performance of the GCC nations and the influence of oil has remained theoretical and reflective (Hvidt, 2007).

Existing theoretical literature on the concept of global competitiveness can be grouped into two different paradigms. The first paradigm is the common neoclassical economics theory that idealizes the influence of competition and monopoly (Hvidt, 2007). The second paradigm is the non-standard political approach to the economy. The second paradigm is significantly influenced by the Marxian, Classical and Schumpeterian theory (Hvidt, 2007). Based on the trends seen in the existing literature on competitiveness and oil, it is apparent that the economic status of the GCC member’s states cannot be reliably used to understand the actual impact of oil on global competitiveness. This is because the economic contribution of oil to the performance of a country in the global market is influenced by a wide array of factors.

3. LITERATURE REVIEW

The purpose of this study is to investigate the impact of oil sector on the global competitiveness of GCC countries. This topic is a very significant area for study for two main reasons. First, all GCC nations rely entirely on oil resources to achieve economic growth and remain competitive in the global market. Oil revenue is the backbone of these countries and any changes in oil availability and prices can affect the economic performance of the nation’s. Secondly, the impact of oil sector on the global competitiveness of the GCC countries is an important area of focus because the oil resources that the GCC nations rely on for economic growth are not infinite. Previous events have shown that the prices of oil and the demand keep changing from time to time. Thus, it is important to understand how these changes can affect the global competitiveness of the GCC member states.

3.1. Global Competitiveness

Global competitiveness is a concept that has been widely discussed in academic cycles. This is because it allows

for several analysis levels when evaluating economic performance of nations. Although its application began at the firm level, it has also been applied to study and evaluate economic performance on the national, regional and global markets (Hvidt, 2013); (Fagerberg, 1996); (Roessner, Porter, Newman, & Cauffiel, 1996). (Silke, 2011) describes global competitiveness to be the “ability of countries to provide high levels of prosperity to their citizens” (p. 183). Measuring the global competitiveness entails quantifying the impact of various key factors that contribute to the creation of conditions for competitiveness. Particular focus is usually placed on the macroeconomic factors, the state of the nation’s technology, the quality of the institutions and the supporting infrastructure. According to (Helleiner, 2008), global competitiveness also measures the policies and factors that contribute to sustainable economic prosperity. It is also worth noting that it is significantly influenced by the way in which a nation uses the resources that it has (Hertog, 2011). A more tractable definition is given by (Álvarez et al., 2009) where global competitiveness is described as the ability of a country to compete in global trade by exporting its products. In this aspect, the competitiveness is considered in relations to the productivity and the growth of the nation.

The study of global competitive has attracted profound interests in the recent past. This is because it gives researchers the opportunity to understand contemporary issues that are related to superior economic performance in the global and regional markets (Hertog, 2011). In most of the studies, the states are said to be globally competitive if it is able to simultaneously implement its strategies and policies to achieve better performance in the global market. Successful implementation of the said strategies will move the country from one performance level to another level of superior performance. This allows that particular nation to outperform its peers both at the local and the regional levels. (Colton, 2011) remarked that in the last two decades, the concept of global competitiveness has come out as a new paradigm in economic performance studies. It is being used to capture the awareness of the limitations and challenges that are caused by competition that occurs at the global level. It also allows for the evaluation of the institutions, factors, and policies that significantly influence a nation’s productivity levels. The global competitiveness of Gulf nations has been heavily linked with the availability of oil resources in the region (Baker & Wiseman, 2009). The GCC nations, for instant, came together to create a development plan that could allow them to become a productive and competitive (Colton, 2011). At the center of this plan are the oil resources that are available in each of the member countries.

The crude oil is not only important for GCC as natural resources but also as a mining industry that contributes in the GDP. The GCC oil sector is usually divided into three major sub sectors. These are the upstream subsector, the midstream subsector and the downstream subsector (Jiyad & Mousa, 2011). The upstream sector encompasses the exploration and production process. The midstream sector, on the other hand, includes the activities that take place after the initial production phase up to the point of sale (Kasriel & Wood, 2013). It comprises of the processing, transportation, and marketing of the crude oil and natural gas. The downstream processes take place from the point of sale. They include the processes that are associated with the refining of the crude oil, purification of the natural gas, and the processing of crude oil. The subsector also encompasses the activities that associated with the marketing of the various products that are derived from natural gas and crude oil. Some of the products that come out of the midstream sector include jet fuel, kerosene, heating oil, diesel oil, waxes, fuel oil, asphalt, and liquefied petroleum gas (Kasriel & Wood, 2013).

Oil is a resource that is not only important to the Gulf region but also to the world as a whole. Ref notes that in the year 2010, the world consumed a total of 30 billion barrels of oil with a huge portion being taken by the developed nations (Miller & Sorrell, 2014). The Gulf region produced about 30 percent of the world’s total oil resources. In the year 2010, the members of the GCC produced over 25.2 million barrels every single day. This is in addition to the 44. 6 billion cubic-feet of the world’s natural gas every single day (Miller & Sorrell, 2014). With International Energy Agency (IEA, 2012) projections indicating that the consumption of energy is likely to increase by about 50 percent by the year 2030, the GCC nations will play a very critical role in the overall global economy.

The expansion of oil industry continues to be rapid because of the rapidly growing need for power and energy in each of the GCC member states (Miller & Sorrell, 2014). As the region strives to meet the rising energy demand at the local, regional and global levels, it is also expected that the revenue that is earned from oil resources will go up. Despite this being the case, (Alfaki & Ahmed, 2013) noted that the Gulf region still faces various oil related challenges that are affecting growth and performance in the global market. More particularly, most of the nations are facing the challenge of infrastructure deficit, slow uptake of technology, insufficient innovation capabilities, and over reliance on a single source of revenue (Alfaki & Ahmed, 2013). The challenges are likely to continue impacting negatively on the performance of the member states in the regional and global markets.

Several factors are known to affect the global competitiveness of oil producing nations, GCC members included. Technology is widely considered as an important factor that determines a nation’s competitiveness in the global perspective. According to (Dahlman, 2013), a nation’s ability to improve its technological and economic capabilities will significantly influence its performance in the world market. Thus, the integration of

technology in the oil sector in the Gulf nations has been used as a comparative notion of competitiveness and performance in the international markets (Álvarez et al., 2009). The global competitiveness of GCC nations is therefore influenced by their technological capabilities, that is, their ability to absorb, adapt and effectively use technology in their oil related activities. The other factor that influences global competitiveness, according to (Álvarez et al., 2009), is the relative inflation rates. In nations where the relative inflation is low, there are higher chances that global competitiveness will be improved over time. Productivity, which is the measure of the total output per input, has also been identified to impact on the overall competitiveness of a nation in the global perspective and the Standard of living in a country (Wysokińska, 2003). GCC member states like Saudi Arabia, Oman, and United Arabs Emirates have adopted technology as a way of increasing labor productivity. Compared to other Gulf region nations that are yet to do the same, these states have managed to improve their competitiveness in the global market and improve the overall Standard of living of the citizens (Wysokińska, 2003). Other factors that also impact on global competitiveness include tax rates, the cost of business, and national institutions (Álvarez et al., 2009).

3.2. Previous Studies on Global Competitiveness

Due to the importance of global competitiveness in the understanding of contemporary economic and development issues, various researchers have carried out studies on the relationship of the concept with the factors that influence it. (Alfaki & Ahmed, 2013) carried out a study to evaluate the relationship between global competitiveness and technological readiness in the Gulf region by focusing on the United Arabs Emirates. In the study, the researchers critically evaluated and examined the impact that information and communication technology (ICT), and education were having on the nation's technological readiness and global competitiveness. To achieve the objectives of the study, (Alfaki & Ahmed, 2013) used a comparative and situational analysis approach to describe the United Arabs Emirates global competitiveness. They worked to highlight the nation's strengths, weakness, and opportunities using discussion data from various international sources. Finally, they matched the nation's worldwide performance against that of the other GCC member states and the major Asian nations that were undergoing economic transformation.

Based on the data collected, (Alfaki & Ahmed, 2013) found out that the United Arabs Emirates had made great progress in terms of its Global Competitiveness Index (GCI) ranking between 2007 and 2013. Improvements had also been made in the quality of infrastructure and the overall macroeconomic environment. The researchers went ahead to state that the nation had effectively used ICT and education to increase their level of productivity and this contributed to its impressive competitiveness in the global market. However, UAE was still lagging behind most of the other developed economies around the world with respect to technological readiness. This had proved to be a very big barrier to the adoption and use of technology to improve economic performance. Overall, the situational and comparative analysis that the researchers did showed that there was a very strong relationship between technology and global competitiveness.

In another study by (Wysokińska, 2003), the concept of global competitiveness was evaluated by looking at the relationship that it had with productivity levels and sustainable development. The study was conducted by analyzing the labor productivity index in CEE and the European Union countries. The researchers relied on labor productivity data collected between 1996 and 1998 to measure performance. They also adopted a systemic review approach to evaluating how productivity, sustainable development, and competitiveness were related. This was done by identifying various primary and secondary sources on the concept of global competitiveness. A comparison was also made for the three years period that the researchers considered in the study.

(Wysokińska, 2003) found out that productivity leads to improved competitiveness in the global and local markets. In nations where productivity levels are high, expansion plans for various projects are effectively implemented. This is because high levels of productivity provide funds for the various expansions plans that were being executed. In addition, the researchers stated that high productivity levels benefited locals by ensuring that they have access to cheaper products in the market. The other short term impact of productivity was determined to be the availability of employee opportunities in the country. Based on the findings, Wysokińska concluded that higher productivity leads to improved global competitiveness. However, in the long run, it may affect the natural resource availability in the country and again negate the improvements that have been made in terms of global competitiveness. These findings are relevant to this study because they show how global competitiveness can be used to evaluated micro and macroeconomic issues and overall economic performance of a nation.

(Taner, Oncü, & Çivi, 2010) also evaluated the performance of GCC nations on the basis of international competitiveness. The study was done systematically by reviewing data collected from primary and secondary sources on key measures of international competitiveness. Some of the measures that the researchers evaluated and analyzed were trade balances, economic status of the country, and the existing institutional structures. From the review, Taner et al., concluded that the concept of global competitiveness was very complex

because of the wide array of indicators and factors that influence it. The researcher went ahead to conclude that Gulf nations that are not economically well-developed are associated with high positive trade balances, pointing to the fact that global competitiveness is influenced trade balances and economic performance of a nation.

One of the differences between previous studies that have been conducted on the concept of technology and the current study is the choice of variables. In most of the existing literature, the concept of global competitiveness has been evaluated by looking at how it is influenced by specific economic parameters such as *productivity levels* (Wysokińska, 2003), *trade balances*, *national economic performance* (Taner et al., 2010) and *technological readiness* (Alfaki & Ahmed, 2013). Although these parameters and variables have been effectively used to examine the factors that influence global competitiveness, they have not captured the impact that *natural resource*, which is a very important element in the evaluation of a nation's economic status, influence global competitiveness. In addition, these studies have evaluated the impact of factors like *productivity levels*, *trade balances*, *national economic performance*, and *technological readiness* from a unidirectional perspective. This is because they do not look at the other contributory factors that may also influence global competitiveness as the selected parameters are being evaluated.

In the present study, this limitation was addressed by studying the impact of oil on the global competitiveness of the GCC using four non- traditional parameters. This contributed to the understanding of the concept from a multidirectional perspective. Currently, no study has been conducted to evaluate the impact of oil on the global competitiveness of the GCC member states by means of the four exogenous variables that were used in this study. Therefore, the use of *oil rents*, *fuel exports as percentage of merchandise exports* and *mining sector production as percentage of total production* as the main explanatory variables is a very significant move towards the understanding of global competitiveness in the Gulf region.

4. DATA AND METHODOLOGY

As discussed earlier in the literature review section, this study is intended to shed more light on the economic status of the GCC nations by looking at the oil sector's impact on of global competitiveness of the member states. The focus is placed on how the non-traditional factors; *oil rents*, *fuel exports as percentage of merchandise exports*, and *mining sector production* impact on the global competitiveness of the GCC nations.

4.1. Description of Data and Sources

In conformity with the availability of the necessary data and an accepted number of observations, this study analyzes the issue of the oil sector's impact on the global competitiveness of the GCC countries using annual time-series data over the period 2006-2014. The data comprise:

- **Global Competitiveness Index (GCI)**, which presents a framework and a corresponding set of indicators in three principal policy domains (pillars) and twelve sub-domains (sub-pillars) for 140 countries. This variable was collected from the GCI Historical Dataset from 2006-2014, World Economic Forum (WEF).
- **Oil Prices (OP)** Arabic 31. This variable was collected from the Organization of the Petroleum Exporting Countries database (OPEC).
- **Fuel Exports (FX)** is measured as percentage of merchandise exports. This variable was collected from World Development Indicators database.
- **Mining Sector Production (MS)** is measured as percentage of GDP. This variable was collected from World Development Indicators database.
- **Oil Rents (Rent)** which is the difference between the value of crude oil production at world prices and total costs of production. It is measured as percentage of Gross Domestic Product (GDP). This variable was collected from World Development Indicators database.

4.2 Methodology

The study uses panel data techniques to measure the effect of the oil sector's impact on of global competitiveness of GCC countries. Firstly, unit root tests will be used to confirm formally whether the variables are stationary or not. The general structure used by most panel unit root testing procedures is:

$$\Delta y_{it} = \rho_i y_{i,t-1} + \sum_{j=1}^{p_i} \phi_{i,j} \Delta y_{i,t-j} + \alpha_i X_{it} + \varepsilon_{it}$$

where $i = 1, \dots, N$ for each country; $t = 1, \dots, T$ is the time period; X_{it} is the symbol for the combination of all the explanatory variables in the model (fixed effects or time trend also included); ρ_i represents the autoregressive coefficients and finally ε_{it} is the error term. The test's null hypothesis is that each series in the panel dataset contains a unit root while alternatively, at least one of the individual series in the panel is stationary (no unit root).

A number of unit root tests were considered but most test for a common root among the series. The chosen test was the one proposed by Harris and Tzavalis (1999). This test has a null of unit root versus an alternative with a single stationary value. It is designed to be applied to data sets which are relatively short in time in order to provide relatively exact corrections for small values. The test, as implemented, uses y_{it} rather than Δy_{it} as the dependent variable, which means that the test is for $\rho = 1$ rather than $\rho = 0$. If the results of the test show that the series are stationary, then the analysis will proceed with the random and fixed effects estimation. Otherwise, panel cointegration test will be followed.

Panel data have both a cross-sectional and a time series dimension, which can be regressed to analyze the differences between individuals and changes within individuals over time. The generic panel data model is expressed as follows:

$$y_{it} = X'_{it}\beta + \alpha_i + \varepsilon_{it}, i = 1; 2; \dots; N; t = 1; 2; \dots; T$$

where i denotes individuals, t denotes the dimension of the time series, X'_{it} is a $1 \times k$ vector of observations of the explanatory variables, β is a $k \times 1$ vector of coefficients, α_i is an individual effect which cannot be observed directly and is difficult to quantify and ε_{it} is the error term. Finally, to choose between the random and fixed effects models, Hausman test will be applied.

5. EMPIRICAL RESULTS

As discussed in the Data and Methodology section the univariate characteristics of all the variables are tested with the unit root test proposed by Harris and Tzavalis (1999). The null hypothesis of the test is that each series in the panel dataset contains a unit root while alternatively, at least one of the individual series in the panel is stationary (no unit root). The findings indicate that all the series are stationary in their level.

Hence, given the unit root test results, the exercise does not need to proceed by testing for the existence of cointegration. Furthermore, table (1) presents the descriptive statistics of the used variables.

Table 1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GCI	54	4.7468	.2773559	4.3222	5.3818
Rent	54	34.57492	13.45685	14.6344	59.6061
FX	54	.813513	.1357762	.39866	.9649
OP	54	81.68222	12.64616	58.75	100
MS	54	.4401093	.1225294	.1986	.6537

To use the appropriate panel data model we start by conducting Hausman test. Null hypothesis is that the preferred model is random effects vs. the alternative that the fixed effect is preferred. The result of the test support using random effect model since the null hypothesis cannot be rejected.

Also Breusch-Pagan Lagrange multiplier (LM) test has been conducted to decide between a random effects regression and a simple OLS model. Results of the test show that Chi square is 59.37 (p value is 0.00) so we reject null hypothesis and conclude that random effects model is more appropriate.

Table (2) shows the Panel estimation using fixed and random effects methods.

Table 2 Panel estimation using fixed and random effects methods

Variables	Dependent variable: GCI	
	Fixed effects model	Random effects model
Rent	-.0300396*** (.0076767)	-.0271406 *** (.0068666)
FX	.3847025 (.3405886)	.4250033 (.3188418)
OP	.0052915* (.0027962)	.0045854 * (.0024206)
MS	1.618581 (1.132222)	1.72961* (.9083506)
Wald test		24.89 (0.0000)
Number of observations	54	54
Number of countries	6	6
Hausman test		1.72 (0.7874)
Adjusted R ²	0.1141	0.1428

Notes: the figures in brackets denote the standard error of the coefficients.

* Denotes 10% level of significance.

** Denotes 5% level of significance.

*** Denotes 1% level of significance.

6. DISCUSSION AND CONCLUSION:

The purpose of this paper is to investigate the impact of oil sector on the global competitiveness in a panel data framework including all the GCC countries for the period from 2006 to 2014.

The results of the Harris and Tzavalis (1999) reveal that the exercise does not need to proceed by testing for the existence of cointegration. The results of the regressions show that the relation between rent and GCI found to be negative and highly significant whereas the oil prices and contribution of the mining sector in GDP found to have positive relation with GCI at 90% significance level. Finally, fuel exports as percentage of the merchandise exports has insignificant relation with GCI.

As oil rents increase as a percentage of GDP, this indicates more dependence on oil rents to generate more GDP. However this reduces the competitiveness of the other sectors in the economy resulting in lower country competitiveness. This is considered as indirect effect.

On the other hand, there is a direct effect, since these countries mainly depend on oil sector to generate their competitiveness, higher oil prices and higher contribution of mining sector in GDP raises its competitiveness. When these countries attempt to diversify their economies they start losing their comparative advantage and hence their competitiveness diminishes. This means that these economies are exposed to the risk of the variability of oil market conditions, which is considered as a challenging threat to their economies.

To avoid the above discussed threat faced by GCC countries, we suggest to invest foreign currency that flowing into these economies due to non-renewable resources export in large investments, such as heavy industry and petrochemicals, coupled with private investment in order to play the key role as “economic growth engine”, and move the economy to more productive stage.

References

- Alfaki, I. M. A., & Ahmed, A. (2013). Technological readiness in the United Arab Emirates towards global competitiveness. *World Journal of Entrepreneurship, Management and Sustainable Development*, 9(1), 4-13. doi:10.1108/20425961311315683
- Álvarez, I., Marín, R., & Maldonado, G. (2009). *Internal and external factors of competitiveness in the middle-income countries: Competitiveness and its relationships with productivity and sustainable development*. Ministry of Foreign Affairs and Cooperation of Spain. Madrid, Spain. Retrieved from http://eprints.ucm.es/9570/1/WP_08-09.pdf
- Baker, D. P., & Wiseman, A. W. (2009). Gender, equality and education from international and comparative perspectives *Gender, Equality and Education from International and Comparative Perspectives* (pp. iii).
- Bina, C., & Vo, M. (2007). OPEC in the epoch of globalization: An Event Study of Global Oil Prices. *Global Economy Journal*, 7(1), 1-49. doi:10.2202/1524-5861.1236
- Colombo, S., Committeri, C., Ayadi, R., Gadi, S., Groen, W. P. d., Al-Shalabi, A., . . . Bianco, C. (2014). *Bridging the Gulf: EU-GCC Relations at a Crossroads*. Rome, Italy: Istituto Affari Internazionali (IAI).
- Colton, N. (2011). *Social Stratification in the Gulf Cooperation Council States* The London School of Economics and Political Science, London, UK: The LSE Middle East Centre
- Dahlman, C. (2013). *Technology, globalization, and international competitiveness: Challenges for developing countries*. Georgetown University, Edmund A. Walsh School of Foreign Service. Retrieved from http://www.un.org/esa/sustdev/publications/industrial_development/1_2.pdf
- Dargay, J. M., & Gately, D. (2010). World oil demand's shift toward faster growing and less price-responsive products and regions. *Energy Policy*, 38(10), 6261-6277. doi:<http://dx.doi.org/10.1016/j.enpol.2010.06.014>
- Davidson, C. (2009). Abu Dhabi's New Economy: Oil, Investment and Domestic Development. *Middle East Policy*, 16(2), 59-79. doi:10.1111/j.1475-4967.2009.00391.x
- Difiglio, C. (2014). Oil, economic growth and strategic petroleum stocks. *Energy Strategy Reviews*, 5, 48-58. doi:<http://dx.doi.org/10.1016/j.esr.2014.10.004>
- Fagerberg, J. (1996). Technology and competitiveness. *Oxford Review of Economic Policy*, 12(3), 39-51. doi:10.1093/oxrep/12.3.39
- Helleiner, E. (2008). Political determinants of international currencies: What future for the US dollar? *Review of International Political Economy*, 15(3), 354-378. doi:10.1080/09692290801928731
- Hertog, S. (2011). *Princes, brokers, and bureaucrats: Oil and the state in Saudi Arabia* (First Edition ed.). Ithaca, United States Cornell University Press.
- Hvidt, M. (2007). Public-Private Ties and Their Contribution to Development: The Case of Dubai. *Middle Eastern Studies*, 43(4), 557-577.
- Hvidt, M. (2011). Economic and Institutional Reforms in the Arab Gulf Countries. *Middle East Journal*, 65(1), 85-102.
- Hvidt, M. (2013). *Economic diversification in GCC countries: Past record and future trends*. The London School of Economics and Political Science, London, UK: The LSE Middle East Centre

- IEA. (2012). World energy outlook. from International Energy Agency
- IMF. (2012). *Saudi Arabia 2012 Article IV Consultation* (IMF Country Report No. 12/271). Retrieved from Washington, D.C. 20431: <http://www.imf.org/external/pubs/ft/scr/2012/cr12271.pdf>
- Jiyad, & Mousa, A. (2011). Oil upstream development: The feasibility of a fast-tempo, big-push strategy. *International Journal of Contemporary Iraqi Studies*, 5(1), 11-46. doi:http://dx.doi.org/10.1386/ijcis.5.1.11_1
- Kasriel, K., & Wood, D. (2013). *Upstream petroleum fiscal and valuation modeling in excel: A worked examples approach*. : John Wiley & Sons.
- Kubursi, A. A. (1987). Oil, Industrialization and Development in the Arab Gulf States. *International Journal of Middle East Studies*, 19(3), pp.144. doi:doi:10.1017/S0020743800056774
- Miller, R. G., & Sorrell, S. R. (2014). The future of oil supply. *Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences*, 372(2006). doi:10.1098/rsta.2013.0179
- Puig, G. V., & Al-Khodiry, A. (2012). The Economic and Monetary Union of the Gulf Cooperation Council. *Journal of World Trade*, 46(1), 121-154. doi:TRAD2012005
- Rasmussen, T. N., & Roitman, A. (2011). *Oil Shocks in a Global Perspective: Are they Really that Bad?* IMF Working Paper. IMF. Washington, DC.
- Roessner, J. D., Porter, A. L., Newman, N., & Cauffiel, D. (1996). Anticipating the future high-tech competitiveness of nations: Indicators for twenty-eight countries. *Technological Forecasting and Social Change*, 51(2), 133-149. doi:[http://dx.doi.org/10.1016/0040-1625\(95\)00195-6](http://dx.doi.org/10.1016/0040-1625(95)00195-6)
- Seznec, J. F., & Kirk, M. (2010). *Industrialization in the Gulf: A Socioeconomic Revolution* (1 ed., pp. 97-185). New York: Routledge
- Silke, D. (2011). *Tracking the future: Top trends that will shape South Africa and the world*. Cape Town: Tafelberg Publishers Ltd.
- Taner, B., Oncü, S., & Çivi, E. (2010). *The relationship between international trade and national competitiveness*. Retrieved from www.opf.slu.cz/vvr/akce/turecko/pdf/Taner.pdf
- Wysokińska, Z. (2003). Competitiveness and its relationships with productivity and sustainable development. *Fibres & Textiles in Eastern Europe*, 11(3), 3 (42, 11-14).