

ABSTRACT

Title of Thesis: NON-OIL SOURCES OF NATIONAL INCOME IN THE
KINGDOM OF SAUDI ARABIA

Tariq Almakhalbah, Master of Arts, May 2019

Thesis Chair: Ashraf Ahmed, Ph.D.

Professor of Economics

Saudi Arabia is originally known for its massive oil production which is the main source of GDP. Nonetheless, the Kingdom has recently invested into other economic sectors to ensure that the country does not depend entirely on oil alone. As such, this paper looked at how Saudi Arabia develops its GDP which makes it to be considered among the most massive economies in the world. The study also looked at both the oil-based and non-oil-based sources of GDP. The primary objective of this study was to assess the role of non-oil-based products and services in contribution of the country's GDP; in addition, to find out the role that oil-based products and services make towards the growth of the country's GDP. The analysis was carried out based on the data obtained from The World Bank. The statistical methods used for the analysis are Pearson correlation, scatter diagram, simple and multiple linear regression. From the data analysis, oil is the strongest source of GDP growth, which contributes about 90% to it. However, there are some non-oil sources displayed as a growing trend in contributing to GDP growth. The significant factors were merchandise exports and service exports. Besides, some other non-oil factors displayed an indication of the growing role in GDP growth. These are high technology exports, goods exports, and commercial services exports. Thus, the effective role of government to the target of Vision 2030 is likely to enhance the share of non-oil in GDP growth and economic development.

NON-OIL SOURCES OF NATIONAL INCOME IN
THE KINGDOM OF SAUDI ARABIA

by

Tariq Almakhalbah

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by

Tariq Almakhalbah

has been approved

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THESIS COMMITTEE APPROVAL:

_____, Chair
Ashraf Ahmed, Ph.D.

Linda Loubert, Ph.D.

M.G. Quibria, Ph.D.

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DEDICATION

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Chapter 1: Introduction

The economy of Saudi Arabia is among the largest in the global scale and one of the most complex to understand. Over a period of ten years between 2003 and 2013, the economy of Saudi Arabia almost doubled in size, which was associated with a protracted oil boom. Over the similar duration, the economy went through a significant modernization, which resulted in prosperity and change to Saudi Arabia. In addition, the income for Saudi household nationals, after factoring in inflation aspects, increased by approximately 75%, job opportunities increased by 1.7 million, and an additional \$450 billion was ventured into infrastructure, health, and education. Overall, the living standards of the citizens of Saudi Arabia was boosted which consequently led to an improved quality of their lives. Notably, the government of Saudi Arabia has come to the realization that there needs to be great diversification away from oil to ensure that the country's GDP does not so much rely on oil-based products and services. According to the Custodian of the two holy mosques, King Salman Bin Abdulaziz, argues that his "first objective is for our country to be a pioneering and successful global model of excellence, on all fronts, and I will work with you to achieve that" (2016, April 25). As such, it becomes essential to have a look at the contributors of Saudi Arabia's economy in detail.

1.1 Background Information

Evidently, the development of Saudi Arabia is not a recent phenomenon as it is attributed to the consistent activities of modernization, which the country has invested in to ensure that there is progress built on its antecedents. For years now, the government of Saudi Arabia has sought to enhance the standards of living, and consequently, the quality

of life of its citizens. The country has applied the wealth generated from the country's natural resources to support the economic and social development programs of the country (Albqami, 2004). Whereas many international observers have noted the variations of the oil market with discomfort, Saudi Arabia has established economic strategies, which have subsequently led to consistent growth. According to the International Monetary Fund (IMF), Saudi Arabia plays "a key stabilizing role in the global oil market" by performing best ahead of other countries which equally distribute oil. Remarkably, the increase in GDP from \$5.377 billion in 1970 to \$756.35 billion in 2014 illustrates the success story of Saudi Arabia (Albassam, 2015). Moreover, the per capita income increased from \$921.35 in 1970 to \$19,982.09 in 2016 which indicates the progress that the country has had over the years with respect to its GDP.

Perhaps the most steering factor to the tremendous GDP growth of Saudi Arabia today is Vision 2030 of the country. The Deputy Crown Prince Mohammed bin Salman, on April 25, 2016 made the announcement of Vision 2030. Vision 2030 is based on three main pillars which include an ambitious nation, a thriving economy, and a vibrant society (Aguilera, et al., 2016). Besides, Vision 2030 outlines 24 particular goals for the nation to attain societal, political, and economic development. Furthermore, the same Vision 2030 stipulates 18 commitments to attain the goals set with certain projects in manufacturing, electronic governance, culture, renewable energy, entertainment, and education.

Notably, Saudi Arabia is cognizant of the fact that its wealth lies in its citizens and society despite having an enormous unexploited opportunity alongside its rich blend of natural resources. It is for this reason that the Kingdom has a vision of having a vibrant society as one of its main pillars. The Kingdom acknowledges that the satisfaction and

happiness of citizens and residents are crucial, and this can only be met through promoting social, psychological, and physical well-being (Al Mallakh, & El Mallakh, 2015). At the center of Saudi's Vision 2030 is its society, which it envisions to have a healthy lifestyle, an attractive environment for living, and a good quality of life. In so doing, the Kingdom will build a strong and productive society through promoting the social developments. Consequently, this will result in an increased GDP for the country.

Ostensibly, having a diversified economy is essential for Saudi with respect to sustainability issues. It is for this reason that Saudi has a thriving economy as one of its three pillars of Vision 2030. Even though gas and oil are important pillars of Saudi's economy, the country began venturing into other sectors to expand its economy. Over the past ten years, the country has recorded an economic growth of an average of 4% and above (Akan, et al., 2008). Consequently, this remarkable growth has led to the creation of millions of new employment opportunities. Presently, the Kingdom is among the 20 largest economies across the world. However, its ambition does not stop at that as it aspires to be at a greater rank by 2030.

1.2 Statement of the Problem

Apparently, there has been an increased effort by the government of the Saudi Kingdom to diversify its economy to ensure that it does not rely on oil. Further, the leaders of the country have established Vision 2030 to help the country to stay focused and committed towards its set goals. Nonetheless, there still exists challenges towards creating more employment opportunities in the country in the non-oil sector. Besides, there exists no detailed study that can give researchers, Saudi's government, Non-

Governmental Organizations (NGOs), foreign investors, and the local investors the particular steps to take to help with ensuring that the country does not so much depend on oil in generating its GDP. There seems to be conflicting notions of the oil reserve capacity with some arguing that the oil could still serve the country for the next 100 years consistently. As such, these schools of thought assert that there is no need for a fast diversification of the economy, as things will come to fall in place. On the contrary, there exists a group of people who argue that the present actions by the country need not only be sustainable, but also to ensure that the country develops mechanisms of creating more sources of revenue other than oil. For this latter school of thought, the argument is that even most of the natural resources are depleted when constantly exploited and therefore, there is the need to have a back-up plan. Furthermore, the same group of people argue that there needs to be a fallback plan for the country in case the oil reserves become exhausted due to unforeseeable circumstances. Besides, the country could create other sources of revenue such as tourism and agriculture as in other countries.

1.3 Purpose of the Study

This study is aimed at establishing the various ways through which Saudi Arabia develops its GDP. By so doing, this study took into account the contribution of the oil sector towards growing the GDP of the Kingdom. Moreover, the research further assessed the contribution of the non-oil sector towards the growth of economy which impacted the GDP. Lastly, the thesis illustrated how Vision 2030 will improve the economy of the country and subsequently, the nation's GDP.

1.4 Research Objectives

The objectives of this study included:

- To determine the non-oil-based products and services, which contribute to Saudi Arabia's GDP.
- To find out the role that oil-based products and services play towards the growth of the country's GDP.

1.5 Research Questions

The research questions included:

- Do non-oil sources have any impact on Gross Domestic Product (GDP) in Saudi Arabia?
- Which are the currently existing non-oil sources of national income through exports?
- What is the role that oil-based products and services play towards the growth of the country's GDP?

1.6 Significance of the Study

This thesis is crucial in contributing knowledge not only to the Saudi Arabian government as a whole, but also to the investors of Saudi Arabia especially with respect to the need to diversify the country's economy. The findings of the study might help the government understand the leading aspects in developing the growth of GDP in Saudi Arabia; thereby ensuring that the initiatives and policies employed to improve the economic sectors do not lose their intended purposes. The study may also help the Saudi

community to appreciate the importance of Vision 2030 towards boosting the economy, and how it will help the nation to diversify it to make it sustainable. From the research findings, the investors in Saudi Arabia might be informed of the sectors that are potentially leading with respect to revenue of the country.

1.7 Limitations of the Study

Given that Saudi Arabia has, for a very long period, been known for its extensive oil business, it becomes challenging to discuss all the non-oil sector industries which also contribute to the country's GDP. As such, a study of the non-oil sector industries and the oil industry needs to be carried out separately. Secondly, the study is focused on secondary sources only and thereby making a generalization of the other categories such as the primary data not to be possible. Thirdly, the study only focuses on a few industries in the non-oil sector which may limit analysis in a comparative manner with the oil sector. In simple terms, this offers the research a well-developed structure on how Saudi Arabia develops its GDP. In such a case, therefore, a study of all the non-oil sector industries would be applicably ideal for comparative analysis. Lastly, the thesis is limited to Saudi Arabia and, therefore, it cannot be generalized to other Arabic countries.

1.8 Scope of the Study

This research focused on the two broad sectors of Saudi Arabia's economy which include the oil and non-oil sectors. Further, the non-oil sectors considered in this thesis included tourism, agriculture, manufacturing, service, banking, et al. Further, the thesis considered Vision 2030 to be a major contributor towards the development of Saudi Arabia's GDP.

1.9 Assumptions of the Study

This research was underlined by the following assumptions:

- That all stakeholders involved in developing the country's GDP have some consideration in mind when handling the topic.
- That the oil sector accounts for the largest share of the country's GDP.
- That the non-oil sector industries which account for the remaining share of the nations' GDP include tourism, agriculture, manufacturing, service, banking, et al.

1.10 Theoretical Framework

Until 1930s, the Kingdom of Saudi Arabia was a subsistence economy. The country would then grow rapidly during the 1973 oil crisis and come to its peak around 1980. However, by mid-1980s, the price of oil drastically went down to as low as USD \$5 per barrel from USD \$40 which consequently led to the country having massive debts overseas (Alkhazim, 2003). Nonetheless, the situation came under control when the price of oil stabilized from 2002 to mid-2008 which allowed the government to establish surplus budget and improve its expenditure.

Originally, Saudi Arabia's economy was based on subsistence agriculture which was overseen by its largely dominated nomadic population. The people, back then, were poor until the discovery of oil in the 1930s. Several other oil exporters such as Iran, Kuwait, Iraq, and Venezuela would then join hands with Saudi Arabia to establish the Organization of the Petroleum Exporting Countries (OPEC). The main aim of OPEC was to raise oil prices and to regulate production of same.

OPEC raised the price of oil following the 1973 oil crisis from USD \$3 per barrel to almost USD \$12. Following the increase in oil price, Saudi Arabia became one of the fastest-growing economies in the world. The nation enjoyed an overall substantial surplus in its business with other nations. Moreover, the nation's imports increased rapidly and enough revenue for the government was available for defense, development, and help to other Islamic and Arab nations (Askari & Dastmaltschi, 1990). The Kingdom reached its economic peak during the 1980 Iran-Iraq War.

Nevertheless, the increased oil prices resulted in the establishment of more oil fields across the world which consequently led to a reduction in global consumption. As such, the oil price went down by mid-1980s from as high as USD \$40 per barrel to USD \$5. For the first time in a decade, there was a need of having an element of planning for uncertainties (Al-Iriani, 2006). What followed was a drop in the volume of oil processed by the country from approximately 10 million barrels on a daily basis to 2 million barrels per day over the same period. Hence, there developed budgetary deficits and the government drew down its assets in foreign lands (Al-Shammari, 2009). Due to the financial pressures, the Kingdom left its role within OPEC as the "swing producer" in 1985. Ever since, the country adopted a production quota and its oil policy has been guided by an aim of maintaining its quota and market shares.

1.11 Operational Definition of Terms

Gross Domestic Product: The total value of products produced, and services offered in a nation over a period of one year.

Economy: The condition of region or state with respect to the consumption and production of products and services and the allocation of finance.

Develop: To grow or cause to advance or expand.

Oil-based Sector: The industries involved with oil production and sale of same.

Non-oil-based Sector: The industries which have no link to oil as their source of income.

IMF: International Monetary Fund.

GDP per capita: Gross domestic product divided by midyear population, given in constant 2010 USD.

GDP growth: Annual percentage growth rate of GDP at market prices based on constant local currency.

Trade (%GDP): The sum of exports and imports of goods and services measured as a share of gross domestic product.

Exports (%GDP): The value of all goods and other market services provided to the rest of the world.

Imports (%GDP): The value of all goods and other market services received from the rest of the world.

Chapter 2: Literature Review

Ostensibly, petroleum resources have been the main source of revenue for Saudi Arabia's economy. Even though the country has a vast reserve of natural gas, the gas segment has not been given too much consideration with respect to economic growth which explains why Saudi does not export natural-gas (Ageli, 2013). The country has been the world's leading exporter of crude oil since the 1970s, and it has the world's most vast reserve for crude oil which amounts to approximately 20% of the world's total proven crude-oil reserves (Auty, 2001). With the country being the leading exporter of oil, it has been referred to as the world's "swing producer". According to United Nations Conference on Trade and Development (UNCTAD), and United Nations Statistics Division (UNSTAT), over the past seven decades, oil prices increased by nearly 900% whereas those of minerals and metals went up by only 68%. Nonetheless, the price increase was not due to a lack of oil despite oil being a scarce source of energy (Auty, 1988). Over the decades, the country has sought to diversify its economy so that it is not too much dependent on oil. As such, this section of the study illustrates the measures taken by the Saudi government to have its economy diversified and stabilized (Abdel-Rahman, 2001). Empirical studies were used to compare the researchers' views and those of other authors concerning the subject of how Saudi Arabia develops its GDP.

2.1 Introduction

In 2011, the Gross Domestic Product (GDP) for the Saudi Kingdom was at USD \$671.2 billion. The Purchasing Power-Parity (PPP) was USD \$691.5 billion with an annual per capita income of USD \$23.77 million (PPP). Also, the country recorded a GDP value of USD \$746.64 billion in 2013 and USD \$756.35 billion in 2014. Notably, the three years performed better than 2015 which had a GDP record of USD \$651.7 billion. Similarly, the GDP per capita of 2015 was at USD \$20,732.86. Apparently, the decrease in oil prices is regarded as the most challenging issue with respect to the economy of the country. As such, the government has been compelled to embrace some measure for the purpose of safeguarding the nation's growth potentials in the long-term perspective, and to ensure financial stability. Some of the measures included imposition of a 2.5% tax on any land that is underdeveloped, international visitors' tax at the airport, and additional taxes on soft drinks and tobacco of a 5% value-added tax (VAT) in 2015. Besides, the prices of water, gas and fuel have also been increased.

The 2015 measures were followed by the announcement of Saudi's Vision 2030 which aims to position the country at the center of the Islamic and Arabian nations and make it an important power house for joining the three continents. Vision 2030, besides being short on details and long in terms of rhetoric, intends to increase the level of transparency in the country and efficiency of the government. Additionally, the plan also aims at decreasing the expenditure of the government through subsidy reforms and increasing revenues by the government by selling off partially state-owned enterprises.

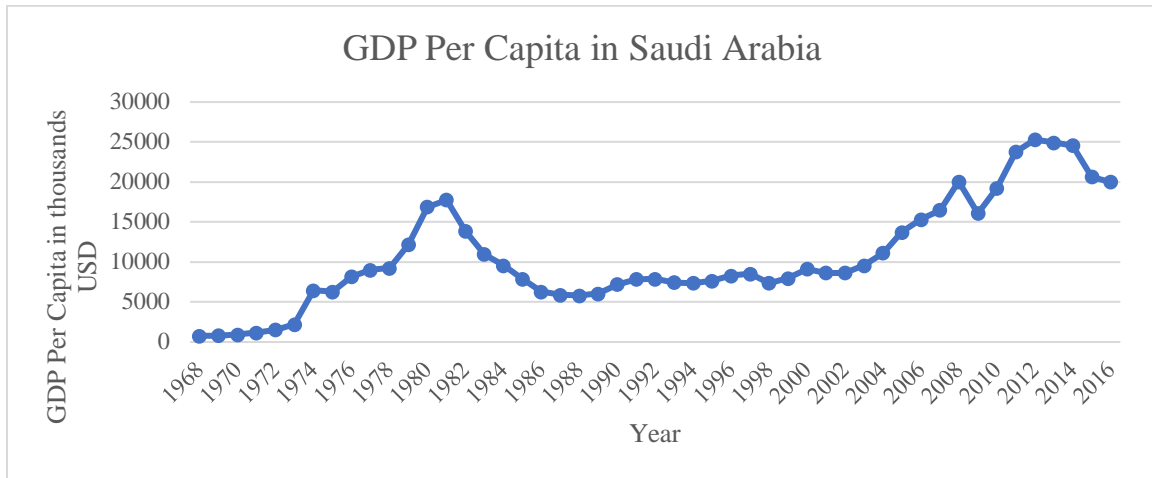


Figure 1 GDP Per Capita in Saudi Arabia 1968-2016 (Source: World Bank)

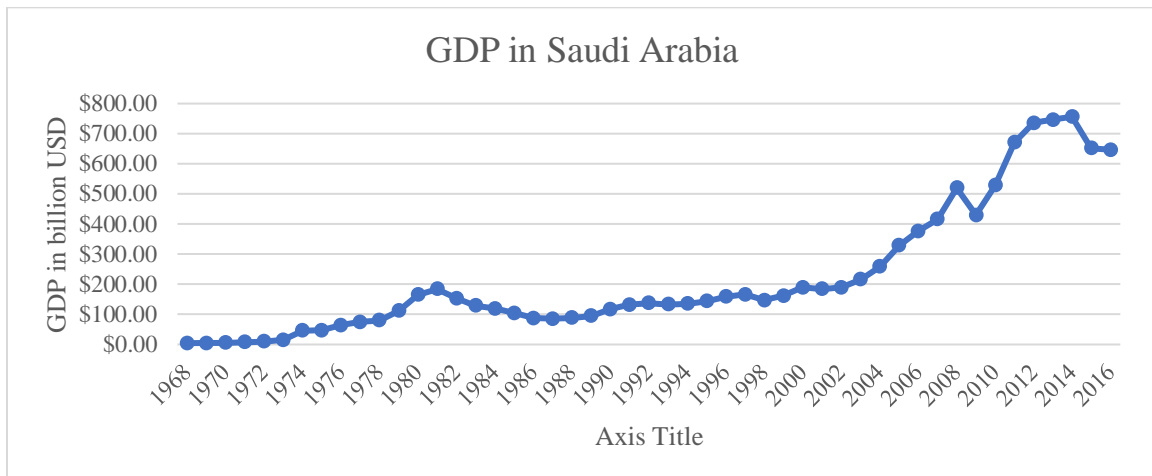


Figure 2 GDP in Saudi Arabia 1968-2016 (Source: World Bank)

Saudi's economic growth rates are heavily dependent on the prices of oil in the global context. Its growth rate in 2011 was 6.8% and in 2010 was 4.6%. Notably, the remarkable growth rate of 1.8% in the 1970s due to the sudden increase of oil price in the world led to a major breakthrough for the country's economy (Bontis, 2004). The Kingdom transformed from poverty to riches. Nonetheless, growth rates have been moderate since then. For instance, over the period 1990 to 2010, the average growth rate per year was 3.9%. Evidently, the

influx in the revenues generated from oil during the 1970s did not translate immediately into human-development rates similar to those of other nations with equivalent per capita incomes (Abed, et al., 2001). The country took time to develop its markets, government services, and infrastructure and by 2011, the country had been ranked number 56 in the global context by the United Nations' Human Development Index (UNHDI).

The government of Saudi has intended to diversify its economy not to depend on oil exports since the 1970s. This was evident by the increase in contribution of non-oil sector to approximately 73% of the total GDP in the country in 2011. This was a big achievement compared to the 46% of the total GDP in 1970. However, most of the services and products which contribute to the country's GDP still depend on oil. From the government's statistics, exports of oil and refined petroleum products amounted to USD \$317.9 billion in 2011 which represented more than half of the country's GDP. Most research still maintains that the economy of the country is much related to the industrial sector. Other sectors are, nonetheless, on the rise with their contribution to the country's GDP. For instance, in 2009, agriculture accounted for 3.2% of GDP, services, 36.4% and industry, 60.4%.

The country implemented a series of five long-range economic development plans with the first 2-year plans (1970-1975 and 1975-1980) being developed for major Saudi Arabia communication and facilities used in the transport sector. The consequent planning aimed at economic diversification and increasing food production, enhancing health services, education and vocational training, and communication which are among the various segments of the nation (Butler, 2001). Towards the end of the 1990s, privatization of segments of telecommunication and electricity sectors had commenced.

Presently, the government policy directs its efforts primarily on developing the economy as the first essential objective in the country. Saudi's government invests largely on the expansion of the production of crude-oil, natural gas and refining capacity. Besides, the government also puts interest in developing the non-hydrocarbon economy so as to reduce the country's dependence on oil and gas and to also create more job opportunities. Notably, many correlated aspects work towards ensuring that Saudi's strategy works. The country enjoys an advanced infrastructure, goods and services as most of its regions are linked by highways and airports (Bontis, 2012). Moreover, the nation enjoys good access to proper sanitation, drinking water, electricity, health, training, education, and a distribution network for oil products and other services.

2.2 Oil and Gas Sector

The supply of oil is very essential to the Kingdom of Saudi Arabia and having it consistently flowing is key to global markets and to the health of the country as a whole (Cordesman, 2003). On average, the country produced 11.6 million barrels per day of total petroleum liquids in 2013. Natural-gas liquids constituted about 2 million barrels in a single day whereas petroleum accounted for 9.2 million barrels per day. Revenues from petroleum accounted for about 80% of the budget, 90% of the earnings from exports, and approximately 45% of the country's total GDP in 2013 (Chatziantoniou, et al., 2013). In the same year, export revenues totaled USD \$274 billion based on the Energy Information Administration (EIA) report.

2.3 Service Sector

Apparently, with revenue obtained from increased government spending and sales of petroleum, the service sector experienced drastic growth in the middle of the 20th century (De Santis, 2003). Notably, approximately 70% of the labor department works in the service sector, which is comprised of tourism, hospitality, retail sales, wholesales, construction, defense, and civil administration. Moreover, due to the increasing complexity of the country, there has been an increasing demand for professional services such as marketing, legal, health care, information technology, telecommunications, and banking. In every advanced economy, the service sector usually accounts for more than 50% of the labor force. Also, there is an increasing demand for the low-skilled services such as those of nannies, manual laborers, servants, retail sales, et al.

There has also been an increase in the employment opportunities offered by the government since the 1970s due to the growth of state (Dwyer, & Forsyth, 1993). Presently, the state has much more sophisticated and comprehensive services than in the early 1970s. Also, the increase in the state employment is attributed to the fast-growing Saudi's population, especially for those who are unqualified or unwilling to carry out particular tasks for the private sector. This explains why there is a huge allocation for government wages which is approximately 40% of the total country's budget.

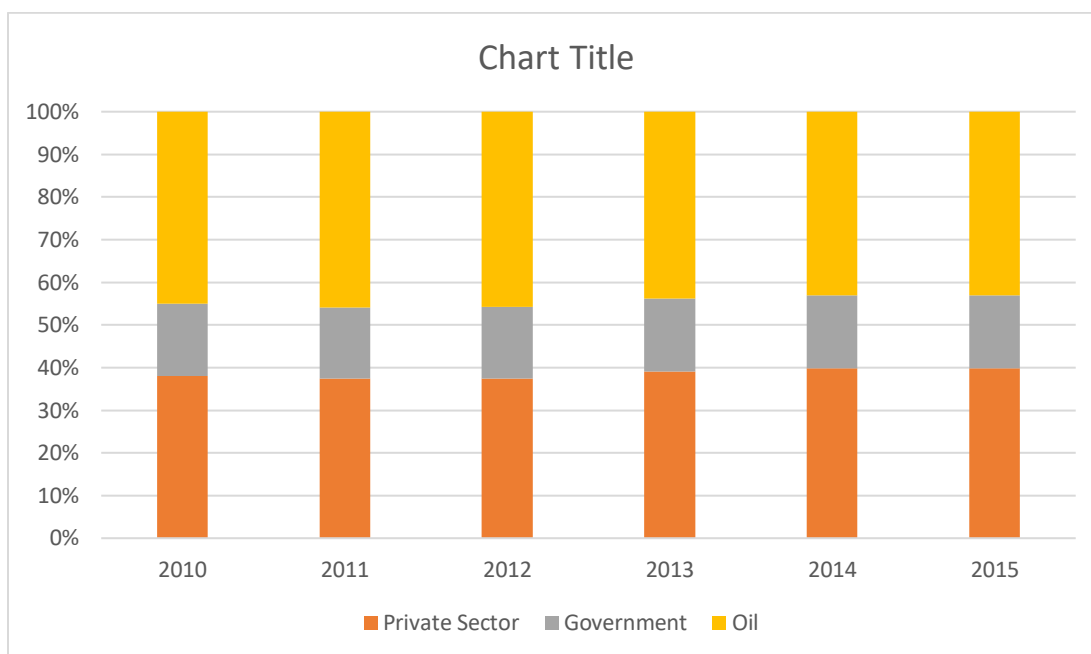


Figure 3 Percentage of Real GDP by sector

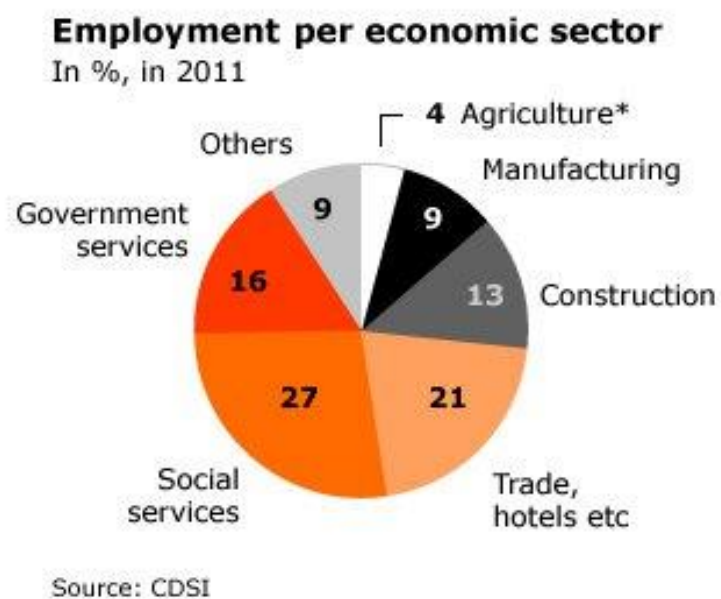


Figure 4 Employment per economic sector

2.4 Banking

In 1952, the monetary agency known as the Saudi Arabian Monetary Agency (SAMA) was founded as the Saudi Arabia head bank called central bank in other cases. Initially, the country relied on a Deutsche bank to transact its core banking roles, central-banking activities since Saudi Arabia was an underdeveloped economy with improper monetary policy (Eadington, & Redman, 1991). After the inception of SAMA, it took over the responsibilities of issuing national currency, supervising and regulating commercial banks, acting as a banker to the government, handling the country's foreign-exchange reserves, ensuring the soundness of the financial system and operating cross-bank electronic transactions. Moreover, the body carried out policies on money mechanisms for enhancing the exchange rate and price stability and also to enhance economic growth. SAMA has therefore strived to become the most competent central bank in the world despite taking it several years to develop its full potential (Essayyad, & Madani, 2003). Notably, Saudi's banking system is known for its benign operating environment, low rates of problem loans, ample liquidity, and a low-cost and stable deposit base. Moreover, the system has a strong loss- absorption capacity characterized by solid profitability and high capital buffers. Nonetheless, the banking system has elements of high deposit and loan concentrations accompanied by a lack of transparency in the transactions of the various businesses.

According to the press releases over the first three quarters of 2012, the banks at Saudi Arabia recorded a 12.4% increase in net income levels which was mainly attributed to higher banking fees and lower provisions.

2.5 Agriculture

The country's development plans offer special attention to the production of food with a sole aim of enhancing food security. With this respect, the government has made generous incentives and subsidies within reach to the agricultural sector. Nonetheless, the sector takes into account a lower percentage of the total gross domestic product of the country and gives employment of a comparable fraction of the workforce as seen in Fig. 2.4 above. Besides, it is no exaggeration that without the government's support, the agricultural sector would be performing even poorer. Apparently, only 1.5% of the land is arable and this lack makes large-scale farming a challenge. This inadequacy cannot sustain the demand for the country without importing food and providing massive subsidies alongside other benefits given by the government to this sector (Bontis, 2012). Important to note, nonetheless, is that agriculture accounts for above 80% of the country's total fresh water used.

Before the production of oil, Saudi Arabia engaged in agriculture which was, however, limited to vegetable production in small-scale and date-farming in villages where the populations are widely scattered. Ironically, the process of production was sufficient for the general population near communities and some vegetables were also sold to caravans passing within the area. Communities such as Bedouin, specifically, depended on animal production. In the late 1960s, the government of Saudi Arabia passed laws which restricted the movement of nomads and their grazing livestock to secure better control of the country (Ghali, 1997). In addition, the government gave land for some prescribed period to those who showed capabilities of agricultural developments.

When the revenues from oil rose in the early 1970s, the government initiated extensive programs which were aimed at promoting modern irrigation technology, modern farming, and roadbuilding in the rural areas. Furthermore, the programs were also directed towards encouraging agricultural technology and research. Strategies were specifically established to improve self-sufficiency in the production of barley and wheat by giving interest-free loans, large subsidies, and monetary aid to individuals, projects, and organizations. As a result, the production of basic foodstuffs emerged.

The main challenge to agriculture remains a scarcity of water since the Kingdom receives only approximately 106 mm of rain on an annual basis (Jasimuddin, 2001). To curb the situation, a series of dams have been built to trap and utilize the precious seasonal rain. In addition, wells have been drilled to draw water from the underground resources. Together with desalination plants which provide enough water for agriculture, these efforts have enabled millions of hectares of desert land to be transformed into fertile agricultural land. Notably, wheat, barley and sorghum production have benefited most from these initiatives. However, the initiatives have been strenuous on the government's budget which led to a withdrawal of government support towards wheat production in 2008 (Iqbal, 2011). The government asserted that wheat could be imported and evidently, the production of wheat fell from 2.55 million tons in 2007 to 1.3 million tons in 2010.

Presently, the country puts more focus on increasing the yields of vegetables and fruits grown in greenhouses which consume little water as compared to the other methods of farming. Also, the government takes interest in dairy and poultry farming together with dates which are adapted to the country's climate. In 2010, 1.07 million tons of dates

were the country's largest crop produced. The country's second largest crop was tomatoes following at 0.49 million tons. Moreover, the agricultural sector of the country gives employment to more than half a million Saudi Arabians.

2.6 Manufacturing

Since the mid-1970s, the manufacturing sector has widely grown following the establishment of the Saudi Industrial Development Fund (SIDF) in 1974, and the Saudi Basic Industries Corporation (SABIC) in 1976 (Mikesell, 1997). The two entities were established by the Saudi government to come up with high-value industrial operations outside the upstream petroleum sector and hence, diversify the economy. SIDF offers preferential loans for new industrial development and the modernization of present development and gives technical aid to industries in Saudi Arabia. SABIC's original purpose was to establish value-added industries associated with petroleum so that a major portion of the value chain could be retained in the Kingdom (Samargandi, 2017). Besides, the motive was to contribute to the overall diversification and development of the economy. Initially, the focus was on petrochemicals, fertilizers, and plastics/polymers. Later on, SABIC ventured into metals while making use of the costs of the low energy in the country for smelting and other operations.

The manufacturing sector has experienced a steady growth unlike the booming upstream oil sector. Notably, Saudi Arabia has made remarkable progress in growing the industries that do not rely on hydrocarbons even though these sectors are still small (Ratha, 2003). The reason for this is because the country generally lacks a comparative advantage in these regions, with an exemption of energy-intensive industries.

The total contribution of manufacturing to the economy of Saudi Arabia was USD \$4.3 billion in 1975 which rose to USD \$29.5 billion in 2010. Notably, the sector has experienced tremendous growth than the overall economy over the same period with its GDP increasing from 4.1% in 1975 to 12.6% in 2010. Without including oil but considering petrochemicals, the GDP was USD \$46.53 billion in 1975 and USD \$528 billion in 2010. Similarly, the employment level in the manufacturing sector increased from approximately 34,000 employees in 1975 to approximately 530,000 in 2010 (Callen, et al., 2014). Evidently, even the industries which do not account for a high percentage of GDP can be crucial in offering employment. For instance, the food-product manufacturing employs more than 100,000 individuals.

Nonetheless, when refining and petrochemicals are excluded, the manufacturing sector accounts for less than 5% of the country's GDP. This is because the petrochemical and refining sectors are very vast, and they are dominated by SABIC and its joint-venture partners.

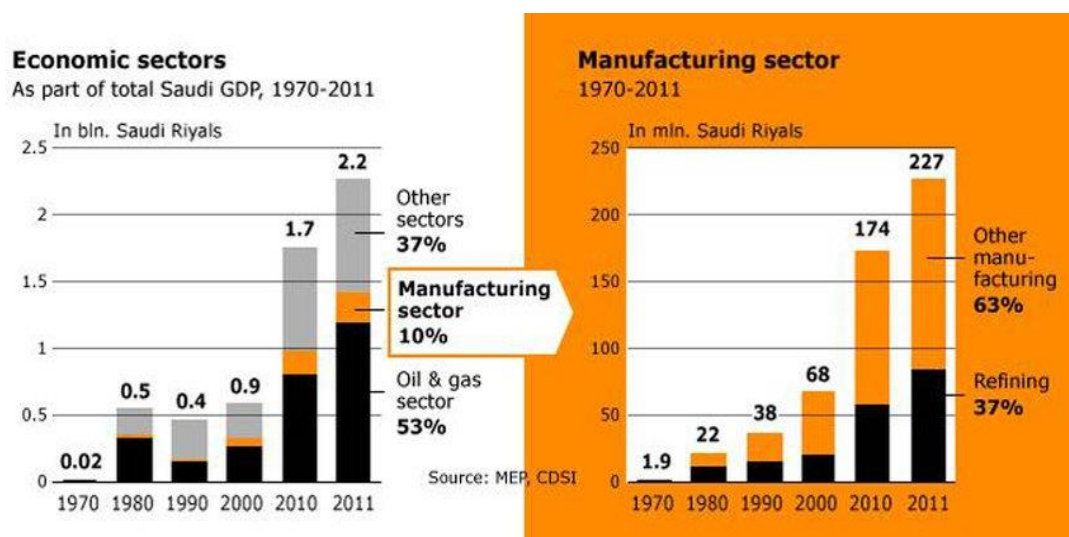


Figure 5 Manufacturing Sector of Saudi Arabia 1970 – 2011

2.7 Tourism

Another area of prime importance to the expanding growth of the economy in Saudi Arabia is that of tourism, including pilgrimages, which occur on a daily basis throughout the year. A large percentage of these pilgrimages are to the Hajj to Mecca in addition to the pilgrimage to Medina. The yearly Hajj event attracts approximately 2.5 million people to Mecca. The approximate number of tourists who are interested in the Medina and Mecca sites every year is 12 million. Notably, the events also attract Muslims who expend a large amount of capital which leads to the enormous growth of the economy (Shoult, 2006). Notably, the government of Saudi Arabia has invested heavily in the tourism sector by ensuring the country has good infrastructure and hotels which increase the total number of pilgrims. The total revenue from 2010 was USD \$17.6 billion which contributed to the religious tourism.

Other than the religious tourism, the government of Saudi acknowledges the importance of establishing and promoting the non-religious tourism sub-sector as an essential means of income, and employment of the nation's economy and diversification. However, the cultural restrictions in the Kingdom make it non-feasible to involve in the mass-market international tourism that has been established in the neighboring country, Dubai (Williams, et al., 2000). On the other hand, having a local market would lead to positive impacts with regard to diversification and employment. Presently, the local market has grown remarkably, and facilities have advanced over the past ten years. Besides, the country has a significant number of regions of natural beauty together with historical sites, many of which are visited annually by tourists.

As development for the expansion of tourism is planned, it is the goal of Saudi Arabia to promote these sites by increased advertising, improved lodging, population control, food consumption, and security situations.

Chapter 3: Methodology

This chapter illustrates how the information regarding Saudi Arabia's GDP was obtained, processed, and analyzed. It entails data on the area of study, research design, data collection, and data analysis. The data categorized as qualitative were valued using descriptive statistics. The data were used to show and draw conclusions from the statistical analysis in various forms like tables, charts and even percentages. Thematic approach of analysis was applied in this chapter.

3.1 Area of Study

This study was conducted in Saudi Arabia which has a population of about 33,555,000 and an area of about 2,150,000 km². Saudi Arabia is one of the Arabic nations situated in the East and is the 5th largest state in Asia and 2nd largest in the Arab world. The neighboring states to Saudi Arabia include Iraq, Kuwait and Jordan which are on the Northern side; United Arab Emirates, Qatar and Bahrain which are to the East; Yemen and Oman which are situated to the South. Most of its terrain consists of mountains and arid desert and it is the only country having both a Persian Gulf coast and a Red Sea coast. Currently, the country has centuries-old attitudes and traditions which were mostly obtained from previous Arab civilization. This culture has been heavily influenced by the Wahhabi form of Islam which came about in the eighteenth century and now dominates the country. Its major boost of economy is oil with approximately 90% of export earnings, 42% of GDP, and 87% of its budget revenues generated from the oil industry. Amongst the biggest challenges facing Saudi Arabia's economy is enhancing education,

diminishing inequality, corruption and reversing or halting the decline in per capita income. Saudi's oil reserves are ranked second in the whole world besides being the top exporter of oil and second-best producer. Moreover, Saudi's petrol is near to the earth's surface and exists in abundance. The oil is extracted by pressure drilling techniques generated by oil wells. As such, it becomes not only less expensive, but is also easier to extract in Saudi Arabia as compared to other countries. Additionally, Saudi Arabia obtains approximately 40% of its GDP from the private sector and the government of Saudi encourages the growth of the private sector to make the country not to depend entirely on oil and to increase the opportunities for employment to its growing population. Besides the oil and the private sector, Saudi has the 5th largest natural gas reserves and as such, the nation is branded as an "energy superpower." By 2016, the country had the 3rd highest total value of natural resources estimated at USD \$34.4 trillion. As it stands now, the country has a nominal GDP of about USD \$646 billion and a Purchasing Power Parity (PPP) GDP of about USD \$1.75 trillion. The nation has managed to record a GDP growth of 1.1% in 2017 with a nominal GDP per capita of about USD \$21,847 and PPP of approximately USD \$55,477. The GDP contribution from agricultural activities accounts for 2.6%, the industry sector 44.2%, and the services 53.2%. Unemployment level in the country is estimated to be approximately 5.6% of the total population. Overall, the main industries of the country include petroleum refining, crude oil production, petrochemicals, fertilizer, metals, plastics, aircraft repair, ship repair, construction, industrial gases, ammonia, sodium hydroxide, et al.

MIDDLE EAST



Figure 6 Map of Saudi Arabia

3.2 Research Design

A research design can be defined as the structure that holds all the crucial aspects in the research. It is the plan, guideline, or outline that is applied to generate responses to research problems. Burns and Grove (2003) define a research design as “a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings.” Parahoo (1997) describes a research design as “a plan that describes how, when and where data are to be collected and analyzed.” Polit et al. (2001) define a research design as “the researcher’s overall information for answering the research questions or testing the research hypothesis.”

This study focused on how Saudi Arabia develops its GDP. The research objectives of this study included i) To establish if Vision 2030 of Saudi Kingdom helps it to grow its economy, ii) To determine the non-oil-based products and services which contribute to the country’s GDP, and iii) To determine the role that oil-based products and services play towards the growth of the country’s GDP.

3.2.2 Descriptive Research

According to Burns and Grove (2003), descriptive analysis “is designed to provide a picture of a situation as it naturally happens.” It may be used to justify current practice and make a judgment and also to develop theories. For this study, descriptive research was used to obtain a picture of how Vision 2030 of Saudi Kingdom helps it to grow its economy, how the non-oil-based products and services contribute to the country’s GDP, and the role that oil-based products and services play towards the growth of the country’s GDP.

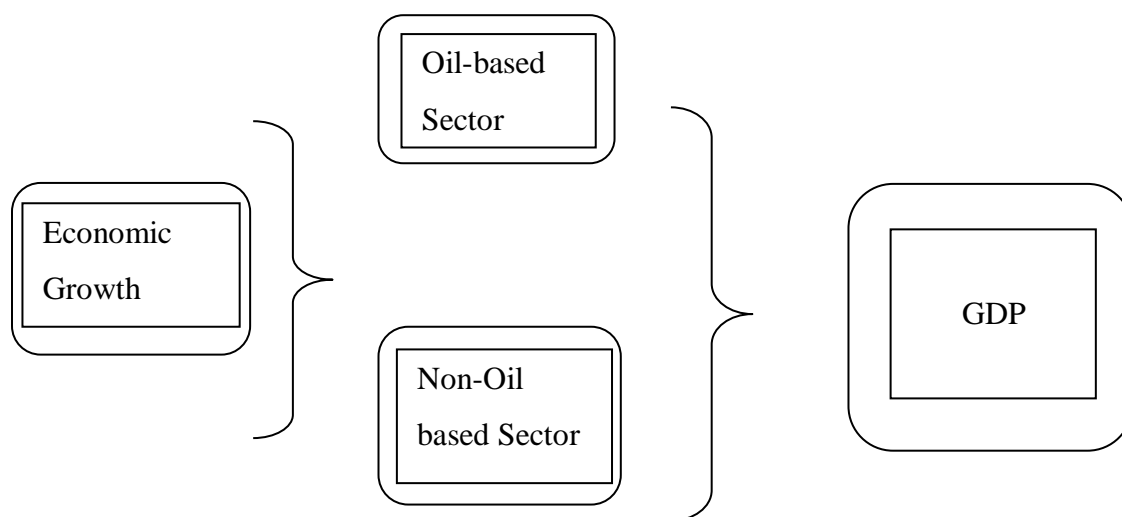


Figure 7 Conceptual Model of the Research

3.3 Source of Data

Data were retrieved from different sources to ensure that a comprehensive report was generated. Some of the sources applied included podcasts, library database and books of renowned authors on the subject of GDP with respect to economic growth. The World Bank was a primary source of data for statistical analysis.

3.4 Data Analysis

This thesis applied both quantitative and qualitative approaches for data analysis.

3.4.1 Quantitative Data Analysis

Data Analysis requires both inferential and statistical techniques. Descriptive statistics in this research were used to calculate mean, frequency, percentages, correlation and distribution. The analysis was done in line with the objectives of the research. The data set was presented using tables, frequency distribution, pie charts and graphs for easy and fast reference. Inferential statistical technique like the regression analysis and Pearson correlation on the other hand was applied in the analysis of quantifiable data.

3.4.2 Variables

A variable can be referred to as a unit which impacts or is impacted by another unit. In this study, the variables are economic growth, oil-based sector, non-oil-based sector, Vision 2030, and GDP. This study tries to assess how Saudi Arabia's oil-based sector, non-oil-based sector, and Vision 2030 contributes to the country's GDP, which is a factor of economic growth.

3.4.2.1 Dependent variables

These are the variables that the researcher is concerned about and are affected by the other variables. The changes that come about due to these variables are the point of interest for the researcher. For this study, the dependent variable is GDP which is influenced by the oil-based sector, and non-oil-based sector.

3.4.2.2 Independent variables

These are the variables that are changed or controlled in a research proposal to test the effects on the dependent variable. In this study the independent variables are the oil-based sector and the non-oil-based sector.

3.5 Statistical Methods

Both qualitative and quantitative techniques will be utilized in the data analysis. However, more reliance will be placed on non-parametric quantitative techniques for greater objectivity. These measurement scales provide data that are unsuitable for rigorous statistical analysis. Other statistics such as percentages will be used where necessary to facilitate the diagrammatic presentation of data analysis results.

3.5.1 Descriptive statistics

This is the analysis that is used to describe, summarize or show data in a meaningful way. Conclusions cannot be made from the data analyzed because it is a way of describing the data. Data is represented in a meaningful way allowing for simple interpretation of it. Measures of central tendency and measures of spread are examples of descriptive statistics. Descriptive data will be used to show how the oil-based sector, non-oil-based sector, and Vision 2030 impact the economy of Saudi Arabia which ultimately impact its GDP.

3.5.2 Bivariate analysis

This is the simultaneous analysis of two variables. It is used to determine the relationship between two attributes whether there exists an association and its strength, or whether there are differences between these attributes and the significance of these differences. Examples of bivariate analysis include both numerical and categorical. For this study, the relationship between the economical and GDP levels will be investigated. Also, the different economic sectors as a function of the level of economy will be looked into vis-à-vis GDP.

3.6 Pearson correlation

This is a measure of the strength of the linear association between two variables. It is usually denoted by (r) . It attempts to draw a line more appropriate through the data of two variables. The Pearson correlation coefficient indicates how far all the data points are more appropriate to the line. This study seeks to show the relationship that exists between economic growth and GDP in Saudi Arabia. The mathematical expression of Pearson

correlation coefficient is:

$$r = \frac{\sum_{i=1}^n (y_i - \bar{y})(x_i - \bar{x})}{\sqrt{\sum_{i=1}^n (y_i - \bar{y})^2 \sum_{i=1}^n (x_i - \bar{x})^2}} \quad \text{where } -1 \leq r \leq +1$$

3.7 Simple linear regression

This model attempts to explain the relationship between two or more variables using a straight line. There is only one independent variable in this model. The slope and intercept of the line in regression models are referred to as regression coefficients while the independent variable, predictor variables and the dependent variables are referred to as response. For this study, we will look into the oil-based sector, non-oil-based sector, and Vision 2030 variables separately and relate to them how they affect GDP in Saudi Arabia. The expression of simple linear regression is:

$$y = \beta_0 + \beta_1 x + \varepsilon$$

where y is dependent variable, and x is an independent variable, β_0 is an intercept, and β_1 is a coefficient of the independent variable ε is the residual or error.

The simple linear regression analysis is applied to analyze the stipulated hypotheses.

3.8 Multiple linear regression

This is the most common model in regression analysis. A multiple linear regression model can be used to identify the strength of the effect that the independent variable has on the dependent variable. It can also be used to predict the impact or effects of changes and to forecast the future values and trends. An ordinary least squares

regression model will be used in testing the hypotheses since there exists both independent and dependent variables in this study (Ayadi, 2006). The independent (X – variable) and dependent (Y- variable) are placed into the regression equation which shows the relationship between the variables. The general model of the linear regression is given as:

$$Y = \alpha + \beta X + \varepsilon \dots\dots\dots (1)$$

Where:

Y – Dependent variable

X – Independent variable

α – Intercept constant parameter (where the regression curve crosses the y-axis)

β – Independent variable Coefficient

ε – Residual or error

Multiple Regression Model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon \dots\dots\dots (2)$$

Where β_j are unknown coefficient of X_j . β_0 is an intercept and ε is residual or error term.

Y is a dependent variable and Xs are independent variables. ε is residual or error.

Chapter 4: Result and Analysis

i) Trends of Non-oil and Oil factors

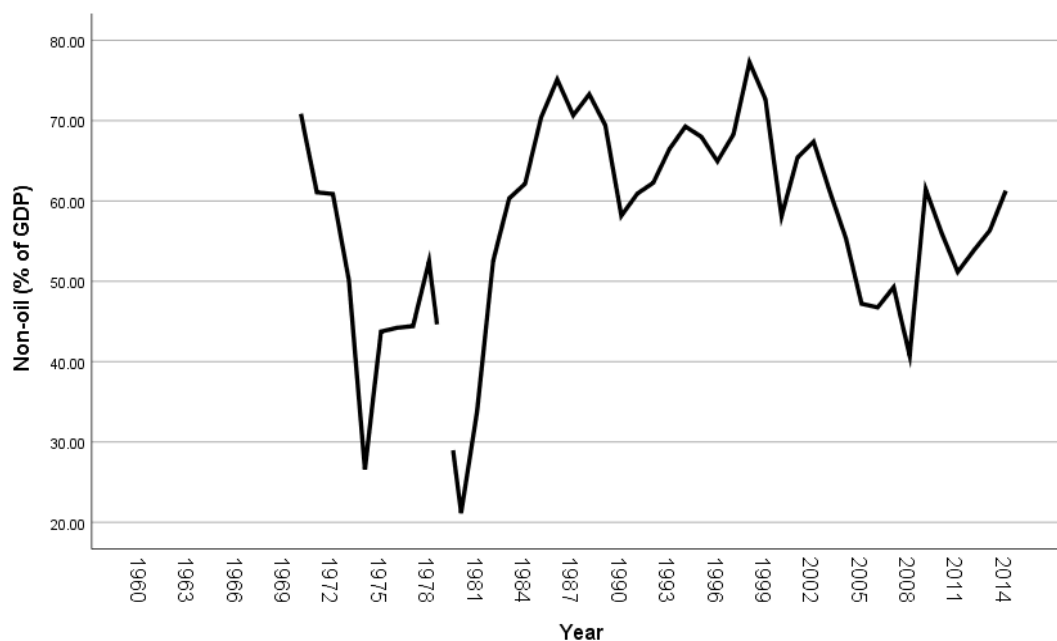


Figure 8 Non-oil (% of GDP) of years 1970-2014

The above Figure 8 represents the trend of non-oil sector as percentage of gross domestic product (GDP). As it appears, there was a rapid decline in the non-oil sector during years 1970 – 1980. After that, it increased until 1995, and after that it declined rapidly. However, it shows a slow increase during the latest years of the chart.

ii) Oil rents

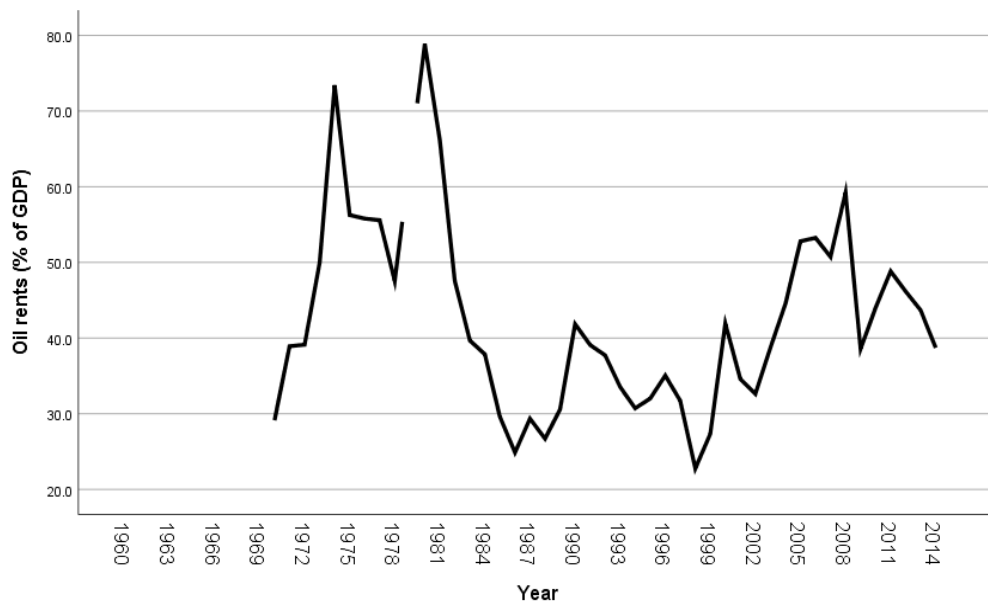


Figure 9 Oil rents (% of GDP) of years 1970-2014

The Figure 9 presents oil rents as percentage of GDP. It shows a rapid increase between years 1970 – 1981. During 1995 – 2002, the percentage shows a decrease somewhat lower than in previous years. After that period, it increases with a slight variation.

iii) Travel Services

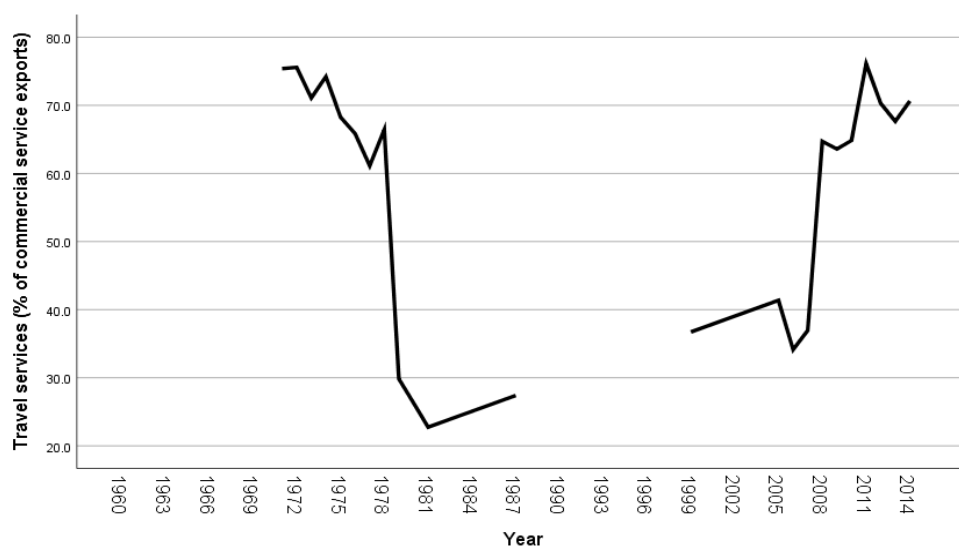


Figure 10 Travel services (% of commercial services exports) of years 1970-2014

Saudi Arabia has been carrying out national and international airline services for an extensive period of time. The data source presents data on limited years. Figure 10 displays travel services in percentage of commercial exports. As it displays, the airline services declined rapidly after 1970. However, since 2006, it has been increasing.

iv) Transport Services

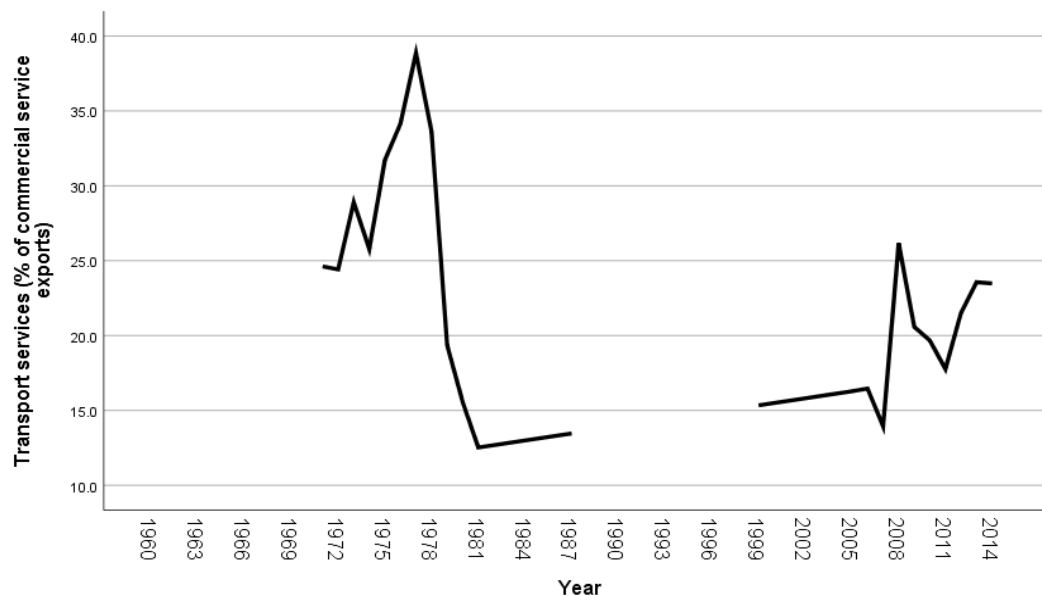


Figure 11 Transport services (% of commercial service exports) of years 1970-2014

Similarly, Figure 11 shows transport services in percentage of commercial service exports. It shows a somewhat similar pattern as observed in Figure 10. There was a rapid decline after 1975 which sharply continued. However, it shows a slight increase during the latest years.

v) Food and Agricultural Export Materials

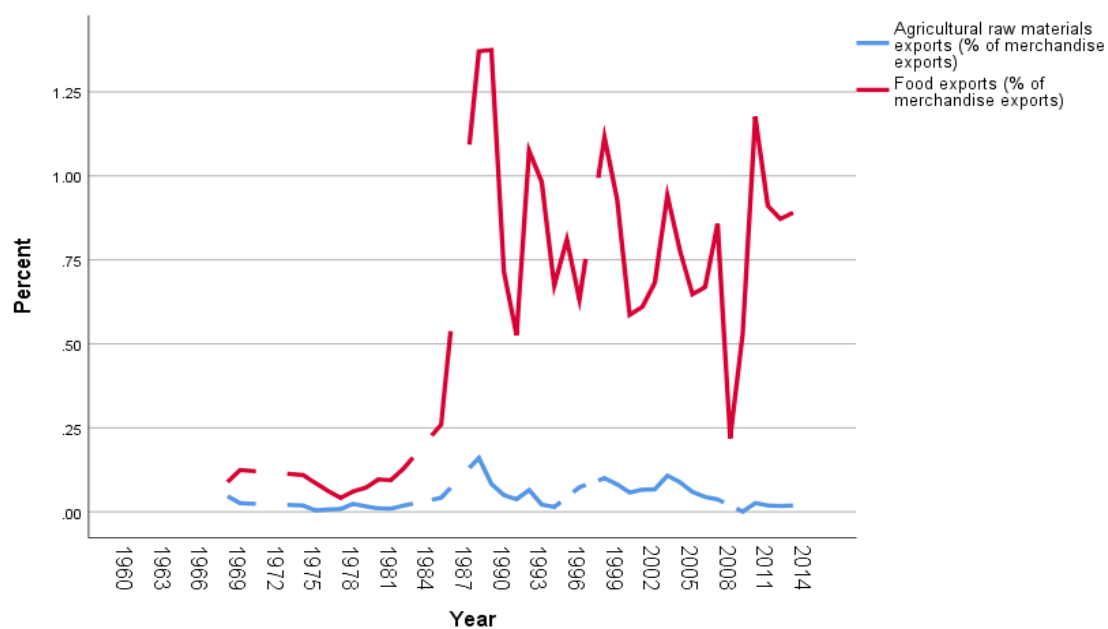


Figure 12 Agriculture raw materials exports and food exports (% of merchandise exports) of years 1967-2014

Figure 12 displays the pattern of contribution of agricultural raw materials and food exports in percentage of merchandise exports. As it shows, the percentage of both agriculture and food exports are less than one percent. Food exports are slightly higher than agricultural exports.

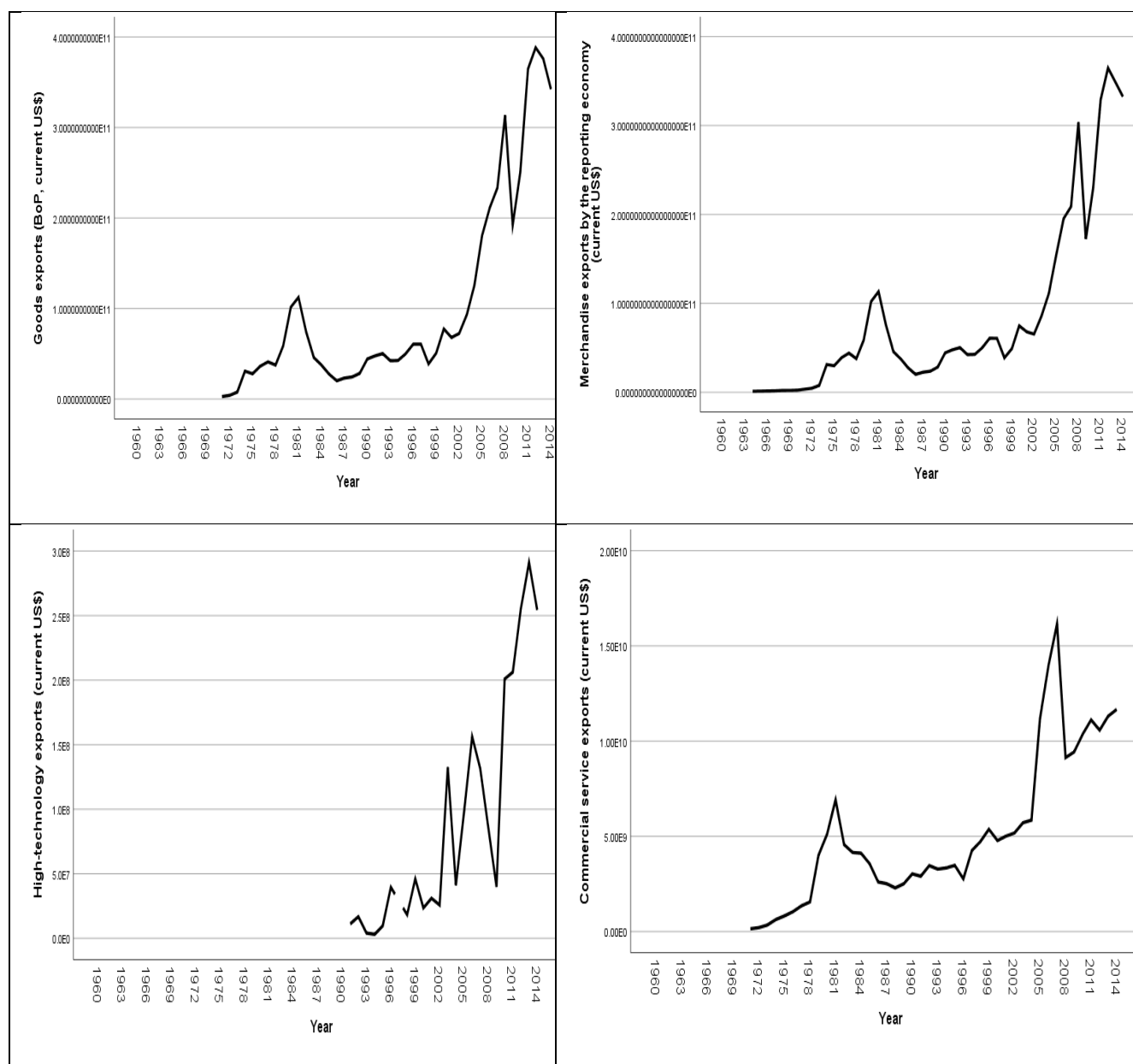


Figure 13 Some non-oil factors displaying growth over time

Figure 13 displays an increasing trend of non-oil factors. The factors are goods exports, merchandise exports, high technology exports, and commercial services exports. This growth displays an indication of the increasing role of non-oil economic growth. Although the current role may not be significant, the policy and program of developing

the non-oil role on economic growth are likely to increase the share of non-oil production of GDP growth.

A) Relationship between selected factors

Table 1 presents Pearson correlation coefficient between selected variables. The travel services show a significant positive relationship with a non-oil percentage of GDP. High technology exports appear to have a strong relationship with GDP, its population, and foreign direct investment (FDI). Commercial service exports display a strong positive relationship with GDP, foreign direct investment, and high technology exports. Merchandise exports has shown a positive relationship with GDP, population, FDI, high technology, and commercial exports. Manufacturing exports show a strong relationship with population, and it also has a significant positive relationship with the non-oil sector, and GDP. A similar pattern of the relationship also appears for food exports, but the strongest relationship is observed for manufacturing exports. Agriculture exports show a significant relationship with the non-oil sector, manufacturing exports and food exports.

Table 1. Pearson Correlation Matrix

Pearson Correlation Matrix

			X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁
Non-oil (% of GDP)	X ₁	Corr	1										
Log (GDP at market price)	X ₂	Corr	-.112	1									
Log (Population total)	X ₃	Corr	.234	.899*	1								
Log (FDI)	X ₄	Corr	-.456*	.797*	.627*	1							
Travel services (% of commercial service exports)	X ₅	Corr	.522*	-.245	-.076	-.293	1						
High-technology exports (current US\$)	X ₆	Corr	-.499*	.892*	.846*	.525*	.449	1					
Commercial service exports (current US\$)	X ₇	Corr	-.168	.840*	.768*	.718**	-.320	.758**	1				
Merchandise exports (current US\$)	X ₈	Corr	-.287	.740*	.703*	.654**	.049	.902**	.863**	1			
Manufactures exports (% of merchandise exports)	X ₉	Corr	.673**	.598*	.863*	.239	.212	.409	.411*	.381*	1		
Food exports (% of merchandise exports)	X ₁₀	Corr	.667**	.441*	.704*	.235	.183	.258	.275	.228	.919*	1	
Agricultural raw materials exports (% of merchandise exports)	X ₁₁	Corr	.590**	.001	.299	-.212	-.281	-.358	-.102	-.253	.615*	.630**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

B) Scatter Diagram between GDP Growth and Oil Rents

Figure 14 demonstrates a slight positive relationship of the annual growth rate with oil rents although they show a strong contribution to GDP.

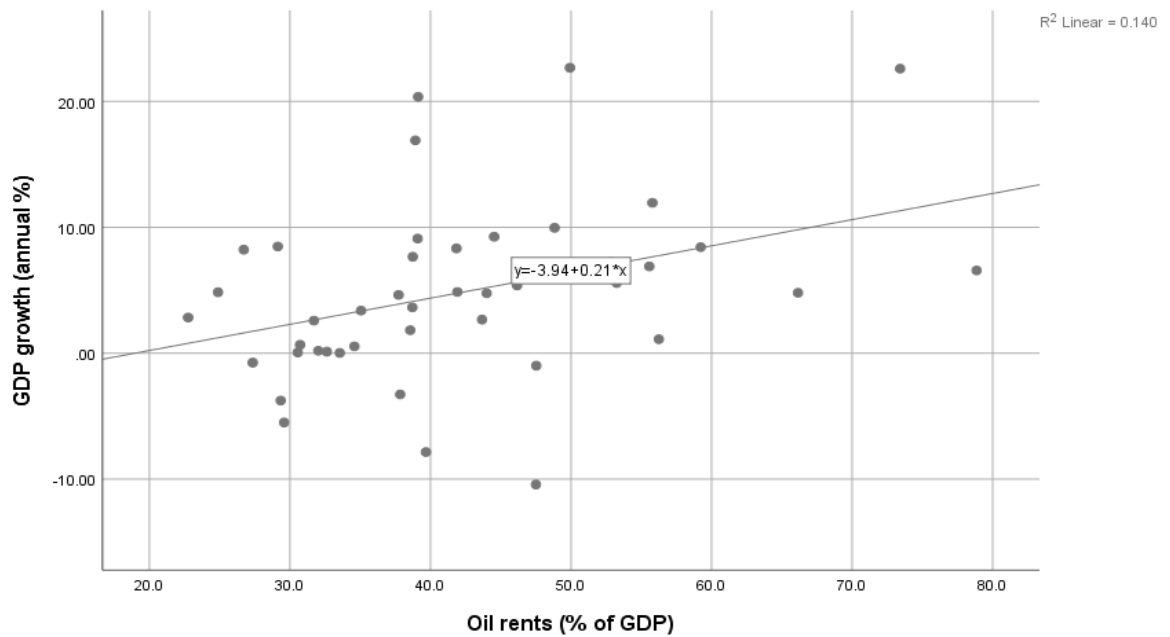


Figure 14 Scatter diagram of GDP growth (annual %) and oil rents (% of GDP)

C) Descriptive Statistics

Table 2. Descriptive Statistics of the selected variables

	N	Minimum	Maximum	Mean	Std. Deviation
Population, total	55	4086539	30886545	15062755.00	8433765.81
Life expectancy at birth, total (years)	55	45.26	74.33	64.19	9.50
Gross enrollment ratio, tertiary, both sexes (%)	43	1.60915	61.11202	17.9469498	14.69
Commercial service exports (current US\$)	44	144868444.9	16159684994.9	5146826947.3	3933925076.3
Merchandise exports (current US\$)	55	891111000.0	388400800000.0	83477831221.3	106499707157.64
Manufactures exports (% of merchandise exports)	37	.085	12.95	6.42	4.35
Food exports (% of merchandise exports)	37	.0412	1.374	.5890	.4076
Agricultural raw materials exports (% of merchandise exports)	35	.00056	.1602	.04352	.0357
Service exports (BoP, current US\$)	44	153783426.2	16403716573.2	5238054736.1	4060210498.8
Foreign direct investment, net inflows (% of GDP)	45	-8.22	8.50	1.16	3.06
Oil rents (% of GDP)	44	22.76	78.86	42.20	12.52
Valid N (listwise)	32				

Table 2 displays descriptive statistics of the selected variables. It shows minimum and maximum values, mean and standard deviation. It shows for some variables that the range is very large.

D) Multiple regression analysis

Table 3. Multiple regression of GDP at market price on selected non-oil variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-829634129288	2098546481094		-.395	.701
Log (Population total)	40990243104	178021666485	.082	.230	.823
Life expectancy at birth, total (years)	1094667967	12327611330	.024	.089	.931
Gross enrollment ratio, tertiary, both sexes (%)	3554110659	1711462907	.241	2.077	.065
Log (FDI)	6205135855	3668377256	.054	1.692	.122
Merchandise exports (current US\$)	1.372	.161	.750	8.532	.000
Manufactures exports (% of merchandise exports)	2618602879	5538777493	.047	.473	.647
Food exports (% of merchandise exports)	-11931010167	31949232694	-.019	-.373	.717
Agricultural raw materials exports (% of merchandise exports)	-366294071002	363252798254	-.039	-1.008	.337
Service exports (BoP, current US\$)	-7.147	2.744	-.148	-2.604	.026

a. Dependent Variable: GDP at market prices (current US\$) n=19; F= 374.362; p < .0001; R²=.997

Table 3 presents multiple regression analysis of GDP at market price on selected variables. Among the variables, only two variables are found to have a significant relationship with GDP—merchandise exports and service exports. In addition, education appears to have marginal impact on GDP. The F test appears to be highly significant. The coefficient of determination indicates that the selected variables explain 99.7% variation of the dependent variable.

Table 4. Multiple regression of GDP on selected non-oil and oil variables

Model	Unstandardized Coefficients B	Std. Error	Standard ized Coefficients Beta	t	Sig.
(Constant)	- 16446753856 71679369986 8	72		-.436	.673
Log (Population total)	55318395580	13962468577 0	.111	.396	.701
Life expectancy at birth, total (years)	-2551103912	9766165651	-.057	-.261	.800
Gross enrollment ratio, tertiary, both sexes (%)	2339336065	1414137820	.159	1.654	.132
Log (FDI)	4471301411	2933600461	.039	1.524	.162
Commercial service exports (current US\$)	-3.893	2.475	-.078	-1.573	.150
Merchandise exports (current US\$)	1.530	.139	.837	10.976	.000
Manufactures exports (% of merchandise exports)	2089647932	4350631108	.038	.480	.642
Food exports (% of merchandise exports)	- 13057302172	25075051587	-.021	-.521	.615
Agricultural raw materials exports (% of merchandise exports)	- 35950265694 2	28568102696 8	-.038	-1.258	.240
Oil rents (% of GDP)	-1732608934	648881458	-.080	-2.670	.026

a. Dependent Variable: GDP at market prices (current US\$) n=19; F= 547.573; $p < .0001$; $R^2=.999$

Table 4 presents the regression analysis of GDP adding additional variable oil rents.

The results indicate a significant relationship with GDP and remain a significant relationship with the dependent variable.

Table 5. Multiple regression of Manufactures exports (% of merchandise exports) on selected variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	173.555	137.565		1.262	.226
Log (Population total)	-8.312	11.412	-.939	-.728	.478
Log (GDP at market price)	-5.497	1.624	-1.123	-3.385	.004
Life expectancy at birth, total (years)	1.466	.853	1.834	1.719	.106
Gross enrollment ratio, tertiary, both sexes (%)	.287	.100	1.081	2.866	.012
Log (FDI)	.326	.284	.164	1.147	.269

a. Dependent Variable: Manufactures exports (% of merchandise exports)
 n = 20; F =30.124, p = .000; R² = .909

Table 5 presents regression analysis of manufacture exports (% of merchandise exports) on selected variables which are not export material sources. Among the selected variables, only two are found to have a significant relationship with manufacture exports. These variables are GDP and education (gross enrollment ratio, tertiary). It indicates that if the level of education increases, the source of non-oil GDP is also likely to increase.

Table 6. Multiple regression of high-technology exports (current US\$) on selected variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10480791274.	8257017387.		1.269	.236
Log (Population Total)	-1305677592.	981013737.	-2.572	-1.331	.216
Log (GDP at market price)	243157155.	144806355.	1.624	1.679	.127
Life expectancy at birth, total (years)	70535503.	71235798.	1.012	.990	.348
Gross enrollment ratio, tertiary, both sexes (%)	5949113.	2196768.	.878	2.708	.024
Log (FDI)	3070173.	8221945.	.067	.373	.717

- a. Dependent Variable: High-technology exports (current US\$);
n = 14; F = 18.565, p < .0001; R-square = .912

Similarly, the regression analysis of high technology also demonstrates a significant relationship with education. Again, it shows that improvement of higher education is likely to increase a non-oil source of national income.

Chapter 5: Conclusion and Policy Recommendations

Saudi Arabia is originally known for its massive oil production which is the main source of GDP. Nonetheless, the Kingdom has recently invested into other economic sectors to ensure that the country does not depend entirely on oil alone. As such, this paper looked at how Saudi Arabia develops its GDP which makes it to be considered among the most massive economies in the world. The study also looked at both the oil-based and non-oil-based sources of GDP. The primary objective of this study was to determine the non-oil-based products and services which contribute to the country's GDP; in addition, to determine the role that oil-based products and services play towards the growth of the country's GDP. Moreover, this study compared the findings of different studies in the Literature Review section and from there drew several inferences. Besides, the objectives of the study were analyzed based on the secondary source of data obtained from the World Bank Database. From the data analysis, oil is the strongest source of GDP growth, which contributes about 90 percent to it. However, there are some non-oil sources displayed as a growing trend in contributing to GDP growth. The significant factors were merchandise exports and commercial service exports. Besides, some other non-oil factors displayed an indication of the increasing role in GDP growth. These are high technology exports, goods exports, and commercial services exports. Thus, the effective role of government to the target Vision 2030 is likely to enhance the share of non-oil in GDP growth and economic development.

Policy Recommendation

The leaders of the country place an emphasis on increasing the role of non-oil-based sources on economic growth. To achieve that gradually, the investment in education would be very crucial so as to enhance the human capital. Citizens of Saudi Arabia with a higher level of education will have better efficiency in developing non-oil productivity, as well as technological development which also contributes to the non-oil source of economic growth.

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