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## Shifting Sands in the World Market

*A case study:*

*Understanding Saudi Arabia's motivation behind their oil policy*



*By*

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## Abstract

This paper's focus will be on illuminating the motivation(s) behind Saudi Arabia's oil policies, over the last years, especially in concern to the kingdom's increase in its oil output in 2014, even though it had been asked to cut production by other OPEC-members. In order to gain more knowledge about the incentives behind Saudi Arabia's oil policies the paper will firstly examine the historical-, political- and economic link between oil and Saudi Arabia. Secondly, the paper will try to access Saudi Arabia's current economic situation, in order to understand what kind of economic problems and/or challenges the nation faces. Thirdly, the paper will outline global trends in the energy market. Having presented these three components, the paper will introduce its methodological framework, in order to clarify the inherent and active choices that has formed the theoretical and empirical selection in the paper. Hereafter, the two theoretical approaches will be shown in order to facilitate a later analytical understanding of the dynamics behind Saudi Arabia's oil production, its domestic economy, and the global energy market. In this theoretical section, the reader will be familiarized with the theory of "the Dutch disease" and "The Modern World-system". These theories will be crucial in the later analytical section and they do furthermore form the basis of the paper's two hypothesis, created in order to answer the problem formulation. The paper will then recap the findings of the two analysis's and by combining these, a conclusion formed by the duality of marked mechanisms, and domestic considerations, will appear.



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## 1 Introduction

*In the study of International Relations, the first thing that comes to mind is military might, security dilemmas and war. In reality however, relationships between nations are more often through the market place than on the battlefield. In this interactions crude oil, or as some will call it, the blood of capitalism, is what makes this connectedness possible. It is based on this worldview, that this paper will analyze a seemingly paradox concerning the way the most important of all oil producers, Saudi Arabia, behave in relation to the biggest changes in oil prices since the financial crisis.*

The recent fall of oil prices, to a six-year low, has greatly affected the world economy. However, the cause of the sudden fall is still debated. It is difficult to point to just one reason, but instead many different variables have played a role. One such variable is the increased in alternatives to crude oil. Here, it is estimated that crude oil will lose its leading position as the most consumed fossil fuel in 2035 overtaken by Coal and later Gas. Especially gas has proved to be the fastest rising direct competitor to oil. Also rising, but less imminent of a treat to oil, is the advances made in the area of greener alternatives (OPEC, 2013, p. 44). Another variable is the advances made in drilling technology, which has made it possible to extract oil from previously inaccessible locations, hereby increasing both supply and competition in the world market (Moran, 2014). However, the arguably most important variable is the decrease in demand for oil worldwide. Estimates created by the Energy Information Administration (EIA) predicts that oil growth will increase to 1.3 million barrels a day, which might sound like a lot, but compared to the highest growth demand, which reached 2.89 million barrels a day in 2010, it has created anxiety among major oil producing enterprises. Particularly OECD countries, which has already reached their record demand in 2005, now plateauing around 12-13 million barrels a day in Europe and 23-24 million barrels a day in America. This has further enhanced the importance of the Asian market, and here the economic growth is diminishing. In the Chinese market, the demand for oil is slowly declining to a record low of 3.1 percent (Zhou, 2015).



All of the above factors, partially explains the current oil glut, and according to estimation made by Goldman Sachs Group Inc. It is in this economic climate that Saudi Arabia has chosen to increase its oil output and hereby contributing to, not only the oil glut, but also the decline of oil prices. This behavior seems to be in sharp contrast to Saudi Arabia's historic reactions to oil gluts and the entire economic thinking of the OPEC. In past oil gluts and instability in the oil market, Saudi Arabia has functioned as a so-called swing producer, increasing oil output when global supply was low and decreasing in times of oversupply (Fattoush & Sen, 2013, p. 2). However, on the 21<sup>st</sup> of December 2014, Saudi Arabia announced that it would not cut its output, hereby initiating a collapse in oil prices and a price war among oil producers (Dhabi, 2014). Additionally Saudi Arabia also increased its own output to a 30 year high of 10.3 million barrels a day (Zitouny, 2015). In a market, defined by oil glut, it seems like a self-defeating strategy to pump out even more oil in a race towards the bottom, nevertheless this is the strategy that Saudi Arabia has chosen, and it is based upon this paradox that this paper has chosen its problem formulation.



## 2 Problem formulation

Why does Saudi Arabia not act in accordance with general economic rationality, cutting production when global oil output is high (or demand is low)?

### 2.1 Development in Saudi Arabia

*The purpose of this section is to account for the rise of Saudi Arabia as an oil producer. The first part of this section will account for the first steps of the country's oil adventure. Thereafter the role of Saudi Arabia during earlier oil crisis and within OPEC is emphasized. Lastly the in the world market is presented to understand how the demand for oil on the world market is, and will be, shaped in the years to come.*

#### 2.1.1 The rise of Saudi Arabia as an oil power

In the postcolonial world, a decade after the First World War had ended, the United States of America was looking for states that had oil, but weren't already in business with the dominating European oil companies. Countries like Iran, Iraq and Bahrain were largely dominated by the British firm British Petroleum, or just BP. The Arabian Countries lacked the expertise and the Technology to retrieve the oil from the ground therefor they were forced to bring in foreign actors with the means to retrieve the oil. It is in this context that the new king of Saudi Arabia Saud Ibn Abd al-Aziz, the founder of what is Saudi Arabia today, was trying to find partners to develop the riches of his new kingdom. The new king of Saudi Arabia did not favor the European firms, because he was suspicious of their intentions due to their earlier actions in the region. In turn, this meant that King Saud Ibn Abd al-Aziz favored the Americans for the task of oil extraction. In 1933, he granted the Standard Oil Company of California, or just SOCAL - today's Chevron, a sixty-year lease that gave them the exclusive rights to drill for oil in an area the size of Germany and Denmark combined (Bronson, 2006, p. 18).

In the beginning, the oil companies did not have much luck with their investments in Saudi Arabia. Saudi Arabia had not export any oil prior to 1938 and the two main



reasons for the later boom in exports where the oil needed by European powers for the Second World War and the discovery of the Ghawar oil field in 1948 (In Saudi Arabia), which later turned out to be the world's largest oil field. These two factors combined with the largest offshore oilfield discovery in history, called Safaniya discovered in 1951 (also in Saudi Arabia), would make Saudi Arabia the world's largest oil exporting country (Bahgat, 2011, p. 85).

The early years of the American oil adventure in Saudi Arabia were not considered a sure thing. In fact, there were high-ranking people in SOCAL that had doubts about an oil adventure so far from home. The very first well they made created an output of over 6000 barrels a day but it dried out shortly after the completion of the well. SOCAL then drilled six more wells but the operations were under huge pressure from the main office. The investment needed to show some yield if the operation were to continue. The first five wells did not bear any fruits and SOCAL was about to pull the plug. In the very last hour, they found what they were looking for. The oil field of Dammam ended up delivering 4000 barrels a day and a total of more than 32 million barrels in the 44 years of operation (Simmons, 2005, p. 29). SOCAL needed capital to finance and utilize the full potential of the Dammam field and therefore sought partners, for these investments. SOCAL created the California-Arabian Standard Oil Company (CASOC) to fulfill the concession given to them by the Saudi Arabian government (Bahgat, 2011, p. 85).

In 1936, SOCAL sold half of their shares, in CASOC, to the American company Texas Oil Company (Texaco). CASOC changed its name to Arabian-American Oil Company (Aramco) in 1944. In 1946, the lease given to them by the Saudi Arabian government was prolonged six years to make up for the lost time during the Second World War. The territory in this redrawing of the contract was expanded and Aramco was once again looking for investments to get the operation underway. The Standard Oil Company of New Jersey, today's EXXON, and Standard Oil Company of New York, today's Mobil, joined the quest. They were all offered 25 percent of Aramco but the Standard Oil Company of New York feared the big investment and only wanted 10 percent of the company, this in turn meant that the three remaining companies got 30 percent each (Simmons, 2005, p. 31).

Aramco seemed like it was a good thing for Saudi Arabia, the progress and new development spearheaded by the oil industry was popular, not only in the government but also in the populace. The popularity that the foreign oil companies had at the beginning was not that common in the region, in the 1950's there were conflicts between BP and the Iranian government over royalties. The good relationship between USA and Saudi Arabia was solid for the time being. As an example, they agreed on a 50/50 policy or split of profits between the host country and Aramco. In 1973 the Saudi Arabian government bought 25 percent of Aramco and the next year the government bought 35 percent accumulating to the ownership of 60 percent in 1974 and by 1980 Aramco was hundred percent owned by the Saudi Arabian government. The investment made in Aramco was, at the time, the biggest single foreign investment made by the USA. The agreed and peaceful replacement of ownership was a significant and strong indicator of the ties that the two nations were establishing. The last American executive left Aramco in 1989 and, the later oil minister of Saudi Arabia, Ali al-Naimi became executive leader of the company that same year (Bahgat, 2011, p. 85).

### 2.1.2 OPEC as a new player in world oil market

The Organization of Petroleum Exporting Countries, OPEC, was created in 1960 and the members were from the beginning Iran, Iraq, Kuwait, Saudi Arabia and Venezuela later others joined. The creation stems from of a conflict between buyers and sellers. The oil importing countries wanted low prices and the oil exporting countries believed that their commodity were priced inadequate during the 1950's. This belief made the oil exporting countries team up and form OPEC. As a counter the importers created the International Energy Agency in 1974. The reason for creating OPEC, some argue, can be trace back to an event in 1959 where a group of International Oil companies called the seven sisters<sup>1</sup> decided to lower the overall price of oil. Prior to the foundation of OPEC, the producing countries did not participate in neither the production nor the setting of the price. As a response to the inability to affect the decisions, OPEC would try to balance the game. OPEC's efforts to affect

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<sup>1</sup> Anglo-Persian Oil Company (BP), Gulf Oil, Standard Oil of California (SoCal), Texaco (Chevron), Royal Dutch Shell, Standard Oil of New Jersey (Esso/Exxon) and Standard Oil Company of New York (Socony)

the price did not have much impact until the beginning of the 1970's where the Arab-Israeli war broke out (Bahgat, 2011, p. 176).

Saudi Arabia's role in OPEC was to be the swing producer of oil. In a market controlled by the forces of demand and supply the swing producer's role is to adjust the supply so that a given price or quantity can be obtained (Bahgat, 2011, p. 89). The dependence on OPEC grew in the 1960s. The rapid growth in Western Europe, USA and East Asia especially Japan created a global thirst for oil and the only way to quench this thirst was through OPEC.

### 2.1.3 The 1970's oil shock

In 1973, the Arab-Israeli war broke out. This event gave OPEC an opportunity to raise the price unilaterally on oil. The American decision to support and arm the Israeli side in the conflict made the Arab leaders angry and therefore they placed an embargo on all the countries that supported Israel, this included USA, Nederland, Portugal and South Africa (US Department, 2013). OPEC's aim was to raise the global price on oil, and they achieved this. Prior to the 1973 Arab-Israeli conflict, the price of a barrel was around or below 3 dollars. Shortly after the conflict started, the price quadrupled and rose to 12 dollars a barrel and stayed there (CBC, 2006). Saudi Arabia's role in this was no different from the rest of the Arab countries. As a direct answer to the American decision to rearm the Israelis, Saudi Arabia lowered its oil production ten percent. Double the amount that were agreed upon by OPEC members. The Saudi Arabian king Faisal was angry with the Americans and felt betrayed by them. Former president Franklin D. Roosevelt had promised Saudi Arabia that they would always have a place at the table while negotiating settlements concerning the conflict between Israel and Palestine. The American decision to support Israel, without Saudi Arabian involvement, damaged their relationship (Simmons, 2005, pp. 52-53).

The second oil shock of the 1970's came in 1979 when the shah in Iran was removed from power and replaced by the Ayatollah. This was a significant event because the Shah had been backed by the west and especially USA and the Ayatollah was a counter response to that. The Iranian revolution created an anti-western spirit in, at the



time, the second largest exporter of oil in the world (Parvaz, 2014). Prior to the revolution in 1978, Iran produced six million barrels a day, a number reduced to 1.9 million in 1980. This significant shortage in the market created a void that only Saudi Arabia could fill and they stepped in as a swing producer, increasing their output, because they feared that the soaring price of oil, the shortage created, would destabilize the global economy, and ultimately hurt their interests (Simmons, 2005, pp. 62-63).

#### **2.1.4 Saudi Arabia's importance in OPEC**

The growing unrest in the Arab region made one thing clear to, not only OPEC members, but also the world. OPEC is not a coherent creature. It is a group of very different countries from very different vantage points. There are Hawks and doves. Hawks are the countries that have large reserves, small populations, and high per capita income and the doves are the opposite. Saudi Arabia is one of the hawks (Bahgat, 2011, p. 177). Saudi Arabia being the most important member of OPEC was, as described above, afraid of what might happen if the price of oil were too high due to the unrest in the region. They specially feared two things. One that renewable energy would become an alternative due to the high price of oil if this were to happen the price of oil would likely never be recovered. Two, other areas of the world where oil is harder to access would become profitable and thereby take market shares from already producing countries. Due to the earlier explained unrest in the region and the lack of cooperation from other OPEC countries, the Saudi Arabian Government adopted, in the beginning of the 1980's, a market orientated strategy and started to sell the oil at the market price. They did this to compensate for the loss of production from other OPEC members. This led to a significant rise in production and Saudi Arabia flooded the market and by 1986, the world witnessed the first oil glut (Bahgat, 2011, p. 177).

#### **2.1.5 Saudi Arabian Gas Adventure**

In the 1990's The Saudi Arabian government once again opened its natural riches to the outside world. The royal family invited all the biggest western oil companies to bid on infrastructural and gas extracting projects worth a staggering 25 billion dollars. The investment was designed to remedy a growing demand for electricity within the kingdom, and the prospects for once again being able to drill, in the oil rich Saudi

Arabian land, were too much of an opportunity to miss, for the international oil companies. The investment project involved constructing facilities like power- and desalination plants to help the Saudi Arabian government with the hurdle of an ever-growing population and an increasing demand for electricity and fresh water. These investments were not that lucrative, but the possibility of easily accessible gas, still lured some companies to begin probing for gas. However, drilling for gas in Saudi Arabia quickly turned out to be much more expensive and no real gas deposits were located. Additionally a real problem was the inaccessibility of the known gas reserves, which made any real investment unprofitable, even after offsetting the heavy subsidies promised by the Saudi government. These obstacles soon resulted in failed investments and the flight of the foreign oil companies (Simmons, 2005, pp. 254-259).

### **2.1.6 Saudi Arabia as a swing producer**

Throughout the 1990's and the 00's Saudi Arabia acted as a swing producer several times, increasing production to meet market demand. The two Gulf wars in 1991 and 2003 and the 2002-2003 strikes in Venezuela are some of the events Saudi Arabia helped neutralize the impacted off. More recent Saudi Arabia also raised the production in 2011 when the production in Libya stopped and in 2013 when the dispute between Iran and USA resurfaced (Sfakianakis, 2013).

During the American lead campaign against Libya in 2011, the coherency in OPEC stopped. OPEC were asked by the USA to increase its output to meet the market supply, which disappeared due to the conflict in Libya. A dispute between especially Iran and Saudi Arabia broke out, and Iran argued that Saudi Arabia were one of the only countries in OPEC that had spare capacity and therefore if OPEC were to agree on a higher output it would only benefit a very few of the members and especially Saudi Arabia (Waldman, 2015). The meeting in 2011 was the last meeting where OPEC agreed on something. Even though they did not all agree on the matter the countries that had spare capacity in 2011 raised the production to meet the demand of the market.



At the last meeting in 2014, where it was expected that OPEC countries lowered production, negotiations stopped at a point where Saudi Arabia's Oil minister said that even if the OPEC countries with Russia and Mexico agreed on reducing the supply, Russia could not be trusted (Waldman, 2015). Meaning, that if any OPEC country were to lower the production this would not facilitate in a higher price but in a loss of market shares. This meeting ended with no agreement, which were a surprise and a blow to the cartel. The world had expected especially Saudi Arabia to cut back on its production but they choose not to.

### **2.1.7 The American, Chinese and German Oil Market**

Saudi Arabia is the world's largest exporter of oil and the biggest player in the global oil market. Therefore, in order to later analyze their actions and the motivation behind those, an understanding of the market, in which they operate, is essential. In the following section some key markets; which include the American market and their shale gas revolution, Germanys increasing renewable energy and the future Chinese market.

First a short explanation of how the production of shale gas works. To extract shale gas there are two stages, which needed to be preceded. The first stage is the drilling part. When the drill is at the right depth, it switches from vertical drilling to horizontal drilling. The drill can go horizontal for more than 3 kilometers and this is the expensive part of the operation (Mills, 2015). Shale gas gets its name from the rocks that it is found in. The way that the gas gets extracted from the shale rocks is done by pumping a mixture of water, sand and chemicals (hydraulic fracturing) into the layer and then replacing the gas with that mixture (Stevens, 2010, p. 11). This is the second part of the operation. This is the technical definition. However, another analogy is easier to comprehend. The first stage of the shale gas production is like constructing a factory. The second part is like connecting it to the power grid (Mills, 2015). This is important to understand because when the first part of the shale gas production is facilitated, most of the investment needed to start extracting is complete, meaning like the power from the energy grid provided to the factory the shale can be switched off if the payouts are not satisfying.



There are more than 3000 shale gas wells in USA alone where the first stage has been completed, but they are currently turned off. These wells alone have the capacity to produce around three million barrels of oil a day if turned on (Mills, 2015). The extra output on the domestic market has raised its domestic production from around six million barrels a day in 2009 to nine million barrels a day high in 2014 (Waldman, 2015). Essentially this means that six years ago the United States of America produced about one third of the total consumption, whereas today, they produce around half of their total consumption of 19 million barrels a day, and they have a spare production or a buffer of three million barrels a day if needed (EIA, 2015).

The biggest economy in the European Union is turning toward renewable energy sources. 26 percent of the total energy generated in Germany is now from such sources. Be solar or Wind turbines (Stratfor, 2015). The argument here is that the European countries are looking for higher energy independence from the rest of the world and are trying to become greener. It paints a picture similar to the above explained American case that resulted in lesser demand for energy in the global market.

The overall demand for oil in China is falling due to higher efficiency on consumption and a decrease in the economic growth in the country. The growth is expected to settle at 2.6 percent this year accumulating a total consumption of 10.6 million barrels a day. The growth in consumption is half of the average growth in consumption for the last ten years. The Chinese economy is furthermore getting more efficient with less oil burned per unit of GDP (Waldman, 2015). Effectively the Chinese market is getting closer to saturation and metaphorically driving longer on the gallon. A nationwide change toward more efficient consumption has been going on, both in China's automobile- and in industrial sector. These sectors have been able to sustain growth but lower the energy intensity at the same time. The overall efficiency gain in the period between 2008 and 2014 was 18 percent and the International Energy Agency estimates that even though China still is the fastest growing market for consumption of oil the predictions for its consumption in 2019 has seen a 500.000 barrels a day cut (Waldman, 2015). The tendency that the report highlights is that the largest Asian market, the largest European market, and the world's largest energy market, the United States of America, are showing signs of a



downwards trend in demand. This new normal might signal a paradigm shift in the global energy market and a significant new reality for, not only Saudi Arabia but for all, oil producers worldwide.

## 2.2 Accounting for Saudi Arabia's oil and their exports

*This section has the purpose to display facts about Saudi Arabia and to present essential information and create an idea of the country's situations. Following chapters will be presented: Saudi Arabian crude production, export destinations, market competitions, investment in solar energy, demand, world oil demand and lastly Saudi Arabia's economical situations. By presenting important knowledge of the Saudi Arabian economic situation a foundation of reliable facts will create the framework for this paper.*

### 2.2.1 Saudi Arabia's crude oil production

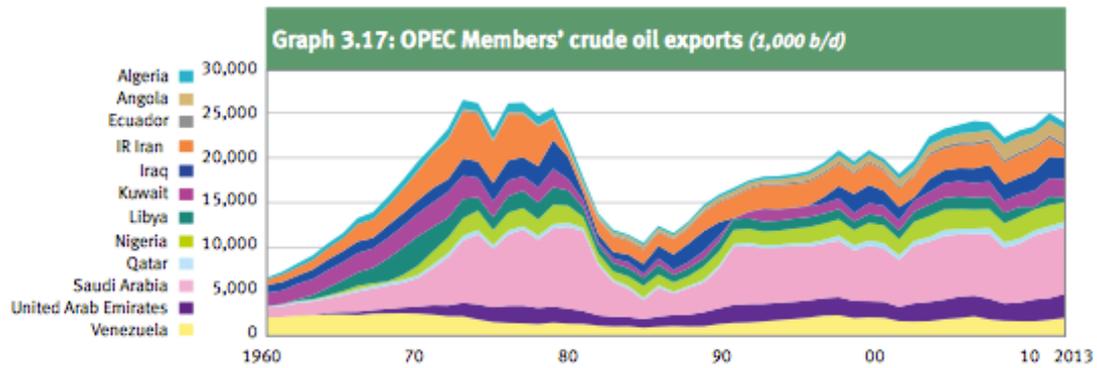
Saudi Arabia is one of the world's largest oil producing country and it is the world's second largest petroleum liquids producer, constitute for 85 percent of their export revenues in 2013, which is 377 billion dollar, making them very reliable on oil export revenues. Saudi Arabia also sits on the largest oil reserves in the world, constituting 16 percent of all known reserves in 2014. There has been extracted approximately 266 billion barrels from the country so far (EIA, 2014, pp. 1-2). The fossil fuel production in Saudi Arabia is primary based on crude oil. In the case of natural gas production, Saudi Arabia poses a large quantity, which are hard to extract and limited productions facilities. Furthermore the majority of the recovered natural gas is used for domestic consumption (EIA, 2014, p. 3).

The figure below shows Saudi Arabia's crude oil exports valued of 7,5 million barrels in 2013. Saudi Arabia's exported value in percentage is above 40 percent of the total value of OPEC export in 2013 (OPEC, 2014). Making them the most important crude oil exporter in OPEC in terms of quantity. Comparing these numbers with other oil exporting regions (Africa region exporting 5 million barrels, Eastern Europe and Eurasia exporting 6,5 million barrels and lastly Latin America exporting 4,4 million barrels. Saudi Arabia is the no. one crude oil exporter in the world, only out produced by the U.S, but the U.S consume still more than they can produce making them a net



importer instead of exporter. The figure below shows that Saudi Arabia has a substantial larger exportation of crude oil as a single country compared with other oil exporting country in the OPEC (OPEC, 2014, pp. 49-51).

Figure 1: OPEC Member's crude oil exports

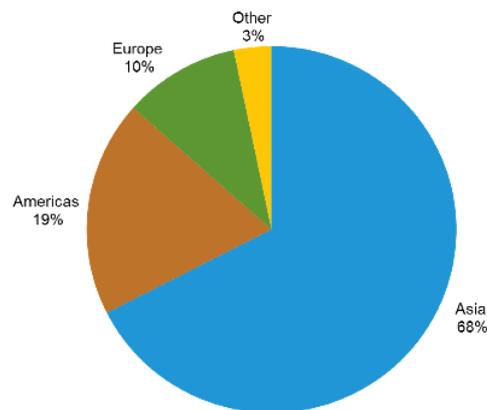


Source: OPEC, 2014, p. 55

### 2.2.2 Saudi Arabia Crude Oil Export Destination

The circle diagram to the right, shows the distribution of the Saudi Arabia's crude oil exports by world regions. The majority of the exports goes to the asian countries including: Japan, China, South Korea and India. Even though the majority of the exports goes to Asia the U.S is still the largest consumer of Saudi Arabia crude oil as a single consuming country (since Canada and most of the south america is net exporter the majority of the 19 percent to America goes to the U.S) (EIA, 2014 pp. 8-9).

Figure 2: Saudi Arabia crude oil exports destination, 2013



Source: EIA, 2014 p. 9

Saudi Arabia is exporting an immense number of barrels every day, but their own daily consumption is among the world highest, ranking as the 12<sup>th</sup> largest consumer of fossil fuel. Saudi Arabia with its approximately 30 million inhabitants it is one of the world's most inefficient energy consuming country and ranking as one of the highest

energy consumption pr. capital. Therefore Saudi Arabia has launched new investment programs to increase energy consumptions from renewable energy sources by the end of 2030 (EIA, 2014 p. 3).

It is estimated that by the end of 2030, the domestic consumption will almost outgrow the exported oil. Saudi Arabia's fast growing economy and population, has created a factor difference between economical growth and oil consumption, which has not been linear, but instead exponential creating a very inefficient oil consuming country (Al-Sheikh, 2012). Saudi Arabia's rapid growth of population, one that has almost tripled in the period from 1980, with its 9.5 million, to today's almost 30 million people, has created major future challenges for Saudi Arabia. One such challenge is to overcome employment problems, since workforce in the oil sector is extremely low compared to the revenue made by it. The oil sector only constitutes for the 1.5 percent of the work force in Saudi Arabia (ECSSR, 2006) and at the same time the Oil sector produce roughly 45 percent of the nation's GDP and 90 percent of the export earnings (Forbes, 2014). Diversification in income is one of the major issues, which will be a ticking time bomb in Saudi Arabia, which needs to be defused while there is still oil left in the soil.

### 2.2.3 Investment in solar energy

The complication with growing population and an inefficient oil consumption creates need for energy in future, which hopefully will be greener and in the same time increase the exported crude instead. Saudi Arabia plans to invest 109 billion dollars in renewable energy in the process. The major part of the investment will go to building solar energy that will be the target of this construction bonanza. The plan is to generate one third of the domestic electricity from renewables source and this investment is planned to be finished by year 2032 and when finished generate 54 GW of electricity (Arab news, 2013). The construction of King Abdullah Economic City is a developing project aimed to build home for two million from scratch. The project aims at having 50000 residents by year 2020 and a completion of infrastructure for the city are scheduled to the year 2035 costing 100 billion dollars (Writer, 2015). This is just one of the many project that has been lunched that will be need for a more reliable energy source in the future. There are already positive signs in sight in turning

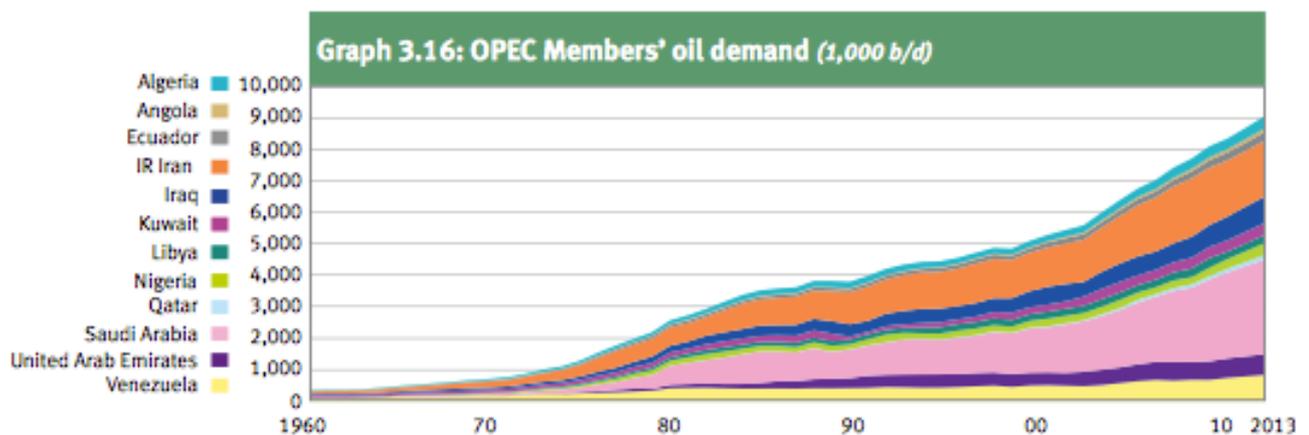


Saudi Arabia to one of the leading solar powered country with new alternative energy reforms and an announcement for over 109 billion dollar investment, which will in future generate one thirds of Saudi electricity (Mayor, 2014).

### 2.2.4 Oil Demand

The figure below illustrates exactly the above problem of increasing domestic energy consumptions that Saudi Arabia is facing. The figure visualizes a growing demand for oil in Saudi Arabia compared to the rest of the OPEC members. In a country where oil is cheap and easy accessible there has not been much incentive to create more renewable and efficient energy.

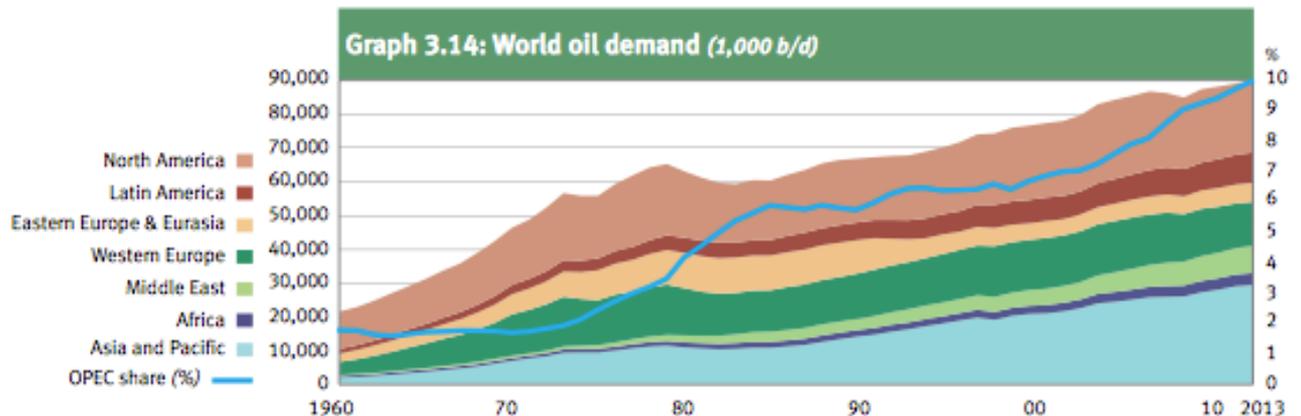
Figure 3: OPEC Members' oil demand



Source: OPEC, 2014, p. 51

The increasing domestic demand for oil has been growing drastically with time and has grown substantial with an increasing population. The figure below, illustrates the increasing oil demand, with demand rising in all regions of the world, but especially in the region of Asia and the Pacific have outgrown compared with the rest of the world, excluding OPEC countries.

Figure 4: World oil demand



Source: OPEC, 2014, p. 51

Oil is the most commonly used primary energy source in the world constitute up a whole 33 percent of the total energy consumption followed by coal that accounts of 28 percent and natural gas on the third place with 23 percent (IMF, 2011).

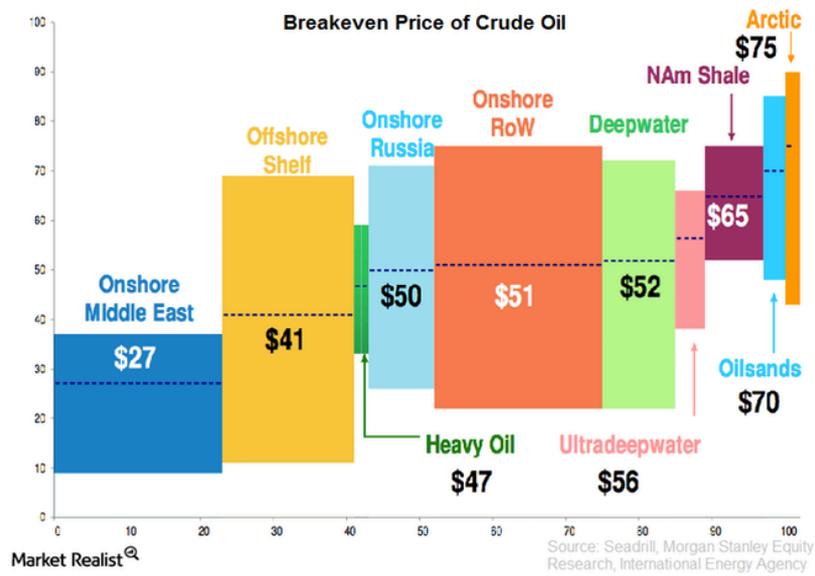
### 2.2.5 Market Competition

Saudi Arabia as the largest producer of crude oil in OPEC and has functioned as a swing producer to stabilize world oil price has made them the most important actor in OPEC (ECSSR, 2006). Although there has steadily been an increase in oil price, which has made it more lucrative for substitute to prosper, like U.S. shale, instead of Saudi Arabia's crude oil meaning Saudi Arabia is losing market shares in the U.S. This has created an export loss for Saudi Arabia of roughly 50 percent in the U.S, which was their main net importer of Saudi Arabian crude oil (Kristopher, 2015).

The figure bellows shows visualize the breakeven point for alternative ways to pump up oil becomes cost effective. Breakeven point is measured, when expenses meets revenues. The breakeven point is the cost of producing crude oil, hence exploring of the oil fields, production costs and refinery of the oil products, transportation and other smaller fees including selling and administration costs. To name some few breakeven points there is the artic oil region with its highest breakeven price of 75 \$ per barrel and the U.S shale oil production with its breakeven price of 65 \$ per barrel. These estimates are price tags, which shows when alternative way to extract crude oil

is becoming profitable. See the figure below to see the breakeven point on other crude oil productions (Kristopher, 2015).

Figure 5: Breakeven Price of Crude Oil



Source: Kristopher, 2015

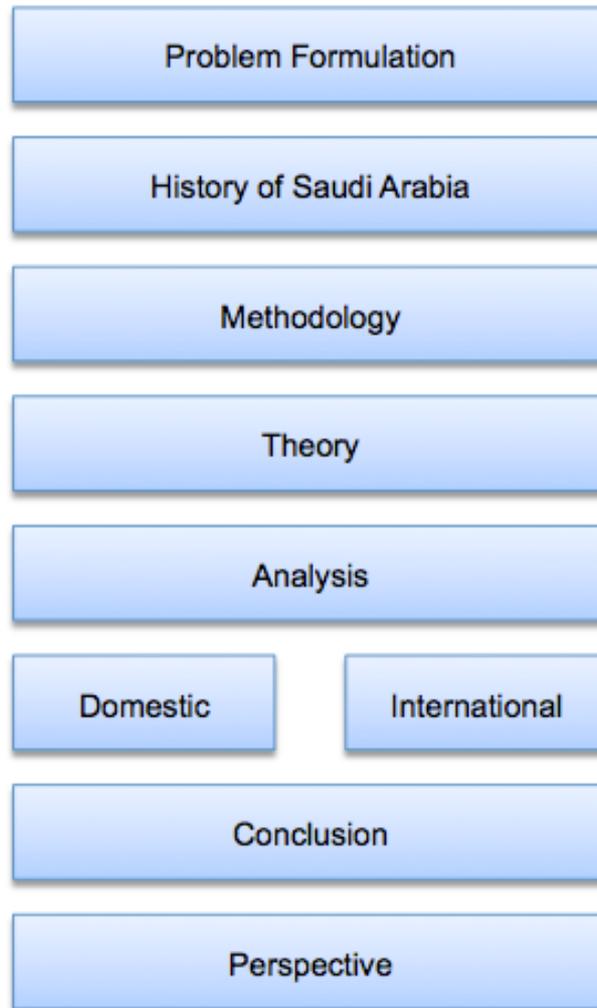
### 3 Methodology

*This sections purpose is to construct an understanding of the methodological path chosen and to understand the reasoning behind the selected problem formulation, theories, hypothesis and empirical material, and furthermore explain the active delimitation. Subsequently, the chosen research design will be introduced and an explanation, of how it will be incorporated to create a framework for answering the problem formulation, will be given. Afterwards, an examination of the empirical data will be provided, describing how these data were gathered and how credible they are. Lastly, a conclusion of whether the paper has fulfilled the goals of reliability and repeatability, in order to ensure validity, will be presented.*

#### 3.1 Structural Design

The structure of this paper will be based on its deductive framework. The reason behind working deductive is to best answer this papers problem formulation. By working deductive two different theories will lay the foundation of two distinct hypotheses. The deductive process implies working from the specific theories to general that lays the foundation of the chosen hypothesis, which will be used to answer the more general wondering of the paper, the problem formulation. Although this paper is taking its structural design from a deductive standpoint, it has been structured alternatively. It is alternative in the sense that it is important to present the required knowledge of the situation in Saudi Arabia, which has previous been accounted for. By illuminating the essential information to the reader, before presenting the theories and the hypothesis it will contribute to construct a complex understanding of the situation in Saudi Arabia that will provide the required building stone before theories and hypothesis will be presented. The figure below shows the construction of this papers structural design.





The paper has chosen an economic approach in respects to answering the problem formulation, hence actively delimitating other approaches, something that will be explained later in this methodology section. The reason behind, selecting an economic approach is to address the knowledge gap existing in concern to exclusively seeing Saudi Arabia, as an economic actor in the global market, and a state with fiscal and monetary complications. Furthermore, a strict economic approach will enable a fixed theoretical framework for Saudi Arabia's preferences, which would facilitate a logical method to establish Saudi Arabia's long-term policy goals and objectives. This methodological strategy is also behind the choice of the two different economic theoretical perspectives. The first perspective is the domestic aspect, whose purpose; is to explore the reasoning behind Saudi Arabia's actions from an angle of national interest. The other perspective is the international view, which will be used to understand Saudi Arabia's action in the world oil market. By examining from an

economic perspective with two distinctive views a more complex analysis can be made and construct an in-depth answer to the problem formulation. Furthermore, these perspectives also lay the groundwork for the paper's choice of theory and hypothesis, which are also the characteristics of deductive framework. Here, the first hypothesis will encapsulate the domestic theoretical perspective by applying the theory of "The Dutch Disease", which examine how plentiful of resources affects governmental domestic decision-making. The second hypothesis, on the other hand, is based on the theoretical understanding of the international market, acquired from World-System Theory.

### 3.1.1 Research Design

In this paper, the case design has been chosen as the foundation of the research design to illuminate the problem formation. The reason for choosing this methodological approach is the unique elements inherent in the case design; to clarify complex dynamics in the chosen structure of the case. It is crucial to pick a case that reflects all the essential aspects, needed for an examination, to get a vast enough picture of the phenomenon and ensure the most optimal reliable, repeatable and valid research structure (Bryman, 2012, pp. 66-68). In the category of the case design, there are multiple ways of approaching the answer to the problem formulation. In this paper the simple case design has been chosen to focus on the understating of Saudi Arabia's motivation behind their current oil policy. To examine this motivation, the current oil "glut" has been chosen as the basis of this papers case. Since there are no other similar cases at the moment, this will be the best-case scenario to explain the situation.

### 3.1.2 Type of Empirical Materials and Document Analysis

The quantitative empirical materials that have been gathered in this paper are mostly from: OPEC, EIA and IMF, which are used to lay the foundation of the statistical material used in this paper. Other empirical material includes qualitative data from articles (foreign affairs, Foreign policy, Financial Times, Forbes, etc.) and other scientifically literature about Saudi Arabia. To extract information, document analysis has been applied as the methodological tool to collect date from the chosen empirical martial. When document analysis is applied to extract information there are some

important aspects that need to be taken into considerations, which include authenticity, credibility and meaning of the documents (Duedahl & Jacobsen, 2010, pp. 53-67).

In the facet of authenticity of the chosen empirical material, this paper will view it from two distinct perspectives. In the first perspective the authenticity of the quantitative data, it can be said to be considerable high, due to numbers gathered from international institutions, which is respectable for providing the best data that will reflect the situation. From another perspective the same empirical material can be seen as having a low authenticity, since data from OPEC is known for its unreliable set of the data to deliberately create deviance of the facts, which can be used to give false impression of the situation to control the market (Simmons, 2005, pp. 267-269). It is therefore crucial to know that even though this paper will be using the first perspective the uncertainty of the authenticity can be up for discussion to analyze if there is a hidden agenda. Concerning the credibility of the rest of the chosen empirical data, there can be said to be excellent validity, with documents from well-known news media like Foreign Affairs and Foreign Policy. Authors from these news media are generally recognized scholars, which illustrates their point of view in the situation of Saudi Arabia. The purpose of using many different empirical- data and documents is to understand the complexity of the situation, hereby comprehending as many arguments as possible to understand the phenomenon.

### 3.2 Delimitations

*The purpose of this section is to explain the active delimitation that the paper has undertaken, in order to create a silver lining. In this respect, it is important to carefully delimitate excessive variable, in order to focus on the variables that plays a key role.*

The active delimitation occurs based on the chosen problem formulation, and the choice of answering this from an economic point of view. Because of this active choice, theories and hypothesis has been carefully selected that are suitable for answering such a problem formulation. By having a strict economic point of view the scope of paper are actively narrowed. Additionally the active delimitation will secure

a limitation of the sheer size of the paper, hereby avoiding a too comprehensive inquiry. The most important aspects that the paper will not be able to use in answering its problem formulation are perspectives such as security dilemmas, military considerations, regional power policy and religious rivalries. The active choices in the paper do also have implication in regards to more subtle passive delimitations. Here the active choice of an economic approach does favor a certain empirical material, mainly written data, and in doing so excluding for instance gathering information by conducting interviews.

In the area of conceptual approaches another active delimitation occurs, primarily in the form of disregarding the examination of peak oil. Implementing the concept of peak oil in this inquiry, in order to analyze the problem formulation could drastically have changed the outcome of the conclusion.

This concludes the active delimitations that this paper has undertaken, which can be used to construct a more stringent inquiry, narrowing down the excess variables, hereby contributing to an increase in the validity of this paper.

### 3.2.1 Theory limitation and deselecting theories

*This sections purpose is to explain the limitation in the paper's selected theory and furthermore explain a theoretical view, which could have been useful, but has been disregarded in the paper.*

There exist a few limitations in the chosen theories; The Dutch Disease and World-System theory. The first limitation is in concern to the fact that the theory emerged from a phenomenon occurring in the Netherlands in the 70<sup>th</sup>. Although this is not a limitation, since it has been theorized, the limitations appear in the form of applying the theory to a country that does not share the same attributes as the Netherlands. Here it can be emphasized that Saudi Arabia did not have the same starting point as the Netherlands, which could slightly lower the validity. Concerning World System Theory there is a marginal limitation occurring when utilizing quantitative data. Because World System theory it is a grand theory it has its strength in analyzing broader phenomena rather than saying something specific. The paper is using both of



these theories, even in the light of their limitation. The reason being to clarify the problem formulation from both a domestic and an international point of view.

The paper has chosen to deselect an approach of Jean Monnet's theory of European Integration explained by three different spillover effects. There exist three different spillover effects namely: functional-, political- and institutional spillover effects. Depending what needs to be examined different spillover effects can be used to understand actor's actions. In the case of this paper functional spill over would be the best option. Functional spillover focuses on how sectors affect other sectors, meaning how development or policy in one sector can affect either positively or negatively. Applying the theory to explain the positive influence Saudi Arabian oil sector would have on sectors in their nation, might have given a different understanding of sector interacts. Although it sounds very simple to examine whether spillovers have occurred in Saudi Arabia, the consequences of the spill-over are hard to measure. In the underlying sectors of crude oil production, it would be simple to implement the theory, since there are many underlying industries who benefits from oil production. However, to use this theory on other more periphery sectors like non-tradable or other producing sectors would be more complex. The problem of correlation problems makes it difficult to analyze how an increasing oil sector affects other sectors positively and therefore this theory is more commonly used in a political situation rather than from an economical perspective.

### **3.3 Reliability, Repeatability and Validity**

It is important to scrutinize, whether this paper has a good reliability or not. Reliability is the quality of the paper and to understand the consistency and coherence of the assumptions created. Therefore it is important to exam whether the empirical material chosen to answer the wondering of this paper is well picked (Bryman, 2012, pp. 46-49). In the paper, the reliability does suffer some weakness since this paper is founded in the actions of Saudi Arabia oil policy in the time of the oil glut. In this sense, if Saudi Arabia wants to pursue a different strategy suddenly this will undermine the papers reliability. Hereby changing the best-case to the worst-case. To solve the above question it would be favorable to gather information from highly ranked people from the Saudi Arabia to clarify the information and their strategy

insuring and understanding their end goal. Unfortunately this is impossible, since they do not wish to expose their strategy to the world.

Another aspect is the repeatability of this paper, which examines the likelihood of an inquiry to reach a related result working in the same area of subject and theoretical framework. It is important in the fields of social science to acknowledge the limitations of time, which will change the field of knowledge drastically. (Bryman, 2012, pp. 46-49). Everything else equal, if the Saudi Arabian situation stays the same in the near future there are good repeatability for other international scholars, which chooses to repeat the inquiry using the same theoretical framework. All thought, if they do not accept the knowledge of demand peak as an applicable concept it would change their structure and hereby result in another conclusion, even though using the same theoretical framework. Therefore it is incredibly important for an inquiry to clarify the concepts used and to present how they are going to form the structure of the paper.

Lastly and most importantly, is the concern of validity in this paper. Validity is the most important criteria for a project, given that the created research is not valid, it will be invalid and therefore will not be usable for further research purpose. Validity of a paper can be measured in three different ways, which need to be fulfilled before it can be accepted as a valid research. The first criteria are the measurement of validity that explains whether the problem formulation is well chosen and whether the hypothesis encapsulates the theories, which has been justified in the beginning of methodology. The other criterion includes two aspects, which is the internal and external validity. Internal validity, clarify how causality occurs and whether this paper has been examining the best variables (de Vaus, 2011, pp. 247). In concern to apply case design as the research structure for the paper there can be questioned whether the dependent variable "Saudi Arabia's oil policy" is affecting the independent variable, which will be Dutch diseases and world system theory. Alternative dependent variables could have been chosen; like security dilemma and regional power, but to keep the research as strict as possible and due to limitations of resources and time, variables has been actively delimited to strictly view from an economical perspective. External validity on the other hand, address to whether this papers conclusion can be used to generalize upon other case studies with the same area of subject (Bryman,

2012, pp. 47). The approach in the paper understand Saudi Arabia's oil policy through an economic theoretical analysis concerning The Dutch Disease and World-System theory tries to create a two-dimensional picture of how countries that possess large quantities of natural resources should react in a time of demand peak in the world market. Hereby giving this paper a high external validity concerning its generalizing power of understanding on how a country should act accordingly in a situation presented in this paper.



## 4 Theory

### 4.1 The Dutch Disease

*The Dutch disease is a theory that destroys the diversification of a countries industry because it steers the focus towards one sector and deprives the other traded sectors from labor. The theory's name stems from an episode in the in the 1960's where natural gas was found in the underground. The found had consequences for the entire Dutch economy because it soon threatened to destroy the manufacturing sector of the country. The boom in the natural gas sector created an inflow of foreign currency that increased the demand for the Dutch currency, hereby making it stronger. This effect made other sectors in the Dutch economy less competitive compared to the international markets.*

There is one concept that is crucial to comprehend before the theory can be presented in a satisfying manor. The concept is the exchange rate. What happens when a country discovers large deposits of minerals or oil is that one sector experiences a rapid growth called a boom. This boom drives up the currency of that country, rendering other sectors less competitive (Karl, 2011, p. 23). This section aims at explaining why the exchange rate is affected by a booming sector and the following exemplifies just that.

In the example by Max Corden and Peter Neary there is three sectors, two traded internationally and one non-traded, the non-traded sector is categorized by goods that are consumed domestically like services, education and construction (Corden and Neary, 1982, p. 826). The two traded sectors are the newly found resource sector and the manufacturing sector. The boom in the extraction of natural resources, in their example, leads to higher export of that new commodity. When the increased export is represented as an increase in capital inflow, the result is an appreciation of the local currency making it stronger. Making the assumption that other countries' currencies are unchanged the appreciation gives a competitive disadvantage to the country experiencing the boom. The disadvantage comes in form of an appreciation of domestic produced products on the world market. Simultaneously the booming sector



drives the domestic wage level upwards increasing the demand for the non-traded sector replacing the workforce to the non-tradable sector (Corden and Neary, 1982, pp. 830-831). The shift in the workers preferences is caused by the higher wage acquirable elsewhere than the manufacturing sector. The labor movement causes further dependency on the booming sector mainly due to two effects, the spending effect and the resource movement effect, which will be explained in the following. However the possibility for further dependency on the booming sector is increased over time because, when labor moves away from other sectors and to the non-traded sector, the financial burden is entirely put on one sector creating an “all eggs in one basket” situation (Karl, 2011, p. 24).

#### **4.1.1 The resource movement effect**

The resource movement effect causes a direct de-industrialization because the resource movement effect extracts labor from the manufacturing and the non-traded sector and replaces it to the booming sector. Due to the extraction of labor from the service sector, assuming that the demand for services is the same, an appreciation of the wage in the service sector is necessary to address the drain of labor. However in cases where it is petroleum-products that are the cause of the boom this effect tends to be minor because this sector is not labor intensive (Corden and Neary, 1982, p 830). Meaning the consequences of the resource movement effect is not that severe when the extraction of labor from the service and the manufacturing sectors is kept at a minimum. But because of the higher exchange rate, the tradable sectors stay uncompetitive internationally preventing innovation and permanent loss of competitiveness (Karl, 2011, p. 24).

#### **4.1.2 The spending effect**

When the boom occurs, wages tend to rise domestically because of the externally added revenue. The extra circulation of money, increases the demand for non-tradable, increasing their value. The non-tradable sector is not affected by the international market like the tradable sectors are. Meaning, if the demand for the non-tradable sector is rising the wages will follow, giving the sector an advantage, in attracting labor, over the manufacturing sector. The manufacturing sector is unlike the non-tradable sector affected by the global market and will lose competitiveness to other

countries if the salary is increased. The workers that are employed in the manufacturing sector will therefore seek towards the service sector because the wage there is higher. The result of a spending effect in the manufacturing sector is therefore not only less labor, but also less production and export. This is called indirect de-industrialization (Corden and Neary, 1982, pp. 830-831).

#### 4.1.3 Political Dependency

The Discovery of natural resources does not always result in acquiring the disease, it is rather the reliance on the export of the commodity. This reliance only arrives if the country's export of a certain commodity is between 60 to 95 percent of the total exports. Due to the country's dependence on the revenues from the sale (Karl, 2011, p. 22). The political aftermath created by the revenue tend to resolve in state over-expenditure. There are different opinions on whether this is a curse or a blessing but the general picture is that the people in power uses that wealth to stay or legitimize their own rule (Robinson, Torvik, Thierry, 2006, p. 466). The reason for the over-expenditure is that people in power, need to have some support from their subjects, otherwise they would be replaced by other political entities. This creates a tendency to spend some of the accumulated wealth on patronage. In fact, one study located a direct correlation between the amounts of the spending in the area of employment of the public, and a dictator's probability of survival (Robinson, Torvik, Thierry, 2006, pp. 461-462). Furthermore, a dictatorship has to battle other political entities over legitimacy in the area of public's wellbeing, hereby creating a chronic tendency of overspending. Therefore, the more a non-democratic country can extract the more it seems to spend. The incentives for being in power follow the amount of resource extraction because the value of being in power appreciates (Robinson, Torvik, Thierry, 2006, p. 450). This notion of overspending, for the sake of staying in power, keeps an artificial domestic demand for labor and creates jobs, but all the jobs becomes dependent on the extraction of one resource. Hence, not only the economy but also the regime becomes dependent on a continued flow of revenue. The term patronage is in the report understood as an offer of employment, in the public sector In order to secure stability (Robinson, Torvik, Thierry, 2006, p. 449).



The theoretical knowledge of this section has formed the foundation for the hypothesis, created in order to answer the problem formulation. In this regard, the core principles of The Dutch Disease and the domestic concerns derived from it, formulates an approach determining Saudi Arabia's dependence on certain sectors, emphasized in the theory. Additionally, the hypothesis will try to express the theoretical knowledge of the interplay in-between domestic requirements reflected from having an economy dominated by a booming sector. Hereby, utilizing the processes described in the theory to understand government rationale in deficit policies.

**“Saudi Arabia is forced to increase its oil output because of sector dependence and domestic requirements.”**

## **4.2 World-System Theory**

*In this section, the paper is going to introduce the theory of the world-economy found in Wallerstein's World-system Theory. The reasoning behind introducing this theory is to enable a later analytical approach, where Saudi Arabia's position in the world economy will be scrutinized. This theoretical introduction will begin by explaining the linkage between capitalism and the current world's economy; in order to give a clear and comprehensive understanding of how the current world's economy is constructed and how markets and states fit into this understanding. After this wide introduction, the paper will focus on clarifying the concepts of core- and periphery products and how this affects the relationships between states and firms. Hereafter, the paper will introduce the five theoretical strategies that states can apply in order to ensure the survival or rise, of a quasi-monopolistic firm. Lastly, the paper will introduce the Kondratieff cycle and its analytical approach to leading products and the systemic failure built into capitalism.*

### **4.2.1 The Modern World-system as a Capitalist World-Economy**

One thing that is paramount to understand, in order comprehend how our present world's economy functions, is the link between Capitalism and the evolution of the world-economy. Nevertheless, before examining the above-mentioned link a clear definition of both world-economy and capitalism is needed.



The theory of the world-economy embedded in the World-System theory is largely based on three defining features: No unitary political system, a diversified cultural, ethnic and linguistic character and a unifying trait acclaimed to the division of labor. The first feature, the lack of a unitary political system, is based on the fact that there isn't any one political system that controls the world-economy; instead the world-economy consists of several different political systems that integrate with one another. The second feature emphasizes, that the world-economy consists of numerous different cultures, religions and languages and the world-economy therefore is a place of multicultural interchanges and not one of homogeneity. Lastly, the third feature underlines the importance that the division of labor has for the very existence of a world-economy (Wallerstein, 2004, p. 23).

In regards to Capitalism, the World-System approach taken by Wallerstein defines capitalism by its trait of endless accumulation of capital.

*“We are in a capitalist system only when the system gives priority to the endless accumulation of capital. Using such a definition, only the modern world-system has been a capitalist system. Endless accumulation is a quite simple concept: it means that people and firms are accumulating capital in order to accumulate still more capital, a process that is continual and endless.”* (Wallerstein, 2004, p. 24)

Immanuel Wallerstein does further stress that Capitalism's characteristic of endless accumulation of capital is creating an embedded social structure in the world-economy which promotes behaviors that shares these attributes, but also punishes anyone that acts with other motivations or goals. Capitalism's attribute of endless accumulation and the world-economy's lack of a unilateral political system is what constitute the real link between the two. The essence of the link is to be found in; how the need to accumulate more capital creates a de facto need for more labor, which again creates a certain structural framework for the world-economy.

*“A world-economy and a capitalist system go together. Since world-economies lack the unifying cement of an overall political structure or a homogeneous culture, what holds them together is the efficacy of the division of labor.”* (Wallerstein, 2004, p. 24)

Another aspect of Capitalism is the idea of markets. The market is an essential part of Capitalism because the market allows the creation of a structure where firms can sell and/or buy goods. A market can exist in two forms, one form is a local structure where individuals interact face to face, and the other form is the virtual markets, which only restriction is the kind of goods being traded. The virtual market can stretch almost endlessly since it is not restricted by space, but only by alternative markets. Wallerstein further argues that the world-economy does constitute of one virtual market that affects all other markets and actors, but this market is not unrestricted. Wallerstein claims that a totally free market would in fact suppress producer's ability to accumulate endless capital and would hereby make capitalism impossible. He explains that this might seem like a paradox because capitalism cannot function without free access to markets and most capitalists strive toward more freedom in the market, but complete freedom in a market would render producers helpless against buyers, since it actually is restriction and complications that generate the uncertainty that makes profit possible.

*“Suppose there really existed a world-market in which all the factors of production were totally free, (...) that is, one in which the factors flowed without restriction, in which there were a very large number of buyers and a very large number of sellers, and in which there was perfect information. (...) In such a perfect market, it would always be possible for the buyers to bargain down the sellers to an absolutely minuscule level of profit, and this low level of profit would make the capitalist game entirely uninteresting to producers.”* (Wallerstein, 2004, p. 26)

Based on this realization, Wallerstein concludes that producers will always strive towards creating a monopoly, since such a construction will create the largest profit margins (Wallerstein, 2004, p. 26). Monopolies are in its nature a hard thing for a producer to obtain, but with the help of state(s) a producer can craft a quasi-monopoly (Wallerstein, 2004, p. 28).

As described earlier, there exists a linkage between capitalism and the current world-economy; this link had created a framework to take the place of a unifying political structure. The political structure, which capitalism replaces is the one known from

world-empires (Wallerstein, 2004, pp. 26-28). These so called world-empires, where empires with such a power over the economy that other modes of operation than, never-ending accumulation of capital, could be prioritized higher, for instance military production. Additionally, this kind of political framework does also restrict producer's ability to maneuver around, and use states in their own game of profit maximization. To shortly recap, Capitalism needs a world-economy in order to have an effective division of labor, a large market and a multiplicity of states that producers can use to either circumvent, pressure or form alliances with / against.

#### 4.2.2 Core, periphery, semi-periphery and the evolution of leading products

One of the major traits of the capitalist world-economy is the division between core and periphery products. Core products are usually produced by quasi-monopolies and are often products that requires a highly sophisticated manufacturing sector and accessibility to advanced technology, resulting in the characteristic of a high profit margin, whereas periphery products often have a small margin of profitability because of to their products need to be truly competitive. Additionally, any exchange between core and periphery will result in the core getting the best outcome, since their position in the world-economy is so much stronger than the periphery producers. This phenomenon is known as unequal exchange (Wallerstein, 2004, p. 28).

The relationship between core products and quasi-monopolies does also have a geographical dimension. The dimension is based on quasi monopolies need for a strong state hence most core productions are located in few strong states, while periphery production is scattered among many weak states. This geographical location of core and periphery production does also mean that strong states will be states dominated, production wise, by quasi-monopolies, while weak states will tend to have a production dominated by competing and inferior goods. States that have a mixture of both core- and periphery products are called Semiperipheral states (Wallerstein, 2004, p. 29). Such a mixture of both core- and periphery products create one of the most problematic position for a state, in the world-economy. Semiperipheral states are constantly under pressure from both core and peripheral states<sup>2</sup>. Trying to advance

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<sup>2</sup> States with an overwhelming degree of either core- or periphery products.

themselves towards the core, while avoiding slipping into the periphery. Therefore, Semiperipheral producers often relies on state interference, to keep costs low on exporting products, and combat other Semiperipheral producers.

Now having a definition of both Capitalism and the world-economy, a more detailed description of different strategies that producers and states can utilize in order to attain and fight quasi-monopoly, can begin. In order to ensure the survival or rise, of a quasi-monopolistic firm, a state can use five different strategies (Wallerstein, 2004, p. 26).

### **1. Patents**

This strategy is one of the most commonly used among firms located in powerful state. Here the firm gets a strong state(s) to enforce the firm's right, to produce a certain new product, in the world-economy. Hereby eliminating competition and securing a quasi-monopoly for the producer, at least until the patent runs out or alternative products arise.

### **2. Protectionism**

In this category states use defensive restrictions on either imports or exports to help domestic firms in the fight against competitors in the virtual market. This could be via taxes or trade barriers.

### **3. Subsidies**

Firms that have a close relationship with the state mainly use this strategy. Here the state will subsidize a given product from a firm in order to make it more competitive in the world-economy.

### **4. Strong states use strength to prevent counter measures in other states.**

Firms located in strong states primarily use strategy number four. These firms will use the strength of the state against weaker states, which have attempted to use strategy number two, in order to remove any entry barriers that might exist.

### **5. Asymmetric cost of production.**

In the strategy of asymmetric cost of production, a given state will try to eliminate competitors with a higher production cost, than the domestic firm. The strategy is often applied in a way that allows large domestic firms to reap maximum benefit



from their geographic position or scale of production, in order to gain an advantage over smaller or dislocated competition.

#### 4.2.3 Anti-monopoly features in the capitalist world-economy

In the capitalist world-economy, two inherent anti-monopoly tendencies will eventually weaken any existing monopoly. These tendencies are based on the zero-sum game that is the market. Here, one actor cannot profit without another losing, this will eventually create great incentives among the losing actor(s) to use political power to overturn or catch up to the winner. The theory of The Modern World-Systems explains that losing actors can use political power in one of the two following ways; internal political struggle or external political pressure. Internal political struggle are aimed at the state(s), where the monopolistic producer is located. Here, losing competitors will appeal to political agencies that would be willing to fight the monopolistic firm due to ideological conviction or political demographics et cetera. In contrast to internal political struggle, external political pressure is based on pressuring other states, than the one where the monopolistic firm is located, too either fight the monopoly directly or at least support alternatives to the monopoly (Wallerstein, 2004, p. 26).

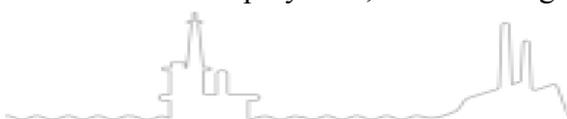
#### 4.2.4 Cyclical Rhythms

Due to previous mentioned anti-monopolistic tendencies inbuilt into the market, a core product will eventually always downgrade to a peripheral product at one point. One can observe such processes all across history from textile, which was a core product back in the 1800<sup>th</sup> century, to steel production and auto-manufacturing.

*“The normal evolution of the leading industries - the slow dissolution of the quasi-monopolies - is what accounts for the cyclical rhythms of the world economy.”*

(Wallerstein, 2004, p. 30)

In the world-economy theory, cyclical rhythms are a term used to describe how a leading product, a product that is both new and often monopolized, start out by generating massive growth in the economy coupled with capital accumulation, higher employment, a rise in wages and a general boost in wealth. This positive trend does



begin to halt as more and more competitors begin to compete in the market of the leading product. Finally this will result in an overproduction that will lead to price competition, and finally a buildup of products. Hereafter recession and stagnation will hit and producers will tend to cut cost of their products in order to maintain their market shares in a declining market. In this volatile climate different firms, with help from their respective state, will wage economic-war on one another in order to “export” economic problems to competitors. Depending on the results of this “warfare” some states benefits while others lose.

Based on this theoretical section, a hypothesis is created in order to answer the problem formulation. Here the hypothesis is based on the assessment; that in order to encapsulate the international dimension of Saudi Arabia’s decision of increasing its output, the most relevant aspect is market shares, since they are determined by supply and demand, which is the main element of the output paradox. The hypothesis will further try to enable a line of inquiry aimed at determining Saudi Arabia’s long terms goal(s) in the international market. Therefore, the theoretical component of the quasi-monopoly and the strategy of creating such a monopoly will be under the loop, hence this component does provide the possibility of either establishing or dissuading the possibility, that Saudi Arabia is acting in accordance to the theoretical description of a country trying to maximize its gains in international trade.

All of the above have let to the following hypothesis:

"Saudi Arabia is increasing its oil-output to defend its market shares  
in order to create a quasi-monopoly"



## 5 Analysis

### 5.1 Analysis part 1

*In this section the analysis will be conducted, focusing on the domestic concerns that arise from natural resource extraction. Firstly, the indicators of the Dutch disease will be presented to determine if the Dutch disease is present in Saudi Arabia. It will be performed in a way that enables the analysis to assess the risks derived from being dependent on one sector. The purpose of the analysis is to generate an understanding, from a domestic point of view, of why Saudi Arabia needs the revenue generated from exporting oil.*

#### 5.1.1 Indicators

An indicator of the Dutch disease is that the labor moves towards the non-traded sector. To establish if an overrepresentation of labor, in the non-traded sector, is present in Saudi Arabia an overview of the labor allocation is needed. Table 1 shows how the employed persons in Saudi Arabia, by main economic activity groups and administrative areas, are distributed. It is not easy to read directly from the numbers in table 1 how many of the workers are directly and only employed in non-traded sectors. However, some sectors are in nature non-traded for example construction, public administration and defense, education and activities of household as employers (service). When the non-traded sectors are accumulated the sum is 7,085,952<sup>3</sup> people out of the total workforce of 11,067,673 people in 2014 accounting for 64 percent. The Non-traded sectors is believed to account for more than 64 percent but it is hard to extract from table 1 how much of the communications industry e.g. is non-tradable.

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<sup>3</sup> Construction, transport and storage, accommodations and food service activities, public administration and defense, education, human health and social work activities, arts, activities of household as employers.

Table 1: Division of labor by sector

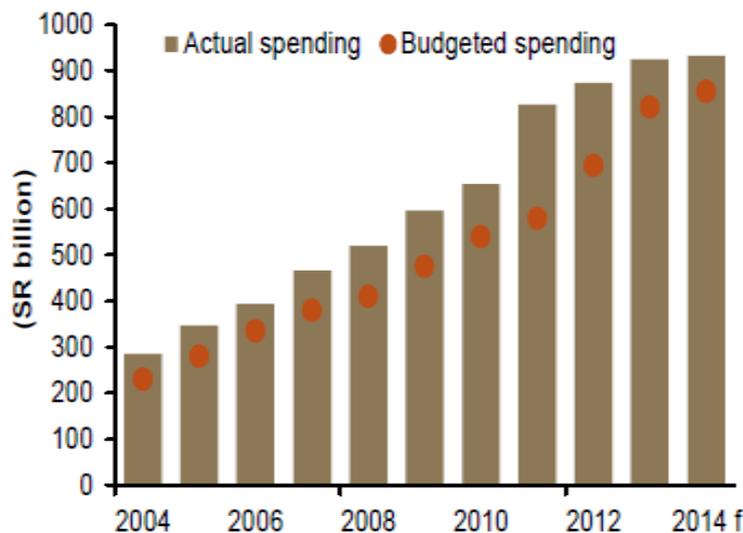
Economic Activity	الجملة Total
Agriculture, forestry and fishing	582,358
Mining and quarrying	152,836
Manufacturing	795,731
Electricity, gas, steam and air conditioning supply	106,839
Water supply; sewerage, waste management and remediation activities	77,047
Construction	1,416,700
Wholesale and retail trade; repair of motor vehicles and motorcycles	1,606,641
Transportation and storage	392,416
Accommodation and food service activities	377,303
Information and communication	128,907
Financial and insurance activities	142,045
Real estate activities	126,860
Professional, scientific and technical activities	158,487
Administrative and support service activities	183,037
Public administration and defence; compulsory social security	1,780,418
Education	1,307,791
Human health and social work activities	610,272
Arts, entertainment and recreation	17,688
Other service activities	243,124
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	853,328
Activities of extraterritorial organizations and bodies	7,845
<b>Total</b>	<b>11,067,673</b>

Source: CDSI, 2014, p. 40



A second indicator of having the Dutch disease is that 60 to 95 percent of its total exports stems from one sector alone. Following the theory then if this indicator is present, the country and the government tends to generate a dependency on that sector. The dependency stems from a continued expenditure that over time reinforces itself, the increased revenue therefore becomes part of the government's budget making it difficult to sustain progress if the revenue stops. Figure 8 (below) shows Saudi Arabia's spending versus its actual budget. 85 percent of Saudi Arabia's exports was in 2013 made up by oil, and 90 percent of the governments income came from the revenue generated by those exports. Figure 8 and the dependency on revenue from the oil sector indicate that Saudi Arabia is depended on the oil sector. What consequences the similarities between the indicators of the Dutch disease and the Saudi Arabian economy have, will be subject to analysis in the subsequent part.

Figure 6: Budgeted versus spending



Source: Fattouh, 2014, p. 5

### 5.1.2 Consequences

The resource movement effect, isolated, causes a direct de-industrialization because it extracts labor from the traded sectors and replaces it to the non-tradable sectors. In the case of Saudi Arabia the effect is visible in table 1 because two thirds of the working force is employed in non-tradables. The consequences of the resource movement effect are that it creates a dependency for Saudi Arabia to export oil. The dependency stems from the revenue generated because, 64 percent of the Saudi

Arabian workforce is hired elsewhere than the traded sectors. In fact only 10 percent of the native Saudi Arabians work in the private sector (Jeddah & Riydah, 2012), further reinforcing the argument. And more the fact that the government receives 90 percent of its revenue from the export of oil means that the oil sector indirectly acts as a financier for the non-traded sectors, creating an immense wave of unemployment or budget deficit if the oil sector fails.

The spending effect, isolated, is created by the extra inflow of foreign capital from the oil sector. In 2013 the capital inflow generated by oil alone was 377 billion dollars (OPEC, 2014, p. 8) and this influx of capital has created an additional demand for all the non-tradables like construction, education and services. The construction sector will henceforth be used as an example of a non-tradable sector, this is done because of the extended empirical material on the area, it claims 13 percent of the workforce (table 1) and it represents a sector that is non-tradable and unaffected by foreign factors.

As explained earlier, the Saudi Arabian government has announced construction for more than 400 billion dollars, indicating that the spending effect is genuine. One reason behind this building boom is exponential growth in population. Here, demographic predictions estimates an increase in population from 27,5 million in 2010 to 37,6 million in 2025 (CDSI, 2010). The consequences, the government faces if they stopped construction, would be two-folded. First, a 38 percent increase in population by 2025 is difficult to deliver housing for if nothing new is constructed. Second, a significant part of the population would lose their occupation, since the extra demand for construction have created a asymmetric relationship between the construction sector and the traded sectors driving wages up and therefore stirring the labor to the construction sector. The spending effect is reinforced by the many workers employed in the construction sector because they spend their salary on services like hairdressers, housing etc. creating lots of domestic jobs and consumption that would otherwise not be present which again raises the demand for services.

The Transfer of labor towards non-traded sectors is indirect deindustrialization, because the capital inflow from the oil sector is destroying the possibilities of other tradable industries to compete internationally due to the high wages paid in the non-

tradable sectors (Jeddah & Riyadh, 2012), due to the high demand. The higher wages in the non-tradable sectors creates incentives for workers to direct skills and creativity towards the service sector, which leads to permanent loss of diversification in the exportable industries as, illustrated in table 1.

What causes the move towards the non-traded sectors, like construction, is a combination of the two effects. The spending effect created the demand for construction and services. The resource movement effect relocated the labor towards the construction and service sectors, creating a dependency. If the construction stops the other sectors ability to absorb the excess labor, that this would create, will be unlikely, on a short term at least, and if the construction sector fails the spinoffs created by the construction sector, is likely to disappear with it. The consequences, for the regime in Saudi Arabia, if the capital inflow halts, would therefore be relative high unemployment and more people on government benefits, creating an incentive for the Saudi Arabian government to keep the construction going. The theory chapter contains evidence from a study that a coalition between the amounts spent on public employment and the dictator's survival probability exists, adding another reason for the regime to keep constructing and public employment stable.

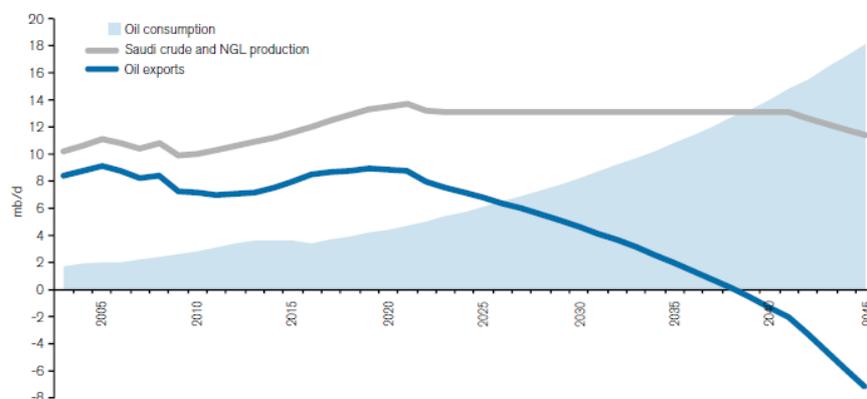
The consequences of high unemployment could end in a political catastrophe for the Saudi Arabian regime. If a large part of the population finds itself unemployed or unable to find living accommodations, due to lack of housing or payment issues, they will start to look for alternative ruling figures, capable of offering them better alternatives. And since incentives for being in power follow the amount of resources extracted, hence the value of being in power appreciates with the extraction and the possibilities of future extraction. Therefore the regime is inclined to spend some of the spoils on patronage to satisfy the population.

Having concluded that the Saudi Arabian regime has, perhaps unknowingly, started combining the patronage and the dependence on one sector. That is, the construction of infrastructure combined with the extraction of oil. This was done in order to consolidate the power and creates an extended timespan for their ruling. The reign is prolonged because the Saudi Arabian regime will be able to provide employment and satisfying living conditions further into the future and here is why.

### 5.1.3 Transition

Saudi Arabia has, as previously mentioned, trouble keeping up with the growing demand for electricity mainly due to the rapidly growing population. The growing population combined with the growing demand for electricity creates a situation where more and more of the main exported commodity are consumed domestically, more than 2,8 million barrels a day in 2011 (Lahn & Stevens, 2011, p. 2). Figure 9 shows that if nothing is done to lower the domestic demand the oil sector will stop exporting and Saudi Arabia will need to import oil from 2027. Going from bad to worse the domestic electricity consumption is highly subsidized by the government making it a growing expenditure (Lahn & Stevens, 2011, pp. 6-8). The timeframe the government has is therefore limited and shifting towards renewable energy would seriously expand the timeframe from which exporting oil is profitable for Saudi Arabia. In section 2.2.3 the plans for constructing solar plants with a capacity of 54 GW by the end of 2032 alone would provide one third of the country's domestic power consumption and address the problem. The dependency Saudi Arabia has created on the oil industry with 85 percent of total export, 90 percent of government revenue, 64 percent of the workforce and 90 percent of native Saudi Arabians employed in non-tradables represent a serious problem for the country if the export of oil no longer is an option. Therefore, making the transaction between oil and solar power for domestic electricity could be a solution.

Figure 7: Saudi Arabia's oil balance on a business-as-usual trajectory



Source: Lahn & Stevens, 2011, p. 2

#### 5.1.4 Partial conclusion

This section found that at least 64 percent of the workforce in Saudi Arabia is located in the non-tradable sector. Figure 8 illustrated that there is a tendency in Saudi Arabia to spend more than the budget and that this tendency grows, annually reinforcing the dependence on oil revenue every year. The Resource movement effect is present and it is visible through the numbers in which employment are dispersed. 10 percent of native Saudi Arabians are employed in the private sector and less than one third of the total workforce is employed in the non-traded sectors. The increased capital inflow was also found to have an effect on non-tradables increasing the demand for them. The increased demand for non-tradables increased the wages in those sectors compared to the traded sectors – excluding the oil sector. Due to the population growth and the amount of workers employed in the construction sector, a correlation between the need for construction and the lack of infrastructure, like housing and solar-plants, was found. It was further recognized that the dependence on the oil sector would be fatal if the domestic consumption of that very commodity is not kept below the forecasts, predicting that Saudi Arabia is going to be a net importer of oil by 2027. Based on this, the hypothesis can be validated, because if Saudi Arabia cuts production and the revenue from oil exports stops, the money for the transition that will make Saudi Arabia able to sustain the government spending level and 90 percent of the native workforce employed will crumble. Thinking about the region that Saudi Arabia is located in the consequences of high unemployment and no sight of change can only be underestimated.

#### 5.2 Analysis part 2

*In this section of the paper, an analysis of Saudi Arabia's increase in its oil output, in an international perspective, will be conducted. This analysis will be constructed on the theoretical assumptions presented in Immanuel Wallerstein's World-System theory. The section itself will be divided into four chapters, each containing one of the key-concepts of the world-economy: the market, the periphery versus the core, quasi-monopolies and cyclical rhythms. The logic behind this division stems from the requisite of determining whether the hypothesis; "Saudi Arabia is increasing its oil-output to defend its market shares in order to create a quasi-monopoly" is true or false. The first analytical chapter concerns itself with analyzing how the oil market*

*can be understood in the theoretical context and how alternative markets affect it. The second chapter evaluates whether Saudi Arabia falls into the category of a core-, periphery- or semi-peripheral state. Chapter three will try to utilize the analytical knowledge of quasi-monopolies in order to elucidate the motivation behind Saudi Arabia's increase in oil output. Finally, chapter four analyzes the connection, if any, between the concept of cyclical rhythms and Saudi Arabia's strategy concerning their oil.*

### **5.2.1 Chapter one: The Market for oil**

Oil as a commodity has few characteristics that are necessary to comprehend, before analyzing the market for oil and its competitive markets. These characteristics are based on crude oil being a great fuel source for transport and export, since you can transport oil without the need for pipelines or wires. Furthermore, oil can be processed into several products needed in everything from agriculture to medicine. On the downside of things, oil is not a great product for generating heat or production of electricity in general (API, 2014, pp. 5-8)

Now having provided a short description of the usage of oil as a commodity, a more detailed analysis of the virtual market of oil, can begin. In the theoretical analysis of a market, one has first to assess whether a commodity is being traded in a face-to-face market or a virtual market. Due to oil's easily movability and its omnipresence in the world, it can be concluded that oil operates in a virtual market. Therefore, in the view of the world-economy theory, oil's only restriction marketwise is alternative products. In this regard, based on previously mentioned fact, that oil is the most important fuel source on the planet, accounting for 33 percent of total energy consumption, which in fact makes oil irreplaceable, it could seem like oil would not have that many restrictions, but this is not entirely true. Oil's limited usage in producing electricity coupled with an increase in prices due to higher extraction costs, has created several restricting markets. These restricting markets are primarily linked to gas, coal and renewable energy. These types of fuel are, unlike oil, great at generating electricity, but does generally have a higher brake-even point and require a certain and limiting infrastructural framework in order to be exploited (EIA, 2015 A, p. 7). The alternative markets to oil, unveil themselves in geographical dimensions, which the report has



previously accounted for. Here, the US is undergoing a shift from oil consumption towards shale gas, Germany, already primarily reliant on coal, is trying to shift towards renewables. Therefore, the only real market that does not appear likely to replace oil any time soon is the Asian market. In an analytical context, the restrictions of the virtual oil market will cause producers to intensify the fight over the remaining shares of the Asian market. Another and far more serious risk to the size of the virtual oil market is alternatives to oil as an energy source to transportation.

All of these trends only points in one direction, the virtual market for oil is facing increasing restrictions, which is resulting in increased price wars, and in a market already experiencing falling demand. World-System theory emphasize that in such a climate the power of state will be crucial, since it is often state involvement in the market that creates the advantage needed to prevail.

### **5.2.2 Chapter Two: Core, Periphery or Semi-periphery?**

In order to analyze the linkage between the state and the production / sales of oil in Saudi Arabia, the theoretical framework of Core- and periphery products will have to be applied. As described in the theory of the World-System, highly sophisticated products, which have a large profit margin, are often characterized as being core products. Furthermore, core producers does also benefit from unequal exchange, whenever dealing with a periphery producer. Additionally, the section outlined that producers of core products often group together in strong states to reap maximum benefit and protection.

Now having briefly recapitulated the features of core- and periphery, these features will have to be applied to Saudi Arabia and its oil. The first theoretical feature is the profit margin of the product. As previously stated, the break-even point for Saudi Arabian oil is the world's lowest at 27\$, this means high profit margins, even though the price of oil is plummeting. Then again, crude oil cannot be classified as a true core product, because it is not a product, which requires an extensive and complex manufacturing process (Kristopher, 2015). A product having these qualities are Saudi Arabia's unique processed-petroleum products. The production of these products involves highly advanced refineries and the usage of cutting-edge technology. Still,



the production of these petro-commodities relies on cheap domestic crude oil and electricity, plus fresh water in order to yield high profits (Reuters, 2014). Processing of crude oil is a major business in Saudi Arabia's and its role in Saudi Arabia's future economic planning cannot be underestimated. As, Saudi Arabia's own oil minister, Ali al-Naim said in regards to the planned opening of two 400.000-barrels-per-day oil refineries in Saudi Arabia.

*“Saudi Arabia plans to become the world's second-largest exporter of refined oil products in 2017 as part of its drive to diversify its economy and increase its share of the global crude and petroleum products markets.”*

Based on this, one can conclude that Saudi Arabia has a unique mix of, a highly profitable periphery product (crude oil), and a core production sector highly dependent on clean water and cheap electricity. Feature number two however paints a troubling picture. Saudi Arabia, being an exporter of core-products such as refined fuels, plastic, chemicals, will be able to pressure and squeeze periphery-countries into submission, and hereby reap the benefits of unequal exchange (Riyadh & Jeddah, 2015). However, quite the opposite appears to be the case. As analyzed above, Saudi Arabia is competing in an increasingly restrictive market, being played out against other oil producers, in a contest of securing market shares in Asia. Moreover, Saudi Arabia have been used as a swing producer, catering to the will of strong states and the buyers of their products'. This illustrates that Saudi Arabia should not be defined as a core state, since it cannot defend itself or pressure weaker states.

*“Is it reasonable for a highly efficient producer to reduce output, while the producer of poor efficiency continues to produce? That is crooked logic. If I reduce, what happens to my market share? The price will go up, and the Russians, the Brazilians, [and] U.S. shale oil producers will take my share,” - oil minister Al-Naimi*

(Rahemtulla, 2015).

The last feature, regarding producers of core products grouping together in a strong state, are not applicable onto Saudi Arabia either. However, Saudi Arabia does embody this feature if one only concern oneself with the oil sector. As previously explained; Saudi Arabia does have the best and most advanced technology in the oil

sector, it also possess some of the most advanced infrastructure concerning desalination facilities, petroleum enhancing manufacturing plants, and refineries, and it employs the world's leading chemical engineers and bio chemists. Besides, Saudi Arabia is the most influential member of OPEC, it has the biggest oil reserves, and its capability to produce vast amounts of oil is on parallel, it can therefore be analyzed as having the traits of a core state, when referencing to oil.

Having now examined the three main features, in the context of Saudi Arabia and its oil, a nuanced picture emerges. This picture depicts, in a regular analytical outlook, Saudi Arabia as being more or less classified as a peripheral state with a mix of core- and periphery products. Considering this classification, Saudi Arabia is rather close to the earlier provided definition of a semi-peripheral state, especially taking into account that Saudi Arabia is caught between, resisting pressure from core and reaping the benefits of exploiting the periphery.

*“States that have a mixture of both core- and periphery products are called Semiperipheral states (Wallerstein, 2004 p. 29). Such a mixture of both core- and periphery products create one of the most problematic position for a state, in the world-economy. (...) Trying to advance themselves towards the core, while avoiding slipping into the periphery.”*

### 5.2.3 Chapter Three: Becoming a quasi-monopoly

As outlined in the world-economy theory, a semi-peripheral state's best option, in order to secure its survival and advancement towards the core, is creating a quasi-monopoly. However, is this general piece of knowledge true for Saudi Arabia, and does there exist any concrete evidence of Saudi Arabia following such a strategy?

Concerning the first question, whether Saudi Arabia would benefit from enforcing a quasi-monopoly in the oil sector, the answer is to be found between theory and practice. Saudi Arabia would benefit tremendously from enforcing a quasi-monopoly in the oil market, since having a monopoly would mean having the possibility to adjust prices and output, and thereby obtaining the highest profit margins. Reality, on the other hand demonstrates that having and using the power of a quasi-monopoly or



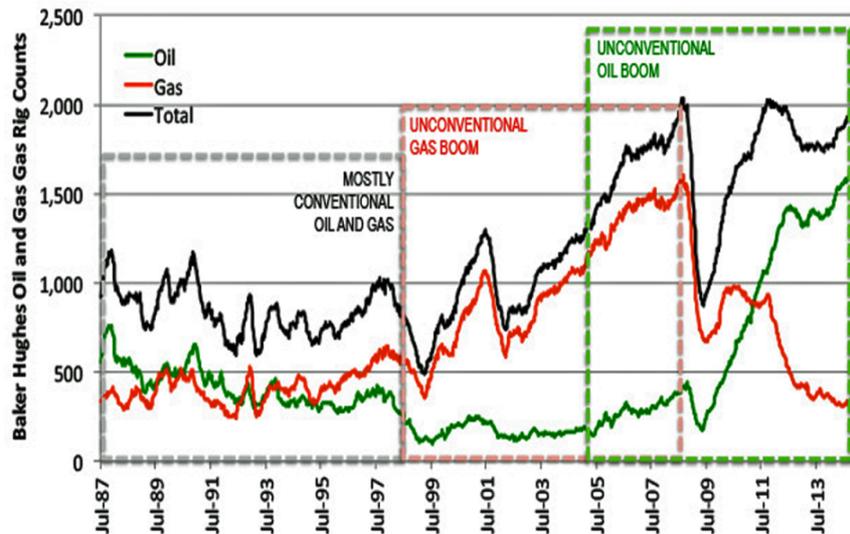
oligopoly in the oil market can have unexpected consequences. Earlier the paper has accounted for the aftermath of OPEC's price hike in the 70<sup>th</sup>, resulting in the entrance of the Russian and the north-sea oil ventures. From this, it is evident that having a monopoly is great, since one can determine prices, minimize competitive disadvantages and decide output, but if one were to try to raise the profit margin, alternative competition, with higher break-even prices, would suddenly begin to defy the monopoly.

The second question, concerning evidence of Saudi Arabia pursuing a monopolistic strategy, can be answered by applying the five strategies of state's abilities to attain or defend a quasi-monopoly. The theory outlines different strategies that states can actively undertake in order to ensure a quasi-monopoly's survival or rise. Initially one can acknowledge that Saudi Arabia does not have any patents or protectionist measures of noticeable mention, and neither is the country engaged in any actions aimed at preventing protectionist measures in weaker states (Saudi Embassy, 2009). Therefore, only two strategies are of any real concern in this analytical inquiry. These are the strategies of subsidies and asymmetric cost of production. To recap, the mechanics behind the strategy of subsidies is that by artificially lowering the price of a given exportable commodity, a firm can increase its market shares, in a given market, that it otherwise would not have been able to. In the past section about the oil market in China, the paper has already clarified that Saudi Arabia has applied both discounts and subsidies to China (Topf, 2014), in order to defend and expand its market shares. Furthermore, Saudi Arabia has also been known for proving subsidized for shipping costs in order to make oil sales to the US viable (Moore, 2015). Therefore, it can be recognized that Saudi Arabia is following the strategy of subsidies. The strategy of asymmetric cost of production is often applied in a way that allows large domestic firms to reap maximum benefit from their geographical position or scale of production, in order to gain an advantage over smaller or dislocated competition. When looking at Saudi Arabia and its current oil policies this strategy can explain it. Here, Saudi Arabia is using its lower break-even point and its ability to increase its output in order to secure market shares in the oil-market. This is also evident in a comment from Saudi oil official:

*"There is no doubt about it, the price fall of the last several months has deterred investors away from expensive oil including US shale, deep offshore and heavy oils,"*  
(Millis, 2015).

The strategy seems to be working since Saudi Arabia has at least deeply hurt its primary competition in the gas sector (as shown in this graph).

Figure 8: US-rig counts, oil-directed, gas-directed and total



Source: Ferro, 2015

Now having determined that Saudi Arabia is applying both its state power, via a strategy of subsidizing, and its production power in order to follow a strategy, aimed at defending or attaining a quasi-monopoly hypothesis number two *"Saudi Arabia is increasing its oil-output to defend its market shares in order to create a quasi-monopoly"* can be verified. However, one immediately begins to wonder why the country would do so, since utilizing this kind of monopoly for profit gains only creates incentives for competitor's entrance into the market. One variable that explains this behavior can be found by applying the theoretical findings of chapter two. Here, the paper established that the virtual market for oil is increasingly threatened by restricting markets and only state involvement would secure the producers ability to fend of competitors, generate steady income, and elude cutbacks. This does explain why Saudi Arabia is interested in keeping its shares, but steady income and avoidance of cutbacks does justify the claim that Saudi Arabia is trying to create a quasi-monopoly, only that it is defending a type of quasi-monopoly based on low production costs. However, if the findings from the previous analysis of Saudi

Arabia's domestic economy is taking into consideration, the hypothesis does seem to hold some sway.

In the theoretical analysis of The Dutch Disease, the paper concluded that Saudi Arabia where undergoing a transformation of its economy. Here a spending- and movement effect had forced Saudi Arabia into diversification and investment in solar power. A shift towards solar power would have major implications for Saudi Arabia's ability to compete in the world market, since solar power would solve two main complications that are keeping the production cost of crude oil high. The first of these complications are the major domestic consumption of energy, already mentioned. The second complication stems from the rising cost of gas needed in order to desalinize water and keep oil drills, plus refineries running. If Saudi Arabia solved these complications, it would not only make cheaper oil exports possible and hereby regain terrain from alternative markets, it would also permit for a larger export of oil, since domestic usage would be lower. Additionally, diversifying into renewables and enforcing a quasi-monopoly based on the world's cheapest oil would secure Saudi Arabia's position in the semi-periphery and make any pressure from core-states less likely. The reason why Saudi Arabia would be able to secure its position is to be found in the components that makes up the production of solar-energy. Here, the production of solar plants constitutes of advanced technology, a progressive manufacturing sector and an excellent infrastructure. These components are what classifies a core state, and it would definitely help securing Saudi Arabia a place in the semi-periphery, if nothing else. To fully comprehend the implications of combining renewable energy with the production of oil products and the extraction of crude oil and how this helps creating a quasi-monopoly for Saudi Arabia, the theory of rhythmical cycles will be incorporated in the analysis.

#### 5.2.4 Chapter four: The Cyclical rhythm

As previously explained:

*“Cyclical rhythms are a term used to describe how a leading product start out by generating massive growth in the economy coupled with capital accumulation, higher employment, a rise in wages and a general boost in wealth. This positive trend does*



*begin to halt as more and more competitors begin to compete in the market of the leading product. Finally, this will result in an overproduction that will lead to price competition, and finally a buildup of products. “*

If one were to apply this theoretical framework to the history of Saudi Arabia, it quickly becomes evident that the current situation is a reflection of the later stage of the cyclical rhythm. Oil where once a leading product, increasing growth and wealth in the world-economy, but now the market is experiencing a buildup of products and the price war has been initiated (OPEC, 2013, p. 44). The theory of cyclical rhythms does however describe how a cut in expenses, due to changes in the production, can reset the cycle. Here, the technological revolution of extracting solar power, combined with Saudi Arabia's already easily accessible and vast reserves of oil would spark such a reset of the cycle.

*“The world economy is benefiting from lower energy costs which are boosting real incomes and household spending while, at the same time, improving the current account balance of oil importing countries,” (Beckman, 2015).*

Possessing such a leading product in the area of energy would mean that Saudi Arabia attained a quasi-monopolistic condition in the oil market. However, Saudi Arabia would not be able to utilize a high profit margin strategy right away, but they would be able to starve out competition and this is the key in winning a price war and securing future buyers for your product. A crucial feature, which Saudi Arabia are very keen on acquiring.

*“Saudi Arabia wants to extend the age of oil. We want oil to continue to be used as a major source of energy and we want to be the major producer of that energy.” Says Saudi Arabia's oil minister, Al Naim (Millis, 2015).*

For Saudi Arabia to succeed with its strategy it is important that alternative markets do not dwarf the virtual markets for oil. If this were to happen, cheap Saudi Arabian oil would not have that much of an impact, since alternative markets, due to infrastructural limitations, would not convert back into oil. Therefore, it is paramount for Saudi Arabia to keep markets using oil, in order to have any potential buyers. This

complication highlights the reasoning behind pursuing a strategy of a quasi-monopoly and it further explains why it is so crucial for Saudi Arabia to keep the oil output as high as possible in a time of low demand.

### 5.2.5 Partial conclusion

The first major point in the analytical section, based on Immanuel Wallerstein's theory of the world-economy, was made in concern to the oil market. Here the analysis concluded that the oil market was restricted by alternative markets primarily those of coal, gas and renewables. Furthermore, it was determined that the quantities of the restrictions were primarily based on two key conditions, infrastructure and prices. Infrastructure was important since it restricted buyers from turning towards oil, due to sunk costs and lesser efficiency in converting oil to electricity, the price of oil was important since it determined the amount of competitors that were allowed to restrict the market, exemplified by the results of the 70<sup>th</sup> oil crisis. Therefore, the paper, in regards to the virtual market of oil, concluded that obtaining a quasi-monopoly could be achieved by undercutting competition, but this would also mean that any such monopoly would not be able to directly profit from the position.

Theoretical point number two, were made in concern to Saudi Arabia's position in the World-economy. Here, the paper located Saudi Arabia in the Semi periphery due to its diversified production of petroleum products and its difficulties in maneuvering between core and periphery states. The conclusion, in concern to Saudi Arabia's diversified production, was that if Saudi Arabia wanted to stay in the semi periphery the country needed to have easily and cheap; electricity and clean water available. The other problem haunting Saudi Arabia was its declining international influence, which might not be such a big problem if seen from a standpoint of oil, since Saudi Arabia could reap great regional and international influence by utilizing OPEC and its vast reserves. Based on these two challenges, and the findings from analyses part one, the paper established that if Saudi Arabia were to solve the question of cheap electricity it would be able to keep its production diversified and once again utilize its monopoly to affect international states dependence upon its oil riches.



The third theoretical point was made in concern to the quasi-monopoly, whose impact on Saudi Arabia's placement in the world-economy were discussed above. However, in the structure of the paper, initially it was determined whether Saudi Arabia were actually pursuing a strategy of obtaining a quasi-monopoly. Here, the paper used two lines of argumentation to determine if there was a theoretical backing for the claim that Saudi Arabia pursued a strategy of creating a quasi-monopoly in the oil market. The first line of inquiry was in concern to, how Saudi Arabia would profit if they were to attain such a monopoly. The second line, applied the theoretical concepts of subsidies and asymmetric cost of production in order to decide if Saudi Arabia's actions, in the international market, did assemble those of a state pursuing a monopoly. Here, it was established that Saudi Arabia were both in a theoretical and in practical sense pursuing what appeared to be a strategy of conquering market shares and securing a long term market for oil (the characteristics of a state creating a quasi-monopoly). Based on these theoretical and empirical conclusions the paper ratified the hypothesis.

*"Saudi Arabia is increasing its oil-output to defend its market shares in order to create a quasi-monopoly"*

After having established that the hypothesis does in fact hold sway, the paper analyzed the impact on the domestic economy and the international market, if Saudi Arabia were to accomplish its implementation of renewable energy. It was concluded that a shift towards renewables would have several beneficial outcomes such as a further diversification of the economy and a chance to become a core state, and it would secure both market shares and a long-term market for oil. Additionally, Saudi Arabia would also benefit from the cyclical rhythm's relapse if the world economy suddenly started to grow based on its cheap oil.



## 7 Conclusion

Now having recapped the central finding of the analytical sections an answer will be given to the problem formulation, based on the hypotheses.

Why does Saudi Arabia not act in accordance with general economic rationality, cutting production when global oil output is high (or demand is low)?

The first hypothesis was based on trying to illuminate the domestic aspect of why Saudi Arabia had increased its oil output. Here, analyzing the characteristics of the Saudi Arabian economy, and the problems arising from having an export sector dominated by oil, was central. The findings of this analysis highlighted several problematic traits occurring from the dominance of the oil sector, and based on this the paper concluded that the hypothesis was verified. From this verification, the paper could therefore conclude that Saudi Arabia were defying the initial logic of the swing producer, because following this economic rationale would mean that domestic project would have to be put on hold, due to lost revenue. The paper further concluded that discontinue of any public spending would have major negative consequences for the Saudi economy. These negative consequences appearing in the form of a rise in unemployment, loss of consumption and political grievances. Additionally, a cut in oil production would also result in a cease of investments in renewable energy.

The second hypothesis was based on determining if the increase in oil output could be due to international concerns, trough a strategy of protecting market shares and creating a quasi-monopoly in the oil market. The paper did conclude that Saudi Arabia were definitely securing its market shares by applying a strategy of subsidizing sales. Moreover, the paper established that Saudi Arabia followed a strategy resembling that of a state aiming at constructing a quasi-monopoly. However it was only when combining the actions of Saudi Arabia and the implications that renewable energy would have on; the diversification on products, possibility to produce cheap oil, the lifespan of worldwide oil usage, elimination of domestic



consumption of oil, and securing Saudi Arabia's position in the world system, that the paper finally verified the hypothesis. By verifying this hypothesis, the paper concludes that Saudi Arabia is flouting the economical rational, inherent in the oil market, because market shares is more important than selling oil at the highest possible price and so is keeping the modernization of the country's oil sector going.



## 8 Perspective

*In this section, a different perspective will be reviewed that could have been examined to comprehend an alternative answer to the problem formulation. The ongoing war in Yemen will lay the foundation for this alternative perspective.*

Recent events in Yemen have created new challenges for Saudi Arabia that need to pursue other ways to regain regional control. The ongoing war was awakened by Houthi rebels capturing the control of the Yemen's capital city Sana'a, combined with a disagreement of the legitimacy of the Sunni. This has divided the country in a familiar ethnicity problem between the Houthi, which are Shia Muslims and the current Sunni government. However this conflict has an additional aspect, which involves the external players in the regional power politics. There are numerous actors who are playing a role in this external affairs, but most importantly it is the proxy war between Saudi Arabia and its Sunni supporters versus Iranian backed Shia groups (Ahelbarra, 2015).

The question that drives this section is whether Saudi Arabia has increased oil output to finance the war in Yemen. The increased oil production in a time of oil glut is a response to the security situations in Yemen. This situation stems from, fear of Iranian propagating their frontier closer to Saudi Arabian borders. Yemen is of strategic importance to Saudi Arabia. If Yemen continues to be unstable and chaotic, it will hurt Saudi Arabia's political control of Yemen. Iran also sees Yemen as having a strategic importance and with the start of the civil war they have utilized the opportunity to create chaos by supporting the Houthi rebel group by weapon smuggling (Ahelbarra, 2015). Furthermore, Iran might see a strategic benefit in creating chaos in Yemen to gain regional control and make it challenging for ships to pass Bab el-Mandeb strait, which is the fourth-biggest geographical chokepoint for ships (Cho & Sharples, 2015). Theodore Karasik says:

*“As the situation in Yemen has dramatically escalated, it's seen primarily as a threat to international shipping and oil transport,” (Cho & Sharples, 2015).*



Changes in the Middle Eastern power politics and oil policy have created new challenges for Saudi Arabia. Easing of Iranian sanctions from especially the U.S has challenged the existing power structure. Legalization of nuclear technology in Iran has created fear of whether Iran will weaponize this technology. This fear has triggered consideration in Saudi Arabia to acquire nuclear weapons from Pakistan (Shakdam, 2015). If Iran can regain trust and open its market for the rest of the world, it will impact the prices of crude oil. These two concerns, regional power and market power creates two distinct battlefields. Unfortunately the battlefields chosen for fighting these battles occur in the land of Yemen, Saudi Arabia with its enormous foreign exchange reserves and Iran with its larger army.

In reflection of this knowledge, a question emerges: Have Saudi Arabia increased their oil output to conduct the war in Yemen?



## 9 Bibliography

**Ahelbarra, Hashem**

2015, *Yemen Crisis Explained*

<http://www.aljazeera.com/news/middleeast/2015/01/yemen-crisis-201512010294461878.html>

**Al-Sheikh, Hamad M.H.**

2012, *The Rapid Growth of Domestic Oil Consumption in Saudi Arabia and the opportunity cost of oil exports forgone*

*Elsevier, Energy Policy* 47, 57-68

**API**

2014, *Understanding Crude Oil and Product Markets*

*American Petroleum Institute*

<http://www.api.org/~media/files/oil-and-natural-gas/crude-oil-product-markets/crude-oil-primer/understanding-crude-oil-and-product-markets-primer-low.pdf>

**Arab News**

2013, *Saudi Arabia aims to be world's largest renewable energy market*

*Arab News*

<http://www.arabnews.com/news/458342>

**Bahgat, Gawdat**

2011, *Energy security: An interdisciplinary approach*, John Wiley and sons ltd, West Sussex

**Beckman, Kip**

2015, *World Outlook: Spring 2015*

The conference board of Canada

<http://www.conferenceboard.ca/e-library/abstract.aspx?did=7037>

**Bronson, R**

2006, *Thicker than oil: America's Unease Partnership with Saudi Arabia*, Oxford University press, Oxford

**Bryman, Alan**

2012, *Social Research Methods*

*Oxford University Press, 4.th edition*

**CBC**

2006, *The price of oil – in context*,

<https://web.archive.org/web/20070609145246/http://www.cbc.ca/news/background/oil/>

**CDSI,**

2014, *Labour Force Survey*



*Central Department of Statistic & information*

[http://www.cdsi.gov.sa/english/index.php?option=com\\_docman&task=cat\\_view&gid=243&Itemid=162](http://www.cdsi.gov.sa/english/index.php?option=com_docman&task=cat_view&gid=243&Itemid=162)

*2010, The Detailed Results of Housing Census by Administrative  
Central Department of Statistic & information*

[http://www.cdsi.gov.sa/english/index.php?option=com\\_docman&Itemid=160](http://www.cdsi.gov.sa/english/index.php?option=com_docman&Itemid=160)

**Cho, Sharon & Sharples, Ben**

*2015, Why Bombing This Tiny Oil Producer Is Roiling the Energy Market  
BloomBerg Busisness*

<http://www.bloomberg.com/news/articles/2015-03-26/why-bombing-the-39th-biggest-oil-producer-is-roiling-the-market>

**Corden, W. Max, Neary J. Peter**

*1982, Booming Sector and De-Industrialisation in a Small Open Economy,  
The Economic Journal, Vol. 92, No. 368, pp. 825-848.*

**C.W.**

*2014, What Dutch disease is, and why it's bad,*

<http://www.economist.com/blogs/economist-explains/2014/11/economist-explains-2>

**de Vaus**

*2011, Research Design in Social Research  
SAGE Publications Ltd*

**Dhabi, Abu**

*2014, Saudi Arabia says won't cut oil output  
Reuters*

<http://www.reuters.com/article/2014/12/22/us-oil-prices-saudi-idUSKBN0JZ05W20141222>

**Dipaola, Anthony & Shenk, Mark,**

*2015, Saudi Arabia Deepens Asia Oil Discount to Record Low  
Bloomberg Business*

<http://www.bloomberg.com/news/articles/2015-02-06/saudis-deepen-asia-oil-discount-to-a-a-record-low>

**Duedahl, Poul & Jacobsen, Hviid**

*2010, Introduktion til dokumentanalyse  
University of Southern Denmark Studies*

**ECSSR,**

*2006, The Gulf Oil and Gas Sector – Potential and Constraints  
The Emirates Center for Strategic Studies and Research*

**EIA,**

*2014, Country Analysis Brief: Saudi Arabia*



[http://www.eia.gov/countries/analysisbriefs/Saudi\\_Arabia/saudi\\_arabia.pdf](http://www.eia.gov/countries/analysisbriefs/Saudi_Arabia/saudi_arabia.pdf)

2015, *How much oil is consumed in the United States?*

FAQ

<http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6>

2015 A, *Electric Power Annual 2013*

<http://www.eia.gov/electricity/annual/pdf/epa.pdf>

**Fattoush, Bassam**

2014, *Saudi Arabia's Oil policy in uncertain Times: A shift in Paradigm?*

Oxford institute for energy studies

<http://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/10/Saudi-Arabias-Oil-Policy-in-Uncertain-Times-A-Shift-in-Paradigm.pdf>

**Fattoush, Bassam & Sen, Amrita,**

2013, *The Swing Producer, the US Gulf Coast, and the US Benchmarks:*

*The Missing links*

The Oxford Institute for Energy Studies

<http://www.oxfordenergy.org/wpcms/wp-content/uploads/2013/12/The-Swing-Producer-the-US-Gulf-Coast-and-the-US-Benchmarks-The-Missing-Links.pdf>

**Ferro, Shane,**

2015, *The oil rig count crash is following an eerily similar path that gas rigs followed years ago*

Business Insider

<http://uk.businessinsider.com/the-oil-rig-count-may-have-peaked-2015-3?r=US>

**Forbes,**

2014, *Saudi Arabia*

<http://www.forbes.com/places/saudi-arabia/>

2015, *Oil Prices Hit The Snooze Button For The Next Year Or Two*

<http://www.forbes.com/sites/chipregister1/2015/02/19/oil-prices-hit-the-snooze-button-for-the-next-year-or-two/>

**IMF,**

2011, *Oil scarcity, growth and global imbalance*

<https://www.imf.org/external/pubs/ft/weo/2011/01/pdf/c3.pdf>

**Karl, Lynn, Terry**

2011, *Understanding the Resource Curse*

<http://openoil.net/wp/wp-content/uploads/2011/12/Chapter-2-reading-material.pdf>

**Kristopher, Gordon**

2015, *Why is the breakeven price of crude oil so important?*

Market Realist

<http://marketrealist.com/2015/01/breakeven-price-crude-oil-important/>



**Lahn, Glada & Stevens, Paul**

2011, *Burning Oil to Keep Cool - The Hidden Energy Crisis in Saudi Arabia*  
Chatham House

[http://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/1211pr\\_lahn\\_stevens.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/1211pr_lahn_stevens.pdf)

**Major, Vicente, Lopez-Ibor**

2014, *Can solar power replace oil in the Middle East?*  
Aljazeera

<http://www.aljazeera.com/indepth/opinion/2014/12/can-solar-power-replace-oil-mid-201412752357541154.html>

**Millis, Joe**

2015, Saudi Arabia claims oil strategy of squeezing high-cost frackers is working

<http://www.ibtimes.co.uk/saudi-arabia-claims-oil-strategy-squeezing-high-cost-frackers-working-1501201>

**Mills, Mark P.**

2015, *Oil Glut: More Surprises In Store After The U.S. Storage Shortage Plays Out.*

<http://www.forbes.com/sites/markpmills/2015/03/12/oil-glut-more-surprises-in-store-after-the-u-s-storage-shortage-plays-out/2/>

**Moore, Molly,**

2015, *A double-standard relationship*  
ABO Newsletter

<http://www.abo.net/oilportal/interview/view.do?contentId=2410736>

**Moran, Michael**

2014, *Is Saudi Arabia Trying to Cripple American Fracking?*  
Foreign Policy

<http://foreignpolicy.com/2014/12/23/is-saudi-arabia-trying-to-cripple-american-fracking-oil-iran/>

**OPEC,**

2013, *OPEC oil outlook*

[http://www.opec.org/opec\\_web/static\\_files\\_project/media/downloads/publications/WOO\\_2013.pdf](http://www.opec.org/opec_web/static_files_project/media/downloads/publications/WOO_2013.pdf)

2014, *OPEC Annual Statistical Bulletin*

[http://www.opec.org/opec\\_web/static\\_files\\_project/media/downloads/publications/ASB2014.pdf](http://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2014.pdf)

**Parvaz, D**

2014, *Iran 1979: A revolution that shook the world*, Aljazeera

<http://www.aljazeera.com/indepth/features/2014/01/iran-1979-revolution-shook-world-2014121134227652609.html>



**Rahemtulla, Karim,**

2015, *U.S. Set to Be the New Swing Producer*  
*Wall street daily*

<http://www.wallstreetdaily.com/2015/03/03/saudi-arabia-oil-production/>

**Reed, Stanley**

2014, *OPEC holds production unchanged; Prices Fall,*

[http://www.nytimes.com/2014/11/28/business/international/opec-leaves-oil-production-quotas-unchanged-and-prices-fall-further.html?\\_r=0](http://www.nytimes.com/2014/11/28/business/international/opec-leaves-oil-production-quotas-unchanged-and-prices-fall-further.html?_r=0)

**Reuters,**

2014, *Saudi Arabia adds to oil power with new refineries*

*Energy, Industries*

<http://www.reuters.com/article/2014/11/04/saudi-oil-refineries-idUSL5N0SQ3UH20141104>

**Riyadh & Jeddah,**

2015, *Making it in the desert kingdom*

*Economist*

<http://www.economist.com/news/business/21637399-factory-building-may-not-be-best-way-diversify-economy-making-it-desert>

**Robison, James A & Torvik, Ragnar & Verdier, Thierry**

2006, *Political foundations of the resource curse*

*Journal of development economics, Elsevier*

[http://www.feem-web.it/ess/ess07/files/bulte6\\_in.pdf](http://www.feem-web.it/ess/ess07/files/bulte6_in.pdf)

**Saudi Embassy**

2009, *Saudi Arabia rejects protectionism at WTO conference*

[http://saudiembassy.net/latest\\_news/news12010902.aspx](http://saudiembassy.net/latest_news/news12010902.aspx)

**Sfakianakis, John**

2013, *Oil Kingdom,*

*Foreign Policy*

<http://foreignpolicy.com/2013/08/07/oil-kingdom/>

**Shakdam, Catherine**

2015, *Nuclear Saudi Arabia: Rising ambitions of the House of Saud*

<http://rt.com/op-edge/263113-saudi-arabia-nuclear-weapon-power/>

**Simmons, R. Matthew,**

2005, *Twilight in the Desert – the coming Saudi oil shock and the world economy*

*John, Wiley & Sons, Inc*

**Stevens, Paul**

2010, *The "shale gas revolution": hype and reality, a Chatham house report*  
*Chatham House*

[https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/r\\_0910stevens.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/r_0910stevens.pdf)



**Stratfor**

2015, *Moves Toward Green Energy Hamper Germany's Economy*  
<https://www.stratfor.com/sample/analysis/moves-toward-green-energy-hamper-germanys-economy>

**Topf, Andrew**

2014, *Did The Saudis And The US Collude In Dropping Oil Prices?*  
<http://oilprice.com/Energy/Oil-Prices/Did-The-Saudis-And-The-US-Collude-In-Dropping-Oil-Prices.html>

**US department of state**

2013, *Oil embargo 1973-1974*,  
<http://history.state.gov/milestones/1969-1976/oil-embargo>

**Waldman, Peter**

2015, *Saudi Arabia's plan to extend the age of oil*  
<http://www.bloomberg.com/news/articles/2015-04-12/saudi-arabia-s-plan-to-extend-the-age-of-oil>

**Wallerstein, Immanuel**

2004, *World – System Analysis: An Introduction*  
Duke University Press

**Writer, Staff**

2015, *Saudi's King Abdullah Economic City could be completed by 2035*  
*Arabian Business*  
[http://www.arabianbusiness.com/saudi-s-king-abdullah-economic-city-could-be-completed-by-2035-593611.html#.VWc3v8\\_tmko](http://www.arabianbusiness.com/saudi-s-king-abdullah-economic-city-could-be-completed-by-2035-593611.html#.VWc3v8_tmko)

**Zhou, Moming**

2015, *Oil's Not Coming Back. Here's Why*  
*Blomberg Business*  
<http://www.bloomberg.com/news/articles/2015-05-12/china-is-missing-ingredient-in-oil-s-recovery-from-six-year-low>

**Zitouny, Ismali**

2015, *Saudi Arabia announces biggest oil production surge in 30 years*  
*RT*  
<http://rt.com/business/250317-saudi-arabia-oil-production/>

