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TOWARDS IMPROVING THE EDUCATION FUNDING POLICY IN OMAN: LESSONS LEARNED FROM OTHER OIL DEPENDENT NATIONS

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LEARNED FROM OTHER OIL DEPENDENT NATIONS

By

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A Dissertation
Submitted in Partial Fulfillment of the Requirements for the
Doctor of Philosophy Degree

Department of Educational Administration and Higher Education
in the Graduate School
Southern Illinois University Carbondale
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DISSERTATION APPROVAL

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in the field of Education Administration and Higher Education

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AN ABSTRACT OF THE DISSERTATION OF

Hamood Salim Al-Shoaibi, for the Doctor of Philosophy degree in Educational Administration and Higher Education, presented on March 22, 2018 at Southern Illinois University Carbondale.

TITLE: TOWARDS IMPROVING THE EDUCATION FUNDING POLICY IN OMAN: LESSONS LEARNED FROM OTHER OIL DEPENDENT NATIONS

MAJOR PROFESSOR: Dr. Saran Donahoo

The education system in Oman underwent tremendous development during the past four decades, however, the national economy dependency on oil threatens the sustainability of its education funding. This study aims to explore the relationship between education funding and oil price fluctuations in Qatar, U.A.E., and Oman from 1975 to 2015. Moreover, it aims to suggest new economic alternatives to diversify the education funding sources in Oman. This quantitative study, under the framework of Human Capital Theory, utilized descriptive and associational approaches to study the association between oil prices and education expenditures in the three countries. Multiple regression analyses showed that oil prices significantly predicted the government expenditure on education in Oman and Qatar with (β = -0.40, p = 0.013) and (β = 2.47, p = 0.02) respectively, while it was not significant in predicting the government expenditure on education (β = 0.36, p = 0.40) in the U.A.E. This study highlighted how Qatar and U.A.E were successful in moving away from oil dependency. The researcher recommended that the Omani government must encourage the inflow of direct foreign investment into its education field, like establishment of new education hubs, educational cities, and opening new branches for some of the leading educational institutions from around the world. The researcher plans to conduct future qualitative research to enrich knowledge in this area.

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DEDICATION

I am proud to dedicate this dissertation to my dear parents:

My Mother, Mrs. Zahya Said Al Thanwi

and

My Father, Mr. Salim Hamood Al Shoaibi

Thanks for your prayers, support, and encouragement to continue my higher education!

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CHAPTER 1

INTRODUCTION

The Sultanate of Oman strategically occupies the far southeastern part of the Arabian Peninsula in the most far east side of the Middle East. The Sultanate's East border extends along the Indian Ocean, on the West bordering the United Arab Emirates (U.A.E.) and the Kingdom of Saudi Arabia (K.S.A.), on the North bordering Iran, and on the South bordering Yemen (Valeri, 2009). Since 1970, the Omani Government adopted five-year strategic plans to transform the country into a modern state, in which it has succeeded. Despite the great need to expand the education system in Oman due to the booming young population, the country's dependence on one source of income is affecting the sustainability of its educational, political, and economic development.

Oman is one of the major oil producers in the Middle East, which depends primarily on oil revenues to finance its strategic development plans including education. The Omani government may face serious problems to finance its education and health services due to the increasing maintenance costs and the limited oil resources (Looney, 1990). The fact that oil prices routinely fluctuate poses a serious obstacle to sustaining growth in the education sector, especially during periods when oil prices decline. This instability forces Oman and other oil dependent governments to search for ways to diversify their economies to continuously fund their education systems.

Problem Statement

Total dependency on one natural source of income, such as oil, endangers the sustainability of funding for the Omani education system. Furthermore, oil price shocks can halt the ongoing development projects in oil producing countries. The Gulf area experienced this

negative effect when oil prices dropped dramatically in the 1970s, 1984, 2008, and 2014. On the other hand, there were also periods when oil prices jumped over $110/barrel during which the Gulf Cooperation Council (GCC) countries enjoyed dramatic growth rates in establishing major educational and academic projects such as building new primary education schools and higher education universities.

Need for the Study

The field of education in Oman lacks research studying the effects of diminishing oil reserves and its fluctuating prices on government education expenditure. The Omani government income is still highly dependent on oil revenues, especially in funding major sectors such as education (Hivdt, 2011). The Omani education field must explore fully the negative consequences of oil export dependency on its education system and search for new sources of income. In addition, these studies will assist other oil dependent countries in the region, who need to investigate the effects of oil price fluctuations on the ability of their governments to sustain a continuous funding of their education systems.

In addition, it is very important to learn from the experiences of the other oil dependent governments like Qatar and U.A.E., and explore how they managed to make their education systems less sensitive to oil price fluctuations. Hopefully, this study will help education leaders in Oman in their search for new sources of income to supplement oil revenues needed for sustainable educational development, and reduce their dependency on oil as the main source of income in the country, especially that Oman oil reserves will extinct soon.

Purpose of the Study

The main purpose of this study is to investigate the relationship between education funding and oil prices in Qatar and the U.A.E. from 1975 to 2015, comparing the results to

Oman for the same period. This research explores this relationship by using the quantitative approach focusing mainly on education expenditures and oil prices, and also includes investigating the effects of other economic factors that might have direct effect on education funding and, thus, the education development in a whole. These variables include Gross Domestic Product (GDP), total labor force in the market, the enrollment numbers in both the primary and secondary levels of education for both sexes, GDP per capita, population, and oil rents in U.S. Dollars.

The researcher chose Qatar and U.A.E. because they are two of the major oil producers that proved themselves as internationally competitive economies with successful efforts in diversifying their income sources. In addition, these countries share almost the same geographic, political, economic, and financial aspects that might influence their education funding and development policies. They also share unique cultural, and social characteristics with Oman such as the same language, religion, tribal society, history, and traditions. This research highlights some of the successful income diversification strategies adopted by Qatar and U.A.E. to sustain the funding of their education systems. The learned lessons from these two countries and other oil dependent nations guided the researcher in developing a more sustained education funding policy for Oman outlined by the implementation of the classic model of the policy process. This research helps in exploring and formulating new funding policy model that can help Oman to move away from its current dependency on oil revenues, suggest new income resources to sustain the country's education development, and reduce its sensitivity to any fluctuation in oil price.

Research Questions

The researcher used a quantitative research design in conducting this research. This study aimed to explore the following research questions:

1. What was the relationship between education expenditures and oil prices in Qatar and U.A.E from 1975 to 2015 in comparison to Oman?

2. What alternatives can Oman or other countries use to generate funding for education?

3. What did Qatar and U.A.E. do to diversify their economy to make education spending less sensitive to oil price fluctuations? How might this apply to Oman? And what are the political challenges to making these changes?

Significance of the Study

This study is unique due to the limited research that investigated the effects of export dependency, and its influence on financing the education system in Oman. The Omani education system is very dependent on oil money and needs new studies that search for some more reliant sources of income to finance its education system away from oil. Furthermore, this study enriches the education field in the Middle East, and encourages other scholars to continue investigating the effects of the different economic crises on education budget allocation in the GCC countries, especially in Oman.

In addition, this research is important for the Omani education policymakers and leaders in the Ministry of Education, Ministry of Higher Education, Ministry of Finance, and the Supreme Council for Planning because it will guide and inform their future decisions in considering new income diversification strategies, whenever faced with an economic crisis. Finally, this research will set the floor for developing a sustained education funding policy model for Oman to move away from its current dependency on oil revenues.

Conceptual Framework

This study collectively utilizes both the human capital theory (HCT), and the classical stage model of the policy process as the conceptual framework to examine the effects of export dependency on education funding policy in Oman. The human capital theory (HCT) describes the stock of knowledge and skills which enables people to perform work in order to reach economic value (Burton-Jones & Spender, 2011). The constructs of this theory include education in terms of knowledge as well as skills, and the productivity at work. This theory relates to this study as it suggests that educating people yield economic benefits for their society. Applying this to this research promises that if Oman continues to invest in high-quality education of its population, it will improve their productivity at work. This theory also helps in constructing the discussion around the need for other funding resources to keep the education expenditure going on in a stable trend. Moreover, the human capital theory supports the researcher's discussion about the oil producing nations' need to diversify their income sources for education spending to sustain its development and maintain their economic growth.

In addition, the researcher used the classical model of the policy process to offer a general framework to analyze the current education finance situation, and ways to deal with it. This model has six stages including: definition of the issue, agenda setting, formulation of the policy, policy adoption, implementation of the policy, and evaluation of the implemented policy (Fowler, 2000). These six stages of policy process model guided the researcher attempts in constructing and designing new education funding recommendations for Oman, based on the successful diversification efforts led by Qatar and U.A.E. in the Gulf region.

Definitions

Education hubs- Education cities that host well known academic institutions from around the

globe in order to attract foreign students, scholars, programs, research and development

companies, and educators to produce knowledge, training opportunities, education, and

innovative research (Knight, 2014).

Enrolment in Primary Education- The total number of students enrolled in both public and

private primary education (World Bank, 2017).

Enrolment in Secondary Education- The total number of students enrolled in public and private

secondary education (World Bank, 2017).

GCC- The Gulf Cooperation Council is an economic and a political alliance formed in 1981,

including six countries, which are the Sultanate of Oman, the Kingdom of Saudi Arabia,

the United Arab Emirates, the State of Qatar, Kingdom of Bahrain, and the State of

Kuwait (Encyclopedia Britannica, 2015).

GDP- Gross Domestic Product measures the total monetary value of all goods and services

produced by the country in a specified time. The GDP has three different ways to view

it: the production approach, the expenditure approach, or the income approach (Callen,

2012).

GDP per Capita- Is the gross domestic product divided by population (World Bank, 2017).

Government Expenditure on Education as % of GDP- The total general government expenditure

on education as a percentage of GDP. It is a result of dividing the total government

expenditure for a specified level of education by the GDP, and then multiply the result by

100 (World Bank, 2017).

HCT- Human capital is the knowledge and skills as a result of investing in education and health

(McMahon, 2009). The Organization for Economic Cooperation and Development (OECD) defines the Human Capital Theory (HCT) in its glossary of statistical terms as the productive wealth stemming from the labor force, their skills, and their gained knowledge (OECD, 2001).

Oil Price Shock or Fluctuation- unanticipated and a surprise change in oil price in the market (Baumeister & Kilian, 2016).

Oil Rents- The difference between the price of the produced crude oil and its total production costs (World Bank, 2017).

Privatization- The process of moving the control, financing, and administration of the education system from the government to the private sector, either as corporations or individuals (Sanyal, 1998).

Total Labor Force- The total labor force that supply labor in a specified time including the employed and the unemployed population (World Bank, 2017).

Total Population- The total population count regardless of their status or citizenship (World Bank, 2017).

Assumptions

In this study, the researcher assumes that the National Center for Statistics and Information (NCSI) in Oman, the Federal Competitiveness and Statistics Authority (FCSA) of U.A.E., the Ministry of Development Planning and Statistics (MDPS) in Qatar, the Gulf Cooperation Council Statistics Center (GCC Stat), and the International Monetary Fund (IMF) are keeping accurate and well recorded data. The researcher also assumes that these entities have the needed data on oil prices, government education expenditure on education, Gross Domestic Product (GDP), total labor force, oil rents, GDP per capita, total enrolled students in the primary

and secondary levels of education for the entire period covered by this study

In addition, the investigator assumes that these authorities have recorded these data information monthly, quarterly, semi-annually, and annually from 1975 to 2015. If this assumption is not true or the required data is not available through these statistics sources, then the researcher will collect the needed data directly from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the World Bank Group Organization online databases. Finally, the researcher assumes that all the needed data is in terms of U.S. Dollars. If that is not true, then the researcher will convert all amounts from its local currency to its equivalent in U.S. Dollars.

Limitations

The limitation in using secondary data stems from the uncertain authenticity of the extracted data. The researcher tried to overcome this limitation by using only trusted online databases and original statistical sources such as the Omani National Center for Statistics and Information (NCSI), the Federal Competitiveness and Statistics Authority (FCSA) in U.A.E., the Ministry of Development Planning and Statistics in Qatar (MDPS), and the Gulf Cooperation Council Statistics Center (GCC Stat),

In addition, collecting inaccurate data, or finding missing data is a major limitation in this study because some of the developing countries like Qatar, U.A.E., and Oman, might not have all the statistics and information records needed for this comparative analysis. The lack of correct data, the accessibility issues, and the difficulties met in collecting the necessary data might pose challenges for this project. The researcher attempted to overcome this limitation by looking for the needed data for the past 40 years from 1975 to 2015 only, in hope that the statistics authorities correctly recorded the needed data due to advancement in technology.

Finally, the researcher looked for the needed data from other concerned world-class organizations such as the UNESCO and the World Bank, as these organizations have developed sophisticated and reliable statistical databases throughout the years for almost all countries in the globe. Another main limitation of this study is relying on online statistical databases in finding the statistical data for the investigated oil dependent nations. However, the researcher attempted to overcome this limitation by communicating directly to the Qatari, Emirati, and Omani statistical authorities if considered necessary.

Delimitations

The researcher delimited the variables of the quantitative research part of this study to GDP, GDP per capita, education expenditure as a percentage of GDP, labor force, population, oil prices, oil rents, and total number of enrolled students in the primary and secondary levels of education. Those chosen factors are the dependent variables used to control for the statistical tests needed to achieve the purpose of this study. Adding other variables and details to this statistical analysis are outside the scope of this research. Another delimitation is limiting the oil producing countries to Qatar and U.A.E. only. The researcher chose Qatar and U.A.E. because they both share the same geographic, political, economic, cultural, religious, and socio-economic factors with Oman. Furthermore, they are close neighbors to Oman, major oil exporting countries, members of the GCC, and most importantly, they have successfully overcome their dependence on oil by strategically diversifying their income resources.

Overview of the Study

Chapter Two explores the historic background information about the educational, economic, and political situations in Qatar, U.A.E., and Oman. In addition, it offers an extensive review of the selected literature focusing on education funding, export dependency, income

diversification solutions used by other nations to sustain their education development. Furthermore, it explores the effects of oil price fluctuations on the education expenditure in the Middle East, and other oil producing countries around the world. Chapter Three presents the methods section, in which the researcher describes the study design, methodology, data collection, and data analysis procedures in more details.

Chapter Four highlights the study results in a narrative, tabular, and chart forms. Finally, Chapter Five includes results discussion, conclusions, and recommendations for the education leaders in the Sultanate of Oman to transition to other funding structures to sustain future developments for the education sector in the country. It is my hope that this study will inspire other scholars to explore the effects of oil dependency, and investigate in more depth its impacts on financing the education systems in Oman, and the rest of the oil producing nations.

CHAPTER 2

LITERATURE REVIEW

Overview

This chapter offers an extensive literature review investigating education funding, export dependency, and its effects on the economies of the oil exporting countries. It discusses oil revenues and the increasing demand for education investment in the Middle East, and the need to diversify income sources in oil dependent economies. This chapter begins by offering a historic background information about Oman, U.A.E., and Qatar, including their political, educational, and economic developments. The reviewed literature covers education investment and oil money, education spending in oil dependent economies, education funding patterns in the Middle East, education development and diversification of resources, and privatization as a form of diversification of resources. Finally, this chapter explores the Human Capital Theory (HCT) and the classic model of the policy process as they apply to human capital development and formulating a new education funding model for Oman.

This literature review relates to my topic as it highlights oil prices and its effects on education financing and economy growth for the oil producing nations in the global market. The reviewed literature reveals the gap in research and the great need to explore in more depth oil export dependency, education expenditure, and income diversification alternatives for Oman with comparison to the other more diversified oil dependent economies.

Oman's Political, Educational, and Economic Development

The Sultanate of Oman has never been a British colony, but declared its independence after the expulsion of the Portuguese in 1650. His Majesty the Sultan Qaboos Bin Said Al-Said became the ruler of Oman on July 23, 1970 in succession from his father. Politically, the country

is practicing a neutral foreign policy, which helped in keeping great relationships with all nations of the world (Lefebvre, 2010). The Sultan is also the Prime Minister, the Foreign Affairs Minister, and the Finance Minister. His Majesty pledged to implement rigorous political and economic reforms since the beginning of His succession. Today, Omani citizens enjoy a modern infrastructure in health, education, transportation, and all other aspects of life with a GDP per capita estimated at $43,700 in 2016 (Central Intelligence Agency, 2017).

Figure one shows the flag of the Sultanate of Oman. The Omani flag consists of three colors which are white, red, and green with the official logo of the country occupying the upper left corner of the flag. Figure two is the map of the Sultanate of Oman. It shows the location and land size of the Sultanate in comparison to the U.A.E. and Qatar, and also highlights the names of the major Omani cities.
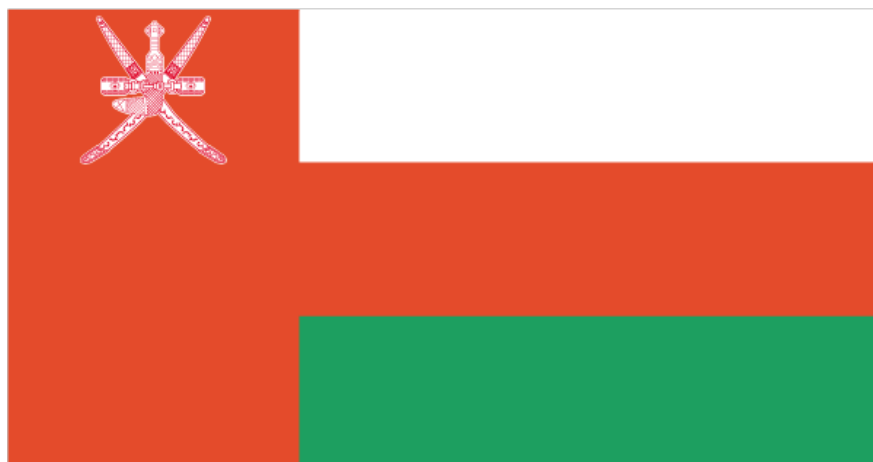
Figure 1. Flag of the Sultanate of Oman, Source: CIA.
    Printed with permission from the CIA. Refer to Appendix B for more information

Figure 2. Map of the Sultanate of Oman, Source: CIA.
    Printed with permission from the CIA. Refer to Appendix B for more information

Oman has 11 administrative divisions divided into specific geographic regions known as governates including: Muscat, Al Dakhliyah, Al Buraimi, Al Dhahira, Al Wusta, Al Batinah South, Al Batinah North, Musandam, Al Sharqiyah South, Al Sharqiyah North, and Dhofar. The Omani Government consists of three branches: The Executive branch, the Legislative branch, and the Judicial branch. The Sultan is the Chief of the State and Head of the Government. Majlis Oman, a bicameral council, is the Legislative branch consisting of the Council of State and the Consultative Council. The Council of State has 85 members appointed by the Sultan. On the other hand, the Consultative Council has 85 members, chosen directly by the people through exercising a simple majority popular voting system. Finally, the Supreme Court is the highest court in the country consisting of five judges. Under the leadership of the Sultan, the Supreme Judicial Council nominates the judges, and the Sultan appoints them. He also has the power to refuse or alter any of these nominees. The other subordinate courts include the Courts of Appeal, Administrative Court, Courts of First Instance, Magistrates Courts, and Military Courts (Central Intelligence Agency, 2017).

Before oil discovery, Oman depended on exporting agricultural and fishing products as the basis for its national economy. Oil explorations in the Sultanate of Oman started in the 1950s. On November 2, 1964, the Shell Oil Corporation (Shell) announced that they discovered oil in commercial quantities in the Sultanate. On October 1, 1967, the Sultanate of Oman launched its first official production of oil gathering approximately 140,000 barrels per day (Rabi, 2011). The discovery of oil in commercial quantities in Oman during the 1960s led to unprecedented transformation and development of the Sultanate from a primitive state to being one of the developed countries in the Middle East (Ehteshami & Wright, 2008). The steady increase in the Omani oil production during the 1970s led to an increase in its oil exports as well.

During the mid and late 1970s, the oil prices increased dramatically in the world market, which increased the oil revenues collected by the Omani government. Being an oil dependent country, Oman implemented strategic development plans financed solely by oil revenues to transform the country into a prosperous state. Substantial investments led to the development of the social and physical infrastructure in all areas such as health, education, transportation, electricity, water, communications, and other aspects of life (Mansur & Treichel, 1999).

Before 1970, Oman had only three schools accommodating less than 1000 boys. There was no formal education for girls at that time. In the 1980s, Oman had more than 700 schools with nearly 300,000 students of both genders. Furthermore, the Sultan Qaboos University (SQU), the only public university in Oman, opened in September 1986 with six colleges including College of Medicine, College of Education, College of Agriculture, College of Arts, College of Science, and College of Engineering (Smith, 1988). The following sections of this chapter will explain the history and relationship between education and the oil industry in Oman, by dividing it into intervals of ten years to better explain their relationship. Each decade had a certain major economic, political, and educational development in which oil revenues affected both the economics of the nation, and its educational offerings and policies during the period from 1970 to 2015.

Stabilization of the Country and Launching the Development in Oman, 1970-1979

After announcing the new Sultan of Oman in July 23, 1970, His Majesty the Sultan Qaboos Bin Said, faced two dilemmas in the 1970s. One was to unite the country into one national government under His leadership because at that time Oman had two separate regimes, the Interior and the Coast, each with its own governmental system. Second, His Majesty the Sultan led a coalition to end the unrest in the Southern parts of Oman, especially in the Dhofar

region. After defeating the rebel forces in the South, the Sultan succeeded in setting up a new Government that united the Interior with the Coast. In addition, he successfully ended the unrest in the Dhofar region, which made him more focused in one main mission, which was to develop His country and extend the basic services of His government to all parts of the Sultanate (Rabi, 2011). In 1970, the new Omani government built three new primary schools in Muscat, which is the capital city of the country. These three schools accommodated around 7000 students in the elementary education level only, and there were no middle or high schools at that time (Ministry of National Economy, 2000). The Ministry of Education expanded its educational plans to develop its infrastructure by building new schools in all levels of education to serve its growing population.

As the production of oil increased, the Omani government used some of the revenues from oil to open new schools in all parts of the country. The Omani government made education accessible in all levels of the primary education system, and free to all for its population to increase the literacy rate in the country. The primary education, 12 years, is free of charge in all levels: elementary, preparatory, and secondary schools. In addition, the government pays for books and transportation for all students in their education institutions. Furthermore, attending the Sultan Qaboos University (SQU) in the undergraduate level is free of charge for all admitted students.

By the end of the 1979, the total number of elementary school students increased from 7000 students to above 92,000 students (Ministry of National Economy, 2000). As the economy of the nation developed, there was a great demand for an educated and skilled human capital to contribute and lead the development of the Omani economy (Al-Shoaibi, 2015). The Ministry of National Economy annual reports show that as oil exports increased, the governmental revenues

and expenditures were, also, increasing each year during the 1970s. In 1971, the Omani national revenues reached 50.1 million Omani Rials (OR), (one Omani Rial = approximately $2.6), and the total expenditures amounted to 46 Million OR. The oil revenues continued to increase in 1972 and reached 53 million OR, while the total public expenditure reached 71.7 million OR. In 1974, the oil prices were increasing, so the total government revenues increased to 303.2 million O.R., with a public expenditure reaching more than 349.2 million OR. As the Omani production of oil was increasing as well as the market prices of oil, the oil revenues increased to 692.2 million OR, and the total governmental expenditures reached 650.4 million OR (Ministry of National Economy, 2000).

The Omani government realized from the beginning that to develop the economy, it should also build its national human capital through investing in education. For example, the total governmental investment in education was around 2,647 thousand OR only, but it represented about 3.8% of the total government expenditure on all sectors, and 1.7% of the GDP in Oman (International Bank of Reconstruction and Development, 1974). As the number of the Omani students increased, the government had to increase the education share in the total budget. In 1975, the total investment in education increased to seven million OR, which accounted for almost 1.8% of the total government expenditures (Ministry of National Economy, 2000).

During the first five years of the Omani development, the total national labor force was about 300,000 Omanis. The Omani human capital consisted of the following: farmers represented about 72.2% of the total human capital, fishermen around 10%, government staff about 6.7%, construction labor around 4%, oil and financial services accounted for 3.3%, and other services around 3.3% (UNESCO, 1974). The increased investment in education, and the

return of the educated human capital to the country contributed positively in improving the Omani human capital, and indeed the economy (Al-Shoaibi, 2015).

From 1970 to 1979, the number of students who completed their high school education was too small to encourage the Omani government to build its first public university. For example, there were only 58 high school graduates in 1976. This number increased to around 27,000 high school graduates in 1999 (Ministry of Education, 2001). In addition, oil prices kept fluctuating a lot during the 1970s, which increased the uncertainty of the oil market, and any sudden decline in oil prices resulted in unexpected annual deficit in the Omani national budget. For these reasons, the high school graduates who wanted to continue their education went abroad to Egypt, Iraq, and other countries to pursue college (Al-Shoaibi, 2015).

In summary, the Omani government has increased the investment in education believing that Omanis must be the leaders of their economy growth. This was very clear in all the annual speeches of His Majesty the Sultan, Qaboos Bin Said, especially when he said: "provide education opportunities even under the shadow of trees" (Kéchichian, 2008, p. 114). He ordered the Omani government to make education accessible to all Omanis regardless of where they live. The Omani government established the Ministry of Education to supervise both the primary education and the higher education during the 1970s. The main goal of the Ministry of Education in the 1970s was to build the necessary educational infrastructure, develop a quality national curriculum, provide quality education, improve the literacy rate, and supervise the higher education needs of the Omanis.

Primary and Higher Education Development in Oman, 1980-1989

During the 1980s, the eruption of the Iranian-Iraqi war negatively affected the oil industry in the Gulf region, which is the hub for most of the oil production of the world. Oil

prices continued to fluctuate causing major instability in the budget planning for the Gulf Countries, and Oman in specific. The Ministry of National Economy annual reports showed that the Omani public revenues and expenditures were fluctuating as well, but in an increasing pattern. For example, Oman's national revenues increased to around 923.7 million OR in 1980, and the total national expenditures reached 959.8 Million OR, with a recorded deficit of over 36 million OR. In 1981, the total national income from oil continued to increase reaching 1,262 million OR, while the total public expenditures reached 1,223 million OR. The Omani government recorded a surplus of about 39 million OR during 1981. Due to the fluctuations in oil prices and the unrest in the region, the total government revenues decreased to around 1175.4 million OR, while the total national expenditures increased to over 1412.9 million OR. In 1985, the total revenues equaled 1,572.9 million OR, while the total government expenditures reached 1,928.4 million OR, resulting in a total deficit of 355.5 million OR. In 1986, the total public income reached 1,186.9 million OR, while the total public expenditure decreased to 1,886.8 million OR due to the decline in the prices of oil (Ministry of National Economy, 2000).

As the health services and education improved in Oman, its population increased to more than 914,000 people due to the reduction in morbidity and mortality rates. During this period, the Omani government opened more than 370 new schools to accommodate the increased demand for education from its people. Increasing the total investment in education by opening new schools, and spreading education accessibility to all parts of the country had increased the total student enrollment in all levels of education. For example, there were more than 92,000 students in the elementary schools, 14,000 students in the middle schools, and 2000 students in the high schools. Furthermore, there were more than 1800 Omani students continuing their higher education in other countries around the globe (Ministry of National Economy, 2000).

Despite the fluctuation of oil prices, the Omani government continued to increase its investment in the education sector hoping to improve its national human capital. In the early 1980s, the total investment in education reached 4% of the total government budget compared to other vital sectors. The education expenditure allocation accounted for around 5.7% of the total public expenditures in 1983, and increased to over 6.9% of the total government expenditures in 1989 (Al-hejry, 1997). The increased investment in education had increased the total number of the educated human capital which increased the participation of Omanis to over 14.1% of the total labor force in the country, estimated at 171,300 employees in 1980 (Ministry of National Economy, 2000).

The 1980s-era witnessed the opening of several higher education institutions in the country due to the continued increase in the demand for higher education accompanied by the increased high school graduates, and the increased demand for specialized human capital. For example, the Ministry of Vocational Training and Labor Affairs opened several Vocational Technical Colleges, the Central Bank of Oman established the Institute of Banking and Finance, the Ministry of Education supervised the Colleges of Education, and the Ministry of Health managed several Health Institutes (Al-Shoaibi, 2015). In addition, the number of higher education scholarships increased to around 1,282 in 1980, while it reached 2,681 during late 1980s (Ministry of Higher Education, 2001).

Furthermore, His Majesty the Sultan announced that his government would start building the first public university in the country during the celebrations of the tenth national day in 1980. This university holds the name of His Majesty, the Sultan Qaboos University (SQU), and opened its doors for the first patch of students in 1986. It admitted 557 students into five colleges: College of Engineering, College of Science, College of Agriculture, College of Medicine, and

the College of Education and Islamic Studies. In 1987, SQU opened the College of Arts, and

opened the College of Commerce and Economics in 1993. According to the SQU website, the

number of SQU students increased to over than 2400 students in 1990.

Expansion of Education Investment in Oman, 1990-1999

The continuous fluctuations of oil price in the world market did not stop the Omani

government from increasing its annual investment in the education sector, and the development

of its human capital, even when its budget suffered major deficits. In 1991, the total fiscal deficit

reached 283 million OR, 579 million OR in 1992, 518 million OR in 1993, 375 million OR in

1998, and jumped to over 475 million OR in 1999 (Ministry of National Economy, 2000).

Despite the annual deficits suffered, the total government investment in education increased

rapidly. During 1990, the percentage of the total national budget allocated for education only

was 7.2% of the total expenditures on all sectors. This percentage increased to 7.5% in 1991,

and jumped to 7.7% in 1993 (Al-hejry, 1997), and reached 9.2% in 1999 (Ministry of National

Economy, 2000).

The Omani population continued to increase, and reached 1,320,000 people in 1990. In

addition, the number of schools increased to 779 in all levels of the primary education with a

total enrollment of 258,000 students in the elementary schools, 72,000 students in the middle

schools, and 26,000 students in the high schools. In addition, 6,600 Omani students were

continuing their higher education abroad (Ministry of National Economy, 2000). According to

Oman's Census Bureau, the country's population was growing at a rate close to 3.7% annually.

Furthermore, about 50% of the total population were 15 years of age or younger. These

demographic statistics suggest that the demand for primary and higher education will continue to

increase in the future (Al-hajry, 2003).

Human Capital and Education Development in Oman, 2000-2009

Oman kept progressing rapidly in all sectors of life, despite major economic challenges posed by the instability in the oil market. The country realized the need to develop its human capital to provide skilled labor force for the market to sustain its economic growth. In an effort to diversify its income sources and to decrease its dependency on oil revenues, the Omani government launched its 2020 Vision Strategic Plan. The 2020 Vision Strategic Plan projected the total deficit in the skilled labor force to be more than 14% in 2020 (Al-hajry, 2003).

Oman needed more investments in education to improve the human capital development, but income sources are scarce. The Ministry of Education continued to build new schools and improve the educational sector during this decade. In 2000, there were 993 public primary schools, 1010 public schools in 2001, 1022 public schools in 2003, 1046 public schools in 2005, and reached 1053 public schools in 2005. In 2000, the total enrollment of students in these public schools increased to over 555,000 students. The student total enrollment numbers jumped to over 576,000 students in 2003, 568,000 students in 2005, and 563,000 students in 2006 (Center for National Statistics and Information, 2013).

In 2000, the Omani government increased its annual investment in education to over 217,700 million OR. In 2001, the total investment in education continued to increase, and reached 228.5 million OR, 303.9 million in 2004, 360.6 OR in 2005, 406 million OR in 2006, 528.6 million in 2008, and over 578 million OR in 2009 (Center for National Statistics and Information, 2013).

The total percentage spent on education from the total national budget also continued to increase annually. For example, the total percentage spent on education increased to 8.7% of the total fiscal expenditures on all sectors in the country. This percentage reached around 9.6% in

2003. Afterwards, it kept fluctuating as the following: 9.4% in 2005, and 9% in 2006, 8.8% in 2007, 7.7% in 2008, and 8.5% in 2009 (Center for National Statistics and Information, 2013).

As the number of high school graduates was increasing in an annual basis, the need for higher education opportunities continued to rise. As the Omani government was unable to finance opening a new public university, the Omani government gave the opportunity for the private sector to contribute in the education sector by allowing them to open new universities. His Majesty Sultan Qaboos bin Said granted 17 million Rials for Omani-owned private universities such as Sohar University, Dhofar University, Nizwa University, Buraimi University, and Sharqiyah University. This royal grant helped them in the construction of new buildings and facilities in order to improve their education accessibility and quality (Ministry of Higher Education, 2017). According to the SQU website, the Sultan Qaboos University added two more colleges to its campus: College of Law in 2006 and College of Nursing in 2008 to absorb more high school graduates, and provide quality education to yield the needed skilled human capital to contribute to the development of the prospering Omani economy.

Education Investment and Dependency on One Source of Income, 2010-2015

In 2010 and 2011, the number of public schools increased to 1040 schools in all levels of education. In 2012, the number of public schools went up to 1043 schools, and that number decreased to 1042 schools in 2013. In 2010, the total enrollment increased in all public schools to 523,000 students. In 2011, the total enrollment decreased to 517,000 students, 515,000 students in 2012, and 517,000 students in 2013 (Center for National Statistics and Information, 2013).

In 2010, Oman invested more than 669.5 million OR in education. While it continued to increase in the following years as follows: the total educational expenditures reached 737.3

million OR in 2011, about 866.2 million in 2012, and it jumped to over 920.1 million OR in 2013. The total investment in education in terms of the total percentage of the national budget continued to grow as well. For example, educational spending in Oman reached 9% of the total expenditures on all sectors in 2010. This percentage decreased to 7.4% of the total fiscal expenditures in 2011, decreased again to 6.8% in 2012, and slightly increased to 6.9% in 2013 (Center for National Statistics and Information, 2013).

During this period, the Gulf Countries Council (GCC) countries enjoyed a long period of high oil prices, above $140/Barrel. Oman used the excess in its national revenues from oil to speed up the development of its infrastructure, especially in education, health, and transportation. For example, the Omani government announced that the second public university, Oman University, is going to open soon. In addition, the completely new Muscat Airport will open on March 2018 beside some other regional airports like the opening of the new Salalah Airport in November 2015. New express highways are under construction with global building standards, which will accommodate the rapid increase in transportation needs in the country. The economy was blooming as oil prices continued to rise well above $140/ Barrel. Suddenly, oil prices started to drop dramatically in the last two years and reached below $45/Barrel. The unexpected drop in oil prices put the Omani economy in a deep recession, and emphasized the need to look for new sources of income to finance its ambitious projects that are still under construction. Today, the Omani Government find itself in a situation where it must stop some of the planned and approved projects, and to postpone others until oil prices rise again. At the same time, the Government should look for other sources of income to finance its multi-billion dollar projects that have already started, even if that means borrowing some money from local and international banks.

Political, Educational, and Diversification Strategies in the U.A.E.

The United Arab Emirates (U.A.E.) located on the Arabian Peninsula, between the Sultanate of Oman on its East and North, the Kingdom of Saudi Arabia on its West and South, and its coastline extends along the Oman Gulf and the Arabian Gulf. The U.A.E. covers a total land of 83,600 square kilometers, as shown in the map of the U.A.E in Figure 4. Abu Dhabi is the capital city of the U.A.E., and it is one of the major cities in the country beside Dubai and Sharjah. The flag of the U.A.E. consists of three equal horizontal stripes; the top stripe is green, the middle one is white, while the bottom stripe is black. In addition, there is another vertical red stripe on the left side of the horizontal stripes, as illustrated in Figure 3 (Library of Congress, 2007).

Figure 3. Flag of the United Arab Emirates, Source: CIA.
Printed with permission from the CIA. Refer to Appendix B for more information

Figure 4. Map of the United Arab Emirates, Source: CIA.
Printed with permission from the CIA. Refer to Appendix B for more information

Historical Background and Formation of the U.A.E.

The Qawasim and the Bani Yas tribal sheikhdoms were the major tribal groups that controled the U.A.E. during the eighteenth century. After the British Expeditions against the Pirates on the Gulf in 1818, the British government signed a general treaty with the coastal sheikhdoms to help in ending the pirates' attacks on the ships along the British sea routes to the British East India Company and the Gulf region. In 1853, the British signed a new treaty with the coastal sheikhdoms and became known as the Trucial Oman Coast (Library of Congress, 2007).

The British declared their withdrawal from the Gulf region in 1968, and put an end to their protective relationship with the nine Trucial States in 1971 including: Abu Dhabi, Dubai, Ras Al-Khaimah, Sharjah, Ajman, Umm Al-Quwain, Al-Fujairah, Qatar, and Bahrain (Hudson, 1977). In an effort to face this sudden British withdrawal from the Gulf region, the Sheikhs of the Emirate of Abu Dhabi and the Emirate of Dubai took the first steps into founding a Federation State including all of the Trucial States, starting by uniting their two emirates on February 18, 1968. They invited the other Trucial States to join their union, but Qatar and Bahrain refused. Bahrain announced its independence on August 14, 1971, while Qatar declared its independence on September 1, 1971. The United Arab Emirates announced its independence on December 2, 1971 consisting of only six emirates: Abu Dhabi, Dubai, Sharjah, Umm Al-Quwain, Al-Fujairah, and Ajman. Finally, Ras Al-Khaimah decided to join the federation of the United Arab Emirates in February 1972 as the seventh state (Aartun, 2002).

The U.A.E. Government and Constitution

The United Arab Emirates has a federal government leading the seven states in the Union. The federal government authority stems from five authorities: The Supreme Council of

the Union, the President of the Union, the Vice President, the Council of Ministers, the Federal National Council, and the Judiciary of the Union. While the federal government has authority over Defense, Foreign Affairs, Armed Forces, Health, and Education, each Emirate handles its own finance, oil, civil aviation, security, and investment (Aartun, 2002).

The Supreme Council of the U.A.E. is the highest authority in the federal government consisting of the Rulers of the seven Emirates. The President of the U.A.E. is the Chairperson of the Supreme Council. The Supreme Council elects both the President and the Vice President, and approves the appointment of the ministers. The ruler of Abu Dhabi will always hold the highest power in the Union, the President of U.A.E., while the ruler of Dubai is the Vice President and Head of the Council of Ministers. In addition, nine members of the Council of Ministers are members of the Royal Families of the seven Emirates (Aartun, 2002).

The Federal National Council consists of 40 members from all the seven Emirates of the Union. It has a consultative role and reviews the federal law drafts before sending them to the President of the U.A.E. for His final approval. On the other hand, the Judiciary of the Union is the Supreme Court consisting of its president and five federal judges. The Supreme Court hears the conflicts between the different Emirates and the Union Government. Its rulings will always prevail the local court rulings (Aartun, 2002).

Development of the U.A.E. Education System

Alhebsi, Pettaway, and Waller (2015) traced back the history of education in the U.A.E. and the Trucial States for the past 200 years. Their research conducted a meta-analysis of all the available literature regarding education existence in the Gulf region for the past two centuries. They added that the cultural context in the region encouraged self-education which placed a great emphasis on the importance of interacting through with others to gain knowledge and understand

their religious instructions. Those traditional learning styles developed into more formal

pedagogical methodologies based on official lessons, courses, and policies. They found that the

education development took four phases leading to the current education system. These four

phases include the Mutawa and the Katateeb, Educational Circles, Semi-Organized Education,

and the Modern Education System (Alhebsi, Pettaway, & Waller, 2015).

The first phase in the development of the education system in the region is the

introduction of the Mutawa and Katateeb. Mutawa is the leader of the mosque who, also,

dedicated some of his time to teach both the boys and the girls. He taught the kids Arabic

language to make them able to read and comprehend the values and morals embedded in the

teachings of the Quran and the biography of the Prophet Mohammed. He used to teach his

students using the repetition methodology which depends on making the students repeat and

memorize his lessons. The Mutawa teaches inside his home or inside the mosque, and made his

living from the generous support of the parents and the community as a whole (Alhebsi,

Pettaway, & Waller, 2015).

The Katateeb is a more organized schooling system which has a school or a physical

place for delivering education to students. Most of the coastal areas in the Gulf Trucial States

had Katateeb which resembled the modern primary education which includes teachers and other

educational resources. The existence of a well-established commerce relations with other

nations provided enough resources to expand the Katateeb education system in the coastal areas

(Alhebsi, Pettaway, & Waller, 2015).

The educational circles refer to the second phase in the development of the education

system in the U.A.E. and the rest of the Trucial States. These educational circles resemble the

traditional teacher and student model in which a lecturer transfer his knowledge to the students

aligned into circles headed by the teacher. The leaders of the educational circles are scholars who had knowledge in various subjects like languages, math, and sciences. The Sheikhs of the Trucial States supported and invited the scholars to their schools to teach their students either in the mosque, the Sheikhs Places, or in the scholars' homes (Alhebsi, Pettaway, & Waller, 2015).

Semi-organized education is the third phase in the development of the education system in the Gulf region. The Arab Awakening movement spanning from 1907 to 1953 placed a great emphasis on education as a basis for improving their communities. Due to this movement, new formal schools opened their doors to students in the Arabian Peninsula. After the World War I, the Trucial States brought more teachers from neighboring countries to run the growing number of schools opening in the region. The local leaders and merchants increased their support to open more new schools in the U.A.E. and the Trucial region, especially after ending the British occupation (Alhebsi, Pettaway, & Waller, 2015).

Introduction of the modern education system in the U.A.E. and the rest of the Trucial States is the fourth stage in the education development in the region. The expansion of the schools built during the Arab Awakening Era formed the foundation stones of the current modern education system. Sheikh Mohamed Almahmoud established the first organized modern school which opened its doors to students in the Emirate of Sharjah in 1930. This school used the Kuwaiti books and study materials as the official curriculum for the school. In 1955, Alqasimiah School for females opened its doors for female students as the first female school in Sharjah. The Kuwaiti government established other schools in Ras Al Khaimah and Dubai in 1955 and 1956, respectively (Alhebsi, Pettaway, & Waller, 2015).

This modern education system introduced and financed by the Kuwaiti government in the Trucial region had three education levels including primary, preparatory, and secondary

schooling. The primary education consisted of six years of education moving to another three years of education in the preparatory level leading to the secondary school. The secondary students had to complete three years of education to get their secondary certificate. Students had to travel to Kuwait to take their secondary school examinations before 1967. After the independence of the U.A.E. in 1971, primary education became free and mandatory for both males and females (Alhebsi, Pettaway, & Waller, 2015).

Before 1971, the State of Kuwait financed all the education system in the country until the U.A.E.'s Ministry of Education took over in 1972. Primary education is free to all citizens and the government pays for all the school expenses like books, equipment, and transportation. The U.A.E. University in Abu Dhabi opened its doors to high school graduates in 1976 along with other quality higher education institutions (Market Line, 2016).

The Ministry of Education in the U.A.E. implemented a five-years strategic plan called Education 2020 in an attempt to reform the education system using more advanced teaching techniques in order to improve students' innovation and learning abilities. The new strategic plan introduced improved curricula for mathematics, science, and English to improve their students learning experience and preparedness for the job market. In addition, the Ministry of Education continues to build modern facilities with well-equipped classrooms and computer laboratories in order to enhance education quality and students' learning skills (Library of Congress, 2007).

Beside the U.A.E. University, the Ministry of Higher Education opened four Higher Colleges of Technology in 1988. In 2005, their number increased to twelve campuses across the country with more than 15,000 students. In 1998, Zayid University opened its doors for female students with two campuses located in Abu Dhabi and Dubai. In addition, Dubai established the

Knowledge Village in 2003. This education zone attracted more than sixteen of the top recognized institutions including the top universities, research and development centers, and other e-learning and training institutions from all around the globe (Library of Congress, 2007).

Today, the Ministry of Education supervises the U.A.E. education system with a clear vision and mission statements that ensure producing quality outputs to meet the needs of the local labor market. The Minister of Education in the Emirates leads the education development in the country to reach its present and future strategic goals. He has two other Ministers of State: Minister of State for Public Education and Minister of State for Education for Higher Education. The Minister of State for Public Education is responsible for developing the public education in all levels of the primary education. The other Minister of State for Higher Education is responsible for developing the higher education and scientific research in the U.A.E. He supervises the universities operating in the U.A.E. ensuring the proper implementation of the higher education policies, and ensuring the delivery of high quality graduates that meet the needs of the growing U.A.E. economy (Ministry of Education website, 2017).

Economy Development and Income Diversification Efforts in the U.A.E.

In 1960, the Emirate of Abu Dhabi discovered oil in commercial quantities within its territory. Dubai followed in the discovery of oil in its geographic area in 1966. These discoveries gave the two Emirates the lead in their economic and social development in the U.A.E. Each Emirate in the Union owns its Oil revenues, and this fact gave Abu Dhabi and Dubai the power to lead the federation, and sometimes pay the bill of the other Emirates when in need (Aartun, 2002).

The U.A.E. continued to diversify its income sources by expanding its tourism, renewable energy, real estate, wholesale and retail trade in the Gulf region. In 2014, the non-oil

trade amounted to $ 291.85 billion, while oil exports accounted for almost 50% of the export revenues. Oil price fluctuations can have serious impact on the country's economy if prices remain low for a long period of time, which in turn will affect the expenditures on all sectors of the growing economy (Market Line, 2016).

Elabdin Ahmed (2015) argued that adopting different diversification strategies in oil dependent countries played a major role in sustaining their economic development. He studied the U.A.E. diversification strategies used to increase its income sources to face the instability of the global oil market. He examined the total contribution of the different diversified sectors and their contribution to the U.A.E.'s GDP during the global financial crisis of 2008. The researcher found that U.A.E.'s diversification efforts in other sectors of the economy produced outstanding economic benefits, and improved the economy's performance by moving away from total dependence on oil (Elabdin Ahmed, 2015).

Political, Educational, and Income Diversification Efforts in Qatar

Qatar is a small country extending as a peninsula on the Arabian Gulf just off the east border of the neighboring Saudi Arabia, as shown in the map of Qatar, Figure 6. The flag of Qatar consists of two colors, white on the left, and maroon on the right, as illustrated by Figure 5. The State of Qatar covers a total land area of approximately 11,525 square kilometers, including a number of small islands (Rand, 2008). As Britain put an end to its protective relationship with the nine Trucial States in 1971 including: Abu Dhabi, Dubai, Ras Al-Khaimah, Sharjah, Ajman, Umm Al-Quwain, Al-Fujairah, Qatar, and Bahrain, Qatar announced its independence on September 1, 1971. At that time, Qatar enjoyed a more developed educational and economic systems in the Gulf region, and that was one of the reasons for refusing to join the federation of the U.A.E. (Aartun, 2002).

Figure 5. Flag of the State of Qatar, Source: CIA.
    Printed with permission from the CIA. Refer to Appendix B for more information

Figure 6. Map of the State of Qatar, Source: CIA.
    Printed with permission from the CIA. Refer to Appendix B for more information

The Al-Thani is the Royal family in Qatar which has ruled the country since mid-1800s. Before oil and gas massive discoveries, pearling was the main source of income for the State of Qatar. In 2013, Emir Tamim Bin Hamad became the new President of Qatar. He took power from his father at the age of 33 and started to improve the domestic welfare of his citizens. The Qatari Government is working at fast pace to modernize its infrastructure in all aspects, such as improving the health care, education, and transportation systems in anticipation of the FIFA World Cup hosted in the country in 2022 (Central Intelligence Agency, 2017).

Qatar has eight administrative divisions called municipalities including: Al Doha, Al Khawor, Al Wakrah, Al Rayyan, Al Shamal, Al Shihanya, Al Zaayin, and Um Sallal. The Emir of Qatar is the Chief of State and Head of the Executive branch since June 25, 2013. Sheikh Abdallah Al-Thani is the Prime Minister who is the Head of the Qatari Government. The President of Qatar appoints all members of the Council of Ministers. The Legislative branch consists of a unicameral Advisory Council called Majlis Al Shura, which has 30 members. Finally, the Supreme Court is the highest level in the Judicial branch and consists of the Chief justice and six members. The subordinate Courts include: Courts of Appels, Administrative Court, Courts of First Instance, Courts of Justice, and Qatar International Court and Dispute Resolution Center (Central Intelligence Agency, 2017).

In 1949, the first modern school in Qatar opened its doors to 50 students. By 1954, three other schools opened their doors to Qataris teaching them Arabic, English, Islamic studies, history, math, and geography. In 1956, Qatar established the Ministry of Education and opened the first formal girls' school in the country. In 2002, the Supreme Council of Education replaced the Ministry of Education (Rostron, 2009). Qatar University, the only public university in the country, launched in 1973 with more than 60 study programs (Kindilchie & Samarraie, 2008).

Today, the Ministry of Education and Higher Education is the highest educational authority in the State of Qatar after the Emiri Resolution No. 9 of 2016. The Ministry is responsible for all education affairs in the country including educational supervision, curriculum and learning resources, government schools, early education, and teachers' affairs. The Minister of Education and Higher Education oversees the implementation of the Qatar Vision 2030 which aims to developing a world-class educational system which meets the highest global standards that provide the necessary education for the citizens of Qatar to guarantee their global success and improve their international competitiveness. It also promotes critical thinking, encourages innovation and creativity, and provides world class educational services to Qataris (Ministry of Education and Higher Education, 2017).

Qatar is an active member in the GCC and the Middle East politics. Before 1971, Qatar was a poor tribal state depending on pearl hunting, fishing, and camel breeding as the main source of income (Brewer et al., 2007; Rostron, 2009). Today, Qatari citizens enjoy one of the largest GDP per capita in the world estimated at $129,700 in 2016. Oil and gas production has driven the real GDP growth in the country which accounts for 92% of export earnings and 56% of the total government earnings, which placed Qatar at the world's highest country in per capita income. Qatar has started constructing modern infrastructure projects like new metro, rail, and port systems. In addition, the country is building new sporting facilities including state-of-the-art stadiums and other related facilities to be ready for the World Cup competitions in 2022 (Central Intelligence Agency, 2017).

According to a recent economic study by Bana Abuzayed (2013), the announcement of the FIFA World Cup affected the Qatari stock market return and volatility. The researcher also examined the effect of the announcement on other related stock markets in the GCC countries.

This study found some evidence of abnormal stock market returns, especially in the services sector of the economy of Qatar and the rest of the GCC members. The author concluded that hosting big sport events can improve the hosting country's reputation and attract more foreign investments to the economy (Abuzayed, 2013).

Table one summarizes some vital statistics information about Oman, Qatar, and U.A.E. obtained from the world bank database for the year 2013, while land area and independence year information are from the CIA World Book:

Table 1

Comparison between Oman, Qatar, and U.A.E. in 2013

Country	Education Expenditure as % GDP	GDP/Capita	Population	Labor Force	Land Area (sq. km.)	Independence Year
Oman	4.96%	$20,011	3,711,481	968,800	309,500	1650
Qatar	4.07%	$96,077	2,250,473	1,550,928	11,586	1971
U.A.E.	5%	$42,831	9,006,263	6,232,093	83,600	1971

Note: U.A.E. = United Arab Emirates; sq. km. = Squared Kilometers
Source: World Bank & CIA World Book

Education Investment and Oil Money

Oil revenues are still the main source of income for the Gulf Cooperation Council (GCC) countries: Oman, Saudi Arabia, United Arab Emirates, Bahrain, Kuwait, and Qatar. In fact, the oil dependent countries share the same educational approaches and spending policies where education is one of the vital developing sectors in the economy, hence, there is a certain percentage of the fiscal budget devoted to education and human capital development. Despite the high revenues enjoyed by these countries, oil prices can fluctuate dramatically based on the supply and demand forces in the global oil market posing serious consequences to the oil exporting nations, especially the GCC economies. Unfortunately, researchers did not explore the effects of oil price fluctuations on the education systems in the Gulf region, Oman in specific. The available literature on education and its spending policies existing in oil dependent nations revealed some common concerns, and rather general discussion of the education development challenges.

In general, the Gulf countries increased their financial investment in education infrastructure to sustain an acceptable economic growth and stability for their countries and their people (Al-Yousif, 2008). This study linked education expenditure to economic growth, but it did not examine the effects of total dependency on one source of income and economic growth sustainability in the GCC, especially in the education sector. Tansel and Kazemi (2000) studied the Middle East and North Africa (MENA) educational trends to list some common educational benefits for their growing population, but they did not study the scarce sources of funding received from oil exports to fund the increasing demand for education in the MENA countries. They concluded that education has positive effects on individual productivity, health, nutrition,

better citizenship, and it will have an increased support for democracy in the developing countries of the MENA (Tansel and Kazemi, 2000).

The reviewed literature concluded that the increased demand for education, and development of the human capital, in the GCC, is due to the booming population in the region (Al-hajry, 2003; Al-Yousif, 2008; Tansel & Kazemi, 2000). Al-hajry (2003) stated that Oman is a developing country with a growth rate over 3.7%, and its population is young with an estimated 50% of them are under 15 years of age. His study did not estimate the actual increasing need for education infrastructure in Oman, and did not show actual data to confirm the amount of education growth needed by the country in the future.

Oil dependent countries, including Oman, need to consider new strategic plans that can guarantee a continuous funding away from the scary dependence on oil. Jordan, Oman, Saudi Arabia, Qatar, and the U.A.E. showed a more resource intensity at the primary and secondary education levels (Tansel, & Kazemi, 2008). This shows that oil rich countries put more emphasis and importance to primary education than the rest of the MENA countries (Al-Yousif, 2008). Al-hajry (2003) suggested amending the current financial policies and regulations to achieve higher levels of efficiency and effectiveness. While Al-Yousif (2008) found that as oil revenues increase, the GCC educational budgets tend to rise as well, leading to a massive national productivity levels. In the case of Oman, he found that there is a unidirectional causal relationship between human capital and economic growth both in the short and long runs (Al-Yousif, 2008). Nevertheless, those studies did not have clear statistical analysis of how oil price fluctuations might affect the education funding and the economy in each of the developing countries such as Oman.

Furthermore, Khatib (2011) published an interesting article investigating the effect of any increase in oil revenues on the education system in Saudi Arabia, the largest oil exporter in the world market today. He specifically investigated the Saudi Government oil revenues and its influence on the expenditures of their education sector. He studied if the increase in the Saudi oil revenues caused any increase in the investment in education between 1975 and 2007. He used linear regression to analyze the relationship between oil revenues as the independent variable, and education expenditures as the dependent variable. One of the major findings of his study suggested that there is a valid positive relationship between the annual oil revenues on education expenditures in Saudi Arabia. He also concluded that any more increase in oil revenues in the specified period led to a stronger increase in money allocation for the development of education with time in Saudi Arabia (Khatib, 2011).

Researchers agreed that there is an increasing demand for education in the Sultanate of Oman, which supports the sudden boom in its population since 1970 (Al-hajry, 2003; Al-Yousif, 2008; Tansel & Kazemi, 2000). It also showed that funding for education is scarce and it is completely dependent on oil revenues, thus looking for new sources of funding is a necessity. In addition, the published literature recommends introducing new policies and regulations that the Omani government and education leaders must implement to manage financing their education system efficiently. Finally, oil dependency might cause negative, and unwanted effects on the sustainability and development of any education system.

Despite the great demand for education in the GCC region, most of the funding comes from oil revenues. This means that funding for the Omani education system is scarce, and hence Oman must search for new and more sustainable sources of income, beside oil revenues to support its educational growth. For example, the Omani government can consider introducing

the implementation of new education taxes and student loans to finance the education expansion (Al-hajry, 2003). On the other hand, Oman is a tax-free country, and a sudden implementation of those taxes might result in protests and unrest that might erupt mostly by its low-income citizens, which the Omani government wants to avoid. All of these challenges force the Omani government to look for other creative sources of income to support its oil revenues.

Education Spending in Oil Dependent Economies

Most of the oil dependent countries are facing great fiscal challenges about their spending policies and educational approaches. These fiscal challenges for oil dependent countries arise from the fact that oil revenues are often "exhaustible, volatile, and uncertain, and largely originates from abroad" (Barnett & Ossowski, 2002, p. 3). Oil price fluctuations yield serious, yet complex financial challenges to the oil dependent nations. For example, the exhausted oil revenues raise some great issues regarding economic growth sustainability and resources allocation in oil dependent countries, like the Gulf Cooperation Council nations: Oman, Saudi Arabia, United Arab Emirates, Bahrain, Kuwait, and Qatar. In addition, oil price volatility and uncertainty have great impact on the policy planning and financial management in the oil producing countries. The global market controls oil prices, and it can send those changes to the fiscal policies and planning, which eventually will affect educational policies and spending. Policymakers do not have any control over the price of oil, and often must cut their planned budgets according to the unanticipated decrease in oil revenues. These budget cuts and deficits caused by the decline in oil prices globally have significant consequences in establishing and supporting educational systems in some of the oil dependent countries (Barnett & Ossowski, 2002).

Tansel and Kazemi (2000) have investigated the unit cost at all levels of schooling in each of the education systems of the MENA countries to determine the equity in the distribution of resources. Their study did not come up with new solutions to diversify the economy, and did not consider new funding sources for education. For the GCC, another year of average school enrollment in 1960 associated with 0.3% higher growth in the GDP per capita over the years 1960-1990 (Al-Yousif, 2008). The author also did not suggest any new sources of income to sustain the annual growth in the educational sector for the Gulf countries.

Ghalayini (2011) investigated if oil price shocks have any effect on world economic growth in the global market. He compared the effects of any increase in oil prices on the exporting countries like Organization of the Petroleum Exporting Countries (OPEC) members, and on the importing countries. This study highlighted an interesting finding that there is no clear relationship between oil price fluctuations and world economic growth. The results showed that the increase in oil prices did not cause any increase in economic growth for the exporting countries. The author explained his findings by saying any increase in oil revenues found their way out of the exporting countries, and did not perform any economic development goals for the exporters. He added that OPEC countries need to develop their institutions to better use the capital inflows to produce profitable economic projects (Ghalayini, 2011).

On the other hand, the study found that any increase in oil prices affected the importing countries negatively, which has a unidirectional relationship with their gross domestic product (GDP) due to their dependency on oil imports to keep their economies running. This study showed the need for the oil exporting countries to invest in educating their human capital who will contribute positively in the economy growth of their nations (Ghalayini, 2011).

Barnett and Ossowski (2002) argued that oil producing countries are not homogeneous when it comes to the level of their dependency on oil revenues, and unanticipated drops in oil prices. The authors stated that there are wide differences in areas such as the importance of oil revenues to their economies, the size of national oil reserves, maturity of their oil industry, ownership and taxation policies of the oil industry, stage of the economy development, and the overall strength of the financial system in the oil producing countries. These factors combined with oil price fluctuations have great influence in fiscal planning and development sustainability in all sectors of the economy. In addition, some of the oil producing countries did not accumulate enough financial wealth through acquiring large financial assets over their long period of oil production. Asset accumulation over the years of oil production is one of the great strategic fiscal policies that will help in sustaining the funding of future economic development, especially in periods when oil prices and production are low (Barnett & Ossowski, 2002).

It is hard to say that education has been so successful in reducing the dependency on oil revenues in the Gulf countries, more specifically in Oman. In order to reduce the dependency on oil, we should continue developing our education system by moving into knowledge-based economies which will, eventually, reduce the dependency on oil. Wilson (2010) argued that the prominent oil producing countries, and the GCC countries in specific are now less competitive internally and globally. Gulf states are still not competitive in terms of infrastructure, macro economy, and technological readiness, except for the United Arab Emirates and Qatar, which are internationally competitive. The author found some important factors that constrain the international growth competitiveness for the GCC. He stated that the major constraints include: inadequate state of the education systems, lack of national innovation systems, lack of

internationally competitive higher education institutions, and lack of entrepreneurship initiatives (Wilson, 2010).

Furthermore, Wilson (2010) suggested that the GCC should become knowledge-based economies and move away from their dependency on oil. Knowledge- based economies enjoy high literacy rates, excellent primary and higher education systems, high quality research universities, dynamic information infrastructure, and extensive innovation systems. Primary education, higher education, innovation, and training programs are some of the major pillars of international competitiveness. The author suggested some specific reforms that the GCC countries must do to overcome their lack of international competitiveness. He listed the following: reform the education systems to move to the creative thinking pedagogy, develop national innovation centers by investing in knowledge production and application, increase the percentage of GDP spending on research and development, and increase the money distributed for basic research at their universities (Wilson, 2010).

In conclusion, the available literature emphasized the importance of the great need to expand the education system in Oman to accommodate the increasing educational needs of its young population. Oman is one of the major oil producers in the Middle East, which depends primarily on oil revenues to finance all its strategic development plans, including education. The fact that oil prices fluctuate all the time poses a serious problem to sustain the desired growth in the educational sector, especially during sudden declines in oil prices. In addition, the reviewed literature suggested that oil dependent countries should be internationally competitive to reduce their dependency on oil by moving into knowledge-based economies. Oman and the rest of the GCC Governments must search for new sources of income to diversify their economies, and implement some more efficient and effective strategic plans to sustain education development,

and eventually diversify their sources of income, and reduce their dependency on oil exports and revenues.

Education Funding Patterns in the Middle Eastern Countries

Sanyal (1998) stated that governments around the world took the main responsibility of providing all necessary financial resources for funding their expanding higher education systems, especially after the end of the World War II. This trend in the financing pattern was clear by the end of the seventies in most countries, except in countries like the U.S.A., Japan, South Korea, and the Philippines where the private sector played a major role in funding their higher education programs. The main reasons for the dominant governments role in funding the higher education include: the importance of making the expensive higher education accessible to all people especially the poor, the governments' need to influence and control the outcomes of education to meet the increased demand for qualified labor force during the reconstruction period after the World War II, and the need to achieve the highest returns from investing in higher education at both the individual and the societal levels. This funding phenomenon suggests that funding for education is mainly dependent on the economic strength of the public sector in the Arab World (Sanyal, 1998).

Sanyal (1998) argued that the economic growth of the Middle Eastern countries during 1960 to 1994 was not promising and sometimes disappointing for some countries which affected the Arab region overall development, especially the education sector. He added that some of the Middle Eastern countries scored negative average annual growth rates like the United Arab Emirates (-3.4%), Kuwait (-5.2%), Bahrain (-1.7%), while Oman enjoyed positive average annual growth rate of 6.1%. Even though the economic state was weak for most of the Arab

countries, they continued expanding their higher education programs due to the increased demand for qualified labor force (Sanyal, 1998).

Both enrollment ratios and public expenditure on education as a percentage of the gross national product (GNP) showed some increase compared to the rest of developing countries. For example, the gross enrollment ratio in the Arab countries kept increasing from 10.7% in 1985, 11.4% in 1990, and 14.5% in 1995, while the gross enrollment ratio for the rest of the developing countries was 6.6%, 7.1%, and 8.9% for the same years. On the other hand, the public expenditure on education as a percentage of the GNP fluctuated between 5.8% in 1985 and 5.2% in 1990 and 1995, while the rest of the developing countries scored only 4% in 1985, 4% in 1990, and decreased to 3.9% in 1995 (Sanyal, 1998).

Despite the increase in the education investment in the Middle Eastern countries, the financial allocation for higher education was decreasing for several reasons. Sanyal (1998) linked this shortfall in the financing of the higher education sector to the following reasons. First, the demand for higher education increased rapidly at a pace that governments could not cope to finance due to general economic reasons. Second, financial resources allocated more for the primary education regards it as a basic human right and must be accessible to all people. Third, the higher education sector demanded more resources as the developing economy demanded more customized programs to produce the specialized labor force needed by the current market. Fourth, rapid knowledge and technological developments demanded more financial resources to update the obsolete machinery and human skills. Fifth, the expansion in the field of research and development needed more funds. Finally, higher education entities realized the importance to improve the quality of education and research to keep up with the modern world (Sanyal, 1998).

Education Investments and Human Capital Theory

The conceptual framework of this study uses both the human capital theory and the classical stage model of the policy process to study the effects of export dependency on education funding policy in Oman, compared with U.A.E. and Qatar. The Human Capital Theory (HCT), since its introduction in the 1960s, is one of the most influential theories not just in economics, but extends to education and other social aspects of our lives. It has grown in popularity under the leadership of Theodore Schultz, Gary Becker, and Jacob Mincer who are the pioneers and developers of the theory. The Human Capital Theory flourished throughout the years and is popular nowadays between politicians and others, especially when they want to explain the relevance between gaining new knowledge and increased levels of welfare and productivity (Hartog & Brink, 2007). In fact, Human Capital Theory is one of the most influential theories in the economics of education field that has been setting the framework for government policy makers since its introduction in the 1960s (Fitzsimons & Peters, 1994). Tan (2014) argued that the Human Capital Theory is not merely a theory of pure economics, but a holistic theory that can interpret a wide range of human affairs, and guide policymakers to choose the best decisions, especially when education is the drive of the economic development (Tan, 2014).

Human capital is "the knowledge, skills, and attributes acquired by investment in education and health throughout the lifecycle" (McMahon, 2009, p.41). The Organization for Economic Cooperation and Development (OECD) defines the Human Capital Theory in its glossary of statistical terms as the productive wealth stemming from the labor force, their skills, and their gained knowledge (OECD, 2001). Mainly, it refers to the amount of acquired knowledge and skills that a person possesses to improve his economic productivity and status

(Garibaldi, 2006). In addition, human capital can represent the amount of investment people make on themselves to increase their economic production (Olaniyan & Okemakinde, 2008). Some liberals criticized the term "Human Capital" because of its negative connotations with slavery in the U.S.A. They believed the term referred to humans as a commodity or machines, and this issue was so sensitive to the point that Gary Becker was so hesitant to publish his book titled "Human Capital," which led him to win the Nobel Prize in 1992. Subsequently, the term became one of the popular terms in economics and politics that led the development of educational policies around the world (Tan, 2014).

Based on the discussion above, human capital theory is "the stock of knowledge and skills that enables people to perform work that creates economic value" (Burton-Jones & Spender, 2011, p. 75). This definition suggests that the human capital stock is the driving force for any country's economic prosperity. It also means that any investment on human capital will enhance their economic productivity, and hence increase their welfare (Olaniyan & Okemakinde, 2008). In addition, this theory suggests that societies gain economic benefits from their investments in educating their people (Sweetland, 1996).

Assumptions of the HCT

The human capital theory relies on several assumptions. We have seen that most scholars think that the human capital theory emphasizes the essential role that education has in increasing the overall productivity and efficiency levels of workers. In addition, they have argued that any increase in the education investment in human begins will, in turn, increase their cognitive and work skills leading them to be more productive and valuable economically (Olaniyan & Okemakinde, 2008). Benson (1978) stated that the human capital theory stands on two major assumptions. The first assumption states that education contributes to the skills development of

the work force, which will make them more productive. The second assumption states that the total earned income reflects the marginal productivity levels of different categories of the work force. In general, people who invest more in education and other training programs will maximize their benefits by improving their overall skills, productivity, competency, total income, and economic growth levels (Benson, 1978).

Individuals investing in their education will enjoy better incomes than those who do not. Ben-Porath (1967) discussed this assumption into more details in his article, and he used the Becker and Mincer ideas of the life cycle of earnings to support his views. The life cycle of earnings states that people make the most educational investment when they are young by foregoing their current incomes. Education investment mostly done at a younger age, so people will enjoy and receive the returns on their investment for a longer period of time. This means that people investing in their education might not receive its instant benefits, instead they will get the full benefits of their educational investments in their future career advancements (Schatzel, Strandholm, & Callahan, 2012).

People and institutions invest in education and training programs because they believe that it will increase their productivity levels at work. Education and on-the-job training programs usually increase the performance levels of the workforce. Most of the education institutions assess the training needs of their employees and design special on-the-job training plans for their staff to increase their knowledge and abilities to lead them to perform their tasks more efficiently and effectively. Eventually, education and other training programs will help individuals to increase their skills and boost their productivity levels by matching the needs in their work market (Boxall, Purcell, & Wright, 2007).

Nevertheless, the human capital theory (HCT) assumes that education and engaging in continuous training programs will positively affect the economic growth of the nation as a whole. Sweetland (1996) stated that most of the human capital scholars believe that there is a positive correlation between education and economic growth, especially if it increases the work force skills needed in their economies. In addition, investment in education might be very costly at the beginning, but at the end, it will improve the individuals' economic status, and will eventually strengthen their countries' economies as a whole. Lucas (1988) also suggested that human capital accumulation through schooling leads to a concentration of highly educated people who will be a strong motivating force for economic growth and development of any nation.

Finally, education and training programs will improve the skills of the workforce and, therefore, their competency levels in the market place. This assumption suggests that as human beings increase their investment in education and training courses, their skills and competency in the market place will increase as well. In addition, as the workforce increases its education levels and improves its skills through training, it will enjoy better job opportunities. As some of the job descriptions are becoming more specialized, the workforce has to increase its skills and abilities to efficiently perform its more demanding and technical jobs. Western countries have noticed that as they increased their education investment in the workforce, they became more skilled to do their duties, which in turn increased their competency levels and led them to better job positions and pay in the marketplace (Hartog & Van den Brink, 2007). Highly educated and specialized individuals are the experts in their fields. They will perform their jobs better, create a more competitive environment in their work place, and advance to better positions by improving their skills and productivity levels (Ployhart & Moliterno, 2011).

Main Commitments of the HCT

The human capital theory (HCT) supports investing in the education of the individuals of the society in order to increase their abilities and skills to perform their duties effectively. Improving their skills will make them enjoy better job opportunities, open new doors for them to acquire higher positions, and put them in a better position to contribute in the economic growth of their countries.

There is a growing gap between employees' qualifications and the job skills required by employers since 1980s. Technology vast advancement and the increasing number of the expert population in our communities will make us in a short supply for skilled workforce, especially that there are more than 70 million expert workers will retire between 2010 and 2020 (Gordon, 2013). Individuals are more aware now of the importance of developing their skills to widen their opportunities in the work place. The human capital theory commits itself to the development of the cognitive, communication, problem solving, negotiation, technical, and leadership skills of the individuals through investing in their education and on-job training programs.

Strengths of the HCT

The strengths of human capital theory include its ability to help researchers to investigate the relationship between investment in education and the economic and social returns expected in the future. Hartog and Van den Brink (2007) stated that many researchers studied this relationship between education and the expected return in terms of wages. The general findings of these studies show that one more year of education will increase the individual's income by 5% to 15%. Most of the developing countries realize higher percentages of increase in wages because their demand for specialized workforce and highly educated individuals is increasing

(Hartog &Van den Brink, 2007). Romer (1990) explained that higher education will contribute to the faster growth of the economy due to the fact that an increase in the number of educated human capital will increase the number of innovations. In addition, the human capital theory helps in explaining the influence that education can have on the economy (Holborow, 2012). These findings will also help education policy and decision makers to plan the adequate education or training needed to achieve the targeted growth in their economies.

Furthermore, the human capital theory explains the need for the development of individuals by emphasizing the importance of investing in their education. Attending specialized training programs can develop the workforce skills to do their duties more effectively and efficiently. Another strength for the human capital theory is the fact that it focuses on building those skills through helping education leaders to reform their education policies, and improve the education quality to accommodate the increase in the need for more specialized workforce in the market place.

Limitations of the HCT

On the other hand, some scholars have criticized the human capital theory for some of its limitations in explaining the other factors that might affect the increase in productivity or income beside education. Tan (2014) summarized some of the major limitations of the theory into four different categories, which are methodological, empirical, practical, and moral aspects of the human capital theory. He added that even though scholars use this theory in many disciplines like education, sociology, and economics to explain and analyze certain human capital affairs, it had received an intense criticism from educators, sociologists, economists, and philosophers for its limitations (Tan, 2014).

Furthermore, the human capital theory has a limitation because it focuses on the individual alone as the main focus and motive for attaining higher education, which leads to better opportunities, salaries, and economic status. Tan (2014) argued that there are other social, economic, and individual characteristics that play a big role in shaping the future wellbeing of an individual beyond education. Unfortunately, the human capital theory falls short in investigating those factors regardless of their importance in motivating individuals to get a better education (Tan, 2014). Individuals' self-interest guides their motivation to pursue higher education, which varies based on their future goals and level of ambitions are different (Melguizo, 2011).

The empirical criticism of the human capital theory focuses on questioning the empirical consistency of the human capital theory with other theories and empirical studies.   For example, the signaling theory provides a different explanation for higher income for educated individuals. The signaling theory suggests the education level of people indicate their innate characters, intelligence, dedication, time management, and their ability to follow instructions. It suggests that these individual characteristics, not just education, will have a great impact on the future economic wellbeing of individuals (Tan, 2011). In addition, these individual characteristics, experiences, and other aspects might influence productivity and competence beyond their education levels (Melguizo, 2011).

The practical aspect of the criticism of the human capital theory stems from the fact that it puts more stress and burden on the individuals to get their education in order to enhance their social and economic status. In addition, it ignores the responsibility of the governments and their policymakers in educating people. Instead, their objectives expect people to take actions by themselves to reduce the financial burden of the government. In practice, some studies show that

the Western world is suffering from a population that is overeducated due to the lack of good education policies that matches education needs with the work place actual needs (Tan, 2011).

Finally, the human capital theory deals with people as inputs of production, instead of human beings with feelings and emotions. It sees them as active economic subjects, and uses their time and labor to maximize their benefits from their level of production just like machines. Nevertheless, scholars still argue that the human capital theory is sound and strong regardless of its limitations (Tan, 2011).

Benefits of using the HCT

The human capital theory enables us to investigate several issues influenced by education such as individuals' income, skills development, job opportunities, and economic growth. In addition, the human capital theory enables us to investigate and measure the private returns, the social returns, the health returns, and the effect of good parenting on education.

First, the human capital theory helps us to investigate why employers pay some workers more than others. The human capital theory can explain these variations in salaries by relating their incomes to the level of education they have. It makes sense that the higher education an individual has, the more job opportunities he/she, and more job advancement is open for him/her. Furthermore, some employers pay their employees differently for doing the same job because they possess more education, and some improved skills (Sweetland, 1996).

Second, the human capital theory enables us to investigate why some kinds of jobs require certain communication, technical, or leadership skills. Employees know that possessing certain skills and knowledge will open up new doors for them to advance and gain a better pay. This also emphasizes the importance of on-the-job training programs tailored for certain

employees to increase their knowledge and develop their skills to produce more efficiently and effectively.

Third, the human capital theory enables us to study the economic growth expected from acquiring higher education and improving our skills. It encourages people to get more education and develop their skills in order to realize a better economic stability for themselves and their nations. To increase those economic benefits and growth, governments around the world are contributing in educating their population and developing their skills through scholarships, grants, loans, and subsidies (Sweetland, 1996).

Fourth, the human capital theory enables scholars to investigate the private and social returns on education. Some studies show that each extra year of education increases individuals' income by 5%-15% in the developing countries. While each extra year of education contributes to the increase of around 5% for individuals living in the Western countries. Researchers can investigate those percentages as well to prove any social returns associated with any increases in income due to education (Hartog & Van den Brink, 2007).

Finally, the human capital theory can help us investigate some of the benefits of education and training on health and parenting. Some studies show that employers are realizing more incentives from investing in their employees' education and training. In addition, health and parenting skills have a great economic value affecting the overall productivity of individuals. Education and health are the most important investments that affect directly the well-being of people and their communities (Hartog & Van den Brink, 2007).

Education Investment and HCT Research in Oman

Unfortunately, the literature lacks research exploring the human capital theory in order to diversify the income sources, improve the economic growth, and the education development in

Oman. The closest research efforts which studied the human capital theory and the education and economic development in Oman is a PhD dissertation written by Dr. Amur Sultan Al-hajry (2003) at the University of Sheffield, UK. In addition, Al-Harthi (2011) wrote an article about university student perceptions of the relationship between university education and the labour market in Egypt and Oman. These two research efforts are the only literature available in the education field that discusses the effects of human capital theory on the Omani education system and its economy.

Al-hajry (2003) looked for new alternatives and different financial funding mechanisms for the development of the Omani higher education system in the future. He evaluated and analyzed the social and private rates of return to Oman's investment in education. He based his study on the human capital theory concepts, especially the ones that viewed investment in education as a form of economic investment. He assumed that the main motive to investment in education in Oman is the expected economic benefits. He did a cost-benefit analysis and a rate of return analysis to achieve efficient resource utilizations. In addition, he studied the equity and accessibility of the higher education system regardless of socio-economic status for the Omani people (Al-hajry, 2003).

In terms of the study results, Al-hajry (2003) indicated that the cost of higher education to the government is much higher that it is for the individuals because the Omani government is fully subsidizing most of the cost for its citizens. He stated that the current allocation of public resources to higher education is unjustified, and the private sector should contribute in funding the education sector in the country. He added that the private contribution in educating Omanis would reduce costs and increase the social rates of return. He suggested that the government

should deduct some of the education cost from individuals' income after graduation for a total of twenty years of employment to recover some of the educational cost (Al-hajry, 2003).

Al-Harthi (2011) investigated how university students in Oman and Egypt perceive the key relationship between their investment in higher education and the market place needs. His research studied the perceptions of 827 Omani and Egyptian senior university students in commerce, education, and engineering regarding their understanding of the relationship between education and the labor market. He found that the Omani and the Egyptian senior university students attend their higher education because they believe that education will help them get better and more secured employment. In addition, one of the main findings of this research is that the Omani and the Egyptian students think that higher education will increase their chance of getting appropriate and attractive job opportunities in the future (Al-Harthi, 2011).

On the other hand, this study found out that the students are unsatisfied with the current university curriculum and wish for a better and a more challenging curriculum, especially in the Egyptian universities. The research also showed some statistically significant differences among students according to their nationality, gender, and their field of study. For example, the Omani senior university students were more confident about the quality of the Omani higher education in comparison to the Egyptian students. The Egyptian students are asking for better matching between their education curricula and the job market requirements. In addition, the study found that female students are more motivated to finish their education and prepare themselves to enter a career after graduation than males. Finally, the researcher concluded that the field of study had a small impact on the perception of students on the relationship between education and the labor market (Al-Harthi, 2011).

Al-Harthi's study provides great insights about new ways to diversify the income sources and improve the economic and the education development in Oman. This article is a good example of the impact of the human capital theory on the perceptions held by university students in regard to investing in a quality education that prepares them for the job market.

The Classical Model of the Policy Process

In addition, the researcher used the classical model of the policy process to offer a framework to analyze a given situation, and derive a policy to deal with it. This model has six stages including: definition of the issue, agenda setting, formulation of the policy, policy adoption, implementation of the policy, and evaluation of the implemented policy (Fowler, 2000). The classic model of policymaking is the simplest way to transform a bill into a law. This model assumes that the policymaking process proceeds in some preset stages that will lead to the desired policy at the end (Birkland, 2001). The following diagram, Figure 7, illustrates the six stages of the classic model of policy making.

Diagram of the Stages Model of the Policy Process
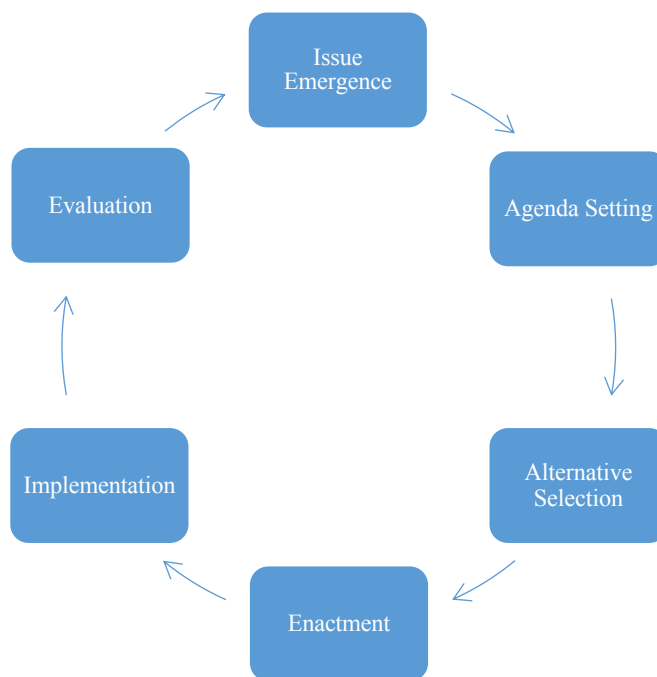
Figure 7. Diagram of the Classic Model of the Policy Process. This diagram illustrates the six
steps involved in the Policy Process Model. Reprinted with permission from
the author through copyright.com. Refer to Appendix C for more information

One of the strengths of this model is that it has stages that policy makers can easily focus their thinking by structuring a clear way to policy making by following six steps only. On the other hand, some scholars criticized this model because it assumes that the policy making is a step-by-step process. Also, the evaluation step can happen at each stage of the policy process not just at the end. Birkland (2001) stated that Peter deLeon mentions that many scholars have contributed greatly to each of the stages of the classic model of the policy process. These scholars include Schattschneider, Kingdom, Pressman, and Wildavsky who analyzed the classic stages model, and contributed greatly to our understanding of the policymaking process (Birkland, 2001).

These six stages of the classic model of policy making guided the researcher in constructing and designing a new education funding recommendation for Oman, based on the successful diversification efforts led by U.A.E. and Qatar in the Gulf region. This model will illustrate the steps that the Omani government should follow to reach the proposed resources diversification for financing its educational system.

<div align="center">**Summary**</div>

The reviewed literature did not investigate the relationship between oil price fluctuations and government expenditure for education. It also did not explore the other adverse effects that oil dependency poses on some other vital economic factors, the development of the Omani education system, and the education budget allocation policy for the educational sector. The available literature studied, in general terms, the effects that education has on the economic growth and the development of the human capital, but did not investigate the effects that export dependency has on education. This research is significant and unique because it offers the baseline information that opens the floor for further studies by other scholars to investigate the

effects that oil dependency and lack of diversification efforts have on education funding in Oman, and the rest of the developing nations. In addition, the researcher hopes that results of this research will inform the education leaders, scientifically, about the negative impacts of depending on one income, and encourages them to diversify their education funding strategies. Finally, the researcher hopes that successful diversification efforts led by other oil producing countries, such as U.A.E. and Qatar, will open our eyes to the problem, and will assist in reducing governments' total dependency on oil revenues.

CHAPTER 3

METHODS

Overview

The main goal of this research is to explore the relationship between education funding and oil price fluctuations from 1975 to 2015 in Qatar, U.A.E., and Oman. In addition, the researcher aims to suggest new economically-sound alternatives to diversify the education funding resources in Oman, in a step to move away from depending solely on oil revenues. The researcher investigated the relationship that exists between government expenditure on education, oil prices, and other economic vitals in the U.A.E. and Qatar from 1975 to 2015, and compared it to the Sultanate of Oman. Moreover, the researcher analyzed the education funding patterns in those oil dependent countries, to explain their successful transition from being totally dependent on oil to some more diversified sources of income. This chapter gives detailed information about the methods used to conduct this study including the design of the study, research questions, methodology, data collection, and data analysis.

Methodology

Design

This cross-sectional study utilized both descriptive and associational approaches of the quantitative non-experimental design. The researcher used the descriptive approach to describe the dependent variable (education expenditure) and the main independent variable (oil price) in Oman, Qatar, and U.A.E. Additionally, the researcher used this approach to describe all other independent variables including population, GDP, labor force, total enrollment in primary and secondary schools, and oil rents.

The researcher adopted the associational approach because the main aim of the study is to examine the association between oil prices (independent variable) and education expenditure (dependent variable) in the three countries (Gliner, Morgan, & Leech, 2011). Hence both dependent and independent variables are of continuous scale (time-series data for forty years), the best analytical approach was correlation analysis and multiple regression (Gliner, Morgan, & Leech, 2011). The researcher used Pearson Product-Moment Coefficient for correlation analysis to examine the relationship between education expenditure and oil prices and the other independent variables. On the other hand, multiple regression analysis helped the researcher to predict the changes in education expenditure from the changes in oil prices, as well as, the rest of other independent variables.

<div align="center">

Research Questions

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This study explored the following research questions:

1. What was the relationship between oil price fluctuations and government expenditure on education in Qatar and U.A.E. from 1975 to 2015, in comparison to Oman?

2. What alternatives can Oman or other countries use to generate funding for education?

3. What did Qatar and U.A.E. do to diversify their economy to make education spending less sensitive to oil price fluctuations? How might this apply to Oman? And what are the political challenges to making these changes?

Research Question One

The researcher answered the first question by collecting the available secondary data for the actual amount of money used in the total budget spent for education as a percentage of GDP in Oman, U.A.E., and Qatar for each year from 1975 to 2015 from the World Bank database online. When encountering missing data, the researcher contacted each of the statistics centers in

the studied countries separately to get the missing data. Sometimes, the centers provided the education expenditures as an actual amount in their local currencies. The researcher converted those amounts into U.S. Dollars using the Google Currency Convertor (Google Currency Convertor, 2017). Then, he divided the collected data by the GDP and multiplied the result by 100 to get the government expenditure on education as a percentage of GDP for each year in each country. This percentage illustrates how much those countries value education, and shows the priority that those governments placed on education expenditure in contrast with financing the other sectors of the economy.

In addition, the researcher compared the available statistics for GDP, population, total labor force, GDP per capita, total oil rents, and total number of enrolled people in the primary and secondary levels of education for Qatar, U.A.E., and Oman from 1975 to 2015. The researcher also controlled for wars that happened in the Gulf area during that time, because wars affect the prices of oil, as well as, the economy performance in the area. Those wars are:

1. Iraq-Iran War (1980-1988)

2. Gulf War I (1990-1991)

3. Gulf War II (2003-2011)

This comparison highlighted the funding structures in those countries compared to Oman, and showed how sensitive they are to oil price fluctuations. Moreover, this comparison emphasized the need for Oman to develop its human capital in order to improve its future economic growth and sustain the country's education funding.

Research Question Two

The researcher answered the second question by conducting an extensive literature review about the alternatives that other education institutions use to generate funding for their

programs. The investigator looked at some of the income diversification strategies used by leading education entities in the U.S.A., China, U.K., and Middle East and North Africa (MENA) countries. The researcher looked for any published journal articles or books from search engines such as EBSCOhost Databases, Education Resource Information Center (ERIC), Google, and Google Scholar. The researcher used key words like "Education Finance," "Education," "Education System," "Education Expenditure," "Education Budget," "Education Funding," "Education Income Diversification," and "Education Funding Resources". The researcher extracted all the related scholar publications that highlighted some of the diversification options used by other education institutions to diversify their income sources and stabilize their education funding. Then, the researcher suggested some of those options that Oman can use to stabilize the funding for its education system.

Research Question Three

The researcher answered the third question by examining the existing literature of the education funding strategies used by U.A.E. and Qatar, that helped them in making their education budgets less sensitive to oil price fluctuations. The researcher looked for any published journal articles or books from search engines like EBSCOhost Databases, Google, Google Scholar, and the Education Resource Information Center (ERIC). The researcher used key words like "Education Development", "Education", "Education System", "Education Expenditure", "Education Budget", "Education Hub", "Economic Diversification", and "Economy Development" for Qatar and U.A.E. The researcher included all the relevant articles that covered the allocated time period.

Those articles highlighted some of the diversification options used by those two oil dependent nations to overcome their dependency on oil. The researcher extracted strategies used

by Qatar and U.A.E. to diversify their economies in sectors like tourism, trading, manufacturing, exporting, agriculture, and aviation. Then, the researcher looked at other strategies used by those two countries to support their education funding. From those strategies, the researcher extracted options that can aid Oman in its continuous efforts to sustain education funding in the country. Exploring new sources of income used by those two countries, helped the researcher in his efforts to develop and outline a six-step process for Oman to sustain funding for its education system. The researcher adopted the classical stage model of the policy process to guide in forming and implementing the basic structure of this proposed diversification process in Oman. At the end, the researcher presented challenges to using similar strategies that the Omani government might face during the implementation phase.

Data Collection

Data collection from secondary sources is not an easy task in developing countries like Qatar, U.A.E., and Oman. That is one of the main reasons for limiting the length of time by studying the available statistical data during the years 1975 to 2015 only. The researcher collected the available secondary data about Qatar, U.A.E., and Oman from the World Bank database online. In addition, the researcher had to contact each of the statistics centers in these countries to acquire for the missing data.

For example, the researcher contacted the Omani National Center for Statistics and Information (NCSI) in Muscat to collect the needed data. Furthermore, the NCSI is issuing some quarterly and annual statistical reports, and books such as the Annual Statistics Book, National Informative Reports, and offers other online statistical publications in its website. The researcher obtained all the needed statistics records in soft copy from the NCSI. The researcher saved the collected data in his personal laptop, and manually transferred the hard copy into soft

copy using Excel worksheets.

The researcher collected data about the government expenditure on education as percentage from the total GDP in Oman, Qatar and U.A.E. for the allocated forty years. Additionally, the researcher collected data about the total number of students enrolled in both primary and secondary schools. Moreover, the researcher looked for data regarding the oil prices, GDP, GDP per capita, and oil rents in U.S. Dollars from 1975 to 2015 for the three countries. In addition, the researcher collected data regarding the total population and labor force for same time period.

The researcher used the World Bank and the UNESCO databases online to get most of the needed data, and collected oil prices from OPEC database online for the studied period. Similarly, the researcher collected any missing data by contacting the Federal Competitiveness and Statistics Authority (FCSA) in U.A.E., and the Ministry of Development Planning and Statistics (MDPS) in Qatar, and the Gulf Cooperation Council Statistics Center (GCC Stat). Furthermore, the researcher converted all of the collected statistics into U.S. Dollars, and saved them in his laptop using the excel software.

The researcher organized and used the following coding system for the quantitative part of the study in the SPSS file as follows, for all the three countries:

1. Government expenditure on education as percentage of the GDP, in the years 1975 to 2015 → coded as *EduExp as % GDP*.

2. Enrollment in primary education (both sexes) for the years 1975 to 2015 → coded as *EnrollPrimaryEdu*.

3. Enrollment in secondary education (both sexes) for the years 1975 to 2015 → coded as *EnrollSecondaryEdu*.

4. Current GDP in U.S. Dollars for the years 1975 to 2015→ coded as *GDP*.

5. Total oil rents in U.S. Dollars for the years 1975 to 2015→ coded as *OilRents*.

6. OPEC oil prices in U.S. Dollars for the years 1975 to 2015→ coded as *OilPrice*.

7. Total population for the years 1975 to 2015→ coded as *Population.*

8. Total labor force for the years 1975 to 2015→ coded as *LaborForce.*

9. GDP per capita in U.S. Dollars for the years 1975 to 2015→ coded as

   GDPperCapita.

10. Wars that happened in the Gulf area for the years 1975 to 2015→ coded as

    WarsDummy. The researcher handled this variable as dummy variable, and coded it

    as "1" for the years in which any of the above-mentioned three wars happened in the

    area, and "0" for the years without wars.

The investigator then transferred the collected data into the Statistical Package for the

Social Sciences (SPSS) version 24 (IBM Corp., Armonk, New York) software. The researcher

performed the assumptions tests required for running multiple regression test as detailed in the

data analysis section below. Finally, the researcher conducted the various statistical tests,

including descriptive analysis, Pearson's correlation analysis, and multiple linear regression for

each country separately.

Data Analysis

In this study, the researcher used statistical analysis only for the first research question.

In order to do so, the researcher analyzed the collected data for the three countries separately in

four stages as follows:

1. The researcher used the E-Views student version 9 software to perform stationary testing

   for all of the variables for each of the countries separately. Then, the researcher took the

first difference for any un-stationary variables to make them stationary before running the regression analysis. For Oman And Qatar, all the variables were not stationary, except for oil rents. Hence, the researcher used the first difference (growth rate) for education expenditure, oil prices, labor force, and GDP per capita. For the total enrollment in both primary and secondary schools in Oman was not stationary even after the first difference, and hence, the researcher excluded it from the multiple regression, see Appendix M and Appendix N, for Oman and Qatar stationary tests respectively. However, for U.A.E., both total enrollment and labor force were non-stationary even after the first difference, and hence, the researcher removed them from the regression model, please refer to Appendix O. The researcher used the growth rate of government expenditure, GDP per capita, and oil prices for U.A.E. to make those variables stationary, and be able use them in the regression model. The researcher tested for other assumptions of multiple regression analysis for all the three countries (Gliner, Morgan, & Leech, 2011). The assumptions testing resulted in:

1. There is a linear relationship between the dependent variable and the independent variables, using scatterplots, as shown in Appendices G, H, and I.

2. The residuals of the regression (the errors between observed and predicted values) should have a normal distribution, using Q-Q plots, as illustrated in Appendices G, H, and I.

3. There is no multicollinearity between the independent variables, which means that they are not highly correlated with each other, using Variance Inflation Factor (VIF) values. The researcher excluded variables that yielded VIF values of ten or more, such as GDP and GDP per capita.

4. Homoscedasticity assumption, looking for similar variance of error across different values of the independent variables, using scatterplot of residuals versus predicted values, as shown in Appendices G, H, and I.

5. All the observations of the variables included in the regression model are independent, especially the time series data. Furthermore, the researcher used Durbin-Watson test to look for values over "1" and less than "2.5" (Karadimitriou & Marshall, 2017).

2. The researcher used the SPSS software to run a descriptive analysis of the government expenditure on education as percentage of the GDP (as the dependent variable) for each country for the allocated 40 years' time frame with the following factors (independent variables):

1. The total number of students enrolled in both primary and secondary education, by summing up the two columns of (*EnrollPrimaryEdu)* and *(EnrollSecondaryEdu)*

2. Oil prices in U.S. Dollars

3. Total labor force

4. Total population

3. The researcher used the SPSS software to run a linear regression analysis of the government expenditure on education as percentage of the GDP (dependent variable) for each country separately, for the allocated 40 years' time frame, with the following factors (independent variables):

1. The total number of students enrolled in both primary and secondary education, by summing up the two columns of (*EnrollPrimaryEdu)* and *(EnrollSecondaryEdu)*

2. Oil prices in U.S. Dollars

3. GDP in U.S. Dollars, which the researcher excluded due to failing collinearity test, if used with the GDP per capita

4. GDP per capita in U.S. Dollars

5. Total oil rents in U.S. Dollars

6. Total labor force

7. Total population, which the researcher excluded due failing collinearity test, if used with labor force

4. The researcher used the SPSS software to run a bivariate correlation analysis of the Government expenditure on education as percentage of the GDP (dependent variable) for each country for the allocated 40 years' time frame with the following factors (independent variables):

1. The total number of students enrolled in both primary and secondary education, by summing up the two columns of (*EnrollPrimaryEdu)* and *(EnrollSecondaryEdu)*

2. Oil prices in U.S. Dollars

3. GDP in U.S. Dollars

4. GDP per capita in U.S. Dollars

5. Total oil rents in U.S. Dollars

6. Total labor force

7. Total population

The researcher answered the second question by reviewing the available literature regarding other income sources used by other educational institutions in different nations to

diversify their education funding. The researcher highlighted all possible income resources that Oman can use to reduce their dependency on oil. Diversification of income will allow for a sustained education funding in oil-dependent countries like Oman.

Regarding research question number three, the researcher reviewed the available published literature about education funding strategies used by U.A.E. and Qatar to diversify their economies. The researcher investigated the other sources of funding alternatives, which helped U.A.E. and Qatar in their transition from being oil dependent to being more diversified in supporting their education systems.

Consideration of Human Subjects

This research used secondary data collected by a third party. Therefore, the researcher did not have any interaction or contact with a human subject. Nevertheless, the researcher did file up an IRB form to gain clearance and a final approval to start this study. The Human Subjects Committee's decision is in Appendix A.

Summary

This chapter outlined in detail the methods used for the statistical design of the quantitative approach used by this study. Additionally, it described in detail the data collection methods the researcher used to gather the needed education and economic information for Oman, Qatar, and U.A.E., along with details for performing their statistical analyses. Moreover, it detailed the methods conducted to do the intensive literature review used to answer the second and third research questions.

CHAPTER 4

RESULTS

Introduction

This chapter outlines in depth the results of this study, which aimed to investigate the relationship between education funding and oil prices in Oman, Qatar and the United Arab Emirates (U.A.E.). Additionally, the researcher studied other variables along with oil prices, that may have affected the education development in those countries like the Gross Domestic Product (GDP), total labor force in the market, the enrollment levels in both the primary and secondary levels of education for both sexes, GDP per capita, population, wars, and oil rents. This chapter outlines the results of the time-series data from 1975 to 2015 for Oman, Qatar and U.A.E, using descriptive and inferential statistics.

The researcher used regression analysis to investigate the relationship between fluctuations in oil price and government education expenditure for all the three countries. At the end of this chapter, the researcher highlighted some diverse funding options used by other countries to support their education system. Additionally, the researcher suggested some approaches that may help the Omani government to sustain funding for their education system.

Research Question One

The Relationship between Oil Price Fluctuations and Government Education Expenditures in Oman

Over the period of forty-one years in Oman, there was an increase in the population from 1975 to 2015 (M = 2129678.88, SD = 8300409.42), along with increase in the total labor force (M = 746963.34, SD = 548455.80), as illustrated in Figure 8.
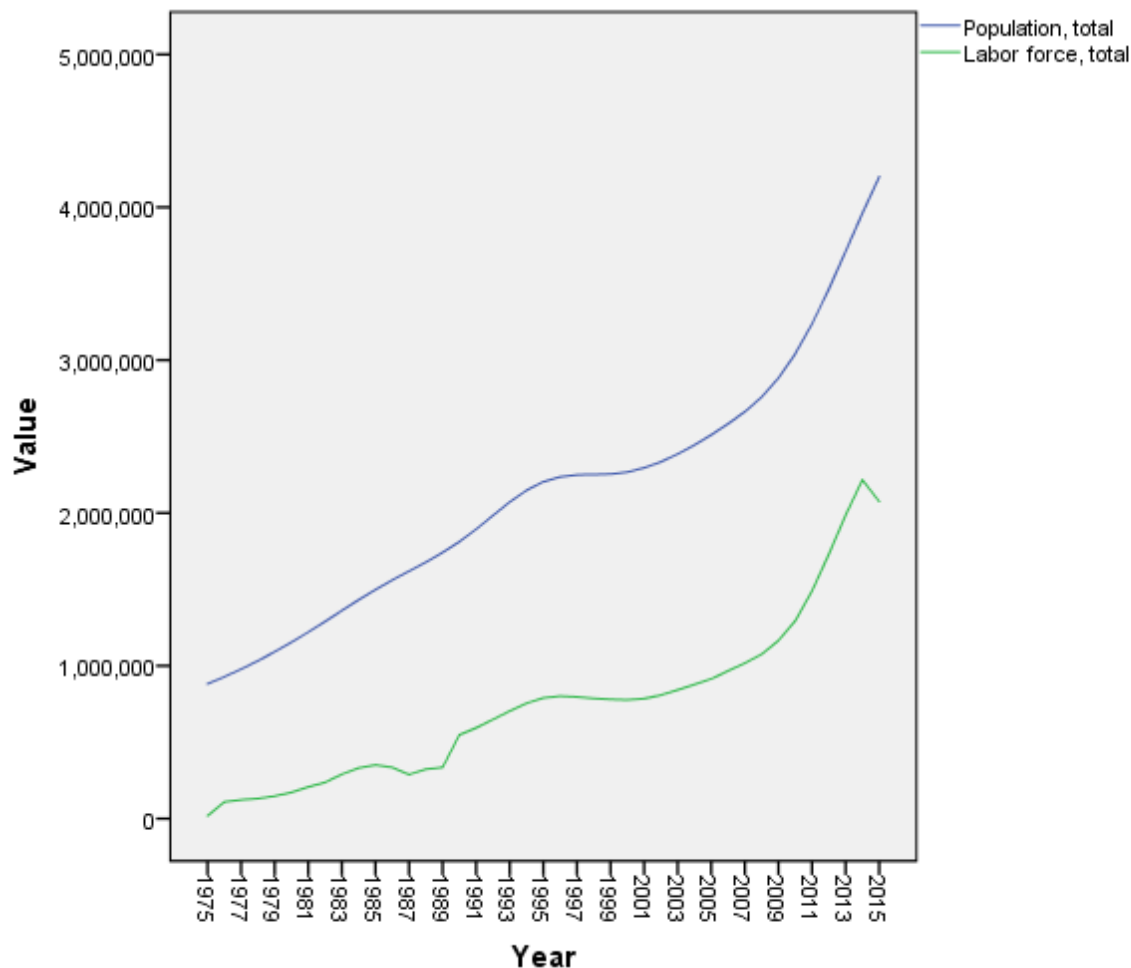
Figure 8. Population and Labor Force in Oman from 1975-2015. This figure illustrates the change in population (blue line) and labor force (green line) in Oman during the period 1975-2015. The illustrated numbers of population and labor force include both citizens and non-citizens.

The resaercher ran correlation analysis using Pearson product-moment correlation coefficient to assess the relationship between Oman total GDP and OPEC oil prices. As demonstrated in Table 2, there was a strong positive correlation between the two variables, $r = 0.927$, $p < 0.001$. As anticipated, the expenditure on education as a percentage of GDP increased when the GDP goes down with lower oil prices, and the opposite was true as shown in Figure 9.

Table 2

Correlation Analysis Using Pearson Product-Moment Coefficient Between GDP and OPEC Oil Prices in Oman

		GDP (current US$)
OPEC Oil Prices	Pearson Correlation	.927[*]
	Sig. (2-tailed)	.000
	N	41

Note: Asterisks denotes significant correlations at the 0.01 level.

Figure 9 Illustrates the Omani government expenditure on education as a percentage from the total GDP in relation to the OPEC oil prices and the total enrollment of students in both primary and secondary schools. Over the past 41 years, the percentage of the Omani expenditure on education naturally increased because of the rise in the total population and in the total enrollment in both primary and secondary schools ($M = 384523.82$, $SD = 211168.06$). However, there was a fluctuation on the percentage of the GDP spent on education expenditure over time.
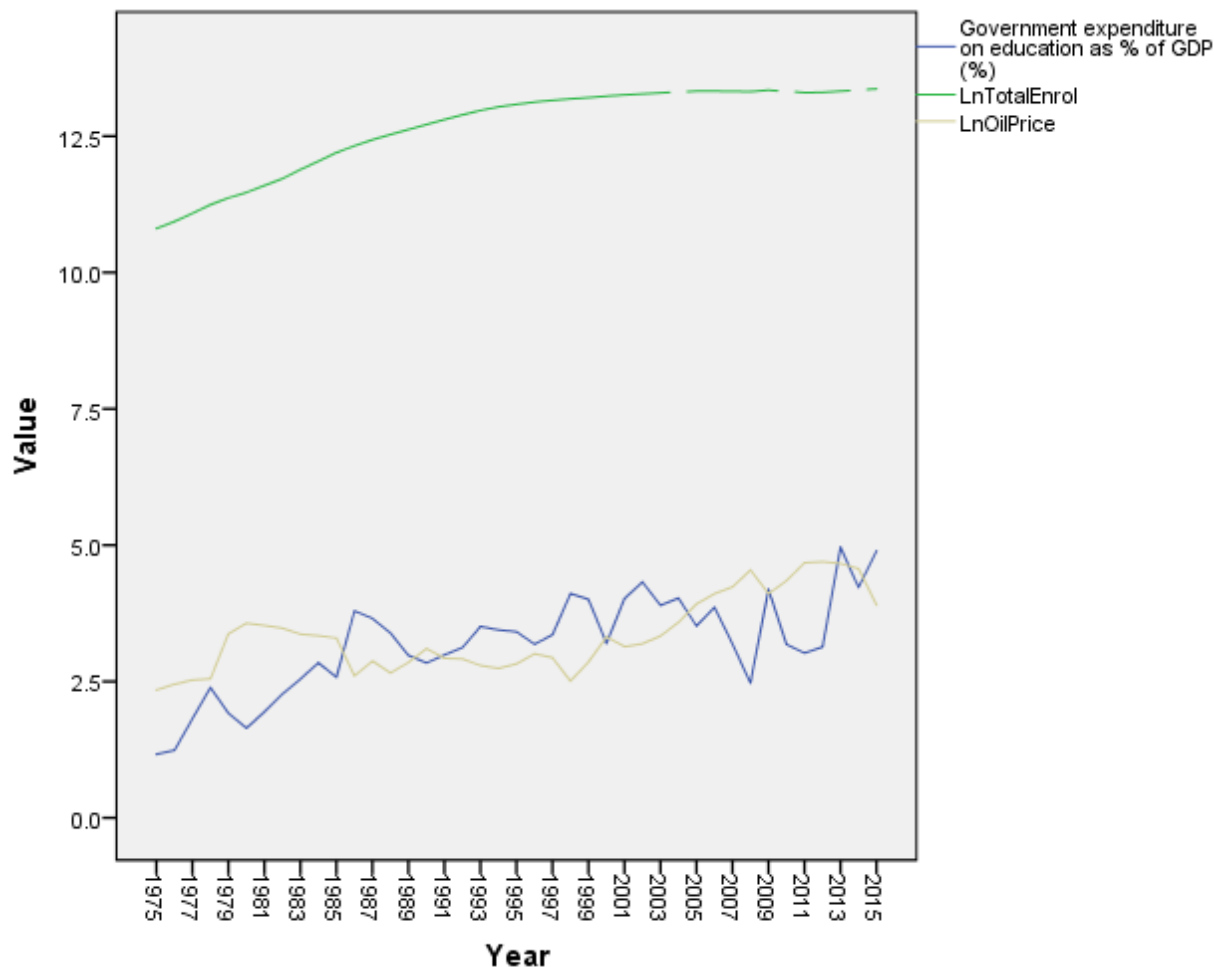
Figure 9. Relationship between the Omani Government Expenditure on Education and Oil
    Prices. This figure illustrates the fluctuation in education expenditure (as % from total
    GDP) in relation to fluctuation in OPEC oil prices over the period from 1975-2015. The
    figure also illustrates the gradual increase in total enrollment in both primary and
    secondary school in Oman from 1975-2015. The discontinuation in the green line
    indicates missing data for the corresponding years.

The researcher ran multiple regression analysis between the percentage of GDP spent on

education expenditure as the dependent variable and the OPEC oil prices, oil rents, wars, and

labor force (independent variables), as shown in Table 3.

Table 3

Model Summary and Univariate Analysis of Predictors on Education Expenditure as a Percentage of Total GDP in Oman

R	R²	Adjusted R²	Std. Error of Estimate	Durbin-Watson
.766	.587	.526	.1450	2.156

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.078	5	.216	**9.650**	.000*
Residual	.760	34	.022		
Total	1.838	39			

Note: This regression model has the percentage of education expenditure from total GDP as the dependent variable. The predictors were oil rents, wars that happened in the Gulf area, growth rate of the OPEC oil prices, growth rate of GDP per capita, and growth rate of the labor force. Significant test statistic is in boldface. Asterisks denotes significant correlations at the 0.01 level.

The results of the regression model from Table 3 indicated that the above predictors significantly explained around 59% of the variance with $F (5,34) = 9.65$, $p < 0.001$. Further regression analysis, as shown in Table 4, indicated that the OPEC oil prices significantly predicted the percentage of the government expenditure on education from total GDP in Oman ($\beta = -0.40$, $p = 0.013$), as did oil rents ($\beta = 0.13$, $p = 0.008$), and GDP per capita ($\beta = -0.871$, $p = 0.001$).

Table 4

Linear Regression Analysis for Variables Predicting the Percentage of Education Expenditure from Total GDP in Oman

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-.287	.145		-1.988	.055		
Oil Price GR	-.396	.151	-.569	-2.624	.013[*]	.258	3.873
Labor Force GR	.011	.034	.037	.319	.752	.911	1.097
GDP/Capita GR	-.871	.247	-.614	-3.533	.001[*]	.403	2.483
Oil rents	.013	.004	.537	2.828	.008[*]	.337	2.968
Wars Dummy	-.024	.051	-.056	-.470	.641	.868	1.152

Note: GR = growth rate. The dependent variable is the percentage of education expenditure from total GDP. The predictors are oil rents, wars in the area, OPEC oil prices, oil rents, labor force and GDP per capita. Asterisks denotes significant correlations at the 0.05 level.

Interestingly, the researcher found that the wars happened in the Gulf area at that times did not predict the expenditure on education. Additionally, labor force was not a significant predictor for education expenditure in Oman ($\beta = 0.011$, $p = 0.75$), as illustrated in Table 4. Furthermore, the researcher found that there was a strong positive correlation between education

expenditure in Oman and population and labor force with (r (39) = 0.75, p <0 .001) and (r (39) =

0.69, p < 0.001) respectively, as shown in Table 5.

Table 5
Correlation Analysis Using Pearson Product-Moment Coefficient between Education
Expenditure, GDP per Capita, Labor Force, Total Enrollment, and Oil Prices in Oman

		GDP/ capita	Labor force	GDP	Oil rents	Population	Oil Price	Total Enroll
Gov Exp	Pearson Correlation	.443**	.691**	.503**	-.468**	.749**	.260	.783**
	Sig. (2-tailed)	.004	.000	.001	.002	.000	.100	.000
	N	41	41	41	41	41	41	38

Note: Total Enroll = total enrollment in both elementary and secondary schools. Double
asterisks indicate that correlation is significant at the 0.01 level. Single asterisk indicates
that correlation is significant at the 0.05 level.

In addition, there was a moderate correlation between education expenditure in Oman

and GDP and GDP per capita with (r (39) = 0.50, p = 0.001) and (r (39) = 0.44, p = 0.004)

respectively. The researcher found that there was a negative correlation between education

expenditure in Oman and oil rents (r (39) = -0.47, p = 0.002). Interestingly, there was no

significant correlation between oil prices and the Omani government education expenditure, as

detailed in Table 5.

The Relationship between Oil Price Fluctuations and Government Education Expenditures in the U.A.E.

From 1975 until 2015, there was a steady increase in the population of the U.A.E., with a sharp upsurge during the early years of the twenty-first century, along with an upsurge in labor force since 2005 as illustrated in Figure 10.
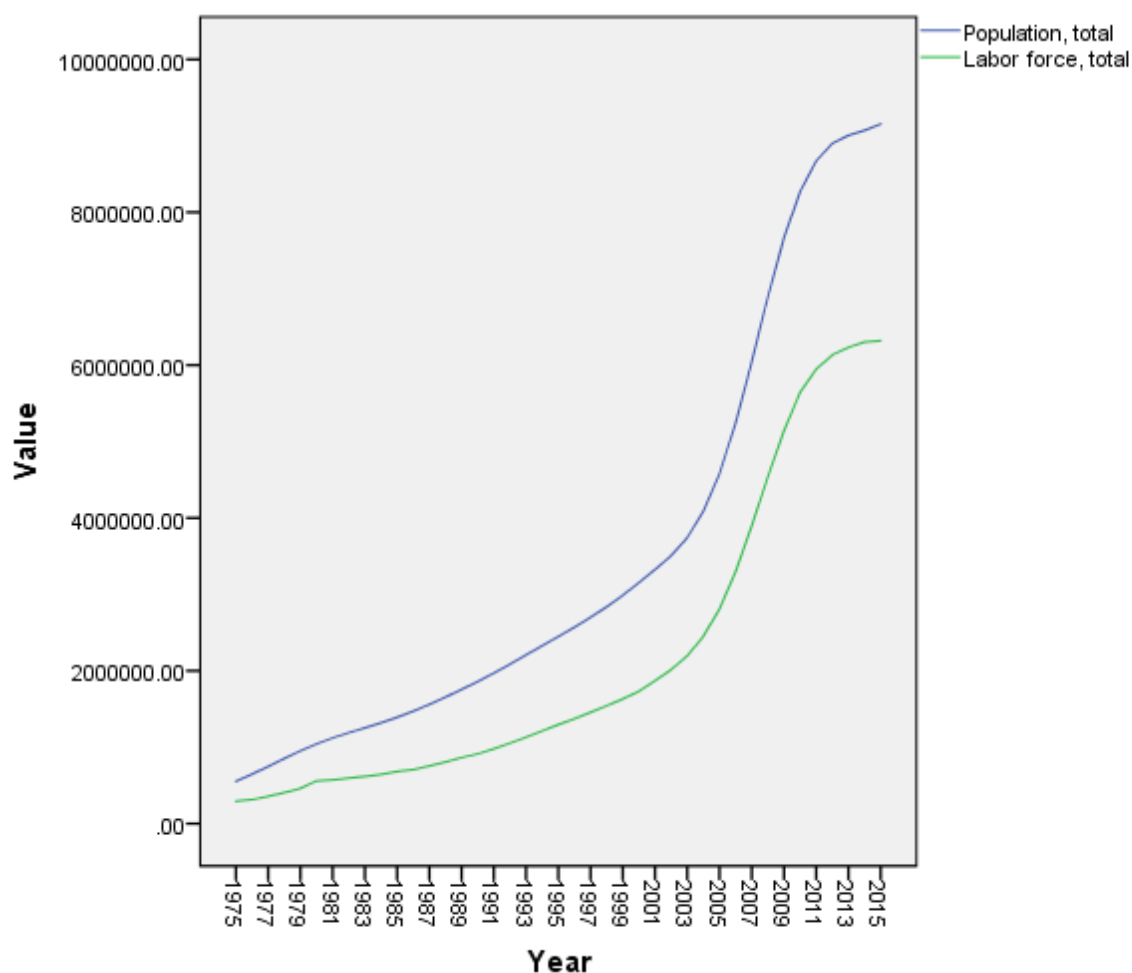
Figure 10. Population and Labor Force in U.A.E. from 1975-2015. This figure illustrates the sharp increase in population (blue line) and labor force (green line) in U.A.E. during the period 1975-2015. The illustrated numbers of population and labor force include both citizens and non-citizens.

Over the forty-one years' period, enrollment in primary and secondary schools in the

U.A.E. also increased, possibly due to the increase in the total population, as shown in Figure 11.
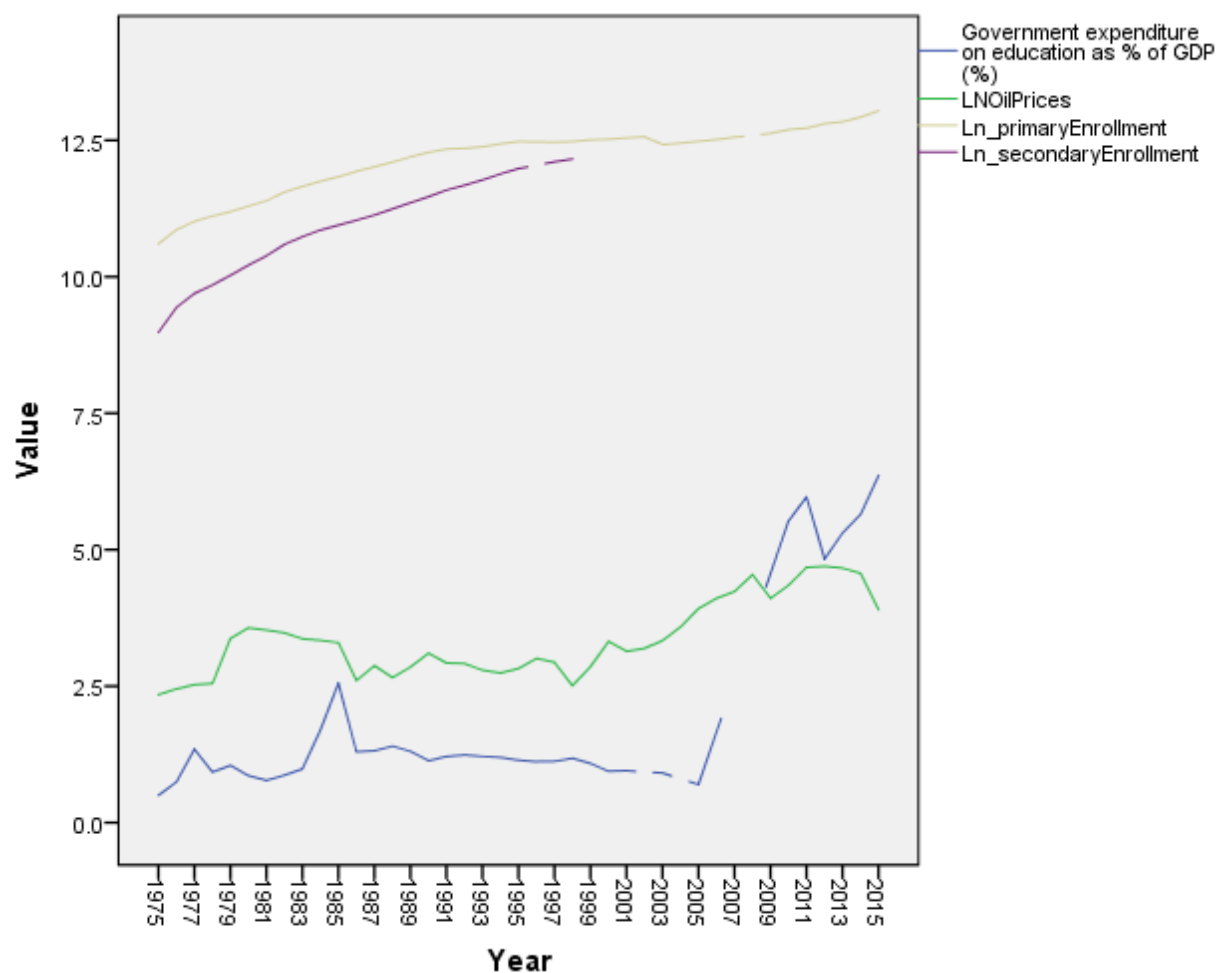
Figure 11. Government Expenditure on Education, Oil Prices and Enrollment in U.A.E.
    Schools. This figure illustrates the change in education expenditure as % from total
    GDP (blue line) in relation to fluctuation in OPEC oil prices (green line) over the period
    from 1975-2015. The figure also illustrates the increase in enrollment in both primary
    (brown line) and secondary schools (purple line) in U.A.E. from 1975-2015. The
    discontinuation in blue and purple line indicates missing data for the corresponding years.

There was no data available for enrollment in secondary schools after the year 1998. In primary schools, there was a slight drop in enrollment in the year 2003, which picked up in the following years. Figure 11 also illustrates the change in education expenditure as a percentage from the total GDP in relation to OPEC oil prices. There was no data found for the education expenditure in U.A.E. from 2006 to 2009. In 2012, there was a slight drop in the government expenditure on education in the U.A.E. that increased immediately the following year as shown by Figure 11.

The researcher ran multiple regression analysis between the percentage of GDP the U.A.E. government spent on education expenditure, as the dependent variable, and the OPEC oil prices, wars, GDP per capita, and labor force (independent variables). The results of the regression model indicated that the above predictors explained only 12% of the variance, as shown in Table 6. However, the model was not significant with $F(4,33) = 1.15$, $p = .35$.

Table 6

Model Summary and Univariate Analysis of Predictors on Education Expenditure as a Percentage of Total GDP in U.A.E.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.35	.12	.02	.38	.91

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.67	4	.17	1.15	.35
	Residual	4.80	33	.15		
	Total	5.47	37			

Note: This regression model has the percentage of education expenditure from total GDP as the dependent variable. The predictors were the wars that happened in the Gulf area, the growth rate of the OPEC oil prices, the growth rate of GDP per capita, and oil rents.

From the linear regression analysis presented in Table 7, the researcher found that none of the above predictors were significant in predicting the government expenditure on education in U.A.E. The fluctuation in OPEC oil prices did not predict the percentage of the government expenditure on education from total GDP in the U.A.E. ($\beta = 0.36$, $p = 0.40$).

Table 7
Linear Regression Analysis for Variables Predicting the Percentage of Education Expenditure from Total GDP in U.A.E.

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1 (Constant)	1.16	.22		5.35	.00		
OPEC Oil Prices	.36	.31	.30	1.15	.26	.40	2.53
GDP per Capita (current US$)	-1.06	0.83	-.31	-1.27	.21	.45	2.21
Oil Rents	-.01	.01	-.21	-.94	.36	.53	1.88
Wars Dummy	.14	.13	.18	1.08	.29	.95	1.05

Note: The dependent variable is the percentage of education expenditure from total GDP. The predictors are wars in the area, the growth rate of the OPEC oil prices, the growth rate of GDP per capita, and oil rents.

From Table 7, it appears that U.A.E. education expenditure might have other variables that the researcher did not include in this regression model, as all the variables in the table were not significant. Moreover, the researcher ran correlation analysis using Pearson coefficient

between the government education expenditure and the other factors, including oil rents, oil

prices, GDP, GDP per capita, labor force, population, and total enrollment in both primary and

secondary schools in U.A.E., as shown in Table 8.

Table 8
*Correlation Analysis Using Pearson Product-Moment Coefficient between Education
Expenditure, GDP per Capita, Labor Force, GDP, Oil Rents, Population, Oil Price and Total
Enrollment in the U.A.E.*

		GDP/ Capita	Labor Force	GDP	Oil Rent	Population	Oil Price	Total Enrollment
Gov exp	Pearson Correlation	-.57**	-.57**	-.60**	-.19	-.56**	-.55**	.24
	Sig. (2-tailed)	.000	.000	.000	.260	.000	.000	.262
	N	39	39	39	39	39	39	23

Note: Total Enroll = total enrollment in both elementary and secondary schools. Double
  asterisks indicate that correlation is significant at the 0.01 level. Single asterisk indicates
  that correlation is significant at the 0.05 level.

From the correlation analysis in Table 8, the researcher found that there was a highly

significant negative correlation with most of the variables. Those variables are OPEC oil prices

(r (37) = -0.55, $p < .001$), labor force (r (37) = -0.57, $p < .001$), GDP per capita (r (37) = -0.57,

$p< 0.001$), population (r (37) = -0.56, $p< 0.001$), and GDP (r (37) = -0.60, $p< 0.001$). In

addition, it illustrates that the correlation between the government education expenditure in

U.A.E. and total enrollment in primary and secondary schools was not statistically significant.

The Relationship between Oil Price Fluctuations and Government Education Expenditures

in Qatar

The collected data showed that there was a slow increase in the population ($M =$ 777285.49, $SD =$ 661140.74), with a small hump during the late 1980s, and a sharp increase in the population after the year 2005, as illustrated in Figure 12.
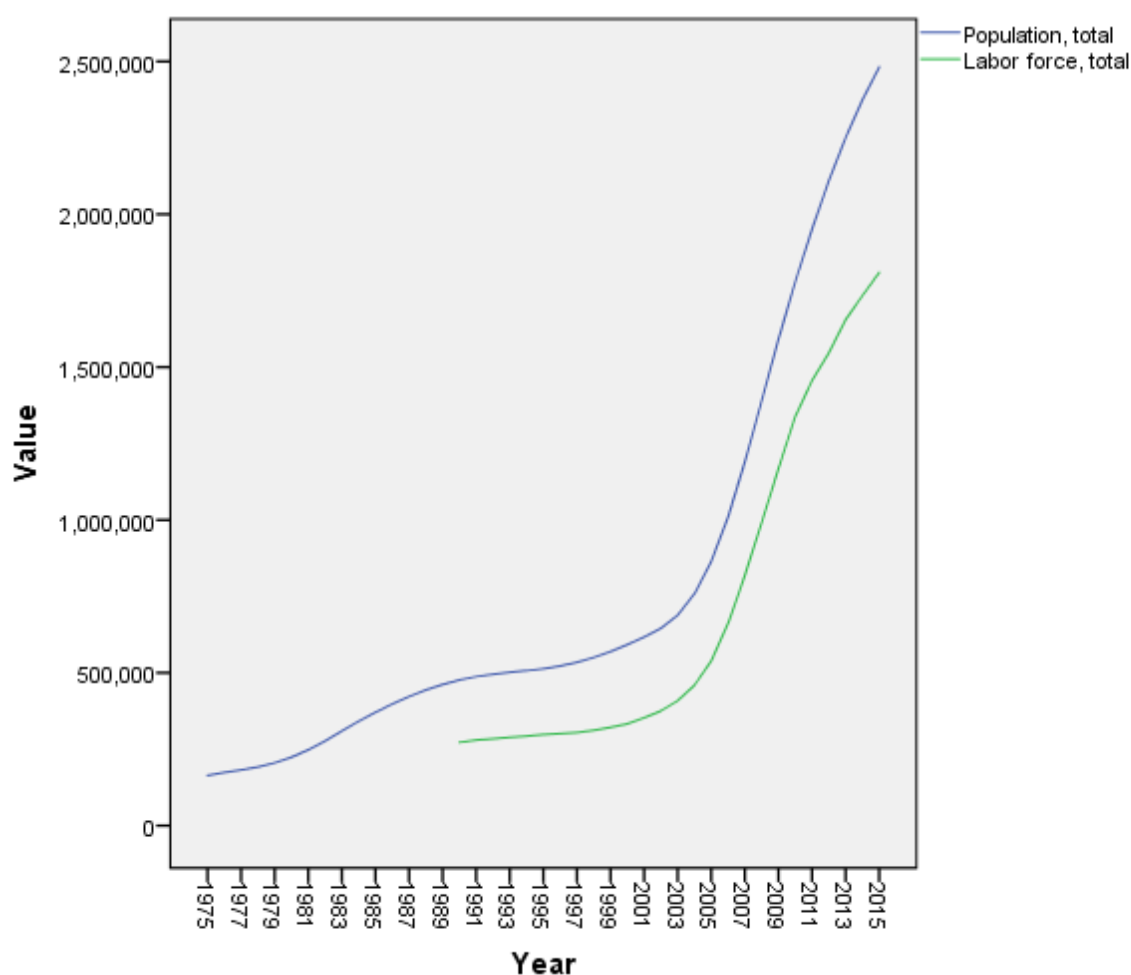
Figure 12. Population and Labor Force in Qatar from 1975 to 2015. This figure illustrates the change in population (blue line) and labor force (green line) in Qatar during the period 1975 to 2015. The illustrated numbers of population and labor force include both citizens and non-citizens.

The above figure also illustrates the changes in labor force in Qatar from 1990 to 2017 (M = 715456.62, SD = 543640.45), with missing data for the previous fifteen years. Moreover, there was a sudden upsurge in the labor force in Qatar coinciding with the increase in population after the year 2005. Along with increase in population and labor force in Qatar, there was a steady increase in enrollment in both primary and secondary schools over the past forty-one years, as shown in Figure 13.
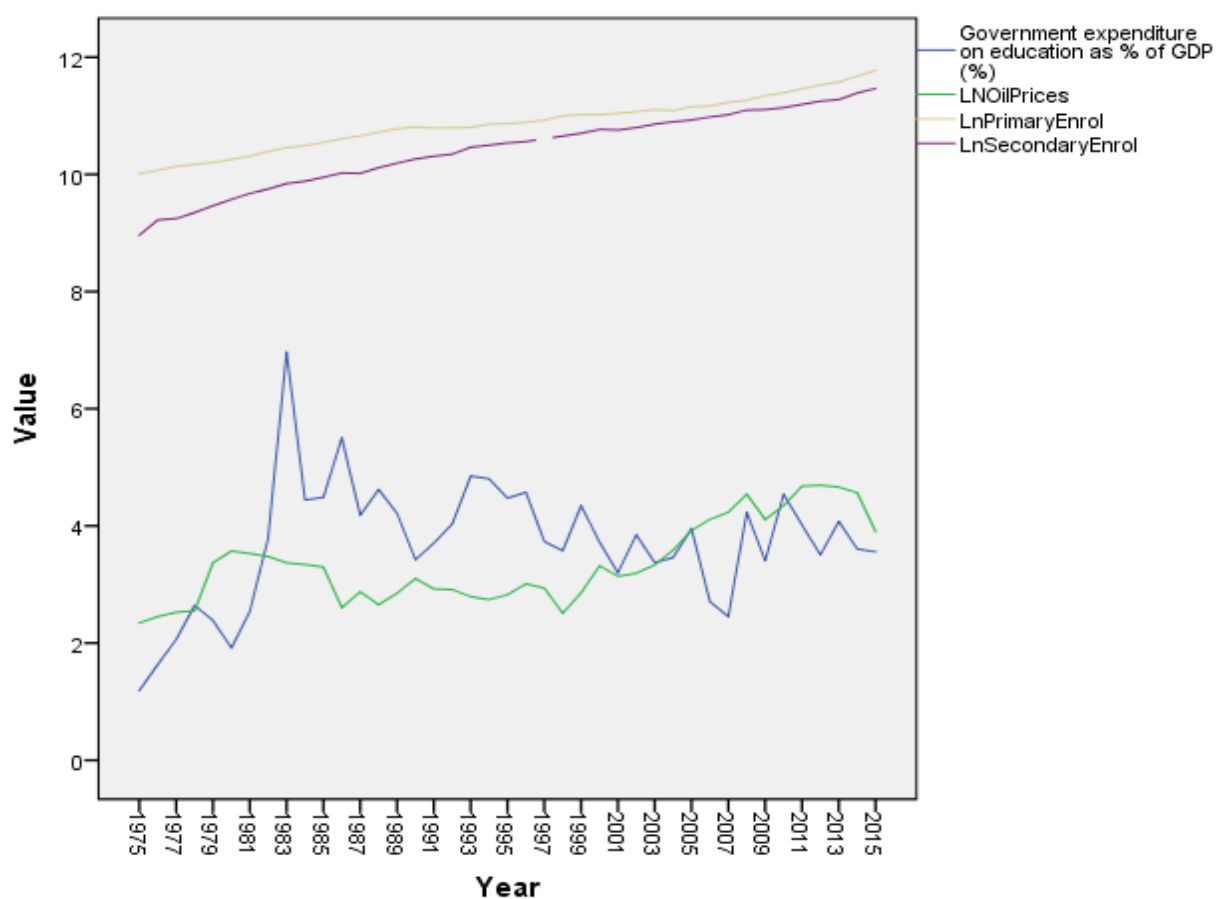
Figure 13. Government Expenditure on Education, Oil Prices, and Enrollment in Qatar Schools. This figure illustrates the change in education expenditure as % from total GDP (blue line) in relation to fluctuation in OPEC oil prices (green line) over the period from 1975-2015. The figure also illustrates the increase in enrollment in both primary (brown line) and secondary schools (purple line) in Qatar from 1975-2015. The discontinuation in purple line indicates missing data for the corresponding years.

The mean for the total enrollment in both primary and secondary schools was (M = 98333.13, SD = 50225.56). Additionally, Figure 13 illustrates the fluctuations in the percentage of the Qatari government expenditure on education from the total GDP in relation to the fluctuations in the OPEC oil prices. As oil prices increase, the GDP increases and hence, the education expenditure as a percentage of GDP decreases. Similarly, the researcher ran correlation analysis between the government expenditure on education from the total GDP, along with the other variables in Qatar, as shown in Table 9.

Table 9
Correlation Analysis Using Pearson Product-Moment Coefficient between Education Expenditure and Oil Prices, Labor Force, GDP per Capita, Total Enrollment, Oil Rents, and Population in Qatar

		GDP/ Capita	GDP	Oil Rent	Pop	Oil Price	Total Enroll	Labor Force
Gov Exp	Pearson Correlation	-.09	.02	-.44**	.091	.02	.152	-.13
	Sig. (2-tailed)	.581	.908	.004	.571	.926	.348	.536
	N	41	41	41	41	41	40	26

Note: Total Enroll = total enrollment in both elementary and secondary schools. Double asterisks indicate that correlation is significant at the 0.01 level. Single asterisk indicates that correlation is significant at the 0.05 level.

There was a negative significant positive correlation only between the government expenditure on education and oil rents in Qatar (r (39) = -0446, p = .004). Additionally, Table 9 shows that the correlation between the education expenditure and the rest of the other variables was statistically not significant. Furthermore, the researcher ran multiple regression analysis, provided in Table 10, between the percentage of GDP that Qatar spent on education expenditure

as the dependent variable and the OPEC oil prices, oil rents, wars, and total labor force as

independent variables.

Table 10
Model Summary and Univariate Analysis of Predictors on Education Expenditure as a Percentage of Total GDP in Qatar

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.673	.452	.343	.481	1.540

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.822	4	.955	**4.132**	.013*
	Residual	4.624	20	.231		
	Total	8.446	24			

Note: This regression model has the percentage of education expenditure from total GDP as the dependent variable. The predictors were wars that happened in the Gulf area, OPEC oil prices, GDP per capita, and labor force. Significant test statistic is in boldface. Asterisks denotes significant correlations at the 0.05 level.

The results of the regression model indicated that the above predictors explained around

45% of the variance with $F(4,20) = 4.13$, $p < 0.01$. The researcher ran further regression

analysis, as appears in Table 11.

Table 11
 Linear Regression Analysis for Variables Predicting the Percentage of Education Expenditure from Total GDP in Qatar

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	4.357	.174		25.104	.000		
	Labor Force	-5.838	2.206	-.719	-2.646	.015*	.371	2.696
	OPEC Oil Prices	2.470	1.011	1.109	2.443	0.024*	.133	7.528
	GDP per Capita (current US$)	-3.234	1.716	-.830	-1.884	.074	.141	7.089
	Wars Dummy	.065	.323	.055	.201	.843	.371	2.699

Note: The dependent variable is the percentage of education expenditure from total GDP. The predictors are the wars that happened in the area, growth rate of OPEC oil prices, growth rate of GDP per capita and growth rate of labor force. Asterisks denotes significant correlations at the 0.05 level.

Table 11 demonstrated that the OPEC oil prices significantly predicted the percentage of the government expenditure on education from total GDP in Qatar ($\beta = 2.47$, $p = 0.02$). In addition, the researcher found that total labor force in Qatar significantly predicted the government spending on education ($\beta = -5.84$, $p = 0.02$). GDP per capita and wars were not significant factors in predicting the education expenditure in Qatar ($\beta = -3.23$, $p = 0.07$, $\beta = .065$, $p = 0.84$) respectively.

The Relationship between Oil Price Fluctuations and Government Education Expenditures as % of GDP in Oman, Qatar, and U.A.E.

Figure 14 nicely describes education expenditure in the three countries in relation to the fluctuations in oil price. This figure represents education expenditure as a percentage of the total GDP in each country. So, if oil price increases, then education expenditure as a total amount of

money increases, while education expenditure as a percentage of the GDP decreases.

As shown in Figure 14, the yellow line shows that oil price is not constant and keeps on changing over time. The blue line represents Oman's education expenditure as a percentage of its GDP, which keeps on decreasing when oil price increases. The orange line represents Qatar's education expenditure on education as a percentage of GDP, which was dependent on oil until the 21st century when Qatar started diversifying its economy. On the other hand, the U.A.E., represented by the grey line, showed a more stable education expenditure on education since late 1986. This clearly suggests that their education funding does not merely depend on oil due to their diversified sources of income.
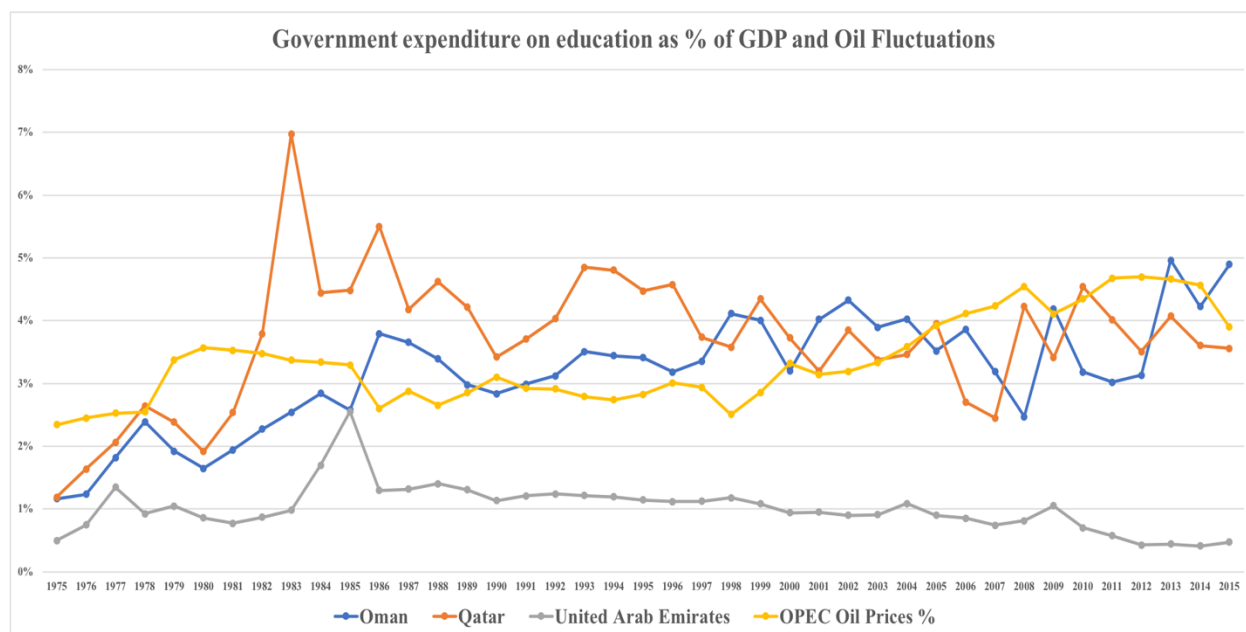

Figure 14. Government Expenditures on Education and Oil Price Fluctuations in Oman, Qatar, and U.A.E. This figure illustrates the change in education expenditure as % from total GDP in Oman (blue line), Qatar (orange line), and U.A.E. (grey line) in relation to fluctuation in OPEC oil prices (yellow line) over the period from 1975-2015.

Research Question Two

What alternatives can Oman or other countries use to generate funding for education?

Policymakers in the Middle Eastern countries face three major challenges in sustaining

the efficiency and effectiveness of their education systems. First, they have to deal with

globalization, which means that the education system must adapt to deliver what the market

needs of the right knowledge and skills to sustain the development of its human capital. Second,

the demand for education will increase over the next decades due to the boom in the young

population, which leads to more pressures on their fiscal budgets for education. Third, facing

these challenges will require looking for more diversified and stable sources of income to sustain

financing the education needs of the young population in order to deliver the qualified labor

force in the market place (Galal, 2007).

Education Development and Diversification of Resources

Most of the Middle Eastern governments financed their entire education systems

including the higher education, with little involvement from the private sectors. Furthermore, the

Arab governments financed, controlled, and dictated all of the major educational investments and

programs to produce the needed human capital by their transformed economies. Most of the

educational institutions in all levels of education do not generate any resources by themselves,

but depend entirely on what the government provides to them to pay for their operations,

maintenance, and other costs. Sanyal (1998) suggested that the Arab states must adopt new

educational and funding policies to enable their education to run and educate the increasing

population in the region. He suggested that all education institutions must improve their

utilization of resources to be more efficient. He added that the government must encourage

education entities to generate some income to contribute in funding their daily operations and

developments. In addition, he suggested the introduction and implementation of cost-recovery policies like the fee-paying system, similar to the one implemented in the developed countries. Finally, he suggested that governments must encourage their education system to gradually privatize their different sectors (Sanyal, 1998).

The education system in the Middle East and the Gulf region in specific should search and explore other income generating activities in order to sustain the development of their education in the coming years. Depending on one source of income, like oil revenues, proved to be unreliable and scary, especially when oil prices keep fluctuating and decreasing in the global market. Many higher education institutions in the Arab countries realize that with the limited state funding due to limited income resources, they have to get involved in income generating activities through various routes. Those income-generating activities must be demand-oriented and driven by the needs of the local society and local economy (Sanyal, 1998).

Education leaders in Oman can help broaden the economy, and reduce oil dependency by applying some of the funding mechanisms used by the U.S. education system, such as implementing the incentive-based budgeting system. Research has shown that there is an ongoing historic search for new funding sources to enable education institutions, even in the United States, to fulfill their educational missions and finance their development aspirations (Hossler, 2005).

The Omani Government represented by the Ministry of Education and the Ministry of Higher Education should search for innovative ways to create new sources of revenues for financing their educational strategic plans, and continue their education growth away from depending solely on oil revenues. Even the wealthiest universities in the United States are looking for other financial resources to run their ambitious development programs. For example,

Stanford University organized the nation's top fundraising campaigns yielding $580,473,838, Harvard University with $485,238,498, and Duke University with about 407,952,525 during the years 1999-2000. While in 2000-2001, the higher education institutions in the United States raised more than $24.2 billion, which is an increase of 4.3% from the earlier year only (Hossler, 2005).

Hossler (2005) argues that there has been a new trend between the public and the private education institutions to increase their financial resources by increasing their level of student enrollment through intensifying their student recruitment marketing strategies. These student recruitment schemes are recruitment for survival, instead of the selective student recruitment practices that existed before. Universities can attract more students through intensifying their marketing and advertising programs, increasing incentives and assistantship opportunities for students, and developing more online education programs that can attract more students and tuition revenues (Hossler, 2005).

Traditionally, Western universities and some of the private universities in the Middle East implemented some specific income diversification strategies. For example, higher education institutions can generate some income by offering research, providing training, and carrying some service contracts with both public and private corporations (Sanyal, 1998). In addition, industrial and commercial companies can sponsor funding specific scholarships or grants for students studying certain academic or professional programs will benefit those companies (Sanyal, 1998).

Sanyal (2008) provided an extended list of possible income-generating activities that will help education institutions to fund their projects, pay for their operations, and make some net income. This list includes some creative tools and activities that will contribute in generating

income and diversifying their resources. For example, implementing different tuition fees for private students and religious organizations. Introducing examination, resident, and other service fees will aid in funding the administrative and other operational costs. Higher education institutions should sign contracts to perform specific research, training, consultancy, and programs with the private sector. In addition, education entities should invest in its productive departments like printing books, renting its facilities, and opening their university bookstores. Finally, education institutions in the Middle East should look into introducing the acceptance of foreign aid and local contributions and donations by both the public and their alumni organizations (Sanyal, 2008).

Privatization of the Education System as a Form of Resources' Diversification

Most of the Middle Eastern governments provide primary, secondary, and tertiary education to their people free of charge. MENA countries spend almost one-fifth of their total public expenditures and a high percentage of their GDP to finance the operations and the development of their education systems (Galal, 2007). For example, Saudi Arabia, U.A.E., Tunisia, Libya, and Algeria spent more than 20% of their fiscal budget on education, while other countries like Oman, Qatar, Kuwait, Jordan, Syria, Lebanon, and Bahrain allocated less than 15% of their budget on education. Furthermore, MENA governments kept their education spending protected for decades even when oil prices declined, which put more burdens on their fiscal budgets and forced them to think of other ways to fund their education systems, like increasing the private sector contribution to education spending (Galal, 2007).

Privatization is the process of moving the control, financing, and administration of the education system from the government to the private sector, either as corporations or individuals (Sanyal, 1998). This phenomenon does not mean that the government will stop supporting the

education system completely. The governments can still support their education institutions as they transfer to run their programs and activities privately. James (1991) stated that there are several reasons that support the development of the private education sector. First, the private education system will absorb the increased demand for higher education, which the public sector could not meet. Second, the private education system will offer special education, skills, and programs that will respond to the growing differentiated demand for certain religious, ethnic, educational, and cultural needs. The successful implementation of the education privatization process in Brazil, China, and Philippines encourages other countries to start its implementation in their education systems (Sanyal, 1998).

Lieberman (1989) listed several ways to implement education privatization, which includes contracting out support services to the private sector like catering and printing services. The government can withdraw gradually from providing and financing an education activity such as catering and residential services, and assign them to the private sector instead. In addition, the government can issue some special vouchers that clients can use to pay for their education needs in the private education institutions.

Another way to implement privatization of the education system is by franchising some of the governmental programs or technical services to the private sector. Malaysia is transferring some of its public universities to the private sector by transferring property rights to tangible assets that the private sector can buy for an approved price. This will help the government to reduce its education expenditure on maintaining and operating these facilities. Furthermore, it will encourage the private sector to build some of the facilities needed by the educational institutions, and then the private sector can lease them back to the public sector (Sanyal, 1998).

Research Question Three

What did Qatar and U.A.E. do to diversify their economy to make education spending less sensitive to oil price fluctuations? How might this apply to Oman? And what are the political challenges to making these changes?

Diversification of economic sources in the GCC countries started more than fifty years ago. Some of these countries have invested billions of dollars back into their economies in order to develop productive assets that can diversify their sources of income. Some of the good examples include the creation of the major industrial cities in Saudi Arabia and the aluminum manufacturing industry in Bahrain. The Percentage contribution by the oil industry versus other sectors can indicate progress, or as a percentage contribution to the total government revenues, can measure diversification efforts in a country (Hvidt, 2011).

The GCC countries realized that in order to achieve income diversification and develop their economies, they had to develop their physical and social infrastructure (Hvidt, 2011). They had to invest in the development of hydrocarbon industries, taking advantage of their vast production of oil and gas, and investing in the development of small and medium manufacturing industries. In addition, the Gulf governments invested heavily in the development of some other productive and service sectors such as aviation, tourism, agriculture, financial services, and real estates (Hvidt, 2011).

Furthermore, according to the Economic and Social Commission for Western Asia (ESCWA), there is a growing trend to privatize the state owned public companies, which reduces the governments' direct control and their subsidies (ESCWA, 2001). With all of these diversification efforts, it is still not clear that those efforts have resulted into more diversified or sustainable economies in the region (Hivdt, 2011). Nevertheless, Qatar and U.A.E. proved

themselves as the best models for having more diversified economies in the Middle East with strong infrastructure and flexible business policies that invites both foreign investments and tourists. The researcher reviewed some of the successful diversification strategies used by Qatar and U.A.E. to make their economies and, in turn, their education funding strategies less sensitive to oil exports.

Qatar Strategies to Diversify Economy

The General Secretariat for Development Planning (GSDP) in Qatar stated that a diversified economy is more stable, creates more jobs, and opportunities for coming generations, and less sensitive to fluctuation in oil and gas prices (GSDP, 2011). The main goal for diversification of resources is to spread investment risks by creating new productive and income-generating activities. The government of the State of Qatar announced its first strategic plan called the Qatar National Vision (QNV) 2030 (Hvidt, 2011). This strategic plan aims to establish an advanced country with sustainable economic development in all sectors, which guarantees a high standard of living for all of its residents by 2030. In addition, it aims for some more diversified sources of income, reduce dependency on hydrocarbon revenues, and improves the development of a strong and competitive private sector (GSDP, 2008).

The first five-year National Development Strategy Plan in Qatar started in 2011 and ended in 2016. This plan included development of the infrastructure, building mega projects, real-estate investments, and establishing new industrial activities (GSDP, 2011). Most of these projects and infrastructure developments are for the anticipated the Federation Internationale de Football Association (FIFA) World Cup that Qatar is preparing to host in 2022. Furthermore, Qatar has reformed its economy environment, government policies, and foreign direct investment (FDI) laws to allow more freedom for the private sector, more openness for foreign

direct investment attractiveness, and increasing protection for the labor force in the market place (Hvidt, 2011). The country has been successful in making it fairly easy for foreign investors to invest in Qatar with a 100% ownership. These efforts led to the establishment of the industrial cities in Dukhan, Mesaieed, and Ras Laffan, beside opening new free trade zones across the country (GSDP, 2011).

The Qatari government is preparing for an era free from depending on oil and gas revenues. The Qatari leaders are focusing on diversifying their exports through the development of the service industries like developing tourism attractions, strengthening the financial services, and improving their knowledge-based infrastructure. Qatar can achieve all of these strategic goals by their current efforts to brand Qatar as a worldwide destination for tourism, education, and a hub for other services in the global market (Morakabati, Beaves, & Fletcher, 2014). One of the country efforts to introduce Qatar as a world's tourist destination is through hosting the major sporting events.

In 2010, the Federation Internationale de Football Association (FIFA) World Cup chose Qatar to be the host of the 2022 FIFA World Cup after a fierce competition with other developed countries. Hosting such premiere sports events meets with Qatar's high aspirations to diversify its economy through developing its tourism industries and international image (Henderson, 2014). In addition, mega sports events, like the Olympic Games and the FIFA World Cup competitions, draw large crowds from inside the hosting country and from outside, such as international travelers, creating some big visitor attraction activities that is an essential part of sports tourism (Nishio, 2013). Furthermore, hosting such big sports activities require expensive investments in infrastructure and facilities in all sectors of the economy, which will encourage large inflow of travelers from all around the world. Qatar will definitely gain in the short and

long runs from those audiences' spending, and other intangible benefits that will enhance the international branding and image of the host country (Getz & Page, 2016; Weed, 2008).

Qatar Strategies to Sustain Education Funding

Qatar is investing heavily in the education sector by spending more than 5% of its GDP on education related activities (GSDP, 2011). It is planning to transform the country into a knowledge-based economy in order to produce highly qualified labor force that can replace the current foreign employees. Furthermore, Qatar has invested in establishing the Education City that brings to the country some of the top leaders in education such as top university names from the United States of America, Europe, and other parts of the world. In 2011, oil earnings contributed around 46% of GDP (Hivdt, 2011), while the government expenditure on education as a percentage of GDP was 4.02% for the same year (World Bank, 2017). The Qatari government provided state of the art infrastructure facilities for businesses, as well as investing in agriculture and fisheries sectors, that contribute heavily to its GDP in order to improve its sustainable economy base (Ibnouf, Dou, & Knight, 2014).

Qatar values education as the main key element for developing its human capital in order to diversify the country's economy, reduce its dependence on oil, and increase its international competitiveness. On this path, the government invested heavily in reforming its education system by introducing a western style k-12 system. In addition, Qatar launched the Independent Schools Project, which encourages schools' autonomy and innovation initiatives, in an attempt to reduce educational costs and improve its quality (Ibnouf, Dou, & Knight, 2014). Nowadays, the country enjoys one of the highest literacy rates, as well as the highest enrollment (both sexes) rates in the Arab world (Donn & Manthri, 2010).

In order to reduce education operations' costs and improve its quality, Qatar planned to transform into an international education hub (Ibnouf, Dou, & Knight, 2014). The Supreme Education Council (SEC), the Higher Education Institute (HEI), the Qatar University (QU), and Qatar Foundation (QF) for Education, Science, and Community Development has been leading Qatar into becoming one of the best knowledge-based education hubs in the world. Today, Qatar succeeded into becoming a world education hub, hosting campuses for the top names in the world like Carnegie Mellon University, Georgetown University, University of Calgary, Texas A&M University, University College of London, Weil Cornell Medical College, HEC Paris, and others. The Qatari Education City serves some strategic educational goals as hosting top education programs, sponsoring research projects, and establishing well-known research and innovation centers inside its education hub (Ibnouf, Dou, & Knight, 2014).

Qatar implemented new reforms for the kindergarten-12 grades, and the higher education systems in order to achieve the highest levels in both efficiency and effectiveness (Erman, 2007). These reforms aimed at making Qatari students more competitive internationally, and capable of meeting the job market needs locally. The establishment of the Independent Schools initiative, in 2004, allowed schools more autonomy, and less governmental interference in its budget and decision making (Erman, 2007).

Even though the SEC continued to fund these schools, they have increased their freedom in looking for new sources for their curriculum choice, decision making process, and financing of their plans and programs (Erman, 2007). In addition, the introduction of the Independent Schools gave both parents and their children variety of educational choices in order to succeed and prepare themselves for the new demands of the job market. Currently, those schools run

their own budgets, and have more independence in both hiring practices away from the bureaucracy of other government agencies (Erman, 2007).

U.A.E. Strategies to Diversify its Economy

The U.A.E. has a unique economic plan using the National Work Program in 2005 by implementing a three-years plan called the U.A.E. Government Strategy. For example, the Government Strategy (2011-2013) aimed to transform the economy into a knowledge and innovation driven economy in the region (Hivdt, 2011). In addition, the U.A.E. Vision 2021 highlights a road map for the government to secure the delivery of its economic, social, educational, health, and other government services to all of the seven Emirates. The main goal of Vision 2021 is to make the country the number one place in the world to do business, in an effort to attract most of the foreign direct investments to the Emirates. Furthermore, it aims to diversify its economy by improving its financial services, aviation, and other high-growth industries to become more competitive globally (Hivdt, 2011).

Abu Dhabi is the richest Emirate in the Union, which owns nearly seven percent of the proved global oil reserves. It is still the major contributor to the Federal Budget of the Emirates and the major player in the development of the other less fortunate Emirates in the Union. Hvidt (2011) argued that Abu Dhabi managed to diversify its economy by investing in metals industries, plastics, fertilizers manufacturing, and other petrochemical industries since the independence of the U.A.E. in 1971. Furthermore, Abu Dhabi invested heavily in high-technology industries such as renewable solar and nuclear energies, high-end real estates, and top tourism attractions. The Abu Dhabi Sovereign Wealth Fund (SWF), called the Abu Dhabi Investment Authority is the largest single SWF in the whole world with an estimated $ 627 billion in 2011 (Hvidt, 2011).

Dubai is the second richest Emirate in the Union and a leader in the entrepreneurship industry in the region. In 2005, more than 95% of its GDP came from non-oil sectors such as tourism, free-zone ports and airports, free hold real estates, and mix of other high income generating activities. Hidvt (2011) stated that the diversification success in Dubai was due to many reasons like strong government leadership for the development efforts, quick decision-making process, flexible labor force policies, and strong service economy. Other reasons include quick creation of international business opportunities, strong branding of the Emirate worldwide, supply-driven demand, and strong cooperation with top international business leaders. Today, the small Emirate is the best diversification model for the rest of the Arab world in the Middle East (Hivdt, 2011).

Currently, Dubai is a leader in tourism industry not just in the Gulf region, but the whole world. It is the host city of the world's largest and tallest buildings, malls, flower gardens, hotels, and theme parks. The city is planning to boost its medical tourism annual income to more than 70 billion U.S. Dollars in 2020. In 2012, more than 500,000 individuals came to Dubai for medical purposes only. In addition, U.A.E. received more than 11,000,000 tourists in 2012 only, 8,000,000 of them visited Dubai, 2,000,000 visited Abu Dhabi, and the rest traveled to the other five Emirates. The U.A.E. is becoming the world focus for luxury and cultural tourism with an ever-expanding aviation routes to the country turning it to a major world hub for tourism and business (Travel Trade Gazette UK & Ireland, 2013)

U.A.E. Strategies to Sustain Education Funding

The successful diversification plan in the U.A.E. has paid off. In 2011, oil earnings contributed only around 32 % of GDP (Hivdt, 2011), while the government expenditure on education as a percentage of GDP was 5.96 % for the same year (World Bank, 2017). U.A.E.

has been very successful in its diversification efforts of education expenditure due to its transformation to being a well-known international hub for education (Hivdt, 2011).

The U.A.E. education system has attracted tens of the top international schools and university branches from around the world. The Emirate of Dubai was the first city in the region to establish two educational free zones known as the 'Knowledge Village' and the 'Dubai International Academic City' (Ibnouf, Dou, & Knight, 2014). Those education zones helped in reducing the number of overseas scholarships, and directed this money to local schools and other educational projects. In addition, those free educational zones attracted both the local residents as well as potential international students from the whole world bringing more money inflow into the country (Ibnouf, Dou, & Knight, 2014).

The successful implementation of the education hubs in Dubai has encouraged the other Emirates to launch their own free-zone education cities to attract international schools, universities, as well as international students into the Emirates (Ibnouf, Dou, & Knight, 2014). Abu Dhabi and Ras Alkaima Emirates are active in attracting new well-known universities and schools into their new education hubs. Today, the U.A.E. has the largest number of the top-names of school campus branches from around the world. Those education hubs brought with them highly qualified international expertise, researchers, innovators, and foreign money (Ibnouf, Dou, & Knight, 2014).

The Dubai Education Council (DEC) has been very successful in getting the private sector to cooperate and contribute in financing its major education strategic plans. The DEC main goal is to transform and raise the Dubai's education system to international standards in terms of the top quality in both education facilities and instructions. Nakheel and Dubai Properties corporations, the major real estate companies in the Emirate, have been very

active in sponsoring the DEC's development plans. In 2005, the two corporations launched a joint initiative with the DEC to contribute more than 100 million Dirhams (Dh) to support DEC's programs to upgrade Dubai's education system to meet international standards. This commitment from the private sector was the first initiative in the region aimed to provide support to the education system, and spread awareness on the importance of constantly developing the education efficiency and effectiveness (Emirates News Agency, 2005).

Abu Dhabi also launched its own initiative to increase the participation of the private sector in sponsoring education development in the Emirate. In 2006, the Minister of Education and the General Director of the Abu Dhabi Education Council (ADEC) announced the implementation of the new cooperation between the private sector and the ADEC. The ADEC established new cooperative initiative for the start of partnership schools program financed by the private sector. Those partnership schools will have more freedom and less supervision from the government authorities in an attempt to accelerate the decision process and eliminate the need for support from any other governmental institution. The ADEC hopes that this initiative will increase the private sector involvement and contribution to the development of the education system in Abu Dhabi, and will increase education standards and quality (Emirates News Agency, 2006).

<div align="center">**Summary**</div>

In this chapter, the researcher highlighted the results of this study as they pertained to their corresponding research questions. In Oman and Qatar, multiple regressions proved that oil prices significantly predicted the government expenditure on education, while it was not significant in predicting the government expenditure on education in the U.A.E. Then, the researcher presented some economic diversification efforts done by other western and MENA

countries, which Oman can use to help sustain their education funding. Finally, the researcher

highlighted how Qatar and U.A.E. were successful in moving away from their dependency on oil

as a main source of their economy.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

Introduction

The Gulf States depend solely on oil rents to power their economies, as it is their strong source of wealth and prosperity. The oil industry dominated the GCC economies for a long time since its discovery in the region (Belbawi, 2011). Recently, these countries have placed a great political drive to move quickly to a more diversified economy for three main reasons. First, they realized that oil production is finite and increasingly expensive. Second, the oil rents and net revenues keep fluctuating depending on the market prices. Finally, the fact that their economies are depending on oil revenues as the main source of income is uncertain and might negatively affect their development efforts. All of these factors contributed in pushing the diversification issue to the table and placed it at the top of their political agenda. In addition, other important issues pushed politicians to move quickly toward income diversification such as wealth distribution issues, use of the migrant labor, clear underdeveloped sectors, which can be productive and income generating in the economy (Hvidt, 2011).

Discussion of the Results

Oman underwent tremendous development in all its infrastructure since its renaissance in 1970. As illustrated in Figure 8 (p. 73), there was an increase in the population from 1975 to 2015 ($M = 2129678.88$, $SD = 8300409.42$), as well as in the total labor force ($M = 746963.34$, $SD = 548455.80$). However, there was a drop in the total labor force in 1986 and 1987, possibly due to decrease in foreign labor at the time due to the Gulf War I (De Bel-Air, 2015). The percentage of Omani government expenditure on education inflated over time, with expanding

education demand and the increase in number of students enrolled in primary and secondary schools.

The results of this study in Table 2 (p. 74), proved a strong positive correlation between the total GDP in Oman and the OPEC oil prices, which align with previous literature showing that the total GDP in Oman depends mainly on oil; as oil prices increases, the total GDP in Oman increases and vice versa (Al-hajry, 2003; Al-Yousif, 2008; Tansel & Kazemi, 2000). However, the Omani government, along with other MENA countries, allocated specific amount of money for important sectors like health and education (Galal, 2007). Hence, the expenditure on education as a percentage of GDP should increase if the GDP goes down with lower oil prices. However, the opposite is true in oil-dependent countries like Oman, as shown in Figure 9 (p. 75).

The fluctuation on the percentage of education expenditure from the overall GDP conversely related to the fluctuations on oil prices. For example, in 1980 and 1985, the expenditure decreased in relation to an increase in oil prices. In 1991, the government spending on education from the total GDP increased gradually until another dip in 1996 and 2000, accompanying the upsurge in oil prices due to the Gulf War I and Gulf War II, respectively. Another sharp drop in government expenditure on education in Oman occurred in 2008 due to the global economic crises that affected the whole Gulf area. During wars, oil prices increase due to the decrease in oil supply from the Gulf area and the increase in demand for oil in the global market. Wars in the Gulf region destroyed and threatened the stability of the oil production sites, which resulted in reduced oil and gas production with higher oil prices (Jaffe & Elass, 2015).

From the results presented in Table 4 (p. 77), the researcher found that the OPEC oil prices significantly predicted the percentage of the government expenditure on education from total GDP in Oman (β = -0.40, p = 0.013), as did oil rents (β = 0.13, p = 0.008) and GDP per capita (β = -0.871, p = 0.001). The researcher can explain this result in view of the strong positive correlation found between total GDP in Oman and OPEC oil prices, as presented in Table 2 (p. 72). As OPEC oil prices increases, the total GDP increases too. Since the government predetermined specific amounts of money to spend on education, then the percentage of the money the government spends on education from the total GDP decreases. In case of decrease in OPEC oil prices, the total GDP will decrease. However, the Omani government should still spend on education to invest in developing its human capital, so the percentage of that education expenditure from total GDP will increase.

Comparing the three significant predictors for education expenditure in Oman, the researcher found that the strongest predictor was GDP per capita, followed by OPEC oil prices and oil rents. Interestingly, the researcher found that the wars happened in the Gulf area at that time did not predict the expenditure on education. The researcher relates this finding to the fact that Oman is a politically stable country, and maintains great relationships with all nations (Lefebvre, 2010), hence, Oman did not get involved in those wars. Additionally, labor force was not a significant predictor for education expenditure in Oman (β = 0.011, p = 0.75) because, until recently, Oman was investing in developing its human capital to replace the existing foreign labor, which accounted for around 45% of its population in 2017 (NCSI, 2017). In 1988, the Omani government implemented the Omanization process, in which Omani national started replacing the foreign labors in all sectors. This process directed the government to invest more in improving the skills of Omanis and prepare them for the job market (De Bel-Air, 2017).

The United Arab Emirates is the second most populated country in the Gulf area after the Kingdom of Saudi Arabia (Markets, 2016). From the results presented in Figure 10 (p. 79), the researcher refers the increase in population is possibly due to the increase in foreigners and expatriates who started to reside in the U.A.E. after Dubai opened its doors widely to tourism, trading, investments, and other job opportunities (Froilan & Youha, 2013). This can also explain the sudden rise in the labor force that occurred mainly after the year 2005 in the U.A.E.

Compared to Oman, the fluctuations in education expenditure were less pronounced in the U.A.E. There was an increase in education expenditure in 1979 and 1984, possibly due to investment in the infrastructure that was happening in the country during that time. In 1986 and 1990, there was a drop in the government expenditure on education from the total GDP in the U.A.E., possibly due to the war between Iraq and Iran and Gulf War I, respectively. As mentioned earlier, wars in the region result in an increase of oil prices and an increase in education expenditure as a total amount of money. However, education expenditure as a percentage of GDP drops due to the increase in the denominator, which is the total GDP.

During the twenty-first century, when the U.A.E. started to diversify its economy, the expenditure on education from the total GDP started to upsurge regardless of the fluctuations in oil prices. For example, there was an increase in the OPEC oil prices that did not accompany a decrease in education expenditure during the Gulf War II (2003-2011). In the U.A.E., education expenditure during the Gulf War II period continued to rapidly increase to match the upsurge in population and labor force during that time, as illustrated in Figures 10 (p. 79) and 11(p. 80). Unlike the situation in Oman, OPEC oil prices did not predict the percentage of the government expenditure on education from total GDP in the UAE ($\beta = 0.36$, $p = 0.40$), as the country has a diverse economy and do not rely merely on oil.

During 1975 to 2015, the population graph for Qatar was somehow similar to the graph

for the U.A.E., as presented in Figures 12 (p. 85) and 10 (p. 79), respectively. Most of the labor

force in Qatar was expatriate from India, Nepal, Bangladesh, and the Philippines, along with

some expatriates from other Arabic countries like Egypt, Syria, Sudan, Lebanon, Jordan, Tunis

and Palestine (De Bel-Air, 2017). Those expatriates found better work-related benefits in Qatar

than in their country of origin (De Bel-Air, 2017), as they might receive some health and

education benefits without paying any taxes in Qatar.

Related to educational participation, the mean for total enrollment in Qatar is almost three

times the mean for total enrollment in Oman (see Appendices J, K, and L for all descriptive

statistics for the three countries). For GDP per capita in the year 2016, Qatar ranked the first

worldwide, while the U.A.E. ranked the ninth, and Oman ranked the 26th (Statistics Times,

2017). The Qatari economic wealth is mainly due to its huge natural gas and oil reserves, and

hence, one of the top producers and exporters of liquefied natural gas worldwide (De Bel-Air,

2017). The oil and gas constituted over half of the government revenue (Index of Economic

Freedom, 2017).

The relationship between education expenditure and oil prices in Qatar is like the one in

Oman, especially before the twenty-first century. In both countries, as oil prices increased, the

GDP increased and hence, the education expenditure as a percentage of GDP decreased, as

illustrated in Figures 9 (p. 75) and 13 (p. 86). However, the situation in Qatar improved after the

twenty-first century, as the country diversified its economy and started to reduce its dependence

on oil and gas revenues (Hendrix, 2017). Similar to Oman and unlike the U.A.E., Qatar still

depends on oil as the main source of its spending on education, despite its diversified economy.

The researcher can attribute this finding to the fact that Qatar has one of the largest reserves for

oil in world (De Bel-Air, 2017; Index of Economic Freedom, 2017).

The researcher found that the total labor force was a negative predictor of education expenditure in Qatar, as presented in Table 11 (p. 88). The researcher can tie this to the theoretical framework of the Human Capital Theory. This theory states that in order to develop the population's human capital, the government has to invest in their education at pre-work stage, as well as, during their work stage through continuous training, workshops, and continued professional development (Burton-Jones & Spender, 2011). However, in Qatar there was a sharp influx of foreign expatriate after the twentieth century, as illustrated in Figure 12 (p. 85). Most of those workers were skilled, and hence Qatar did not spend on their professional development (De Bel-Air, 2017). The percentage of the Qataris from total population in Qatar is booming, and hence Qatar has to invest on its citizens' education to develop its national human capital in order to replace the foreign labor.

Oman's Efforts to Diversify its Economy and Political Challenges

The Sultanate of Oman is one of the first countries that used economic planning in the region. Since 1970, the Sultan Qaboos bin Said led his government to implement a series of a five-year strategic plans until 1995 (MONE, 1995). In 1996, the long term strategic Vision 2020 plan started directing the five-year plans covering the period from 1996 to 2020. Even though economic diversification planning started in 1970, Vision 2020 prioritizes the need for providing the right economic conditions for diversification of its income sources by trying to increase the contribution of the non-oil sectors in the economy such as fisheries, agriculture, mining, and investing in the liquefied petroleum gas products (MONE, 1995).

As part of the Vision 2020 strategic plan, Oman seeks diversification by investing in improving industrialization, developing its privatization plans, and increasing the integration of

its developing economy into the global market (Hivdt, 2011). One of the major goals of the

Vision 2020 plan was to reduce oil contribution into the national budget to 9% as a percentage of

GDP. Unfortunately, the oil revenues were still the major contributor to the national income for

more than 41% of its GDP (Hivdt, 2011), while 3.02% of it went to cover the government

expenditure on education as a percentage of its GDP (World Bank, 2017).

Vision 2020 Plan targeted increasing the human capital development in the country by

investing more in the education sector. In addition, the plan tries to achieve major changes in the

economy structure by increasing diversification processes by increasing the contribution of other

production sectors into the GDP, and speeding the privatization process of the publically funded

institutions. Furthermore, the government targeted diversification by increasing investments in

the tourism and gas industries, but due to the lack of stable gas production and supply, Oman

concentrated in investing more in the non-energy intensive industries such as tourism,

agriculture, and food manufacturing sectors. Hivdt (2011) argued that these diversification

efforts have not yielded the anticipated results, and failed to fully diversify the economy and did

not make it less sensitive to oil revenues, thus, oil remained the main source of income in the

country (Hivdt, 2011).

Despite its diversification efforts, Oman still faces different political and economic

challenges that might slow its plans to stay away from oil as the main source of income. The

country has one of the lowest oil production and exporting rates in the Gulf region. In addition,

the country has low foreign-exchange reserves, which reached $17.5 billion in 2015 compared to

its national budget deficit of $9 billion in 2016 (Al-Sawi, 2016). After the steep decline in oil

prices in 2014, the Sultanate was one of the first countries in the GCC to announce heavy

financial cuts, and reduce or totally eliminates subsidies for some services to its citizens. For

example, the Omani government lifted the oil, water, and electricity subsidies. To finance its current strategic plan and cover up for its deficit due to the sudden decline in oil price, the government had to take local and international loans (Al-Sawi, 2016).

Similar to some other MENA countries, Oman has a small and limited non-oil private sector. The limited growth of private sector, and the extensive investment in oil projects yielded low job opportunities compared to the high level of investment in the energy sector (IMF, 2016). High unemployment rates combined with low oil prices, can pose a major political challenge for Oman that might destabilize the country. The major challenge for Oman now is to grow an independent private sector that can take over the oil industry, to provide some sustainable sources for income, employment growth, and economic stability, especially, when oil exports are extinct. Finally, any decline in oil revenue due to fluctuations in its price have serious economic impacts, and creates major political challenges in employment, public spending, and welfare subsidies for the citizens (IMF, 2016).

The Sultanate of Oman realized that it must take serious steps to combat all of the political, economic, and cultural challenges that might arise in the way to liberalize its economy from its dependence on oil. Oman has to open up its economy to receive more foreign direct investment that will sustain the economic growth in the country. In addition, Oman needs to learn and follow the successful implementation steps of the education hubs in Qatar and U.A.E. In a parallel route, Oman needs to invest more in the development of its human capital, so it will be ready to lead the country's future growth.

Importance of Education and Human Capital Development in Oman

His Majesty the Sultan Qaboos bin Said announced that his main priority will be to educate and train his people as soon as possible to make them able to lead the development in

their country. He is famous for his speech where he said: "provide education opportunities even under the shadow of trees" (Kéchichian, 2008, p. 114). Oman had only three schools when His Majesty took the throne in the Sultanate of Oman in the July 23, 1970. The country's infrastructure and other governmental services were close to zero with no paved roads, one small hospital, no water and electricity services whatsoever. His vision was to quickly transform Oman into one of the developing countries with modern institutions led by Omanis. He realized that the transformation of Oman into a developed society was not possible without an appropriate education and training programs aimed to improve the knowledge base and the skills of his people.

Education will improve the economic outlook in Oman by applying and implementing the basic assumptions of the human capital theory (HCT). The Omani Government needs to increase its investment in education to increase the literacy rate, and train its people to improve their skills and expertise. The Omani economy is still developing, and it is in a great need for specialized employees and skilled labor force. In addition, increasing the investment in primary and higher education will increase the innovation and research development in the country. The increase in innovation and research development will help in creating new solutions and inventions that will search for new income sources for funding the economy growth, and sustain its investment in education and training.

Application of the human capital theory in Oman, especially in education and training was a necessity in order to reach the government goals for transforming Oman into a modern state. In addition, Oman will gain several benefits from improving its population's education and skills. For example, education and training programs will help Omanis improve their knowledge in the different fields needed by the growing demand for skilled labor in the country.

Oman was in a great need for teachers, physicians, engineers, and other specialized workforce in all aspects of life. The task of educating and training Omanis requires huge budgets dedicated to education. The Omani Government realized that the task is huge, and it has to achieve it at any cost to meet people's need for education and to ensure economic development in the country (Rassekh, 2004). The Government started its tasks of building new schools and establishing a new curriculum for all levels of the primary education needs of the nation. The Omani Government contracted with expatriate teachers to run its schools. In addition, most of the administrative staff and leadership were expatriates because Omanis were getting the necessary education and training programs to contribute in the development of their country in the future.

The Omani Government's efforts to educate its population faces many challenges due to its reliance on financing from oil revenues due to price fluctuations and scarcity. The human capital theory can assist in the planning of the different expenditure strategies used by the strategic development plans, especially in education. Scholars can apply and explain the human capital theory (HTC) financially at the three different levels including individuals, institutions, and the economy.

At the individual level, the Omani government encourages individuals to educate themselves by financing all of their elementary, middle, and high school education. In addition, the Omani government is paying for all of its citizens to get their college and university degrees for free as well. In addition, there are two scholarship schemes for high school graduates to compete for limited scholarships to continue their undergraduate education at leading local and international universities. Furthermore, the Sultan Qaboos Scholarship Fund offers certain scholarships for graduate education overseas aimed for its top students. The Omani Government believes that education is very important to sustain its economic growth even when it is

operating under lots of financial constraints due to the fluctuation of oil prices in the world market. Omanis also realize that any year they put in education will reap its benefits in the future through opening new job advancements for themselves as well as better salaries.

At the institutional level, the Omani Government is allocating an annual percentage of its oil revenues to finance building new elementary, middle, and high schools to accommodate the booming young population. The Omani Government is financing all of the school transportation, catering, curriculum development, and training programs for teachers. It believes that education is a basic need just like health that will enhance the life quality of Omanis, and will sustain its rapid economic growth. In addition, the Omani government is financing several training programs and higher education scholarships for its students, administrators, and workers to improve their skills in order to replace the expatriates who are still serving in Oman. Most of the training programs are at some of the Western countries, or at some of the Far East Asian countries, which offer specialized courses in certain needed areas in education. Oman believes that improving its workers' skills will benefit in improving the education system and opens new opportunities for Omanis to advance and lead their educational institutions.

Finally, the human capital theory suggests that there is a strong correlation between education and economic growth. Increasing educational expenditures in Oman led to an educated population that is able to replace the expatriate workers and lead their country to prosperity. In addition, increasing the financing of the international scholarships to the Western countries supplied Oman with a well-prepared citizenry possessing specialized skills that can help to grow the economy. These education and training programs created a very competitive environment in Oman which encourages individuals to get a quality education and gain the skills needed by their economy. Some of the big oil companies in the country realized the importance

of offering a quality education and training for their staff, and started financing their own scholarship and training programs. For example, the Petroleum Development Oman (PDO) is offering international scholarships for fresh high school graduates that includes signing a guaranteed job contract with the company after graduation. PDO believes that investing in the education of their staff will increase their skills and will lead to a competitive work environment. This positive work environment encourages innovation and research in the field and contributes to the sustained economic growth in Oman (PDO, 2017).

Oman needs to diversify its income sources, improve the economic growth, and develop the education system (Al-hajry, 2003). The Omani government has fully funded education and its development since the first day of His Majesty the Sultan Qaboos bin Said been in office as the president of the Sultanate. The researcher thinks that the government should take some steps to diversify its financial funding policies in the country to sustain a continuous development of the education system, especially when oil prices are declining. It is time now that the Omani government starts implementing new policies to incorporate private businesses and individuals' contributions to fund the education development in the country. Policymakers, especially education leaders, should come up with innovative ways to finance their primary and higher education programs. The HCT believes that investing in education will lead to better individual and social benefits. In turn, increases in individual income and social returns will stimulate the economic growth in the country. Investing in education has a major impact on economic growth of any nation, so we have to find new sources of income that can support education away from our dependency on one undependable source like oil revenues.

The HCT believes that investing in the preparation of a quality education curricula, which matches education specializations with the market place requirements will lead to better

employment opportunities for university graduates. In addition, quality education will contribute to introducing better courses that will prepare a better workforce that matches the career opportunities created by the economy. There is a need for policymakers and the education leaders to adapt transparency in terms of education and training courses that takes in mind the real need of the economy in Oman (Al-Harthi, 2011). This strategy will reduce unemployment cases and will direct financial resources to fund the most needed education requirements without any waste in resources. Furthermore, the researcher thinks that once students believe that they are studying a needed specialization will end up to a guaranteed employment, will increase students' motivation to study and excel in their education. This motivation will lead to better education results and preparation for the job market (Al-Harthi, 2011).

Education Funding Diversification in Oman Using the Stages Model of the Policy Process

Human capital development is not possible without sustainable economic and financial resources for the educational and training investments in Oman. Education investment in the country will continue to face gloomy future, especially with the current decline in oil prices in the global market. His Majesty, the Sultan Qaboos bin Said, made a special commitment for education growth in the country since he took power in 1970 (News Bank, 2017).

The education sector must incorporate other ways to finance its growth and development. Some of the diversification strategies proved to be viable and successful in Qatar and U.A.E., and thus it is the time that Oman start implementing them to sustain and diversify its education funding. Oman can achieve education funding diversification by following the six steps outlined in the stages model of the policy process, as illustrated in Figure 7 (p. 58).

According to the stages model (Fowler, 2000; Birkland, 2001), the first step is to recognize that we have a serious problem, and try to define the issue clearly. The concerned

ministries like the Ministry of Finance, the Ministry of Education, and the Ministry of Higher Education are the ministries involved in implementing the six stages of this model. The Omani Government must define the issues affecting its efforts to sustain education funding. The researcher thinks that the major issue is the total dependence of the education funding on one source of income, which is oil revenues. Unfortunately, the Omani Government, and after 47 years since the start of its modern renaissance, its economy as a whole, and its education development is still dependent heavily on oil rents.

The second stage of this model is to set the agenda with clearly-defined goals. The concerned ministries and the Higher Economic Planning Council are responsible for setting the agenda to actively diversify education funding. The government must consider all possible options to diversify education funding, taking in consideration all available diversification strategies implemented by Qatar, U.A.E., and the rest of the oil dependent countries. Opening the economy to foreign direct investment in the education sector, signing new cooperation and partnership with the private sector, and reducing government bureaucracy, will accelerate the diversification efforts and increase private investments in education. In addition, the government may choose to announce the introduction of free-zone educational cities that will set the stage for international schools and universities to enter into the Omani education system.

The third stage of the model is policy formulation, in which the concerned government agencies should engage in formulating a national education policy that will help in implementing the establishment of new education hub in Oman. The Ministries of Education, Finance, Higher Education, and Commerce must play a crucial role in establishing and implementing the new policy attempting to diversify education funding. The policy should include achievable goals with recorded time frames to ensure success for the new education funding policy.

The fourth stage in the model is policy adoption by all the stakeholders at all the levels. The Omani government represented by the Ministers Cabinet has to adopt all of its policies and regulations to adhere with the new education funding policy. Policy adaptation will have to assist in the transformation of the economy to accept easily more foreign direct investments, and give autonomy to the private sector to be more competitive locally and internationally. All the above-mentioned concerned government ministers and agencies must implement the new policy in order to reach goals in a timely manner.

The fifth step is the actual implementation of the new education funding policy by all stakeholders at all levels in the country. Policy implementation stage has to be mandatory for all concerned parties in the Omani government at all levels. The Education Council, as considered the overall umbrella for all levels of education in the Sultanate, may supervise the implementation process with the support of both; the Ministry of Education and the Ministry of Higher Education.

The final stage of the classic policy process model is to evaluate the implementation process to see if the policy really works. In addition, the government represented by the Cabinet of the Ministers will have to evaluate, periodically, the policy and look for ways to improve it both in a formative and summative ways. The Ministry of Education and the Ministry of Higher Education may be responsible for conducting the evaluation task in their facilities, respectively.

Recommendations

Recommendations for the Education Field

1. Education leaders must recognize that oil will end soon, and its current production levels and prices are fluctuating over time with negative effects on education development and sustainability.

2. Ministries of Education and Higher Education in the Middle Eastern countries must take positive actions toward moving to knowledge-based economies that encourage research development and innovation to ensure being competitive internationally.

3. Education funding and development is the responsibility of all stakeholders, including government, private sector, community, and individuals. Education leaders must encourage the private sector to become an active partner with the government efforts to finance and spread education accessibility to all people.

4. Diversification of education funding sources will guarantee a continuous education development in the future, and will reduce the negative effects for being dependent on one natural source of income.

5. The Gulf governments must encourage the inflow of the direct foreign investment into the education field, especially by the establishment of new education hubs, educational cities, and opening new branches for some of the leading educational institution from around the globe.

6. Education leaders must learn from the successful implementation of education cities and hubs in Qatar and the U.A.E., and try to spread their success to other developing countries like Oman.

7. The Omani government must reduce bureaucracy, redundancy, and other inhibitors to increase its attractiveness for direct foreign investment.

Recommendations for Future Research

1. Future research must explore some other factors, like literacy rate, that might have negative effects on education funding that the researcher did not study in this research.

2. The researcher plans to conduct a qualitative research in this area, by interviewing some of the education leaders to explore their knowledge, attitudes, and feedback about diversification strategies and challenges faced in the field.

3. Further studies can focus on exploring the main contributors to education funding in the U.A.E. and Qatar, and how their governments were successful in attracting leading educational institutions to open branches in Dubai, Abu Dhabi, and Doha.

Conclusions

This study investigated the existing relationship between oil price fluctuations and education funding in Qatar, U.A.E., and Oman during the years 1975 to 2015. The researcher concluded that Oman is still depending mainly on oil revenues to fund its education system. Furthermore, the Sultanate is lagging in the process of diversifying its income sources, which will have negative impact on financing its current education plans, and its development ambitions in the future. The Omani government efforts to diversify its economy did not yield the anticipated results, and failed to fully diversify the economy, or make it less sensitive to oil revenues, which is still the main source of income in the country (Hivdt, 2011).

In addition, the researcher found that U.A.E. and Qatar diversification efforts were highly successful and benefited in financing their growing education systems. Their success in diversifying their income sources led to a more sustainable education funding. Both countries succeeded by setting up clear vision and mission statements to move away from oil revenues, as well as opening up their economies for direct foreign investment in all sectors, especially in education (Hivdt, 2011).

Dubai's diversification success, in specific, is a world model that other Arab governments, like Oman, should learn from and follow to increase their international

competitiveness and diversify their income sources (Hivdt, 2011). Dubai's success was due to the following reasons: strong government leadership for the development efforts, quick decision-making process, flexible labor force policies, strong service economy, quick creation of international business opportunities, strong branding of the Emirate world-wide, supply-driven demand, and strong cooperating with top international business leaders (Hivdt, 2011).

As lessons learned from the success of those countries, Oman needs to establish new education hubs to attract leading education institutions from all over the globe, which will increase the private sector spending on education development. Additionally, Oman may offer new opportunities for their private sectors to contribute efficiently in their education plans and development programs. Diversification of funding sources for education will increase education institutions' autonomy, which will reduce governments' control over their spending, curriculum, management, programs, and future development plans. Oman needs to reduce its government bureaucracy over education institutions and ease the entry of new educations hubs into its economy to increase their autonomy and boost their international competitiveness.

In summary, this research explored the effects of solely depending on one natural source as the main source of income, which can negatively affect the sustainability of education funding and development. Education funding should never depend on oil revenues as the main contributor to its fiscal budget, instead education leaders must adopt some creative ways to diversify education funding in order to sustain education aspirations and future developments. Education should not be the responsibility of the government alone, other stakeholders like the private sector must be one of the main contributors in education funding, stability, and future development plans.

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APPENDICES

APPENDIX A

SIU HSC Application Decision

HSC application decision

Hamood Al-Shoaibi
Thu 4/13, 2:50 PM

Sent from my OmaniPhone

Begin forwarded message:

...

From: SIU Human Subjects <siuhsc@siu.edu>
Date: April 13, 2017 at 11:09:32 AM CDT
To: Hamood Al-Shoaibi <hamood@siu.edu>
Cc: Saran Donahoo <donahoo@siu.edu>
Subject: HSC application decision

The Human Subject Committee has conducted a preliminary review of your application to conduct human subjects research titled "*Towards Improving the Education Funding Policy in Oman: Lessons Learned from Other Oil Dependent Nations*" . According to the Code of Federal Regulations 45 CFR 46.102, a Human Subject is defined as "a living individual about whom an investigator (whether professional or student) conducting research obtains (1) Data through intervention or interaction with the individual, or (2) Identifiable private information."

From the details provided in your application, the HSC has determined that this specific work does is not designed to address a research question *about* human participants, and thus does not meet the definition of human subjects research.   The committee thanks you for your commitment to fulfilling your obligations as an SIU affiliated investigator, and wishes you success in your endeavors.

Please feel free to contact us with any questions or with future application submissions as your research progresses.

APPENDIX B

Permission to use the Maps and the Flags of U.A.E, Qatar, and Oman

APPENDIX C

Permission to use the Stages Model of Policy Process Diagram

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Center

Confirmation Number: 11679894
Order Date: 11/07/2017

Customer Information

Customer: Hamood AlShoaibi
Account Number: 3001214759
Organization: Hamood AlShoaibi
Email: hamood@siu.edu
Phone: +1 (618) 303-5765
Payment Method: Invoice

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Order Details

An introduction to the policy process : theories, concepts, and models of public policy making

Billing Status:
N/A

Order detail ID:	70758991	
ISBN:	978-0-7656-2532-8	
Publication Type:	Book	
Publisher:	M.E. Sharpe	
Author/Editor:	Birkland, Thomas A.	

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Title of the article or chapter the portion is from	An introduction to the policy process; theories, concepts, and models of public policy making by Thomas Birkland (2001).
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Institution name	Southern Illinois University
Expected presentation date	Feb 2018

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APPENDIX D

Data Requisition from MDPS, Qatar

APPENDIX E

Data Requisition from FCSA, U.A.E.

APPENDIX F

Data Requisition from NCSI, Oman

APPENDIX G

Assumptions Tests for Multiple Regression (U.A.E.)

Histogram

Dependent Variable: Govexp

Mean = 1.67E-16
Std. Dev. = 0.944
N = 38

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Govexp

Scatterplot
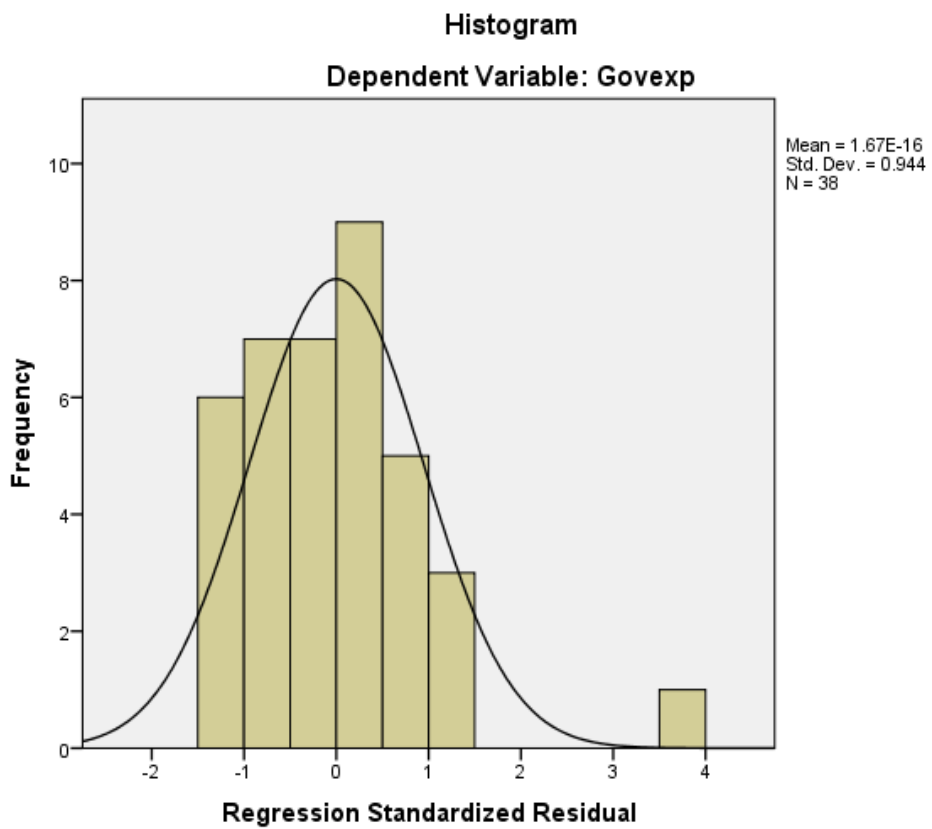
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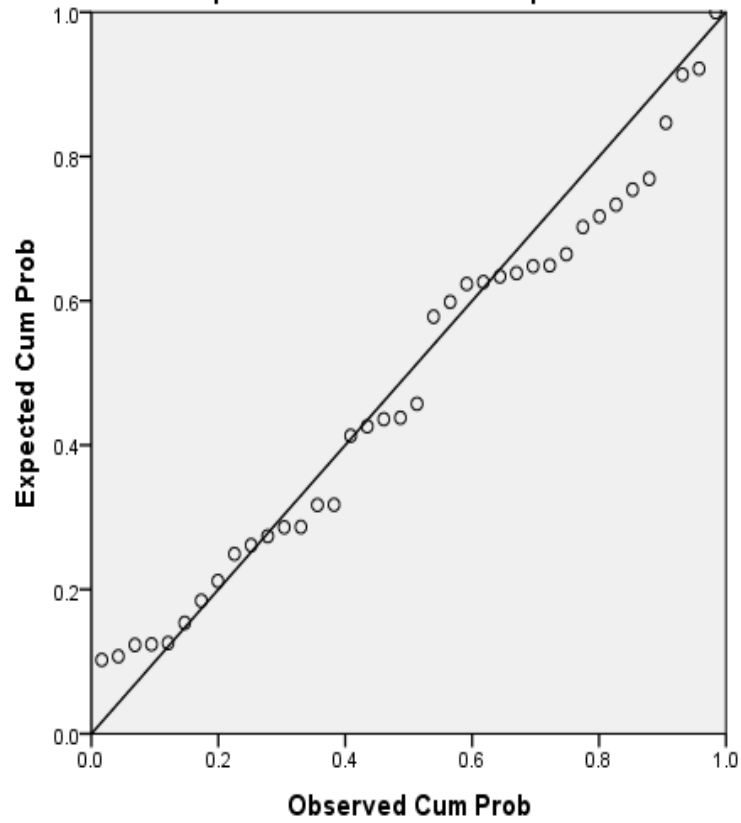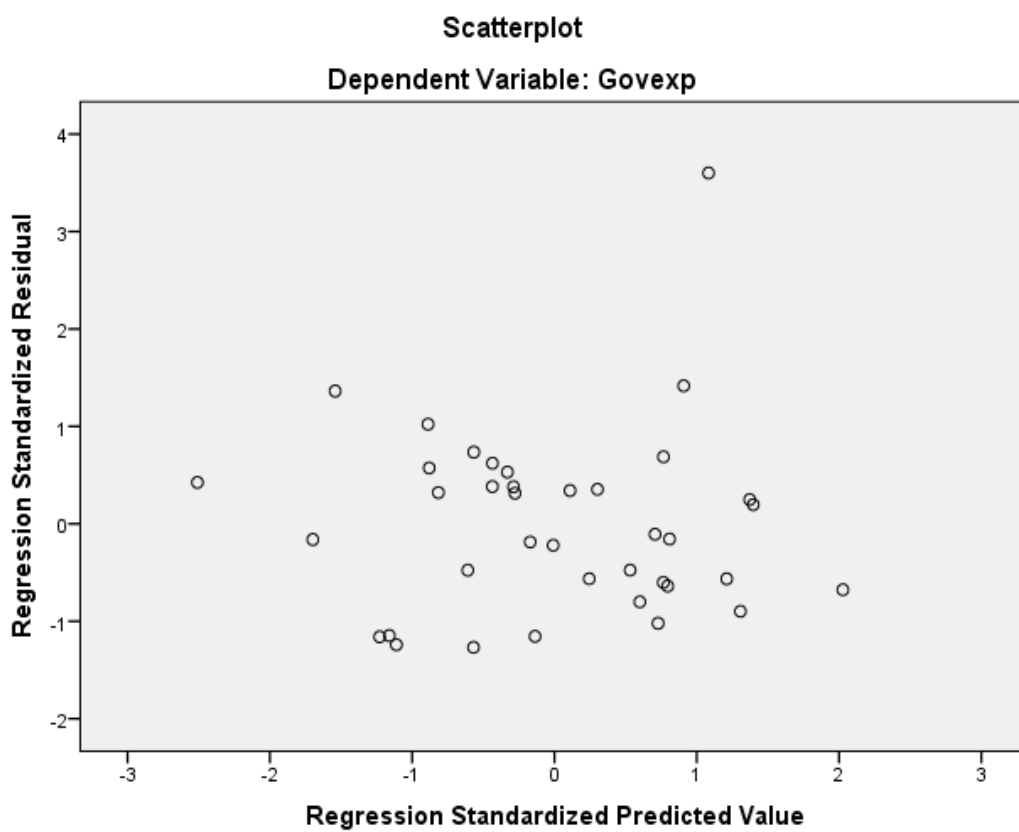
APPENDIX H

Assumptions Tests for Multiple Regression (Qatar)

Histogram

Dependent Variable: GovExp

Mean = -1.33E-15
Std. Dev. = 0.913
N = 25

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: GovExp

Scatterplot
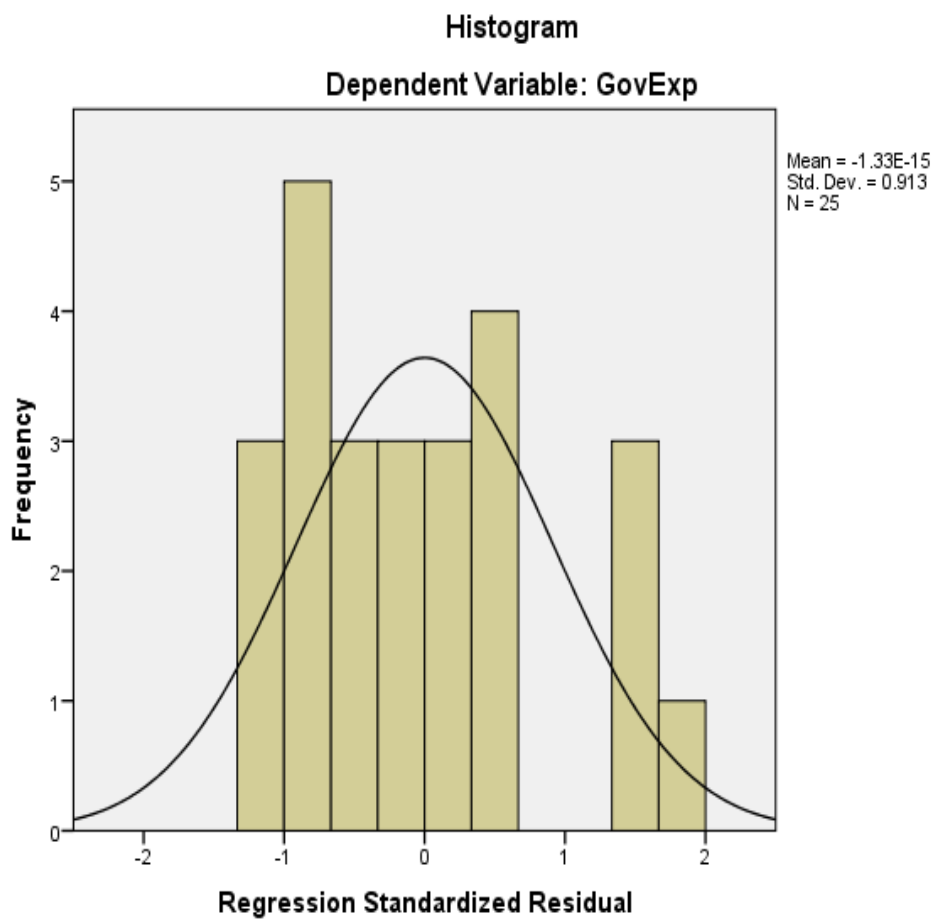
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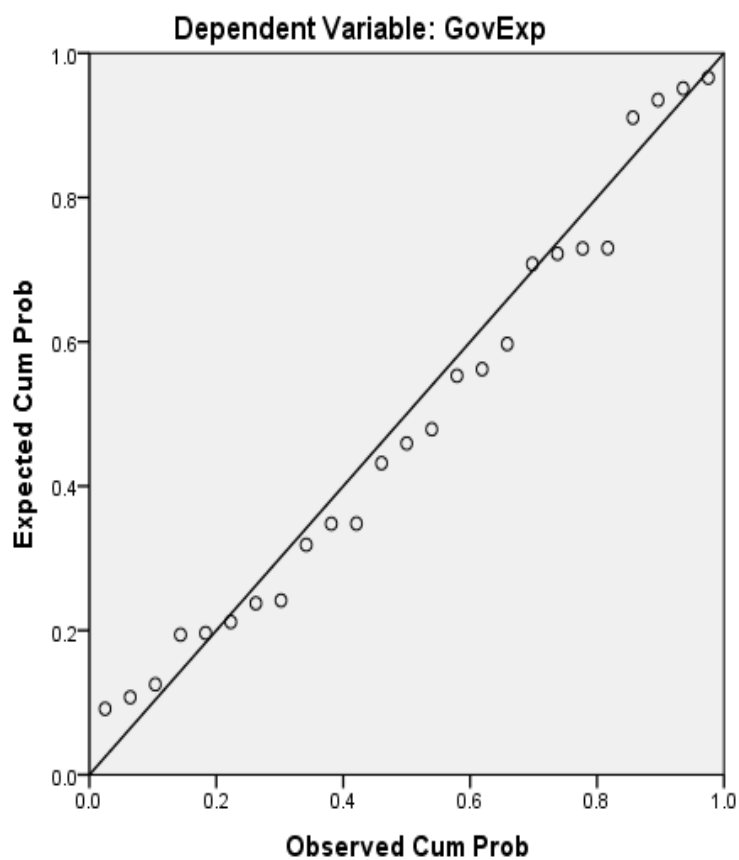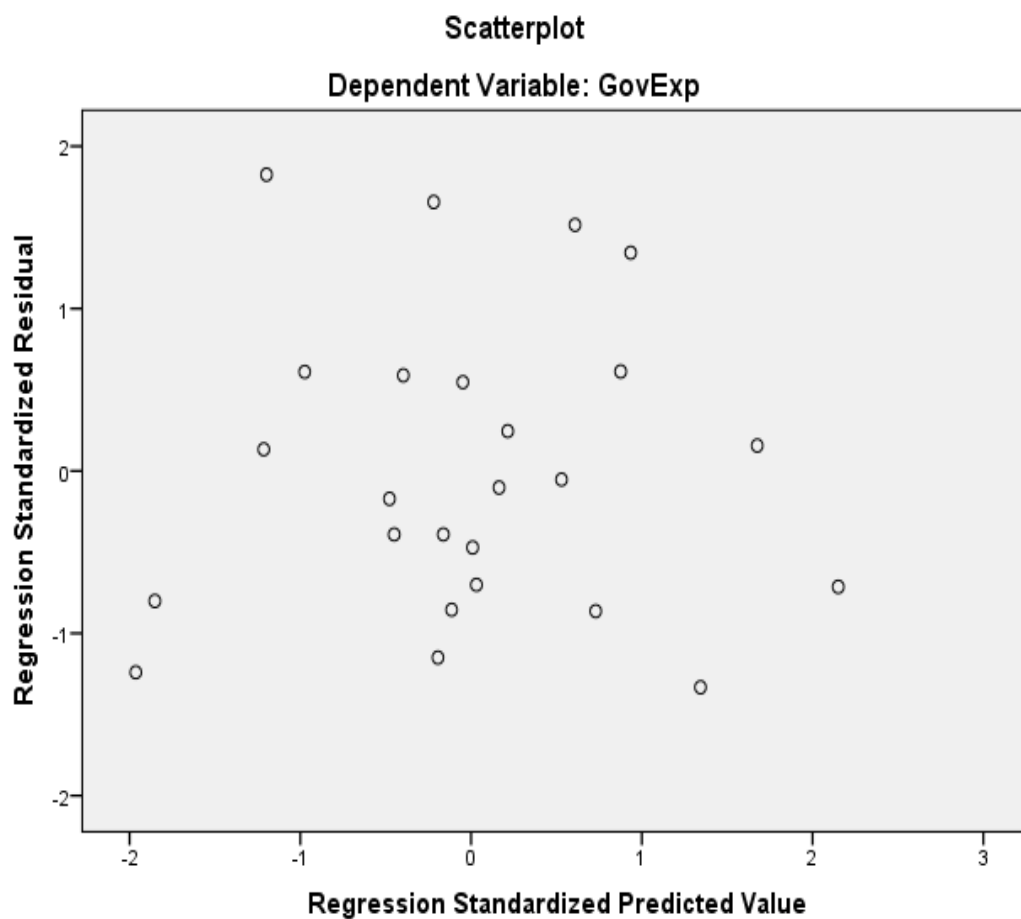
APPENDIX I

Assumptions Tests for Multiple Regression (Oman)

Histogram

Dependent Variable: EduExpGr

Mean = -4.86E-17
Std. Dev. = 0.947
N = 40

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EduExpGr

Scatterplot
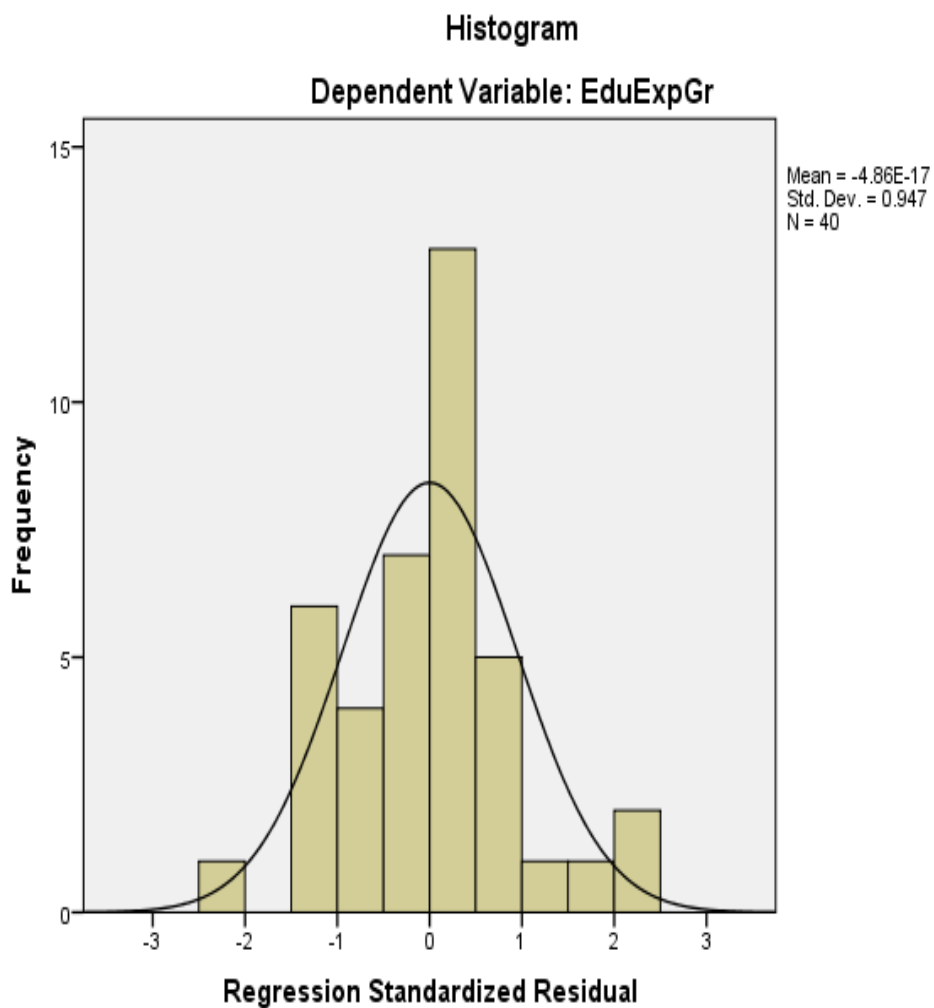
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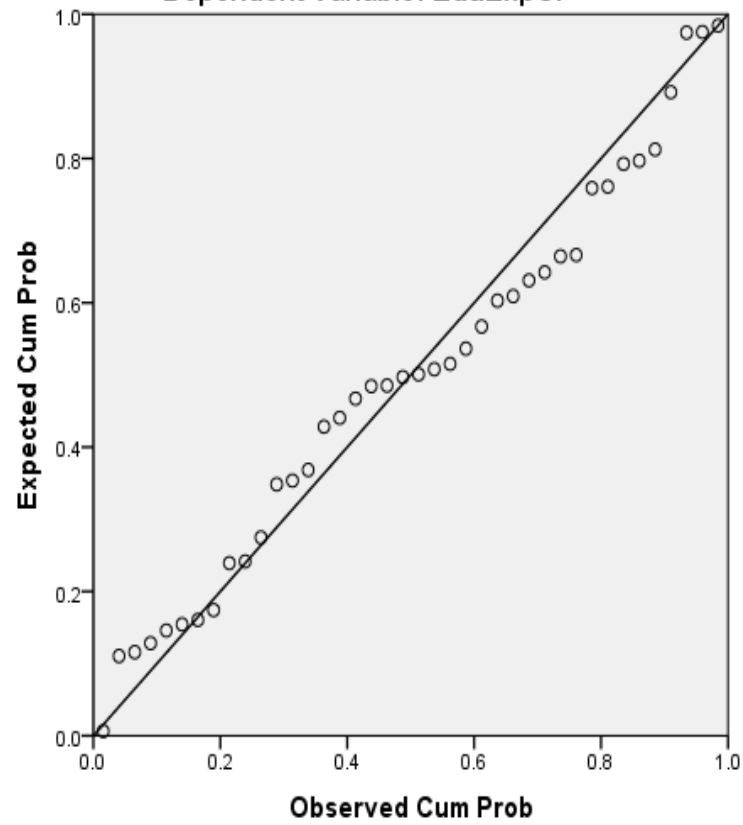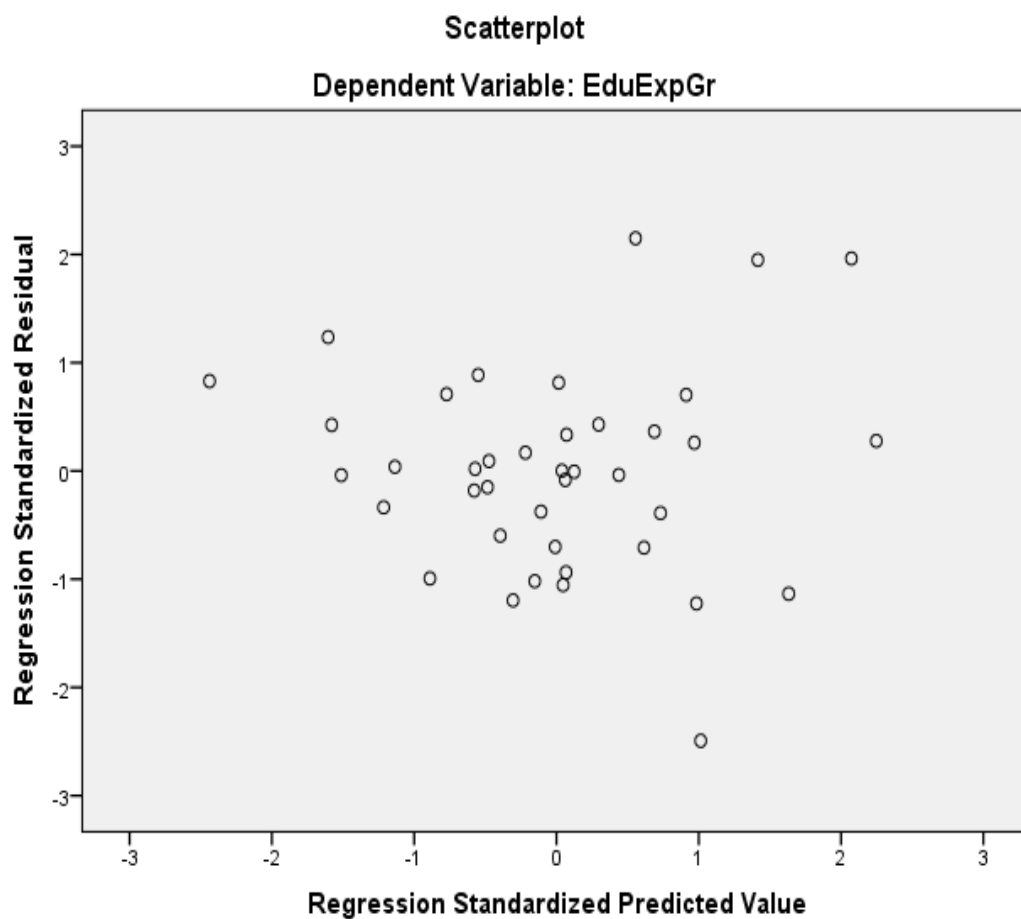
APPENDIX J

Descriptive Statistics for Oman

	N	Minimum	Maximum	Mean	Std. Deviation
Population, total	41	882044.00	4199810.00	2129678.8780	830409.41939
Labor force, total	41	19123.00	2215647.00	746963.3415	548455.79514
Enrolment in primary education, both sexes	39	48649.00	350544.00	233811.9744	98547.51074
Enrolment in secondary education, both sexes	38	723.00	321670.00	153428.3158	119217.66665
Total Enrollment in Primary and Secondary Schools	38	49372.00	637444.00	384523.8158	211168.06477
Government expenditure on education as % of GDP (%)	41	1.16	4.96	3.1772	.90446
GDP per capita (current US$)	41	2377.09	22963.38	9279.0948	5997.04158
Oil rents (% of GDP)	41	17.81	71.42	34.7447	9.15012

APPENDIX K

Descriptive Statistics for U.A.E.

	N	Minimum	Maximum	Mean	Std. Deviation
Population, total	41	554324.00	9154302.00	3483718.2439	2779288.48291
Labor force, total	41	293788.00	6318844.00	2140448.4878	1997994.37603
Enrolment in primary education, both sexes (number)	40	40229.00	460975.00	221544.3500	103850.55928
Enrolment in secondary education, both sexes (number)	23	7971.00	190576.00	76188.0000	55626.68661
Total Enrol	23	48200.00	453229.00	232356.6087	131330.02928
Government expenditure on education as % of GDP (%)	35	.50	6.36	1.8970	1.75519
GDP per capita (current US$)	41	22476.97	45720.02	33502.0144	6733.87491
Oil rents (% of GDP)	41	7.98	51.13	20.3759	7.74953

APPENDIX L

Descriptive Statistics for Qatar

	N	Minimum	Maximum	Mean	Std. Deviation
Population, total	41	164413.00	2481539.00	777285.4878	661140.73350
Labor force, total	26	272279.00	1809178.00	715456.6154	543640.45073
Enrolment in primary education, both sexes (number)	41	22287.00	130464.00	57799.7561	26337.88115
Enrolment in secondary education, both sexes (number)	40	7811.00	95567.00	40479.2750	23702.81620
TotalEnrol	40	30098.00	226031.00	98333.1250	50225.55861
Government expenditure on education as % of GDP (%)	41	1.19	6.97	3.7017	1.07264
GDP per capita (current US$)	41	12685.64	96732.53	36510.1418	27003.63512
Oil rents (% of GDP)	41	5.85	80.99	27.5391	13.89899

APPENDIX M

Stationarity Tests for Oman

Government Expenditure at Level

Null Hypothesis: GOVEXP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.542990	0.1133
Test critical values:	1% level		-3.605593	
	5% level		-2.936942	
	10% level		-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVEXP)
Method: Least Squares
Date: 11/30/17   Time: 19:40
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOVEXP(-1)	-0.270413	0.106336	-2.542990	0.0152
C	0.940799	0.345655	2.721787	0.0097

R-squared	0.145430	Mean dependent var	0.09328
Adjusted R-squared	0.122941	S.D. dependent var	0.61874
S.E. of regression	0.579500	Akaike info criterion	1.79545
Sum squared resid	12.76118	Schwarz criterion	1.87949
Log likelihood	-33.90810	Hannan-Quinn criter.	1.82597
F-statistic	6.466800	Durbin-Watson stat	2.36943
Prob(F-statistic)	0.015185		
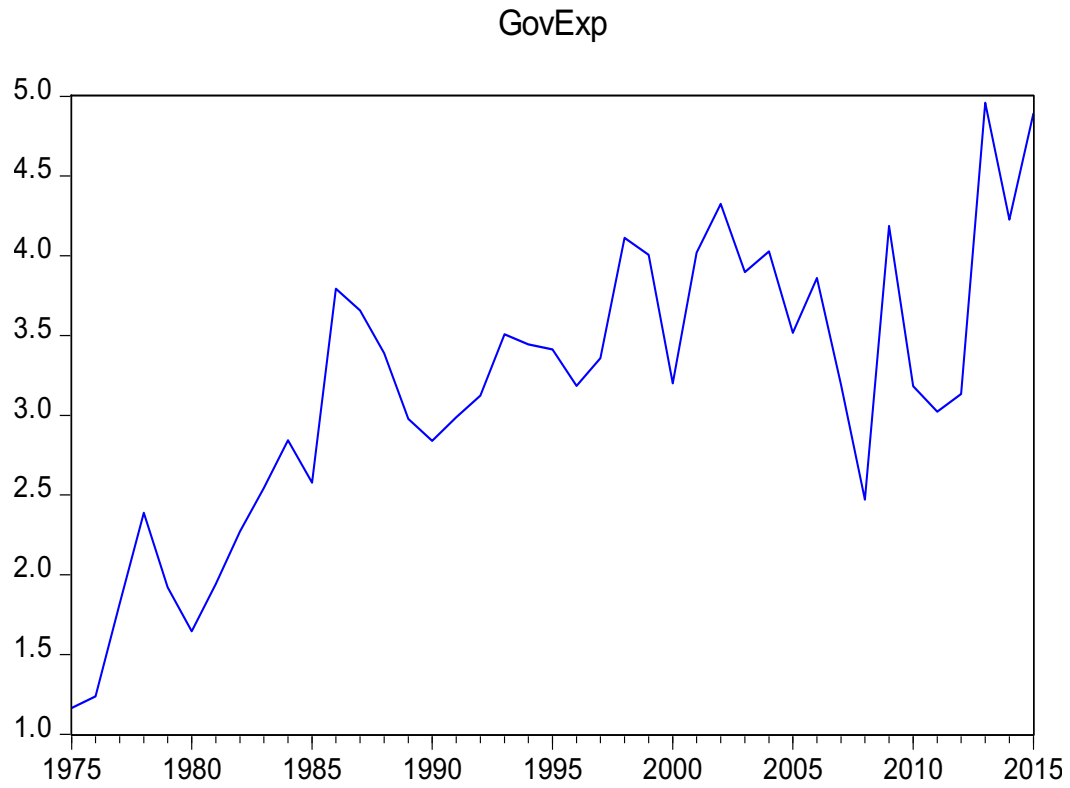
GovExp

GOVEXP after First Difference:

Null Hypothesis: D(GOVEXP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-8.666907	0.0000
Test critical values:	1% level		-3.610453	
	5% level		-2.938987	
	10% level		-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVEXP,2)
Method: Least Squares
Date: 11/30/17   Time: 19:57
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GOVEXP(-1))	-1.351448	0.155932	-8.666907	0.0000
C	0.121359	0.096171	1.261909	0.2149

R-squared	0.669983	Mean dependent var	0.01526
Adjusted R-squared	0.661063	S.D. dependent var	1.02320
S.E. of regression	0.595701	Akaike info criterion	1.85175
Sum squared resid	13.12981	Schwarz criterion	1.93706
Log likelihood	-34.10941	Hannan-Quinn criter.	1.88233
F-statistic	75.11528	Durbin-Watson stat	2.15476
Prob(F-statistic)	0.000000		

EduExpGr
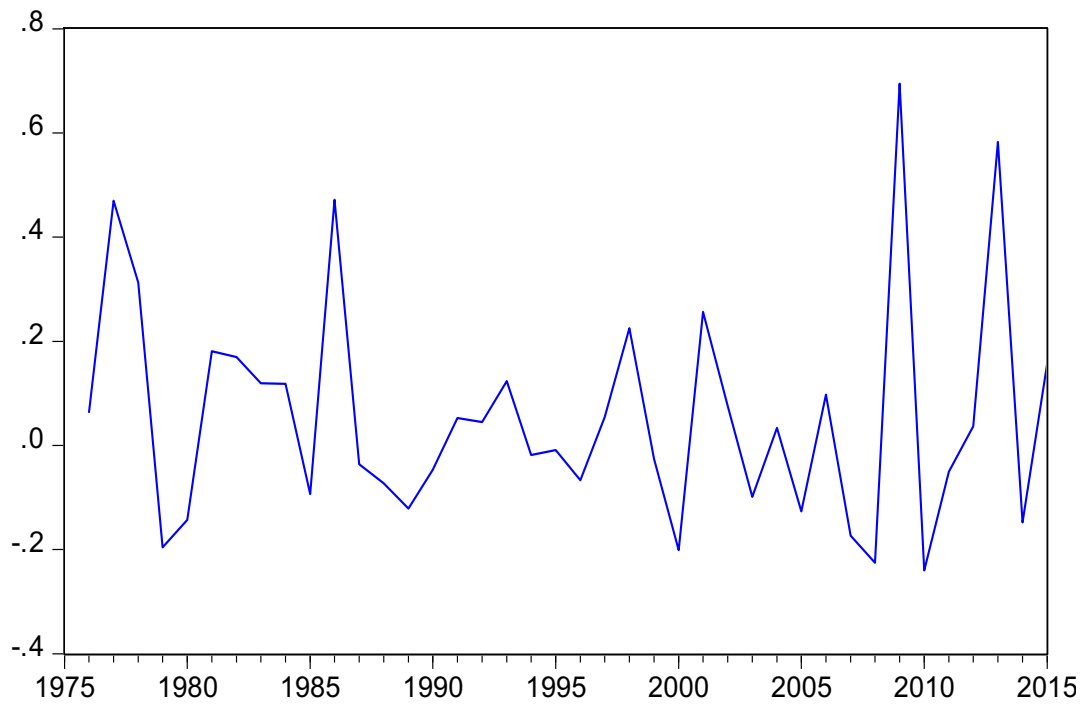
Oil Prices at Level:

Null Hypothesis: OILPRICE has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.486944	0.5299
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(OILPRICE)

Method: Least Squares

Date: 11/30/17   Time: 20:05

Sample (adjusted): 1976 2015

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OILPRICE(-1)	-0.100941	0.067885	-1.486944	0.1453
C	4.695311	3.202595	1.466096	0.1508

R-squared	0.054985	Mean dependent var	0.97650
Adjusted R-squared	0.030116	S.D. dependent var	12.8468
S.E. of regression	12.65185	Akaike info criterion	7.96211
Sum squared resid	6082.637	Schwarz criterion	8.04665
Log likelihood	-157.2438	Hannan-Quinn criter.	7.99273
F-statistic	2.211002	Durbin-Watson stat	1.55738
Prob(F-statistic)	0.145281		

OilPrice
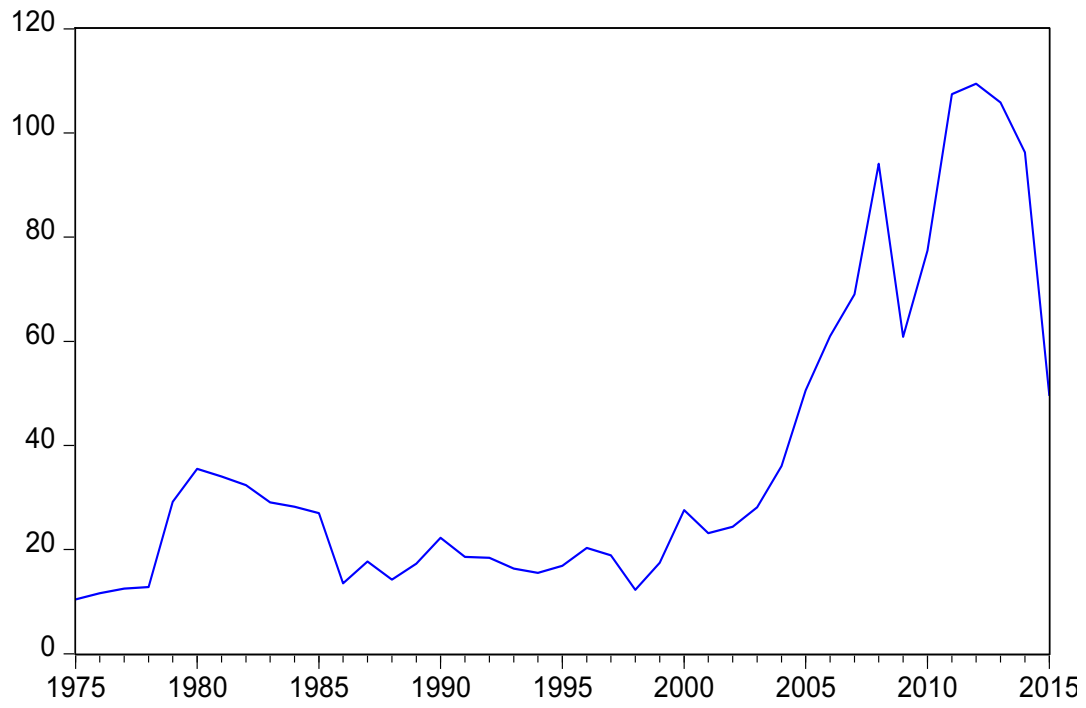
Oil Prices after First Level:

Null Hypothesis: D(OILPRICE) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.647925	0.0006
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OILPRICE,2)
Method: Least Squares
Date: 11/30/17   Time: 20:15
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OILPRICE(-1))	-0.957376	0.205979	-4.647925	0.0000
C	0.877701	2.158932	0.406544	0.6867

R-squared	0.368635	Mean dependent var	-1.230000
Adjusted R-squared	0.351571	S.D. dependent var	16.3695
S.E. of regression	13.18176	Akaike info criterion	8.04545
Sum squared resid	6429.072	Schwarz criterion	8.13076
Log likelihood	-154.8866	Hannan-Quinn criter.	8.07604
F-statistic	21.60321	Durbin-Watson stat	1.64688
Prob(F-statistic)	0.000042		

OilprGro

Labor Force at Level:

Null Hypothesis: LABORFORC has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.056570	0.9581
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LABORFORC)
Method: Least Squares
Date: 11/30/17   Time: 20:22
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LABORFORC(-1)	0.001864	0.032956	0.056570	0.9552
D(LABORFORC(-1))	0.513878	0.226659	2.267187	0.0295
C	20096.55	20882.75	0.962351	0.3423

R-squared	0.232627	Mean dependent var	50402.2
Adjusted R-squared	0.189996	S.D. dependent var	79798.3
S.E. of regression	71818.70	Akaike info criterion	25.2758
Sum squared resid	1.86E+11	Schwarz criterion	25.4035
Log likelihood	-489.8719	Hannan-Quinn criter.	25.3219
F-statistic	5.456662	Durbin-Watson stat	1.49893
Prob(F-statistic)	0.008514		

Laborforc
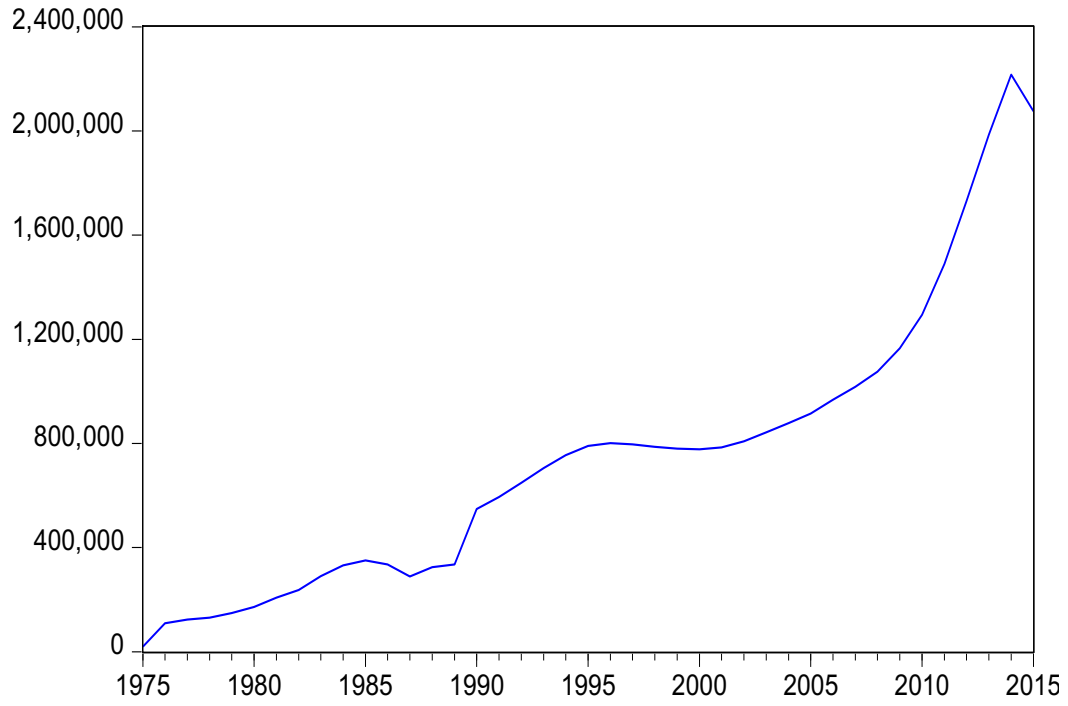
Labor Force after First Difference:

Null Hypothesis: D(LABORFORC) has a unit root

Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

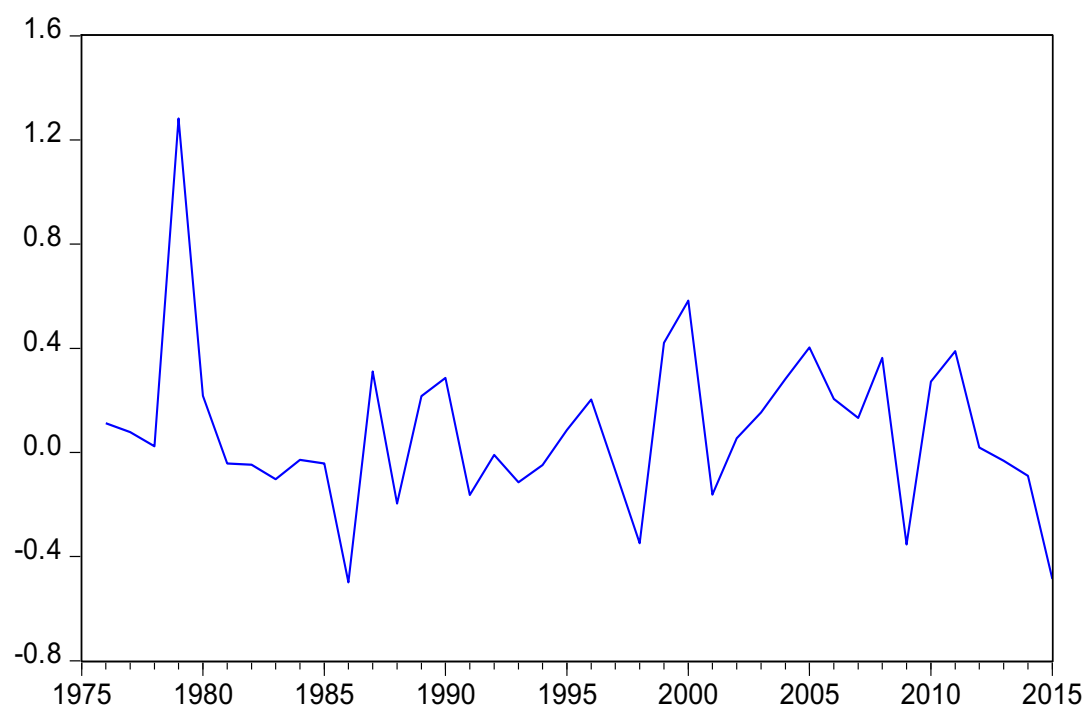|		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.053318	0.0387
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LABORFORC,2)
Method: Least Squares
Date: 11/30/17   Time: 20:24
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LABORFORC(-1))	-0.476948	0.156207	-3.053318	0.0042
C	20943.76	14355.89	1.458897	0.1530

R-squared	0.201256	Mean dependent var		-5918.513
Adjusted R-squared	0.179669	S.D. dependent var		78219.6
S.E. of regression	70844.68	Akaike info criterion		25.2249
Sum squared resid	1.86E+11	Schwarz criterion		25.3090
Log likelihood	-489.8736	Hannan-Quinn criter.		25.2540
F-statistic	9.322751	Durbin-Watson stat		1.50327
Prob(F-statistic)	0.004178			

LaborGro
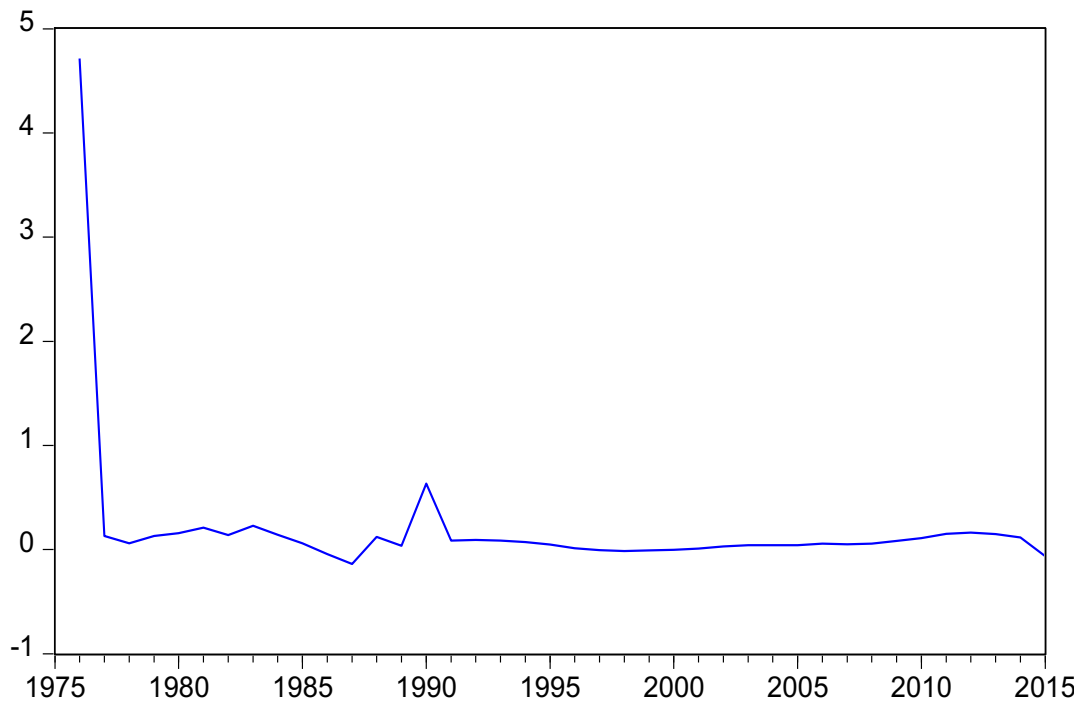
Total Enrollment at Level:

Null Hypothesis: TOTALENROL has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.077502	0.9395
Test critical values:	1% level	-3.808546	
	5% level	-3.020686	
	10% level	-2.650413	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TOTALENROL)
Method: Least Squares
Date: 11/30/17   Time: 20:36
Sample (adjusted): 1984 2003
Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTALENROL(-1)	-0.001239	0.015988	-0.077502	0.9398
D(TOTALENROL(-1))	0.712625	0.281357	2.532813	0.0297
D(TOTALENROL(-2))	0.778577	0.337486	2.306993	0.0437
D(TOTALENROL(-3))	-0.348585	0.340570	-1.023533	0.3302
D(TOTALENROL(-4))	-0.641738	0.347810	-1.845083	0.0948
D(TOTALENROL(-5))	-0.112124	0.335868	-0.333833	0.7454
D(TOTALENROL(-6))	0.831951	0.321491	2.587788	0.0271
D(TOTALENROL(-7))	0.126491	0.321430	0.393525	0.7022
D(TOTALENROL(-8))	-0.539744	0.303607	-1.777775	0.1058
C	3819.218	4833.297	0.790189	0.4478

R-squared	0.965128	Mean dependent var	22392.0
Adjusted R-squared	0.933744	S.D. dependent var	7756.33
S.E. of regression	1996.510	Akaike info criterion	18.3434
Sum squared resid	39860503	Schwarz criterion	18.8401
Log likelihood	-173.4304	Hannan-Quinn criter.	18.4403
F-statistic	30.75190	Durbin-Watson stat	1.81230
Prob(F-statistic)	0.000004		

TOTALENROL
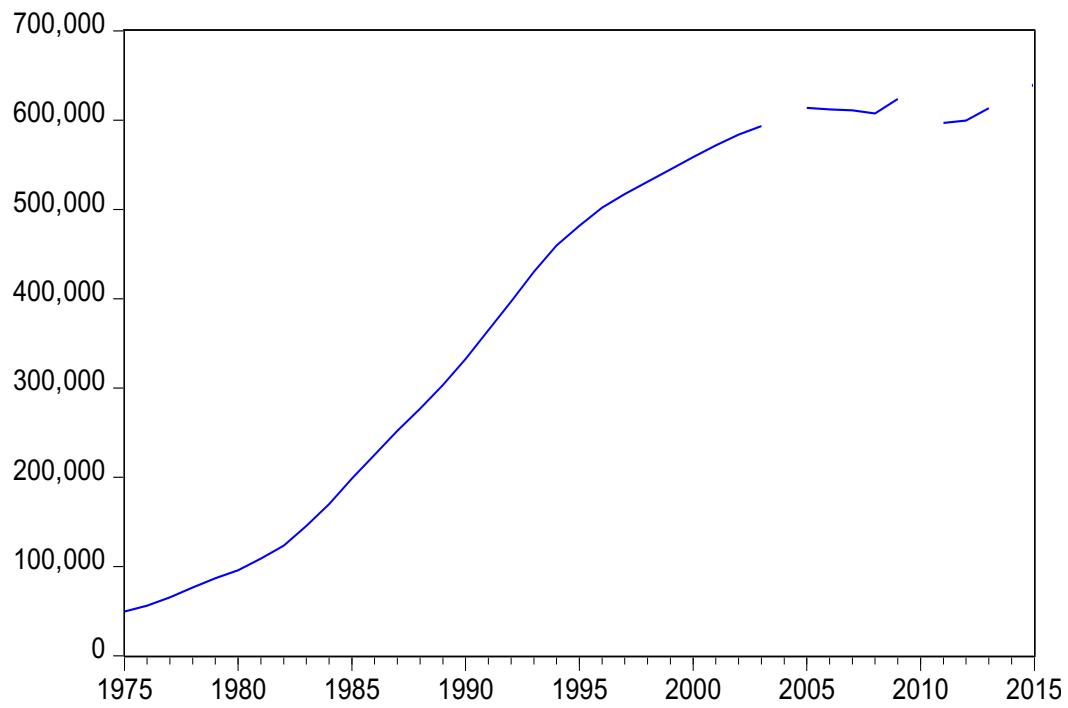
Total Enrolment after First Level:

Null Hypothesis: D(TOTALENROL) has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.982652	0.2913
Test critical values:	1% level	-3.808546	
	5% level	-3.020686	
	10% level	-2.650413	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TOTALENROL,2)
Method: Least Squares
Date: 11/30/17   Time: 20:39
Sample (adjusted): 1984 2003
Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOTALENROL(-1))	-0.200486	0.101120	-1.982652	0.0729
D(TOTALENROL(-1),2)	-0.075723	0.211780	-0.357557	0.7274
D(TOTALENROL(-2),2)	0.709855	0.182144	3.897217	0.0025
D(TOTALENROL(-3),2)	0.350039	0.235838	1.484233	0.1658
D(TOTALENROL(-4),2)	-0.301511	0.188410	-1.600296	0.1378
D(TOTALENROL(-5),2)	-0.407144	0.221830	-1.835385	0.0936
D(TOTALENROL(-6),2)	0.436842	0.161789	2.700069	0.0207
D(TOTALENROL(-7),2)	0.555674	0.213113	2.607415	0.0244
C	3494.556	2299.344	1.519805	0.1568

R-squared	0.752647	Mean dependent var	-623.4500
Adjusted R-squared	0.572754	S.D. dependent var	2913.14
S.E. of regression	1904.169	Akaike info criterion	18.2434
Sum squared resid	39884445	Schwarz criterion	18.6912
Log likelihood	-173.4364	Hannan-Quinn criter.	18.3311
F-statistic	4.183857	Durbin-Watson stat	1.83755
Prob(F-statistic)	0.015804		

GDP Per Capita at Level:

Null Hypothesis: GDPPERCAPITA has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.981285	0.7508
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPERCAPITA)
Method: Least Squares
Date: 11/30/17   Time: 20:50
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPPERCAPITA(-1)	-0.046664	0.047554	-0.981285	0.3327
C	757.2734	516.7866	1.465350	0.1511

R-squared	0.024714	Mean dependent var	331.697
Adjusted R-squared	-0.000952	S.D. dependent var	1776.53
S.E. of regression	1777.428	Akaike info criterion	17.8523
Sum squared resid	1.20E+08	Schwarz criterion	17.9367
Log likelihood	-355.0486	Hannan-Quinn criter.	17.8826
F-statistic	0.962920	Durbin-Watson stat	2.22610
Prob(F-statistic)	0.332659		

GDPpercapita

GDP Per Capita after First Level:

Null Hypothesis: D(GDPPERCAPITA) has a unit root
    Exogenous: Constant
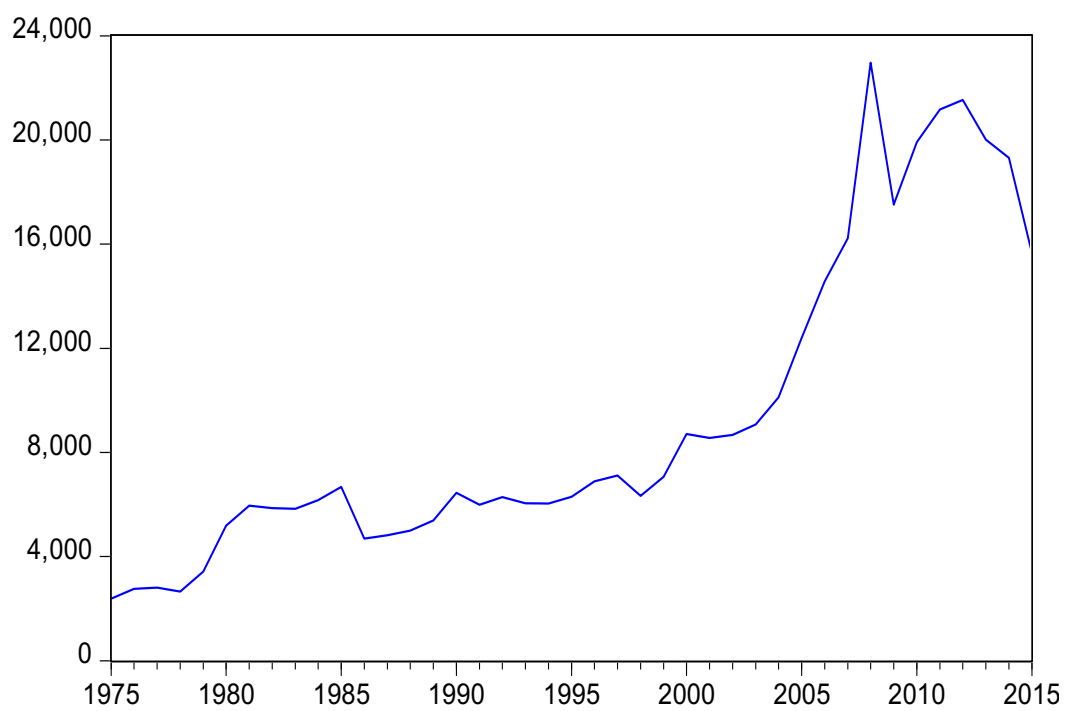   Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.135541	0.0000
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPERCAPITA,2)
Method: Least Squares
Date: 11/30/17   Time: 20:53
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPPERCAPITA(-1))	-1.230514	0.172449	-7.135541	0.0000
C	430.4549	294.9206	1.459562	0.1528

R-squared	0.579143	Mean dependent var		-103.7940
Adjusted R-squared	0.567769	S.D. dependent var		2709.68
S.E. of regression	1781.439	Akaike info criterion		17.8585
Sum squared resid	1.17E+08	Schwarz criterion		17.9436
Log likelihood	-346.2339	Hannan-Quinn criter.		17.8886
F-statistic	50.91595	Durbin-Watson stat		1.79829
Prob(F-statistic)	0.000000			

GDPPCGRO
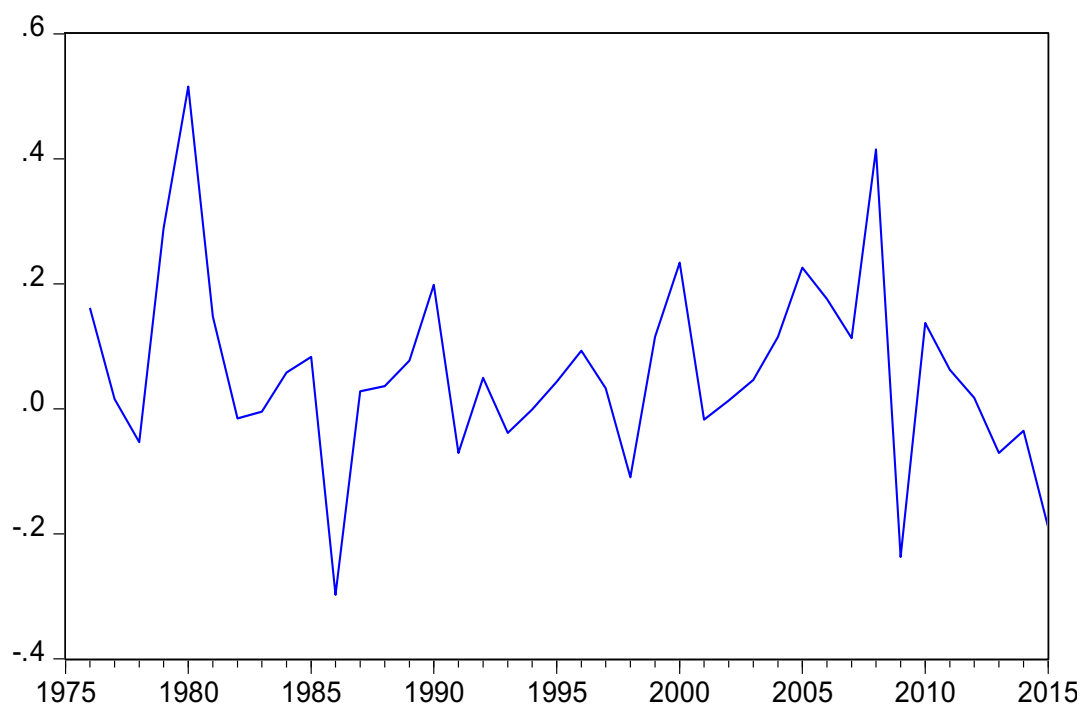
Oil Rents at Level:

Null Hypothesis: OILRENTS has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.756977	0.0067
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OILRENTS)
Method: Least Squares
Date: 11/30/17   Time: 21:01
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OILRENTS(-1)	-0.571811	0.152200	-3.756977	0.0006
C	19.63754	5.510056	3.563945	0.0010

R-squared	0.270842	Mean dependent var	-0.434187
Adjusted R-squared	0.251653	S.D. dependent var	9.85822
S.E. of regression	8.528073	Akaike info criterion	7.17331
Sum squared resid	2763.665	Schwarz criterion	7.25775
Log likelihood	-141.4662	Hannan-Quinn criter.	7.20383
F-statistic	14.11488	Durbin-Watson stat	1.85237
Prob(F-statistic)	0.000577		

Oilrents
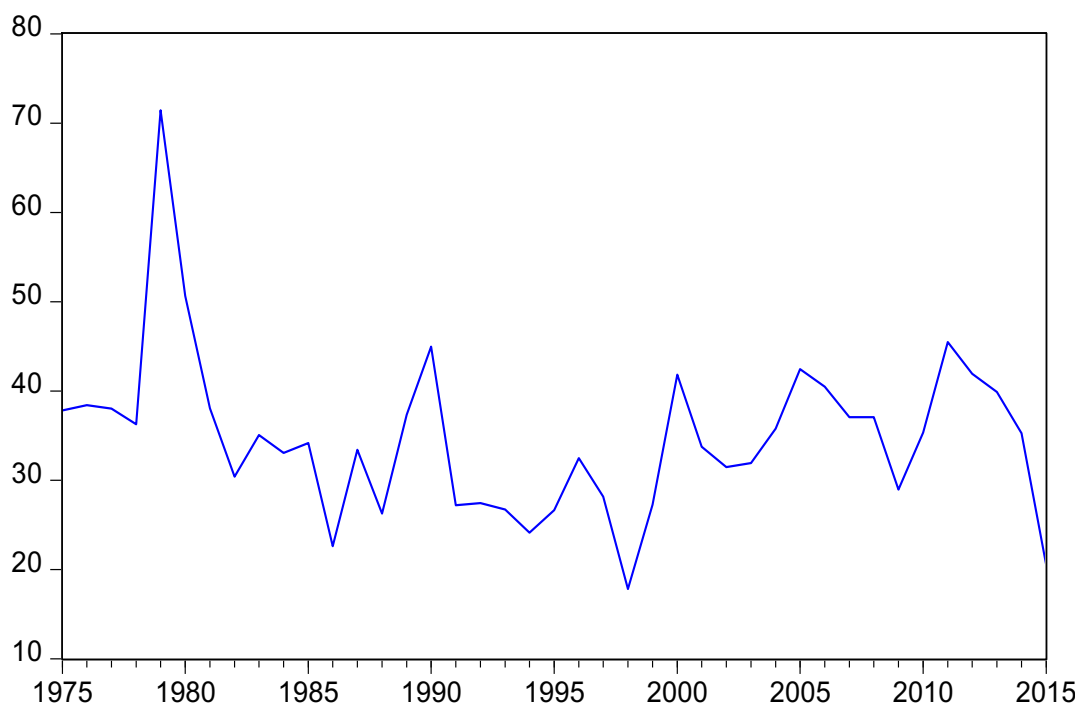
APPENDIX N

Stationarity Tests for Qatar

Education Expenditure at Level:

Null Hypothesis: GOVEXP has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.785637	0.0701
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVEXP)
Method: Least Squares
Date: 12/04/17   Time: 15:56
Sample (adjusted): 1979 2015
Included observations: 37 after adjustments

Variable	Coefficiet	Std. Error	t-Statistic	Prob.
GOVEXP(-1)	-0.510538	0.183275	-2.785637	0.0089
D(GOVEXP(-1))	-0.061343	0.189406	-0.323872	0.7481
D(GOVEXP(-2))	-0.080719	0.173342	-0.465667	0.6446
D(GOVEXP(-3))	0.163517	0.158740	1.030091	0.3107
C	1.999933	0.713317	2.803708	0.0085

R-squared	0.335439	Mean dependent var	0.02460
Adjusted R-squared	0.252369	S.D. dependent var	0.97368
S.E. of regression	0.841880	Akaike info criterion	2.61871
Sum squared resid	22.68040	Schwarz criterion	2.83642
Log likelihood	-43.44652	Hannan-Quinn criter.	2.69547
F-statistic	4.038019	Durbin-Watson stat	1.91086
Prob(F-statistic)	0.009215		

GovExp
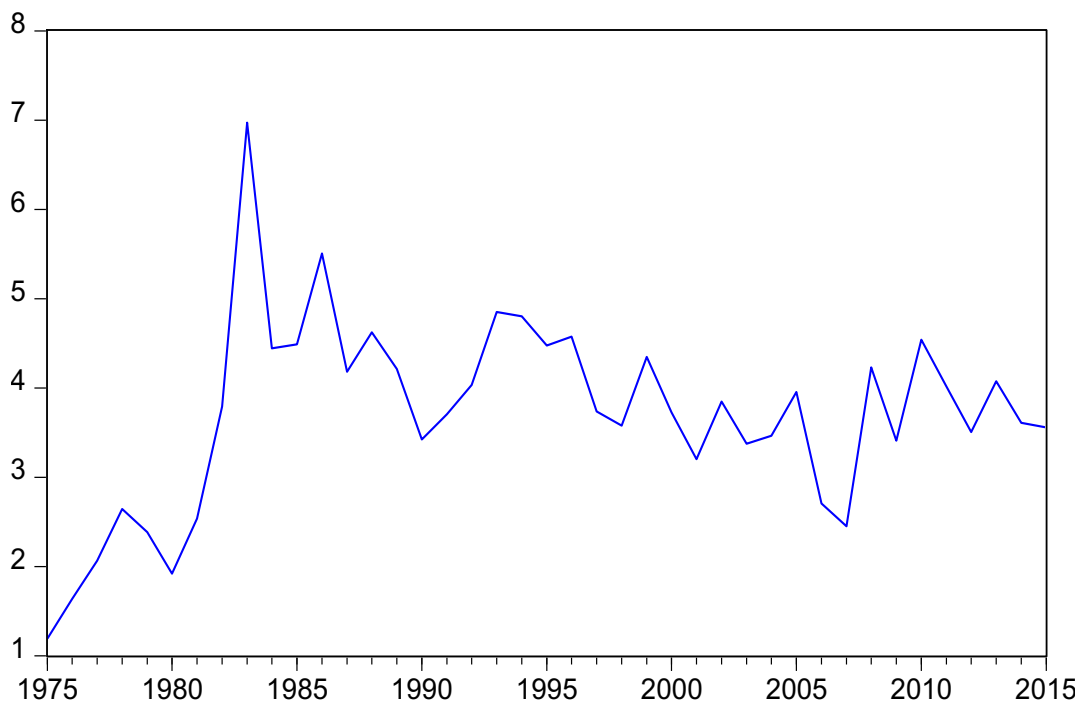
GOVEXP after First Level:

Null Hypothesis: D(GOVEXP) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.351880	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVEXP,2)
Method: Least Squares
Date: 12/04/17   Time: 15:59
Sample (adjusted): 1978 2015
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GOVEXP(-1))	-1.651175	0.259951	-6.351880	0.0000
D(GOVEXP(-1),2)	0.280140	0.162108	1.728106	0.0928
C	0.079807	0.148702	0.536689	0.5949

R-squared	0.674031	Mean dependent var	-0.012605
Adjusted R-squared	0.655405	S.D. dependent var	1.55153
S.E. of regression	0.910808	Akaike info criterion	2.72667
Sum squared resid	29.03499	Schwarz criterion	2.85590
Log likelihood	-48.80706	Hannan-Quinn criter.	2.77265
F-statistic	36.18615	Durbin-Watson stat	1.95465
Prob(F-statistic)	0.000000		

DGOVEXP
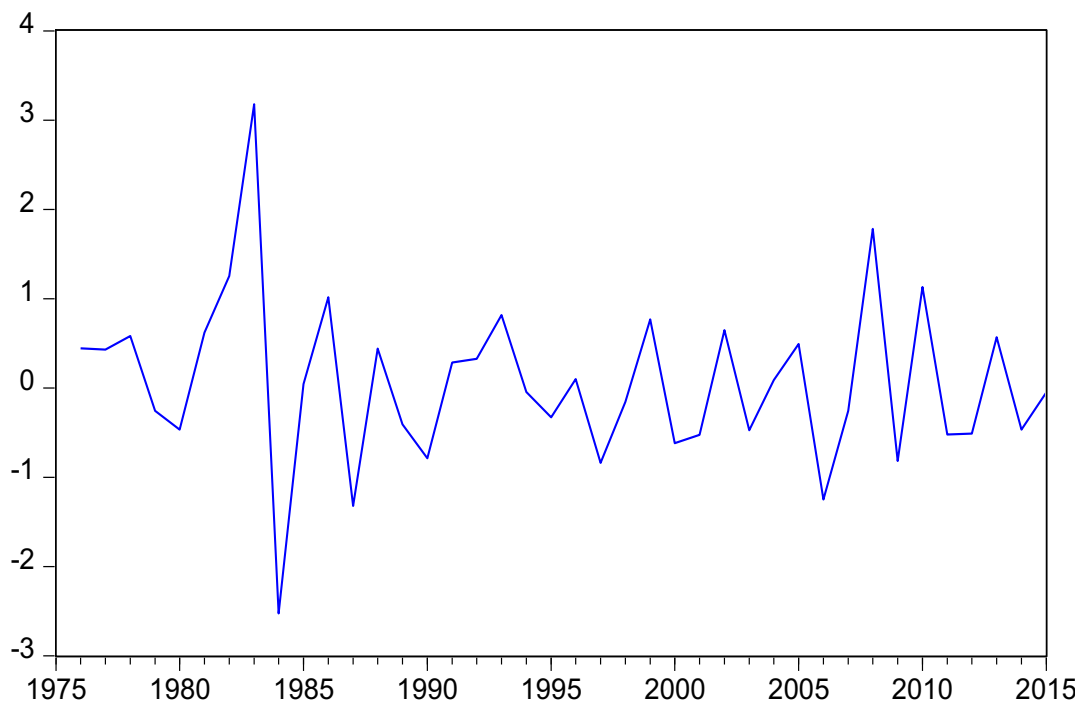
Labor Force at Level:

Null Hypothesis: LABFOR has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.129855	1.0000
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LABFOR)
Method: Least Squares
Date: 12/04/17   Time: 16:11
Sample (adjusted): 1995 2015
Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LABFOR(-1)	0.107556	0.034365	3.129855	0.0069
D(LABFOR(-1))	1.439720	0.194536	7.400790	0.0000
D(LABFOR(-2))	-1.406186	0.447498	-3.142328	0.0067
D(LABFOR(-3))	1.762841	0.587544	3.000355	0.0090
D(LABFOR(-4))	-1.783053	0.510996	-3.489369	0.0033
C	-21239.30	11114.61	-1.910936	0.0753

R-squared	0.958080	Mean dependent var	72207.4
Adjusted R-squared	0.944107	S.D. dependent var	62133.1
S.E. of regression	14689.41	Akaike info criterion	22.2620
Sum squared resid	3.24E+09	Schwarz criterion	22.5613
Log likelihood	-227.7573	Hannan-Quinn criter.	22.3277
F-statistic	68.56492	Durbin-Watson stat	1.70023
Prob(F-statistic)	0.000000		

LabFor

LabFor after First Difference:

Null Hypothesis: D(LABFOR) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=5)

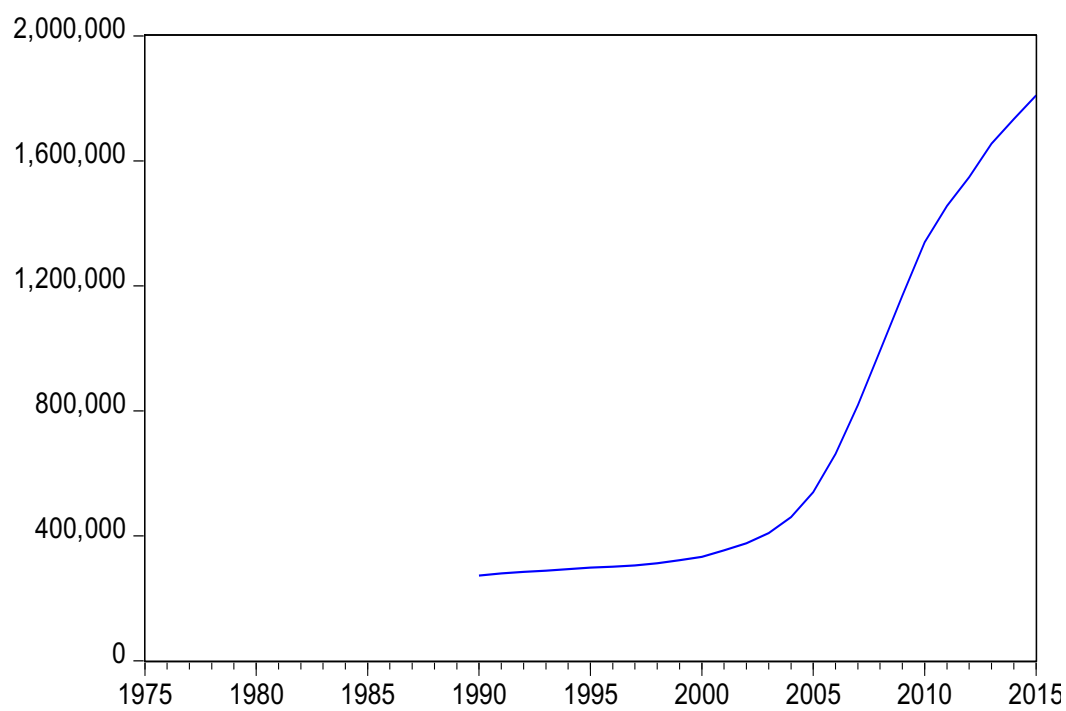|			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-0.310723	0.9070
Test critical values:	1% level		-3.808546	
	5% level		-3.020686	
	10% level		-2.650413	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LABFOR,2)
Method: Least Squares
Date: 12/04/17   Time: 16:23
Sample (adjusted): 1996 2015
Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LABFOR(-1))	-0.020840	0.067071	-0.310723	0.7606
D(LABFOR(-1),2)	0.773482	0.194304	3.980771	0.0014
D(LABFOR(-2),2)	-0.694049	0.294081	-2.360061	0.0333
D(LABFOR(-3),2)	1.257119	0.342451	3.670942	0.0025
D(LABFOR(-4),2)	-1.151631	0.335588	-3.431679	0.0040
C	6541.567	5163.964	1.266772	0.2259

R-squared	0.686802	Mean dependent var	3534.20
Adjusted R-squared	0.574946	S.D. dependent var	21963.3
S.E. of regression	14319.45	Akaike info criterion	22.2195
Sum squared resid	2.87E+09	Schwarz criterion	22.5187
Log likelihood	-216.1995	Hannan-Quinn criter.	22.2786
F-statistic	6.140041	Durbin-Watson stat	2.10226
Prob(F-statistic)	0.003258		

DLABFOR

Total Enrolment at Level:

Null Hypothesis: TOTALENROL has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		6.676073	1.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TOTALENROL)
Method: Least Squares
Date: 12/04/17   Time: 16:31
Sample (adjusted): 1976 2015
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTALENROL(-1)	0.068903	0.010321	6.676073	0.0000
C	-1665.302	1092.213	-1.524704	0.1361

R-squared	0.553183	Mean dependent var	4889.64
Adjusted R-squared	0.540772	S.D. dependent var	4351.87
S.E. of regression	2949.116	Akaike info criterion	18.8679
Sum squared resid	3.13E+08	Schwarz criterion	18.9538
Log likelihood	-356.4843	Hannan-Quinn criter.	18.8986
F-statistic	44.56996	Durbin-Watson stat	1.04116
Prob(F-statistic)	0.000000		

TOTALENROL

Total Enrolment after First Difference:

Null Hypothesis: D(TOTALENROL) has a unit root
Exogenous: Constant
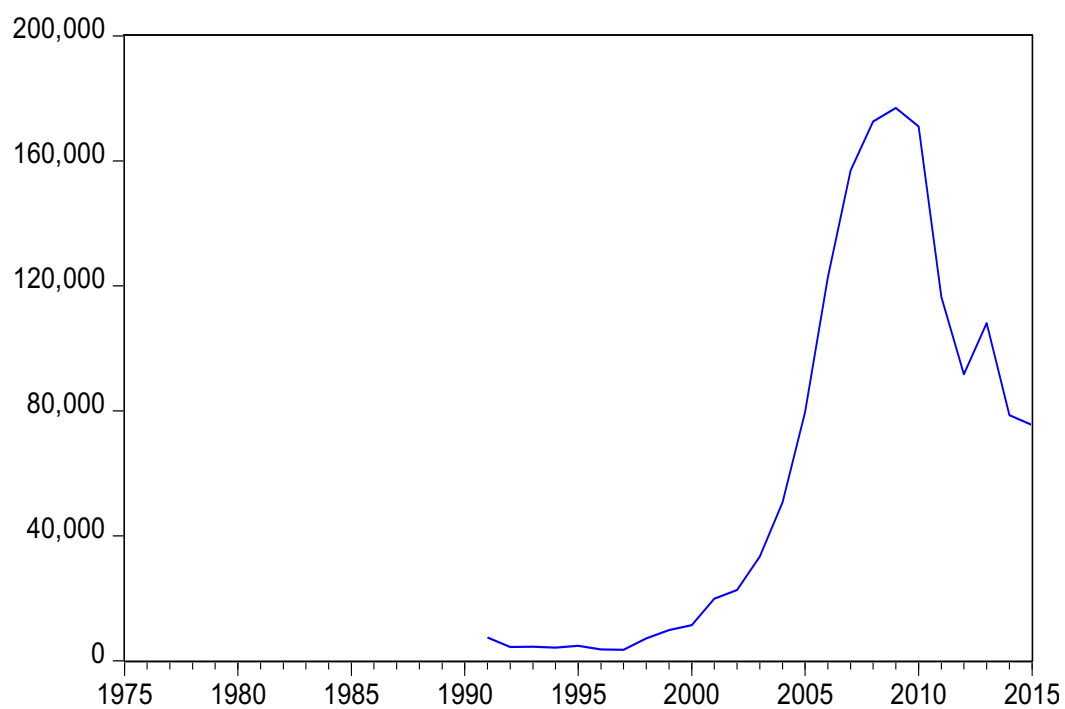Lag Length: 9 (Automatic - based on SIC, maxlag=9)

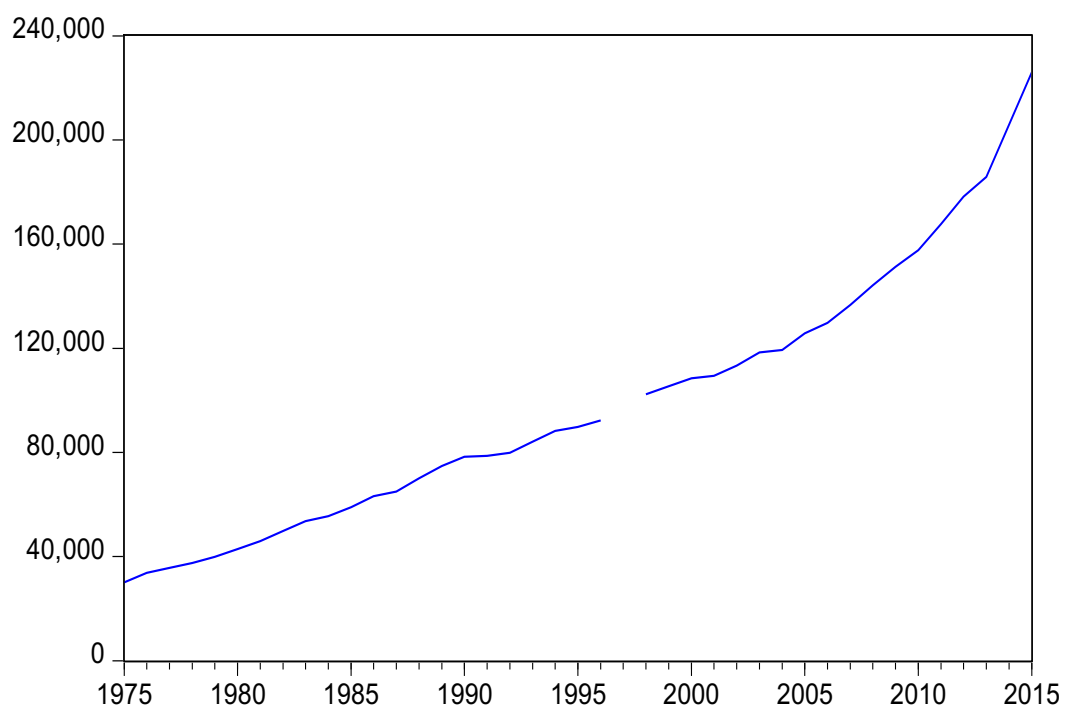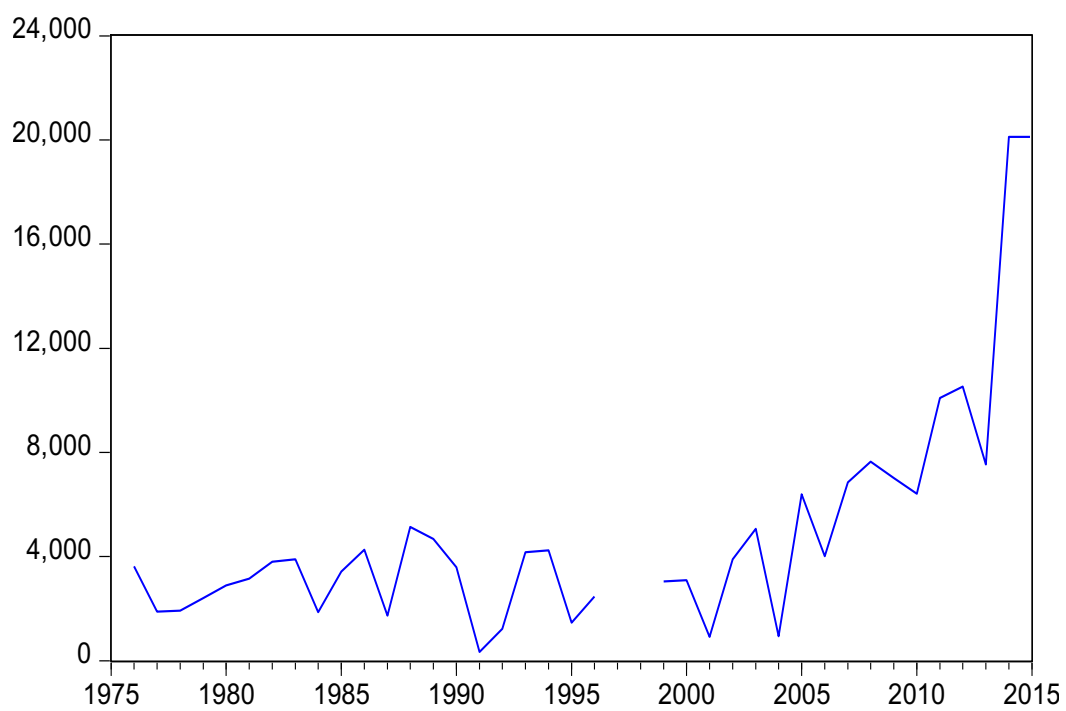|			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			1.014434	0.9947
Test critical values:	1% level		-3.857386	
	5% level		-3.040391	
	10% level		-2.660551	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
    and may not be accurate for a sample size of 18

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TOTALENROL,2)
Method: Least Squares
Date: 12/04/17   Time: 16:33
Sample (adjusted): 1986 2015
Included observations: 18 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOTALENROL(-1))	0.872754	0.860335	1.014434	0.3441
D(TOTALENROL(-1),2)	-1.576992	1.009906	-1.561524	0.1624
D(TOTALENROL(-2),2)	-1.970867	0.973874	-2.023739	0.0827
D(TOTALENROL(-3),2)	-1.303478	1.086141	-1.200101	0.2691
D(TOTALENROL(-4),2)	-0.716538	0.973482	-0.736057	0.4856
D(TOTALENROL(-5),2)	-0.648242	0.925532	-0.700399	0.5063
D(TOTALENROL(-6),2)	-0.020144	1.019666	-0.019755	0.9848
D(TOTALENROL(-7),2)	1.397885	1.090744	1.281589	0.2408
D(TOTALENROL(-8),2)	1.808734	0.919177	1.967776	0.0898
D(TOTALENROL(-9),2)	1.689712	0.532548	3.172884	0.0156
C	-3612.367	2649.476	-1.363427	0.2150

R-squared	0.873102	Mean dependent var	639.222
Adjusted R-squared	0.691818	S.D. dependent var	3620.04
S.E. of regression	2009.652	Akaike info criterion	18.3277
Sum squared resid	28270909	Schwarz criterion	18.8719
Log likelihood	-153.9436	Hannan-Quinn criter.	18.4020
F-statistic	4.816228	Durbin-Watson stat	2.91106
Prob(F-statistic)	0.024242		

DTOTALENROL

Oil Rents at Level:

Null Hypothesis: OILRENT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.331726	0.1674
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OILRENT)
Method: Least Squares
Date: 12/04/17   Time: 16:50
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OILRENT(-1)	-0.270341	0.115940	-2.331726	0.0251
C	6.728251	3.610352	1.863600	0.0701

R-squared	0.125169	Mean dependent var	-0.863254
Adjusted R-squared	0.102147	S.D. dependent var	10.4142
S.E. of regression	9.868674	Akaike info criterion	7.46535
Sum squared resid	3700.847	Schwarz criterion	7.54979
Log likelihood	-147.3063	Hannan-Quinn criter.	7.49587
F-statistic	5.436946	Durbin-Watson stat	1.85314
Prob(F-statistic)	0.025116		

OilRent

Oil Rents after First Difference:

Null Hypothesis: D(OILRENT) has a unit root
Exogenous: Constant
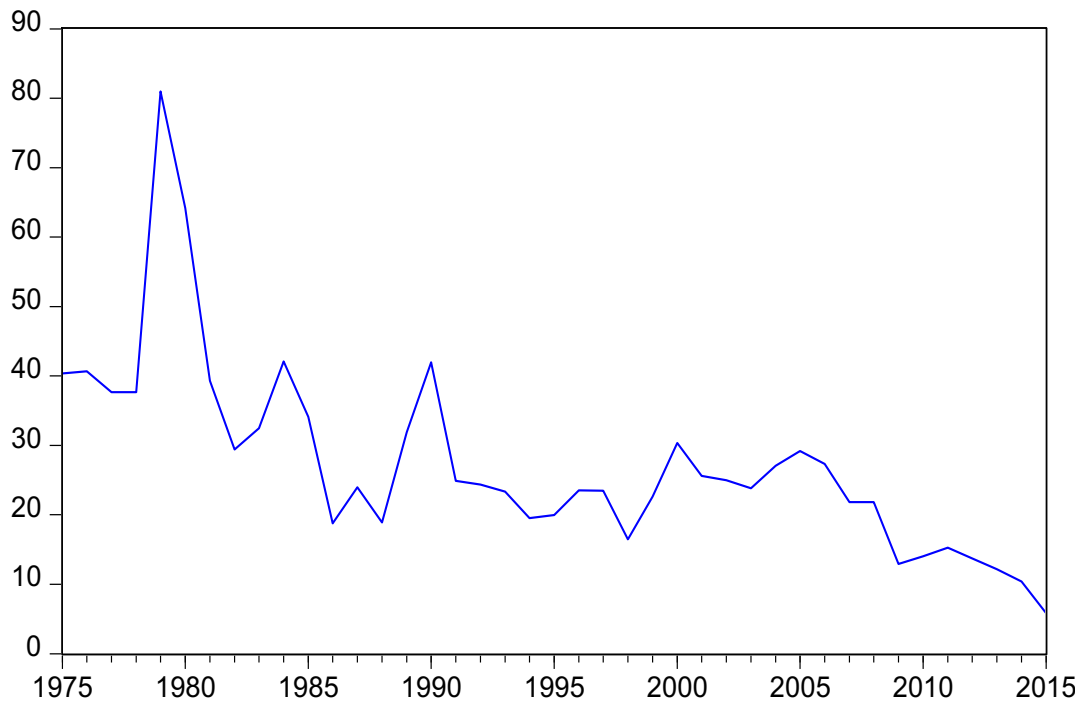Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.576241	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OILRENT,2)
Method: Least Squares
Date: 12/04/17   Time: 16:51
Sample (adjusted): 1978 2015
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OILRENT(-1))	-1.486899	0.226102	-6.576241	0.0000
D(OILRENT(-1),2)	0.400569	0.155091	2.582805	0.0141
C	-1.202683	1.639510	-0.733562	0.4681

R-squared	0.605301	Mean dependent var	-0.040203
Adjusted R-squared	0.582747	S.D. dependent var	15.5570
S.E. of regression	10.04951	Akaike info criterion	7.52852
Sum squared resid	3534.746	Schwarz criterion	7.65786
Log likelihood	-140.0431	Hannan-Quinn criter.	7.57450
F-statistic	26.83759	Durbin-Watson stat	2.17282
Prob(F-statistic)	0.000000		
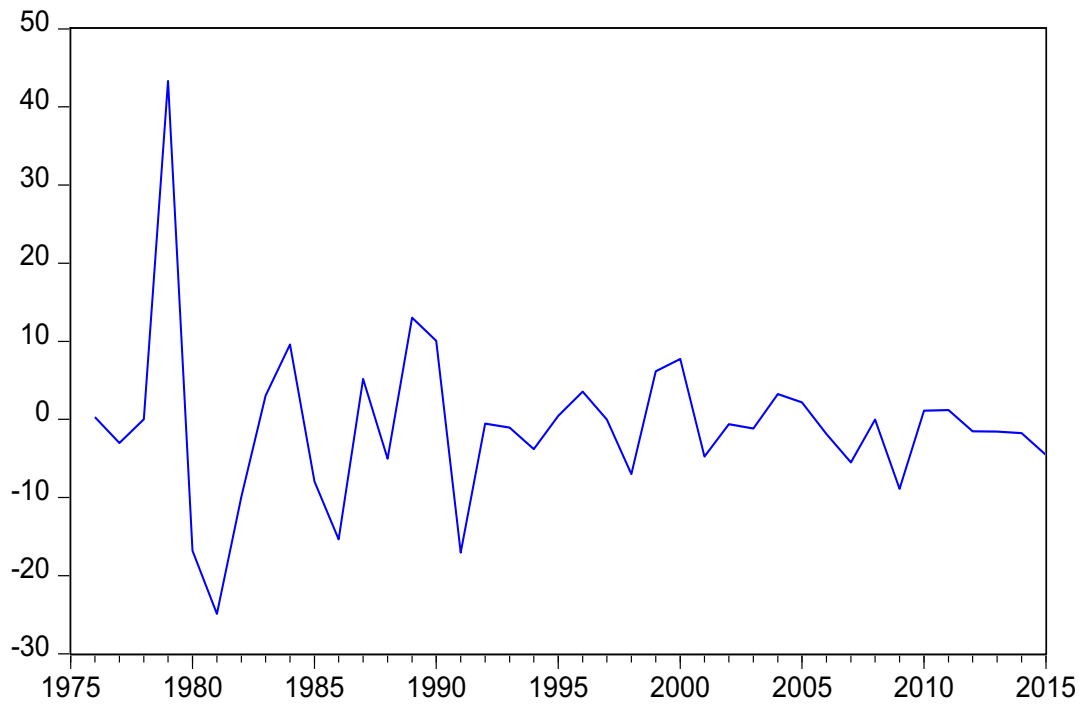
DOILRENT

GDP per Capita at Level:

Null Hypothesis: GDPPERCAP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.461727	0.8882
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPERCAP)
Method: Least Squares
Date: 12/04/17   Time: 16:56
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPPERCAP(-1)	-0.021036	0.045560	-0.461727	0.6469
C	2232.383	2015.043	1.107859	0.2749

R-squared	0.005579	Mean dependent var	1484.40
Adjusted R-squared	-0.020590	S.D. dependent var	7502.52
S.E. of regression	7579.367	Akaike info criterion	20.7525
Sum squared resid	2.18E+09	Schwarz criterion	20.8370
Log likelihood	-413.0591	Hannan-Quinn criter.	20.7839
F-statistic	0.213192	Durbin-Watson stat	1.63825
Prob(F-statistic)	0.646910		

GDPpercap

GDP Per Capita after First Level:

Null Hypothesis: D(GDPPERCAP) has a unit root
Exogenous: Constant
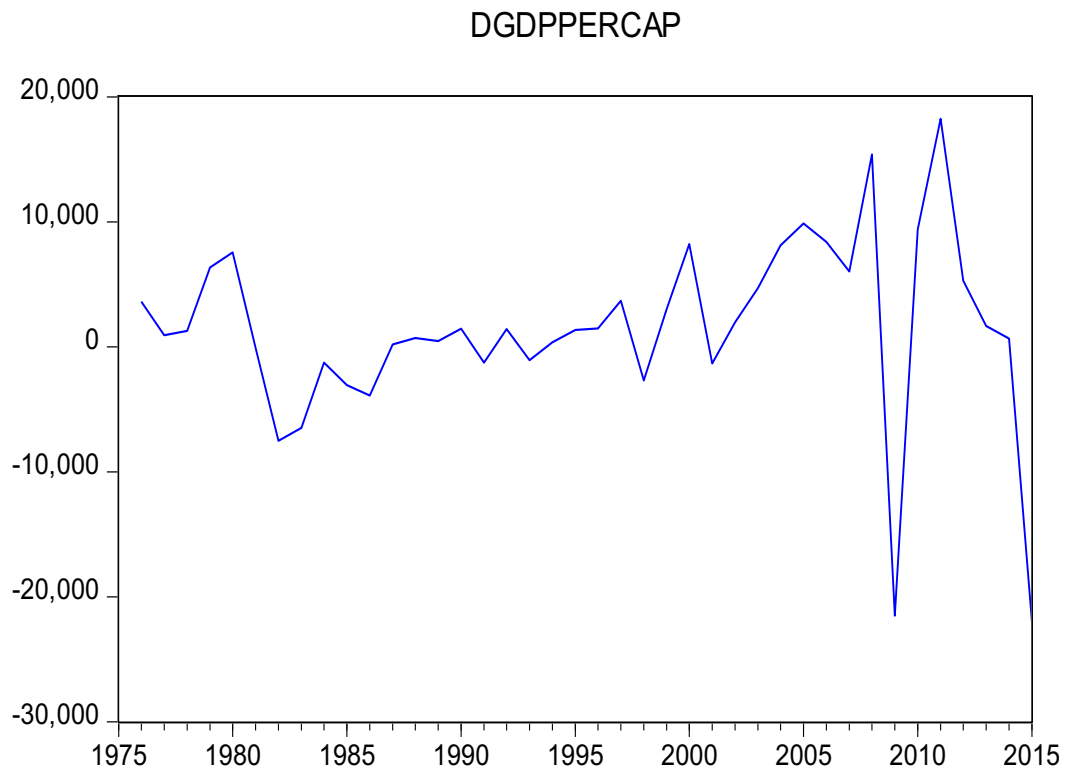Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.938769	0.0002
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPERCAP,2)
Method: Least Squares
Date: 12/04/17   Time: 16:57
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPPERCAP(-1))	-0.941070	0.190548	-4.938769	0.0000
C	1306.830	1293.251	1.010500	0.3188

R-squared	0.397310	Mean dependent var	-658.3590
Adjusted R-squared	0.381021	S.D. dependent var	9767.47
S.E. of regression	7684.559	Akaike info criterion	20.7873
Sum squared resid	2.18E+09	Schwarz criterion	20.8674
Log likelihood	-403.2438	Hannan-Quinn criter.	20.8124
F-statistic	24.39143	Durbin-Watson stat	1.74038
Prob(F-statistic)	0.000017		

DGDPPERCAP

APPENDIX O

Stationarity Tests for U.A.E

GDP Per Capita at Level:

Null Hypothesis: GDPPERCAP has a unit root
Exogenous: Constant
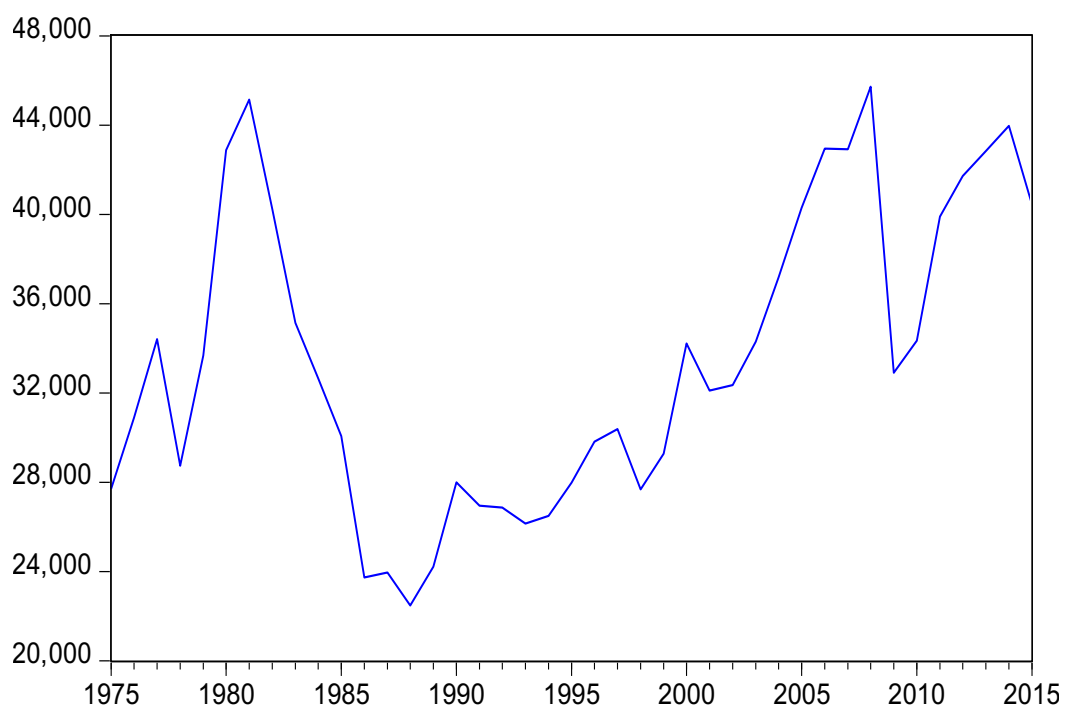Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.803064	0.3738
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPERCAP)
Method: Least Squares
Date: 12/04/17   Time: 17:15
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPPERCAP(-1)	-0.161741	0.089703	-1.803064	0.0793
C	5708.839	3048.473	1.872688	0.0688

R-squared	0.078811	Mean dependent var	318.244
Adjusted R-squared	0.054569	S.D. dependent var	3875.20
S.E. of regression	3768.061	Akaike info criterion	19.3552
Sum squared resid	5.40E+08	Schwarz criterion	19.4396
Log likelihood	-385.1043	Hannan-Quinn criter.	19.3855
F-statistic	3.251039	Durbin-Watson stat	1.64411
Prob(F-statistic)	0.079312		

GDPperCap

GDP Per Capita after First Level:

Null Hypothesis: D(GDPPERCAP) has a unit root
Exogenous: Constant
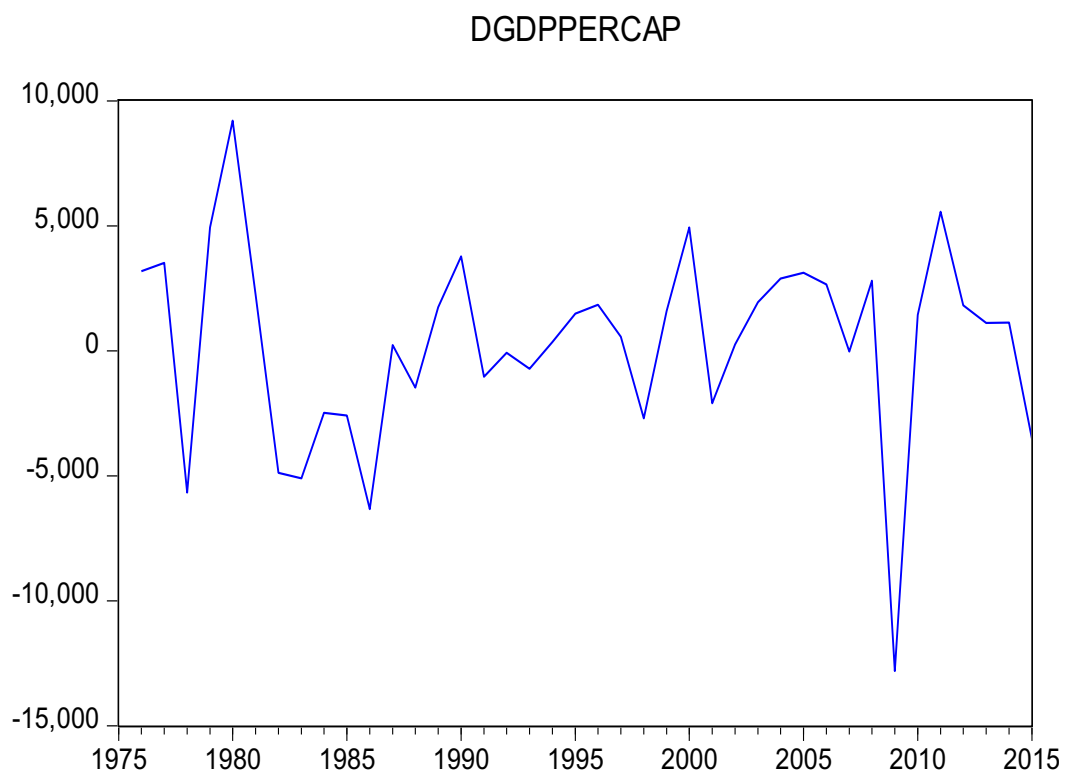Lag Length: 0 (Automatic - based on SIC, maxlag=9)

			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.492986	0.0000
Test critical values:	1% level		-3.610453	
	5% level		-2.938987	
	10% level		-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPERCAP,2)
Method: Least Squares
Date: 12/04/17   Time: 17:16
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPPERCAP(-1))	-0.904248	0.164619	-5.492986	0.0000
C	205.0117	633.3688	0.323685	0.7480

R-squared	0.449183	Mean dependent var	-171.8510
Adjusted R-squared	0.434296	S.D. dependent var	5227.97
S.E. of regression	3932.112	Akaike info criterion	19.4416
Sum squared resid	5.72E+08	Schwarz criterion	19.5267
Log likelihood	-377.1124	Hannan-Quinn criter.	19.4727
F-statistic	30.17290	Durbin-Watson stat	1.94773
Prob(F-statistic)	0.000003		

DGDPPERCAP

Labor Force at Level:

Null Hypothesis: LABORFORCE has a unit root
Exogenous: Constant
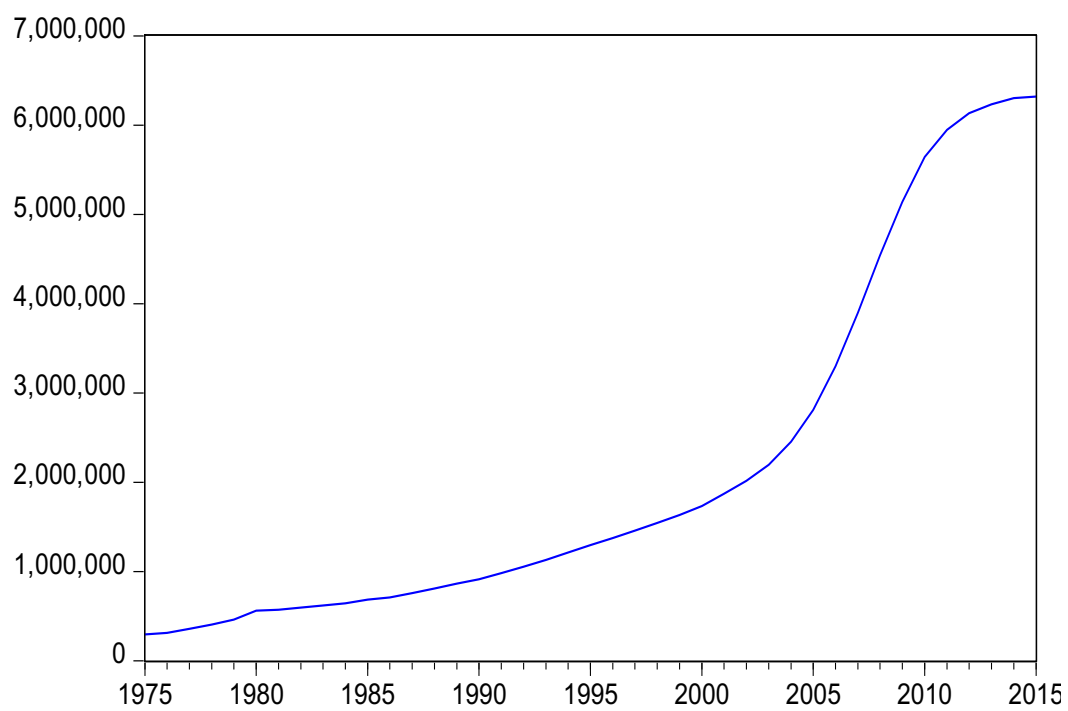Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.396404	0.9802
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LABORFORCE)
Method: Least Squares
Date: 12/04/17   Time: 17:19
Sample (adjusted): 1978 2015
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LABORFORCE(-1)	0.002448	0.006175	0.396404	0.6943
D(LABORFORCE(-1))	1.685717	0.125280	13.45555	0.0000
D(LABORFORCE(-2))	-0.799936	0.151150	-5.292343	0.0000
C	10991.36	10693.15	1.027889	0.3113

R-squared	0.951561	Mean dependent var	156896
Adjusted R-squared	0.947287	S.D. dependent var	179710
S.E. of regression	41260.19	Akaike info criterion	24.1928
Sum squared resid	5.79E+10	Schwarz criterion	24.3646
Log likelihood	-455.6572	Hannan-Quinn criter.	24.2532
F-statistic	222.6379	Durbin-Watson stat	2.33475
Prob(F-statistic)	0.000000		

Laborforce

Labor Force after First Level:

Null Hypothesis: D(LABORFORCE) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

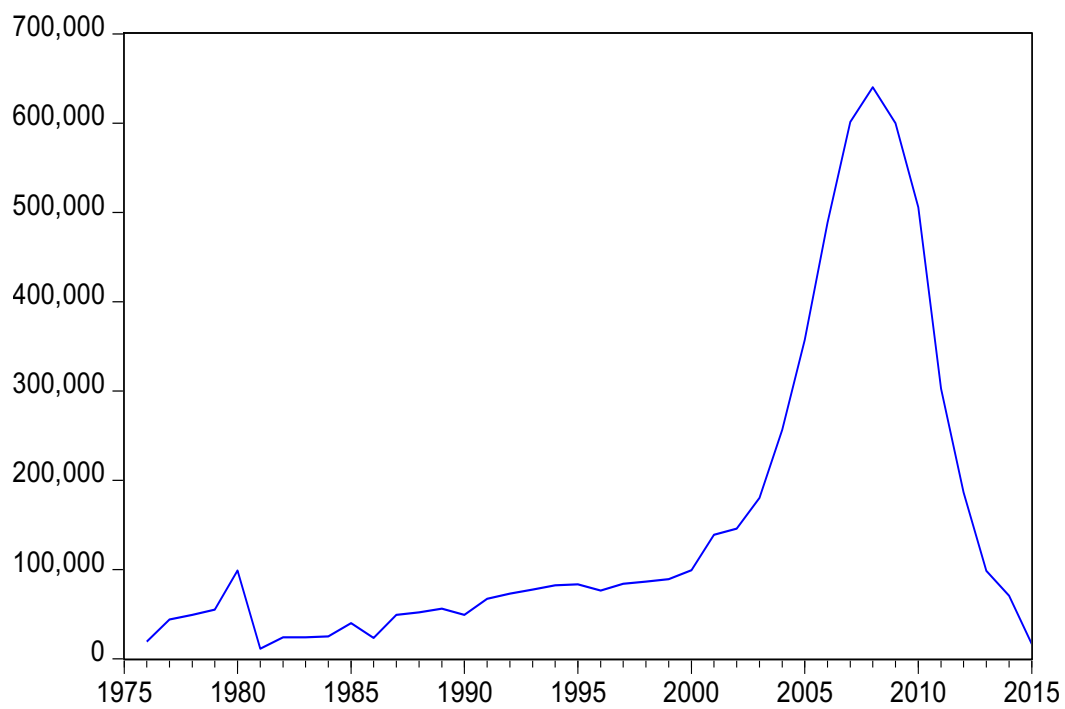|		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.519156	0.1190
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LABORFORCE,2)
Method: Least Squares
Date: 12/04/17   Time: 17:21
Sample (adjusted): 1978 2015
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LABORFORCE(-1))	-0.095365	0.037856	-2.519156	0.0165
D(LABORFORCE(-1),2)	0.760195	0.111745	6.802924	0.0000
C	13279.70	8892.010	1.493442	0.1443

R-squared	0.580716	Mean dependent var	-727.5789
Adjusted R-squared	0.556756	S.D. dependent var	61223.9
S.E. of regression	40760.35	Akaike info criterion	24.1446
Sum squared resid	5.81E+10	Schwarz criterion	24.2735
Log likelihood	-455.7448	Hannan-Quinn criter.	24.1906
F-statistic	24.23777	Durbin-Watson stat	2.26001
Prob(F-statistic)	0.000000		

DLABORFORCE

Oil Rents at Level:

Null Hypothesis: OILRENT has a unit root
Exogenous: Constant
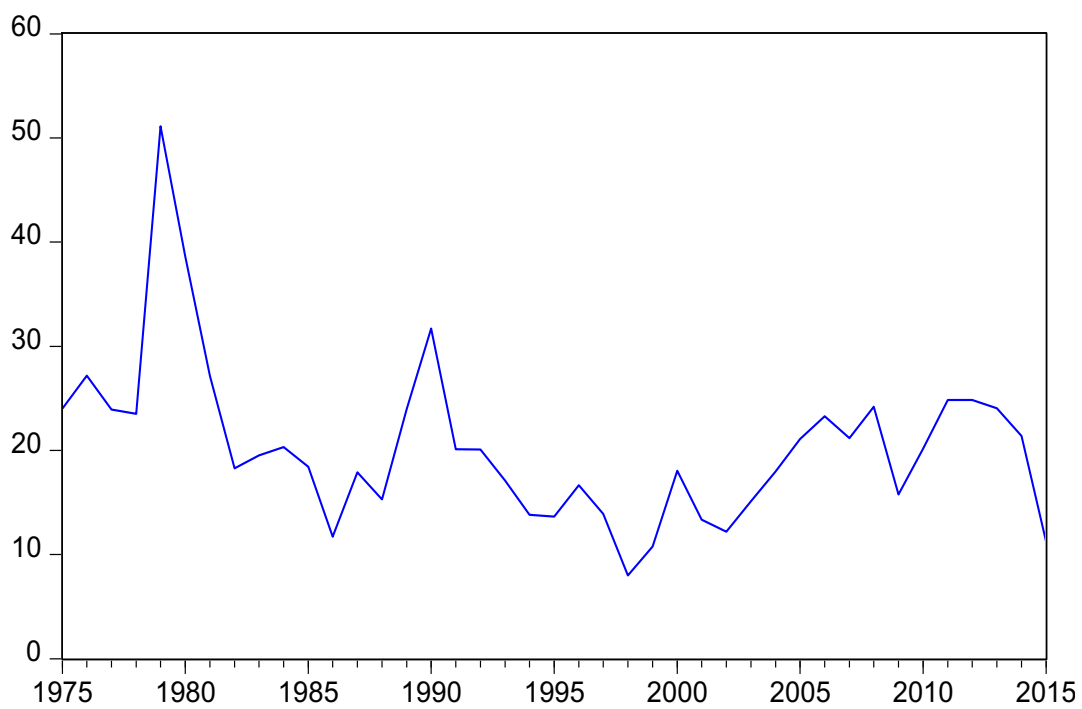Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.018403	0.0417
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OILRENT)
Method: Least Squares
Date: 12/04/17   Time: 17:25
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OILRENT(-1)	-0.401853	0.133134	-3.018403	0.0045
C	7.959734	2.924328	2.721902	0.0097

R-squared	0.193390	Mean dependent var	-0.320504
Adjusted R-squared	0.172164	S.D. dependent var	7.04189
S.E. of regression	6.407081	Akaike info criterion	6.60131
Sum squared resid	1559.926	Schwarz criterion	6.68585
Log likelihood	-130.0278	Hannan-Quinn criter.	6.63194
F-statistic	9.110759	Durbin-Watson stat	1.83480
Prob(F-statistic)	0.004520		

Oilrent

Oil Rents after First Level:

Null Hypothesis: D(OILRENT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.751499	0.0000
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OILRENT,2)
Method: Least Squares
Date: 12/04/17   Time: 17:26
Sample (adjusted): 1977 2015
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OILRENT(-1))	-1.127155	0.166949	-6.751499	0.0000
C	-0.418206	1.145084	-0.365219	0.7170

|			
R-squared	0.551964	Mean dependent var	-0.341439
Adjusted R-squared	0.539855	S.D. dependent var	10.5416
S.E. of regression	7.150693	Akaike info criterion	6.82216
Sum squared resid	1891.899	Schwarz criterion	6.90757
Log likelihood	-131.0332	Hannan-Quinn criter.	6.85285
F-statistic	45.58274	Durbin-Watson stat	1.99900
Prob(F-statistic)	0.000000		
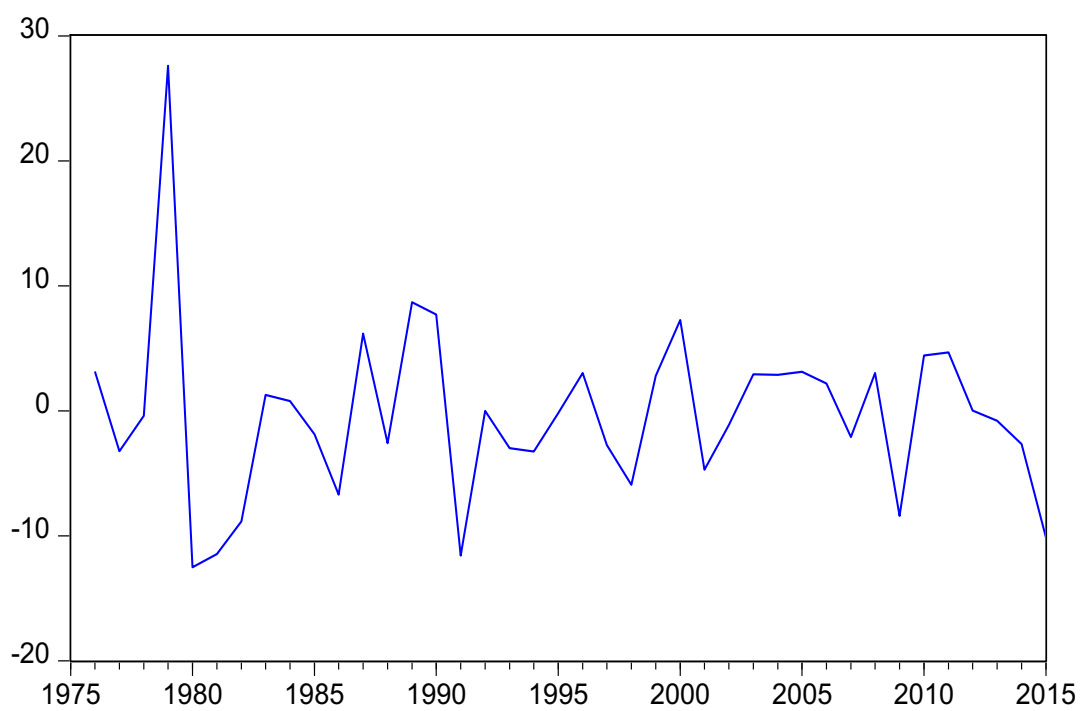
DOILRENT

Total Enrolment at Level:

Null Hypothesis: TOTALENROL has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.599205	0.9999
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TOTALENROL)
Method: Least Squares
Date: 12/04/17   Time: 17:29
Sample (adjusted): 1976 1998
Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTALENROL(-1)	0.026262	0.010104	2.599205	0.0176
C	12850.96	2452.586	5.239760	0.0000

R-squared	0.262304	Mean dependent var	18439.4
Adjusted R-squared	0.223478	S.D. dependent var	6137.03
S.E. of regression	5408.028	Akaike info criterion	20.1195
Sum squared resid	5.56E+08	Schwarz criterion	20.2193
Log likelihood	-209.2553	Hannan-Quinn criter.	20.1414
F-statistic	6.755864	Durbin-Watson stat	0.97136
Prob(F-statistic)	0.017615		
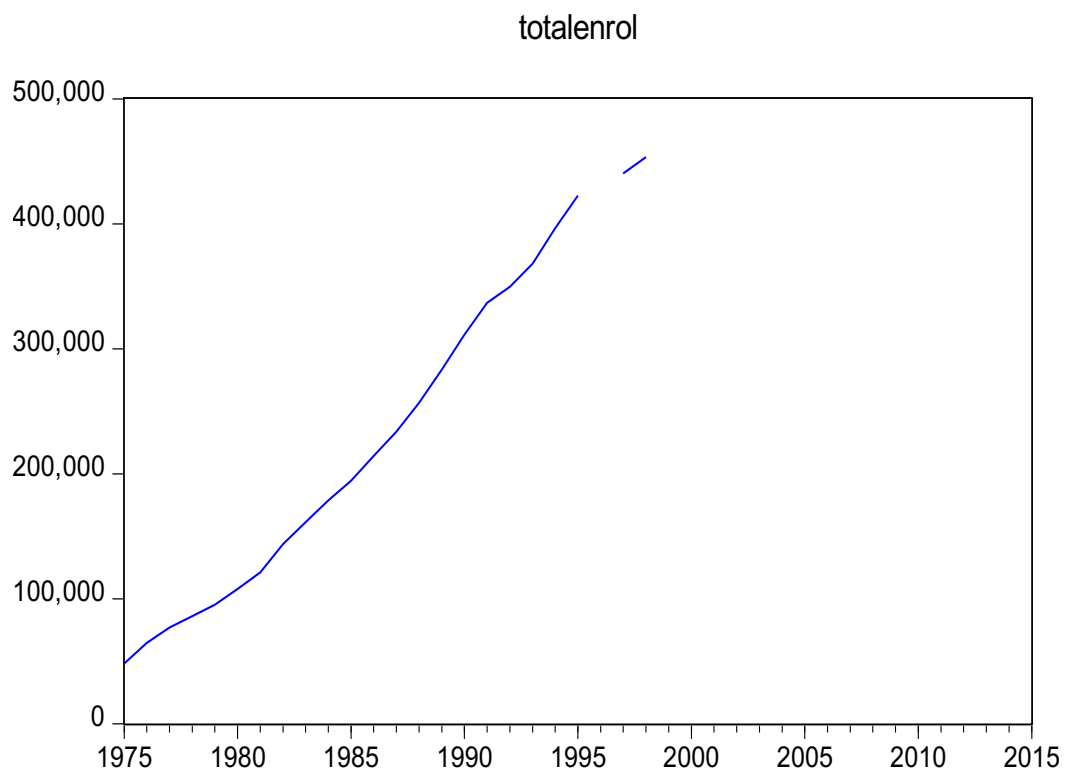
totalenrol

Total Enrolment after First Level:

Null Hypothesis: D(TOTALENROL) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

|		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.739106	0.3970
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
    and may not be accurate for a sample size of 19

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TOTALENROL,2)
Method: Least Squares
Date: 12/04/17   Time: 17:30
Sample (adjusted): 1977 1995
Included observations: 19 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOTALENROL(-1))	-0.337951	0.194325	-1.739106	0.1001
C	6695.965	3741.121	1.789828	0.0913

R-squared	0.151040	Mean dependent var	503.897
Adjusted R-squared	0.101101	S.D. dependent var	5279.91
S.E. of regression	5005.900	Akaike info criterion	19.9732
Sum squared resid	4.26E+08	Schwarz criterion	20.0734
Log likelihood	-187.7523	Hannan-Quinn criter.	19.9905
F-statistic	3.024489	Durbin-Watson stat	1.76373
Prob(F-statistic)	0.100090		

DTOTALENROL
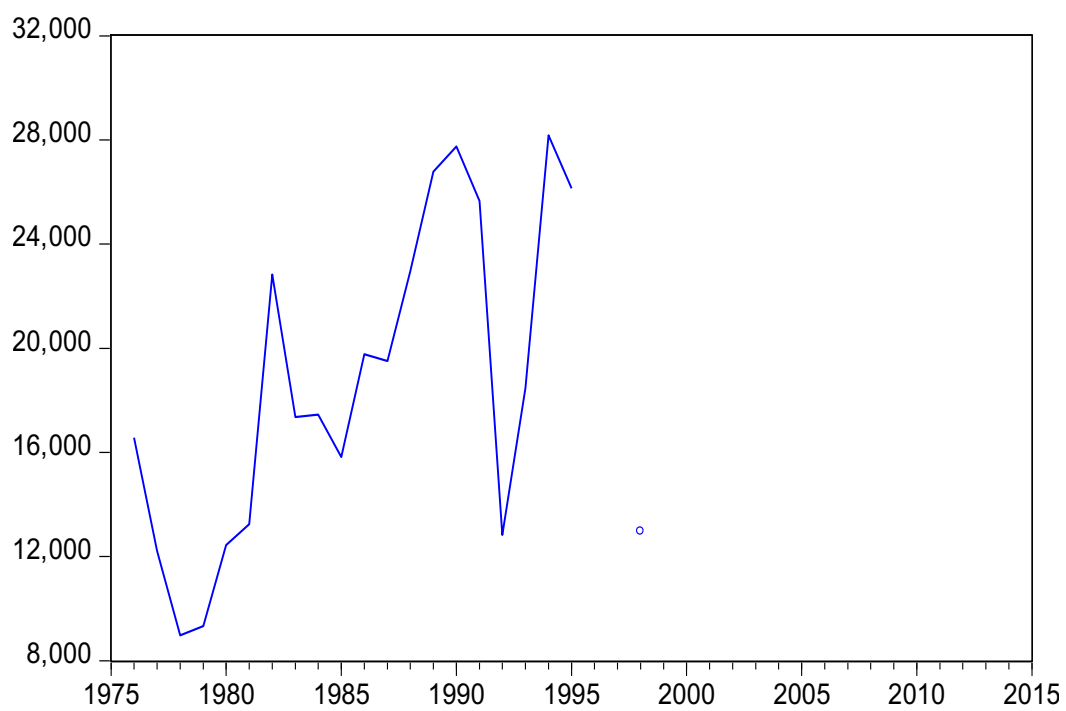
VITA

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TOWARDS IMPROVING THE EDUCATION FUNDING POLICY IN OMAN: LESSONS LEARNED FROM OTHER OIL DEPENDENT NATIONS

Major Professor: Dr. Saran Donahoo