

**THE ROLE OF INTERNATIONAL BOARD MEMBERS IN THE
INTEGRATION OF NOCs INTO THE GLOBAL MARKET: A
COMPARATIVE ANALYSIS OF SAUDI ARAMCO AND EQUINOR**

by

NESLIHAN SAYDAM

Submitted to the Graduate School of Social Sciences
in partial fulfilment of
the requirements for the degree of Master of Arts

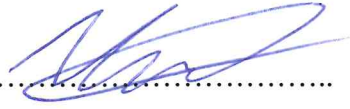
Sabancı University

July 2019

**THE ROLE OF INTERNATIONAL BOARD MEMBERS IN THE
INTEGRATION OF NOCs INTO THE GLOBAL MARKET: A COMPARATIVE
ANALYSIS OF SAUDI ARAMCO AND EQUINOR**

Approved by:

Assoc. Prof. Mehmet Emre Hatipoğlu
(Thesis Supervisor)

.....

Asst. Prof. Mert Moral

.....

Asst. Prof. Osman Zeki Gökçe

.....

Approval Date: July 12, 2019



NESLIHAN SAYDAM 2019 ©

All Rights Reserved

ABSTRACT

THE ROLE OF INTERNATIONAL BOARD MEMBERS IN THE INTEGRATION OF NOCs INTO THE GLOBAL MARKET: A COMPARATIVE ANALYSIS OF SAUDI ARAMCO AND EQUINOR

NESLİHAN SAYDAM

CONFLICT ANALYSIS AND RESOLUTION M.A. THESIS, JULY 2019

Thesis Supervisor: Assoc. Prof. Mehmet Emre Hatipoğlu

**Keywords: Global oil market, NOCs, Board of directors, International board members,
Market integration**

The aim of this thesis is to find the relationship between the change in the level of integration of NOCs into the global oil market and change in the number of international members on their board. The thesis is based on the hypothesis that the decision of a NOC to be more integrated into the market, and its attempts in this way, creates an increase in the number of international members on the board of the company. The hypothesis of the thesis is generated based on the extensive literature on NOCs and Board of Directors. The methodology used in testing the hypothesis is the most different systems design (MDSD). A comparison is made between Saudi Aramco and Equinor, which are two cases that fit to the application of MDSD. The result of the comparison indicates that there is a correlation between the change in the level of integration of NOCs into the global oil market and change in the number of international board members. Thus, this finding verifies the hypothesis.

ÖZET

ULUSAL PETROL ŞİRKETLERİNİN KÜRESEL MARKETE ENTEGRASYONUNDA YABANCI UYUKLU KURUL ÜYELERİNİN ROLÜ: SAUDI ARAMCO VE EQUINOR KARŞILAŞTIRMALI ANALİZİ

NESLİHAN SAYDAM

UYUŞMAZLIK ANALİZİ VE ÇÖZÜMÜ YÜKSEK LİSANS TEZİ, TEMMUZ 2019

Tez Danışmanı: Doç. Dr. Mehmet Emre Hatipoğlu

Anahtar Kelimeler: Küresel Petrol Piyasası, Ulusal Petrol Şirketleri, Yönetim Kurulu,
Yabancı Uyruklu Kurul Üyeleri, Market Entegrasyonu

Bu tezin amacı, ulusal petrol şirketlerinin küresel petrol piyasasına entegrasyon düzeyindeki değişim ile bu şirketlerin yönetim kurulundaki uluslararası üye sayısındaki değişim arasındaki ilişkiyi bulmaktır. Bu tez, ulusal petrol şirketlerinin küresel market entegrasyonlarını artırma kararlarının yabancı uyruklu yönetim kurulu sayısında artışa neden olacağı hipotezini öne sürmektedir. Bu hipotez, ulusal petrol şirketleri ve yönetim kurulları üzerine geniş çaplı bir literatür taraması sonucunda üretilmiştir. Bu hipotezi test etmek için olabildiğince farklı sistemler tasarımı (OFST) kullanılmıştır. Karşılaştırma, OFST'nin uygulanmasına en uygun iki vaka olan Saudi Aramco ve Equinor arasında yapılmıştır. Karşılaştırmanın sonucu, ulusal petrol şirketlerinin küresel petrol piyasasına entegrasyon seviyesindeki değişiklik ile yabancı uyruklu kurul üyelerinin sayısındaki değişim arasında bir korelasyon olduğunu göstermekte, böylece hipotezi doğrulamaktadır.

ACKNOWLEDGMENTS

First of all, I would like to thank to my thesis advisor Mehmet Emre Hatipoğlu, for his contributions to each and every word of this thesis. While writing this thesis, his extensive academic knowledge enlightened my way.

Throughout this process, I re-realized how lucky I am. The process was full of ups and downs, but in each moment, I deeply felt loved and supported. I would like to thank to my parents and my beloved brother Alperen, for giving me such confidence. Your presence makes me stronger.

Then, I would like to thank to my lovely friends, Şeyma Nazlı Gürbüz, Tuba Aydın, and Nurefşan Kutlu for giving all your love and support in any conditions. Thanks to you, I always feel well accepted with all my imperfections and can overcome every challenge I will encounter.

I would like to express my gratitude to my precious friend Ayşegül Gürbüz for her contributions in making this thesis more readable and for her emotional support. I also would like to thank to my dear friend Esennur Uzun for giving me courage to reach this end.

Last but not least, I would like to thank to all my Sabanci friends for always being helpful and warm-hearted in every moment of the two years that I spent with them. Special thanks to Büşra Yeşilağaç for making one of the hardest experiences of my life easier with her companionship.

There are no words to express how thankful I am for having you in my life. I could never achieve this without you.



Dedicated to my family and to all who are family to me

TABLE OF CONTENTS

LIST OF TABLES	x
LIST OF ABBREVIATIONS.....	xi
1. INTRODUCTION	1
1.1. Outline of the Chapters	2
1.2. Terminology.....	3
2. A HISTORICAL OVERVIEW OF OIL COMPANIES: FROM INTERNATIONAL TO NATIONAL	5
3.1. The discoveries of the first oil resources	5
3.2. A Brief History of NOCs	8
3.3. The difference between NOCs and IOCs	13
3.4. Types of IOCs and NOCs	13
3.5. Current Setups and the role of NOCs in the Global Oil Market.....	15
3. NOCs IN THE GLOBAL MARKET: THE DETERMINANTS OF THEIR MARKET INTEGRATION	18
3.1. Introduction.....	18
3.2. State-Owned Enterprises in the Global Market	19
3.3. Discussions on State Involvement in the Petroleum Industry	21
3.4. The Role of the Board of Directors as a Part of Corporate Governance	23
3.5. The Conflict Resolution Role of Board of Directors	26
3.6. Conclusion	28
4. METHODOLOGY	30

5. CASE ANALYSIS	35
5.1. Saudi Aramco	36
5.1.1. Control Variables	36
5.1.1.1. Regime of the Country	36
5.1.1.2. Geographic Features and Geopolitical Risks	36
5.1.1.3. Time of First Oil Discovery	37
5.1.1.4. Initial Culture of the Firm	38
5.1.1.5. Amount of Reserves and Production	39
5.1.1.6. Authority over the Firm	40
5.1.2. Independent Variable	40
5.1.3. Dependent Variable	46
5.2. Equinor	53
5.2.1. Control Variables	53
5.2.1.1. Regime of the Country	53
5.2.1.2. Geographic Features and Geopolitical Risks	53
5.2.1.3. Time of First Oil Discovery	54
5.2.1.4. Initial Culture of the Firm	55
5.2.1.5. Amount of Reserves and Production	56
5.2.1.6. Authority over the Firm	56
5.2.2. Independent Variable	58
5.2.3. Dependent Variable	62
5.3. Discussion	67
6. CONCLUSION	72
BIBLIOGRAPHY	74

LIST OF TABLES

Table 1. Major Diversification Attempts of Saudi Aramco.....	46
Table 2. The Change in the Number of Intl. Board Members of Saudi Aramco	51
Table 3. International Board Members of Saudi Aramco (1989-Present)	52
Table 4. Major Diversification Attempts of Equinor.....	61
Table 5. The Change in the Number of Intl. Board Members of Equinor	64
Table 6. International Board Members of Equinor (2007-Present)	65
Table 7. Comparison of Saudi Aramco and Equinor	70

LIST OF ABBREVIATIONS

ADNOC: Abu Dhabi National Oil Company
BNOC: British National Oil Company
CASOC: California Arabian Standard Oil Company
CCS: Carbon Capture Storage
CNOC: Consumer National Oil Company
CSR: Corporate Social Responsibility
GDP: Gross Domestic Product
IOC: International Oil Company
IPO: Initial Public Offering
MBOE: Thousand Barrels of Equivalent
MDSD: Most Different Systems Design
MMBOE: Million Barrels of Equivalent
MSSD: Most Similar Systems Design
NIOC: National Iranian Oil Company
NOC: National Oil Company
NYSE: New York Stock Exchange
OGNC: Oil and Natural Gas Corporation
OPEC: Organization of Petroleum Exporting Countries
PDO: Petroleum Development Oman
PDVSA: Petróles de Venezuela
PEMEX: Petróleos Mexicanos
PNOC: Producer National Oil Company
POC: Private Oil Company
SOCAL: Standard Oil of California
SOE: State-Owned Enterprise
YPF: Yasimientos Petroliferos Fiscales

1. INTRODUCTION

One hundred and sixty years from the first modern drilling, oil still remains as the world's primary source of energy supply. Today, almost all aspects of our daily lives are dominated by oil. Transportation, the production of plastic goods, generation of electricity, operations of factories, and many other inevitable aspects of our lives are built on the presence of oil. Oil became the cause of many wars. The existence of oil made some nations extremely wealthy, and the ability to control oil gave political power to others. In short, from individuals to nations, oil has become an indispensable and vital commodity for everyone.

Due to this strategic and practical importance, shortly after its discovery, the control of oil became a main concern. In its early years, the control of oil was in the hands of a small group. Oil was controlled either by major oil companies or the National Oil Companies (NOCs) of some colonial powers until the mid-20th century. Authority over the resources transformed in time, and countries with oil reserves started to take control of oil by establishing their own NOCs. With this shift, both the economic and political power of oil holders were reshaped. In this new environment, oil reserves were operated by two types of companies: International Oil Companies (IOCs) and National Oil Companies (NOCs).

The struggle for the control of oil has never ended, and oil has become a source of many domestic and international conflicts in several countries, such as Iraq, Kuwait, Iran, Venezuela, and South Sudan. However, the changing conditions of the global energy market, such as the emergence of unconventional oil suppliers, decrease in the supply of some of the leading oil producers due to political instabilities, and rising volatility in the oil prices raised new concerns for oil producers. The main concern of oil producers became increasing or at least keeping their market share rather than increasing the amount

of reserve under their control (Finley 2011). As primary actors of oil production, oil companies were some of, if not, the most affected players from this geopolitical change. Until these recent changes, NOCs had been the dominant actors in the oil market, but the discovery of unconventional oil especially created a competitive environment in the market and how NOCs reflected this change became critical for the future of their existence in the market.

In order to adapt to these new conditions, integrating further into the global market turned out to be a must for NOCs. The corporate governance structure of NOCs can be a significant indicator of these NOCs, as it is the primary mechanism that shapes their strategy. Therefore, in analyzing the level of integration of NOCs into the global market, the board structure, the main body of corporate governance, can be an important indicator. Taking this into consideration, this study focuses on the relation between the level of integration of NOCs into the global market and the number of international members on their board. More specifically, I look at the diversification in the operations of Saudi Aramco and Equinor as the indicators of these companies' integration into the global market and the international members on the boards of these companies. I controlled several variables in order to make sure that these variables do not affect the causal link between the independent and dependent variable. These variables are the regime of Saudi Arabia and Norway, respectively home countries of Saudi Aramco and Equinor, geographic features and geopolitical risks in Saudi Arabia and Norway, the initial culture of Saudi Aramco and Equinor, and the amount of reserves under the control of these companies. My expectation is to find a correlation between the diversification in the operations and the internationalization of the boards. My findings are in line with my expectation.

1.1. Outline of the Chapters

The chapters of the thesis are organized as follows: Following the introduction, the second chapter is a historical overview, which is divided into five sections. In this chapter, I firstly briefly overview the first oil discoveries in the world. Secondly, I summarize the phase of the emergence of first NOCs and their evolution. After clarifying the distinctions

between IOCs and NOCs, I describe different types of IOCs and NOCs. Lastly, I touch upon the current setups in the global oil market and the role of NOCs in this international setting. In chapter three, an extensive literature review is presented in four parts. The literature review firstly reviews the literature on state-owned enterprises and their role in the global market. The second focus is on the literature on the state involvement in the petroleum industry and the creation of NOCs. As part of the discussion on NOCs, I focus on the literature on the role played by the board of directors in corporate governance. Lastly, I review the literature on the conflict resolution role played by boards of directors in enterprises. The fourth chapter is about the methodology of the thesis. Chapter five is the empirical part of the thesis. In this chapter, I compare Saudi Aramco, and Equinor regarding the specified independent, dependent, and control variables and finally, analyze the findings.

1.2. Terminology

Some of the terminology used in this thesis may need a brief explanation to clarify what these terms refer to. The definitions of the frequently used terms in this thesis are provided below.

National Oil Company (NOC): National Oil Company refers to an oil and gas company, which is entirely or in the majority-owned by a government of either an oil-producing or oil-consuming state. In this thesis, NOC is used mostly for the companies of oil-producing states. NOCs predominantly deal with oil exploration and production, but they can also maintain operations in refining, oilfield services, transportation, and marketing. Although NOCs are created as domestic companies, they increasingly operate outside of the border of their home country.

International Oil Company (IOC): International Oil Company refers to an oil and gas company which is owned by private shareholders. States can be a minority shareholder in the IOCs. IOCs mostly refer to major oil companies, which operate in not only exploration and production but also refining, oilfield services, transportation, and marketing. These companies include Total, Exxon Mobil, BP, Royal Dutch Shell, Eni,

Chevron, and ConocoPhillips. However, in this thesis, IOC refers to a broader term and includes all privately held companies.

Board of Directors (BoDs): Board of Directors refers to a group of people who oversee the activities of an organization, which can be either a profit-seeking business, non-profit organization, or a government agency. Government regulations and the organization's constitution and bylaws determine the duties, responsibilities, and power of boards. Besides, these laws decide the number of board members, the frequency of board meetings, and whether members will be appointed or elected.



2. A HISTORICAL OVERVIEW OF OIL COMPANIES: FROM INTERNATIONAL TO NATIONAL

3.1. The discoveries of the first oil resources

Until the mid-19th century, the use of oil was limited to very few applications, and obtained from the already existing oil sources naturally sipped to the surface (Yergin 1991). Since the existing amount was quite limited, the industry that was based on its usage was also not very developed. However, as people's need for cheaper and flexible energy resources, especially for the illumination, increased, their search for alternative sources started (Maugeri 2006). As a result, the first oil well in the modern sense was successfully drilled in 1859 in Titusville, Pennsylvania, in the Oil Creek Valley, and followed by many other discoveries in the U.S. and around the world (Tordo, Tracy, and Arfaa 2011). Following the discovery in Titusville, the interest in the region rose considerably and only fifteen months after the first discovery, nearly seventy-five wells were producing in the region. The amount of daily production was almost fifty barrels in the whole of Titusville (Yergin 1991). The invention of the first flowing well¹ in 1861 enabled the production of three thousand barrels a day in the same region. The production was rising so quickly that the total amount of production, which was 450,000 barrels in 1860 reached three million barrels in 1862 (Yergin 1991).

With the development of the petroleum industry in America, the will to reach this new source for light (and eventually other applications) emerged in the rest of the world. In 1961, the first cargo with barrels of oil was transferred from Pennsylvania to London, which was the first step in the global oil trade (Yergin 1991). Oil transportation in

¹ A well in which the formation pressure is sufficient to produce oil at a commercial rate without requiring a pump is called flowing well.

America was carried out by horse carters and barges, but the monopolization of these carters led to the search for alternatives and thus, the emergence of pipelines in the mid-1860s (Maugeri 2006).

During this early era of oil production, competition forced producers to produce at the fastest and highest capacity possible. This race in production damaged reservoirs and created chaos in the region due to high fluctuations in demand, supply and price of oil. In 1870, the largest oil refinery in the world at the time, Standard Oil Company, was established by John D. Rockefeller in Cleveland, Ohio (Maugeri 2006). As a refinery company, Standard Oil operated mainly in refining and transportation rather than production, mostly profiting from manipulating/shaping relations between producers and consumers. Standard Oil dominated the market for several decades by controlling both pipelines, shipping, and drilling business. In the 1880s, the company was in control of 90 percent of U.S. refineries, pipelines, and other transportation tools. Its monopolist (and monopsonist) position often created a row among lawmakers, who argued that the company should be broken down.

Standard Oil was monopolist and monopsonist over the oil market with 85 percent of the world's oil production until the mid-1880s. The oil production in Russia was initiated by Ludwig and Robert Nobel (Cowles 1973). With the leadership of the Nobel family, then with the entrance of the Rothschild family, Russia became the second oil producer in the world. Meanwhile in Europe, private companies were enjoying the advantage their home countries provided in producing oil in the colonies. As the two major companies in Europe, both Shell and Royal Dutch started a business in Indonesia in the 1890s. These developments around the world weakened Standard Oil in the oil market. The weakening of Standard Oil was also fastened by the developments in the U.S. The discovery of reserves in Texas in 1901 decreased the significance of western Pennsylvania, where Standard Oil was sustaining its operations. These discoveries led to the establishment of oil companies, namely Texas Oil Company (1902) and Gulf Oil Company (1907) (Parra 2004). Simultaneously, a campaign against Rockefeller and his dominance over the oil industry occurred in the U.S. As a result of investigations and trials, in 1911, the U.S. Supreme Court decided for the partition of the company into more than thirty companies. This break-up formed the main contours of the IOC scene in the globe, the contours of which can still be traced today.

By the 20th century, oil was no longer used solely for illumination. More than 200 derivatives of oil were used in various areas of daily life by then. The developments in the automotive industry especially created a large market for the use of oil products. Developments in military technology further increased oil demand. In 1911, Winston Churchill, as the first lord of Admiralty, attempted to change the British fleet from coal to oil, and the change was approved in 1913 (Victor 2013). With this change, the U.K. aimed to upgrade its fleet in terms of speed and range but lost its energy self-sufficiency that was otherwise derived from being dependent on British coal. At the time, Great Britain was supplying almost half of the coal in the world but did not have oil either in the country or in its colonies. As a solution for this problem, the government purchased the majority shares of the Anglo-Persian oil company in 1914 (today's BP), which was established in 1909, following the first oil discoveries in the Abadan region of Iran.

The emergence of WWI in 1914 strengthened the idea that the control of oil was crucial as petroleum was the primary fuel for all the transportation equipment used in the war. Indeed, global oil consumption rose by 50 percent between 1914 and 1918. However, during the war, while the U.S. was still the major oil producer in the world, the U.S. Senate expressed that most of the American oil fields were about to run out. The Bolshevik revolution in Russia further decreased oil supply and the production in Azeri fields dropped to minimal levels. This global decrease in oil production motivated Great Britain to explore oil in the Middle East.

In 1912, the Turkish Petroleum Company was founded by BP, Shell, and Deutsche Bank to obtain concessions in Mesopotamia. After the dissolution of the Ottoman Empire, TPC gained a concession to oil explorations and the first oil was found in Kirkuk in 1927. In 1928, Total and the predecessors of Exxon mobile became equal shareholders of TPC. The discoveries in the Middle East continued as following; Bahrain in 1932, Qatar in 1935, Saudi Arabia, and Kuwait in 1938, the United Arab Emirates in 1958 and Oman in 1964.

The case of Iraq was the first attempt by Western oil companies, which later dominated the market and gained control of oil in the Middle East. These companies (Exxon, Chevron, Mobil, Texaco, Gulf, BP, and Shell) were later called “seven sisters” by

Enrique, head of Italy's national oil company (Sampson 1975). Some of these major international companies took part in oil discoveries in Latin America, mainly Mexico and Venezuela in the first three decades of the 20th century.

3.2. A Brief History of NOCs

The history of NOCs dates back to the early twentieth century (Noreng 1994). Government interest in oil started to increase as the use of oil expanded, and oil became a strategically valuable commodity. Accordingly, the first NOC was created in 1914, during WWI, by Great Britain, a consumer country at the time. The Anglo-Persian Oil Company had control of oil in Iran until the nationalization of Iranian oil in 1951. Winston Churchill addresses the motivation behind the creation of this NOC by using the following words, “If we cannot get oil, we cannot get corn, we cannot get cotton, and we cannot get a thousand and one commodities necessary for the preservation of the economic energies of Great Britain” (cited in Yergin 1991).

NOC creation continued with other European countries, especially the colonial powers. As the strategic importance of oil increased, colonial powers began to show an interest in the resources in their colonies. France and Italy became the first states to establish NOCs in Europe. France established its NOC, Compagnie Française des Pétroles (CFP), in 1924. Two years later, Italia established its NOC, Azienda Generale Italiana Petroli (AGIP) (Victor, Hults and Thurber 2012). Almost at the same time with European countries, Latin American countries, which mostly gained their independence from Spanish colonialism during the early 19th century, established their NOCs, as important oil discoveries took place in the region. The first of these NOCs established in Argentina in 1922 is called Yacimientos Petrolíferos Fiscales (YPF) (van der Linde 2000; McPherson 2003). Since the company operated in both the exploration, production, transportation, refinery and marketing of oil and gas in the country, YPF became the first vertically integrated NOC. The motive behind the creation of the company was to achieve economic independence in Argentina. Following Argentina, Chile (1926), Uruguay (1931), Peru (1934), Bolivia (1936) and Mexico (1938) became other NOC establishing countries in Latin America.

The Mexican NOC, *Petróleos Mexicanos* (PEMEX) is noteworthy among these cases since PEMEX was the first extensive nationalization attempt in the world oil history.

During the 1930s, oil discoveries in the Middle East caused a geographic shift in global oil production. A private-consortia formed by international oil companies, controlled petroleum production in the Middle East. For instance, U.S. companies set up the *Aramco Oil Company* to run oil production in Saudi Arabia. Following WWII, rapid economic growth in the United States increased the demand for oil. However, the country was already the most explored and drilled region in the world. In the meantime, due to its higher productivity and less marginal cost compared to the United States, Middle Eastern oil became the primary source of international oil trade and the United States became a net oil importer, which would prevent the country from manipulating the market (Yergin 1991; van der Linde 2000; Maugeri 2006). It reached a point where from the 1940s to the 1970s, seven out of ten new barrels of oil were coming from the Middle East (Mommer 2002).

The changing conditions in petroleum production, especially in the Middle East, increased the bargaining power of host countries against international oil companies (IOCs), which opened the way to a new era (Marcel 2006). In the late 1940s and early 1950s, oil-producing countries and IOCs grappled continually over the financial terms upon which the postwar petroleum order would rest. The main issue between the parties was the distribution of rents. The terms of the struggles were different for each country. However, the objective for all of these countries was to shift revenues from oil companies and the oil-consuming countries that taxed these companies, to oil exporting countries. As much as money, the oil exporting countries were also struggling for the power that the control of oil brings. At that time, the concession contract included a royalty payment to the host country and an income tax. As a result of rising demand of oil-producing countries to gain more profit from the oil industry, Venezuela changed the terms of its contract with IOCs and brought the “fifty-fifty” profit sharing system in 1948. Saudi Arabia followed Venezuela and applied the same system in the country in 1950.

During the 1950s, several oil-producing countries established NOCs to gain control of their own oil reserves by nationalizing their natural resources (Victor 2013). The *National Iranian Oil Company* (NIOC) in 1951, *Petróleo Brasileiro* (Petrobras) of Brazil in 1953,

and Oil and Natural Gas Corporation (OGNC) of India in 1956 were some examples of these nationalizations (Bentham and Smith 1987). Although the nationalization of oil resources started during the 1950s, the major nationalizations took place during the 1970s. During these nationalizations, the only major economy that did not attempt to create a NOC or centralize its oil industry under state control was the United States. However, even some of the states in the U.S. tried to imply some strict regulatory rules (Victor 2013).

As part of the increasing state control over the petroleum industry, the major oil producers met in Cairo in 1959. The main purpose of major oil exporting countries was to protect their common interest. Following this meeting, in 1960, some of the major oil-producing countries, Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela founded the Organization of the Petroleum Exporting Countries (OPEC) (Marcel 2006). The number of OPEC members increased in time. Qatar (1961, left in 2019), Indonesia (1962, left in 2008), Libya (1962), United Arab Emirates (1967), Nigeria (1971), Ecuador (1973), Gabon (1975), Angola (2007), Equatorial Guinea (2017) and Congo (2018) became other members of the union.

The cartelization did not create the expected result for host countries in the first place. These states maintained separate negotiations with private companies and the terms that each of these states were willing to agree showed variations. However, the increasing demand for oil and diminishing reserves of the U.S. strengthened the hand of host countries in the negotiations. In 1968, OPEC published a “Declaratory Statement of Petroleum Policy in Member Countries”. OPEC asserts that the declaration emphasized “the inalienable right of all countries to exercise permanent sovereignty over their natural resources in the interest of their national development” (OPEC 2019). As a result of these steps, and several concession negotiations, OPEC countries gained the right to obtain 75 percent of the profits of IOCs and the right to be a part of decision-making processes about entrepreneurial issues (Maugeri 2006).

As the tendency towards resource nationalization and the number of NOCs increased, the structure of the international oil market dramatically changed. At the beginning of the 1970s, the access of IOCs to the oil market was 85 percent and NOCs’ were barely 1 percent. By 1980, the access of IOCs dropped to 12 percent and NOCs’ rose to 59 percent

(Diwan 2007). The increasing control of states and NOCs over the oil market made oil prices more sensitive to political issues, which led to two considerable price crises in the 1970s (Victor, Hults, and Thurber 2012). After the fourth Arab-Israeli (Yom-Kippur) War in 1973, some of the Arab States implied supply restriction under the OPEC coordination, which led to supply shortages in Western countries, and as a result came the first oil price shock. While the price of oil was around \$20 in June 1973, it reached almost \$50 in six months. The second price shock occurred after the Iranian revolution in 1979 and the Iran-Iraq War in 1980 because of the drop in Iranian oil production. While the price of oil was around \$55 in early 1979, it reached \$120 in a year. During the supply shortages in the 1970s, the only type of states that created NOCs were the oil importing ones, in order to protect their oil supply. In the late 1980s and early 1990s, the last wave of nationalization had only been maintained by former Soviet states.

As a result of the oil nationalizations, by the 1980s, most of the oil resources were under state control. However, during the 1980s, the course of events started to change as oil prices started to decline. It became visible that some states failed to manage their oil effectively. The first steps towards privatization and liberalization at that time was taken by mostly oil importing industrialized states. For instance, the U.K. reduced its share in BP from 68 to 51 percent in 1977, and also privatized the British National Oil Company (BNOC) in 1982, which was established in 1975 as part of the nationalizations. Several NOCs of oil importing countries, such as Total, Eni, Elf Aquitaine, OMV and Repsol survived as state-owned entities until the end of the 1980s and early 1990s (Victor, Hults, and Thurber 2012).

NOCs of oil exporting countries resisted to privatization longer mostly due to the fact that oil production in the Middle East had recently been nationalized. In Latin America and Africa, on the other hand, natural resource extraction has always been in the purview of the state since the end of colonial rule in the region (Waelde 1995). However, due to the low prices in the second half of the 1980s, these countries had to make some institutional reforms (Stevens 2008). Before the fall of prices in 1982, OPEC imposed supply quotas to keep oil prices under control, which worked until 1985. However, within the same year, Saudi Arabia brought the netback price system, which is “to value crude oil by "netting" costs from the value of products obtained through the refining process” (Mabro

1987, p.6), which caused oil prices to sharply decline in 1986 and gave an advantageous hand in the market to the importer states.

The first major attempt for the privatization of NOCs in oil exporting countries took place in Argentina in 1993 where the government announced that the 32 state-owned companies were eligible to privatization. Yasinientos Petroliferos Fiscales (YPF), one of the first established NOCs, was also among these companies, and later in the 1990s, it was privatized in two steps (Grosse and Yanes 1998). Following Argentina, the privatizations continued in Latin America. As part of the privatizations, PEMEX and PDVSA demanded more private sector involvement (Howell 2007). The spread of privatization also affected other parts of the world. For instance, China and India encouraged the private sector to take control of minor portions of their NOCs. Russia also privatized its oil sector, although the new owners had strong ties with the government (Aslund 1999).

During the 1990s, oil production in non-OPEC countries increased. Many countries did not comply with output restrictions of OPEC. From 1986 onwards, Saudi Arabia followed the policy of low and stable oil prices in order to encourage the use of oil (Tordo, Tracy, and Arfaa 2011). Combined with all of these, OPEC increased its members' production quota in 1997, which resulted with a high amount of surplus and again the decrease of prices. While the oil price was around \$75 at the beginning of the 1990s, it fell around \$20 in 1998. The increase in non-OPEC production caused a decrease in the market share of NOCs, since oil in non-OPEC countries was mostly operated by IOCs. The decrease in the market share of NOCs weakened the power states with NOCs had to control the oil market by affecting oil prices. Therefore, these new conditions created a need to adopt to the transformation in the international market.

The new millennium started with the recovery of oil prices, which affected the policies towards NOCs in different ways. On the one hand, the wave of privatization continued. China, Brazil, India, Pakistan, Norway, and Japan partially privatized their NOCs. On the other hand, high oil prices put oil exporting countries into an advantageous position and increased their bargaining power. The perception that there was a scarce oil resource increased governments' desire to increase their share in the oil.

3.3. The difference between NOCs and IOCs

The major difference between NOCs and IOCs is the owner of a company. In NOCs, either a government is the only owner such as PDVSA, Saudi Aramco, NIOC and most other NOCs, or a government is a majority shareholder. Equinor, Petrobras and Oil and Gas Corporation (ONGC) of India are examples of the second type of NOCs. Companies with the government as a minority shareholder are more like IOCs rather than NOCs. Italian Eni is the most well-known example of this type of NOC. The rest of the oil companies, 100 percent owned by private shareholders, are called IOCs. However, it is not always easy to clearly distinguish these two categories from each other. Many companies, which started to operate as NOCs have been privatized and sustain their operations as IOCs such as Total (privatized in 1985), BP (in 1979) and ENI S.p.A (in 1992) (Any Myers Jaffe and Wilson 2007). On the other hand, some others, like Saudi Aramco, were established as IOCs and nationalized later.

The rest of the comparison is more about the factors that determine the market positions of NOCs and IOCs. Hartley and Medlock (2008) show that NOCs tend to underperform compared to IOCs. They mostly adopt different production policies. Overall, NOCs tend to produce less than IOCs annually (Eller, Hartley, and Medlock III 2007; Victor 2007). The objectives of NOCs and IOCs also differ from each other. While IOCs adopt only commercial objectives, NOCs undertake several missions other than profit-maximizing. Another difference is the variation in the taxation policies over NOCs and IOCs. Although these details are not always public, many NOCs operate under different taxation policy than international companies. Lastly, NOCs and IOCs do not have equal access to oil reserves. NOCs generally have higher access to the reserves (Pirog 2007).

3.4. Types of IOCs and NOCs

Besides their differences, IOCs and NOCs also differentiate within themselves. IOCs can be categorized according to their operational capacity as majors and independents. The majors refer to the world's largest six private oil companies, namely Total, Exxon Mobil,

BP, Royal Dutch Shell, Eni, and Chevron. Sometimes, ConocoPhillips is also listed among the majors. The history of Exxon Mobil, BP, Royal Dutch Shell, and Chevron dates back to “Seven Sisters”, when seven oil companies dominated the oil market between the 1940s and 1970s. The majors are also known as big oil or supermajors. Today, these companies control only 6 percent of the world’s total reserves. Therefore, compared to NOCs, the market share of majors in oil production is quite low. The common feature of majors is that these companies are all vertically integrated. Vertical integration means that these companies operate in both upstream, midstream, and downstream operations, three steps of the supply chain in the global oil market (Heungjo et al. 2011) Upstream refers to the exploration, drilling, and production of oil. Midstream includes anything about transportation, storage, and marketing of crude or refined oil. As the last step, downstream involves anything about the refining of crude oil, and distribution and marketing of products of crude oil.

Independent oil companies, on the other hand, are defined as non-integrated oil companies. These companies operate mostly in upstream. Cairn Energy in the U.K., California Resource Corporation in the U.S. and Enerplus in Canada are some of the examples of independent oil companies. As opposed to Majors, Independents are generally not involved in downstream and midstream operations.

NOCs can be categorized according to the types of states in control of the company. NOCs can be created either by oil-consuming countries or by oil-producing countries. Consumer’s national oil companies (CNOCs) are established to meet the oil demands of oil-consuming countries. Anglo Persian Oil Company created by Great Britain was the first example of CNOCs. This type of NOC was more prevalent before the 1970s, the time of resource nationalizations. The oil demand of emerging economies, such as China and India, increased since the beginning of the millennium. To meet this demand, during the 2000s, especially China and India, increased their operations with their CNOCs. The major CNOCs of China through which the company aimed to meet the oil demand in the country, are China National Petroleum Corporation (CNPC), China National Offshore Oil Corporation (CNOOC), and China Petroleum and Chemical Corporation (Sinopec). The leading Indian CNOCs are Oil and Natural Gas Corporation (ONGC), Indian Oil Corporation, Hindustan Petroleum.

Producers' national oil companies (PNOCs), on the other hand, are companies established by resource owner states in order to control the oil reserves of the home country. The first PNOC was established in 1922 by Argentina and was followed by several other PNOCs, especially after the nationalizations during the 1970s. Today PNOCs constitute the majority of NOCs in the world. Both Saudi Aramco and Equinor fall into the group of PNOCs.

3.5. Current Setups and the role of NOCs in the Global Oil Market

The start of the new millennium witnessed a significant demand for oil from the large emerging economies, such as China and India, which shaped the forecasts about the demand for oil (IEA 2015). From 2000 to 2010, while the world total oil demand had increased by 15 percent, the rise in the demand of China was 81 percent, and the rise in the demand of India was 57 percent. The average annual increase in the demand of China was almost 8 percent, and in the demand of India was 5.7 percent. The share of China and India's demand increase in the world total demand increase was 44 percent.

In addition to the rising demand, the conflicts in the Middle East such as the U.S. occupation of Iraq in 2003 and the Israel Lebanon War in 2006, caused a devaluation of the U.S. dollar, and reports indicating that the amount petroleum reserves are in decline caused an increase in the oil prices until 2008. While the oil price was around \$35 in early 2003, it reached \$160 in June 2008. However, the effect did not last so long, and in six months from the peak, the price dropped again, and in January 2009, it was \$36.

From 2009 to 2011, oil prices recovered, and at the beginning of 2011, the price was around \$90. During 2011, Arab Spring protests erupted in the Middle East and North Africa, which led to a revolution in Egypt and a civil war in Libya, the two major oil producers in the region. The conflicts in the region caused a decrease in the level of oil production, especially by Libya. While crude oil production in Libya was 1.7 mmboe in 2010, it fell to 0.5 mmboe in 2011. At that time, sanctions against Iran were also a factor in the decrease in oil supply. As a result of the fall of the oil supply, the oil price reached around \$115 in 2011.

Many other developments after 2010 affected the price of oil considerably. The high growth of the emerging economy at the beginning of millennium started to slow down after 2010. Accordingly, the level of oil consumption did not rise as expected. Besides, one of the groundbreaking developments in the oil industry took place in the United States in 2011. Shale Revolution, the combination of hydraulic fracturing and horizontal drilling from tight oil, changed the balance in the oil market (EIA 2011). Thanks to the shale industry, the U.S. became a major exporter in less than a decade, which changed the balance in the global market and deeply affected the market position of the NOCs (IEA 2018). In 2011, the total oil supply in the world was 86.6 mb/d (million barrel per day), in which the share of OPEC (most of the NOC owners) was 35.7 mb/d, and the share of non-OPEC countries was 48.8 mb/d (IEA 2011). Within the non-OPEC countries, the share of the U.S. was 8.1 mb/p (IEA 2011). In 2014, the total oil supply rose to 89.3 mb/d, in which the share of OPEC was 36.7 mb/d, and the share of non- OPEC countries was 52.8 mb/d. Within the non-OPEC countries, the share of the U.S. was 11.8 mb/d. In other words, overall non-OPEC production increased from 56 percent to almost 59 percent. The share of U.S. production increased from 9 percent to around 13 percent from 2011 to 2014. Almost all of the increase in the share of non-OPEC production in the total world supply comes from the U.S. shale.

In return for rising oil supply, OPEC, especially Saudi Aramco, one of the major oil suppliers of the world, decided not to decrease their production level. In other words, the company preferred low oil prices over a decrease in its market share. Since Saudi Arabia has the lowest cost of production, the country could handle low oil prices longer than the new shale producers such as the U.S., and Canada, where the cost of production is much higher. As a result of these developments in the market, the oil price started to decrease from \$110 in the midst of 2014. At the beginning of 2015, the price fell to \$55.

OPEC did not sustain its lax supply policy, and in November 2016, they had an agreement with non-OPEC countries to cut their total oil supply 1.2 mb/d from January 1, 2017 (OPEC 2016). The sanctions on Iran, the crisis in Venezuela and the war in Libya also created a supply shortage in the market. Consequently, from mid-2017 to mid-2018, the price of oil increased from around \$50 to \$75. In the meantime, U.S. President Donald Trump made several calls to OPEC for price restraint. Then, in June 2018, in the OPEC

ministers' meeting, OPEC decided to increase its production by one mb/d, and the oil prices started to decline again.

The recent developments created various challenges for NOCs. Price volatility increased considerably. In the times of high oil prices, many NOCs predominantly focused on crude oil production rather than investments in technological developments since production was the easiest and quickest way to make money. However, the low-price environment created a challenge not only for these NOCs but also for their home countries. The decrease in the fall of prices led to a fall in the revenues of the budgets of these countries. Therefore, this new environment created pressure on the NOCs to sustain their revenues.

On the other hand, the low-price environment did not create the expected result over shale producers because when the oil prices are low, shale producers can continue drilling but can store the oil in the ground. In other words, the flexibility in production contributed to shale producers' sustainability in the market. Therefore, the main concern is not the amount of controlled reserve anymore. What gains importance is the amount of market share that any company holds.

All these challenges created the need to become more integrated into the global market to minimize the effect of the challenges on their operations. In other words, NOCs have drawn to decrease their dependency to create value on crude oil production, and their operations in their home country while increasing their joint operations with other international companies.

3. NOCs IN THE GLOBAL MARKET: THE DETERMINANTS OF THEIR MARKET INTEGRATION

3.1. Introduction

Starting from the 1930s, Keynesianism, which prescribes state intervention to counter business/macrocycles, became modus operandi for states and their management of public finances, especially until the end of the 1970s (Kwiatkowski and Augustynowicz 2015). Keynesianism promotes state intervention in the market by increasing government expenditure and lowering taxes (Hall 1989). Until the early 1980s, states had a significant role in the economies of both developed and developing countries by controlling critical mechanisms through ownership (Toninelli 2000). However, during the early 1980s, the spread of neoliberal economics and policies (and the Washington Consensus) started to reverse this trend (Carroll and Sapinski 2016). Inefficient performance of state-controlled economies at that time and the collapse of socialist states, whose economies were primarily based on state control, were among the key arguments of neoliberals (Plehwe 2016). Nevertheless, states have continued to exert significant control over the economy through state-owned enterprises (OECD 2017).

According to Dieter Bös' (1989) categorization, SOEs fall into four groups; public services (utilities, communications, and transportation), basic commodities (coal, oil, atomic energy, steel), finance (bank, insurance) and education/health. Among these sectors, the oil and gas industry always had a significant role both for countries' domestic market and the global market as its share in the energy supply. According to International Energy Agency (2018), by the end of 2016, in the world total primary energy, the share of oil was 31.9 percent, and the share of gas was 22.1 percent. In other words, oil and gas constitute more than 50 percent of the world's energy supply. None of the oil producers

in the world, except for the U.S. and mostly the U.K, leaves the oil industry entirely to the private sector. Even in the U.S. and U.K several debates take place to increase state regulations over the oil industry, so much so that free-market becomes questionable. However, the idea of nationalization came with the post-colonial era; Saudi Aramco operated as a privately-owned oil company from the 1940s to 1980s.

The primary tool of states to control oil and gas production either in their home country or in other oil-producing countries is NOCs. Today, NOCs control 80 percent of the proven world oil reserves and produce 58 percent of world supply (ENI 2018). NOCs have similar dominance in the natural gas industry, but measuring gas supply and dominance is harder because the infrastructure for supply is at least as important as the raw production of fuel (Victor, Jaffe, and Hayes 2006). Besides, an estimated 60 percent of undiscovered oil and gas reserves fall into the areas where NOCs have privileged access to reserves (Tordo, Tracy, and Arfaa 2011). These numbers indicate that despite all the discussions on the importance of NOCs, they are still one of the most important actors in the oil and gas industry, and they will remain so for a while. Furthermore, if needed, NOCs can produce at a loss to give political leverage to their countries. Therefore, their role in the global market is a critical issue for the future of the energy market. Understanding how NOCs function, in turn, is essential in understanding how these companies will shape energy markets. This thesis will focus on one specific aspect of NOC structure - the composition of its board.

In this chapter, first, SOEs and their role in the global market and the literature on NOCs will be examined. Then, the literature on the role of the board of directors in the companies will be reviewed. A further discussion of what role NOCs boards can play in shaping energy markets will then follow. The conflict resolution role of the board of directors in the literature will be examined.

3.2. State-Owned Enterprises in the Global Market

State-owned enterprises have been a major class of players in shaping the national and global economy. According to the World Bank (2014), SOEs constitute more than 10

percent of the world's largest firms. OECD (2005) defines SOEs as "enterprises where states have significant control, through full, majority, or significant minority ownership." IFC defines SOE as "a legal entity that is majority-owned or controlled by a national or local government whether directly or indirectly." As both definitions contend, the share of the state in the business is not a determinant by itself for an entity to be considered as state-owned. What really matters for ownership distinction is how much control states have over these enterprises. Privately-owned enterprises, on the other hand, are defined as industry and businesses owned by ordinary people, not by the government.

An extensive amount of work indicates that ownership is one of the key determinants of the performance of firms (see, *inter alia*, Zou and Adams 2008; Boubakri et al. 2016; Fitza and Tihanyi 2017). Many of these works find that SOEs perform lower than POEs in profitability (Pollitt 1995; Bozec, Breton, and Louise 2002) by grounding their claim on mainly three theories, which are the property rights theory (Alchian and Demsetz 1973), agency theory (Jensen and Meckling 1976) and public choice theory (Niskanen 1971; Tullock 1976). According to the property rights theorists, in the SOEs, there is no dominant authority to claim right over profits, which would let the firm pursue goals other than profit maximization (Martin and Parker 1997; Pratuckchai and Patanapongse 2012). Due to the fact that the existence of a robust monitoring mechanism checking the performance of the firm in the SOEs is rare, according to the public choice theorists, politicians and bureaucrats can more easily pursue their own interests over firms. For instance, they care about the amount of resource under their control and their prestige more than the firm's efficiency and productivity (Niskanen 1971; De Alessi 1983).

Although all these theories indicate that POEs outperform SOEs, they do not show any data about the current market position of the SOEs, which is necessary to understand the role of SOEs in the global market. However, it is essential to note that in this thesis, only the firms that are at least 50.01 percent state-owned are considered as the SOE, which means many firms under state control are not counted as SOEs. Besides that, according to the same data, SOEs' contribution to the global investment in 2006 was 20 percent (World Bank 2014), which clearly shows that it is not possible to ignore the effect of the SOEs on the global market.

3.3. Discussions on State Involvement in the Petroleum Industry

Since the mid-19th century, after the first Royal Commission Report on the coal industry in Britain, energy has been considered as the “commanding height” of the economies and it is accepted as one of the political issues (Grayson 1981). Most of the oil-producing states had early experience with IOCs. These IOCs were mostly backed by imperialist powers of the time. Based on their experience with IOCs, oil-producing states perceived the control of IOCs over the oil resources as losing sovereignty over their own country, especially during the 1950s (Madelin 1974; Grayson 1981). Therefore, the idea of gaining sovereignty over the natural resources created a political basis for several early NOCs (Olorunfemi 1991; Stevens 2003). For instance, the nationalization of oil in Mexico is celebrated as a federal holiday in the country.

The rest of the arguments in favor of NOCs are generally based on economic motives. The first argument is that the operation of IOCs creates information asymmetry between the company and the government. Until 1973, international oil companies isolated themselves from the domestic economy of the countries that they operate in, which prevented governments from having access to the information they needed (van der Linde 2000). The inability of the oil-producing state to run the industry by itself gives the company an advantage in its bargaining with the government (Nore 1980). To prevent this asymmetry, governments established NOCs, which enables them to have first-hand information about the operations and financial conditions (Grayson 1981).

Another motive for establishing NOCs is increasing the amount of rent captured by a state, which is determined by two conditions; the total amount of rent created in the petroleum industry and the relative share captured by the state and its agent (NOC) (Tordo, Tracy, and Arfaa 2011). When the petroleum industry of the state is under control of the international oil market, it is hard to implement conventional fiscal instruments, such as royalties, income taxes, and production sharing contracts, which are not easily adaptable to the dynamic market conditions (Kemp 1992). However, when states have control of the industry, they are able to capture all of the rent, which made the idea of establishing NOCs highly attractive for states.

The last argument in favor of NOCs is the difference between state and private interests with respect to time horizons. The idea is that since it is for their national interests, states concern more about the future of the oil sector in the country (Noreng 1997). These national interests are mainly the security of supply within the country, conservation of oil reserves, increase in commercial and technical capabilities, and the creation of a fund to infrastructural investments and generation of “proper returns” (Nore 1980; Grayson 1981; Benthon 1988; Horn 1995; McPherson 2003).

Despite these arguments in favor of NOCs, their performance is generally lower than expected, which gives rise to the substantial arguments against their existence. The first argument claims that NOCs can have too much power in domestic politics. Generally, it is assumed that NOCs protect the interests of governments as opposed to private companies. However, generally, the case is that NOCs use governments for their interests (Waelde 1995). Thus, the power of the NOC creates the possibility that the NOC acts as a state within the state (Waelde 1995), which is in conflict with the elimination of information asymmetry argument. This is because it causes information asymmetry, but this time between the government and itself (van der Linde 2000; Paul Stevens 2003), cementing unprofitable actions that would be hurtful to remove for vested interests in that NOC.

The economic perspective posits arguments about objectives of NOCs, the efficiency of NOCs, the competitiveness of NOCs, and the corporate governance structure of NOCs. The first argument is about to what extent the objectives of the NOCs align with creating value for these companies. State control imposes various missions on NOCs, which are generally in conflict with the commercial interests of the company. States tend to use NOCs as a tool for their campaign in domestic politics and also as leverage in their foreign policy. Although some scholars describe these objectives as advantageous for the government, they only bring political benefits to the government with some economic costs (Tordo, Tracy, and Arfaa 2011), and in the longer term, can harm governance quality as well (Bayulgen 2010). Another mission that states put on the NOCs is social investments, which have been of more interest recently. As opposed to political goals, these investments do not prevent them from achieving financial goals or do not decrease their efficiency when the costs are managed effectively. However, the problem is their

success level in achieving these goals. NOCs tend to show a low level of success in these investments due to a lack of supervision over the expenses (Robinson 1993).

One of the most common critiques of NOCs concerns their levels of efficiency in their operations. NOCs are generally accused of being operationally less efficient than IOCs due to their technical and managerial incapability and human resource policies (Jaidah 1980; Al-Mazeedi 1992; Gochenour 1992). During the 1970s, a wave of nationalizations gave control of most of the sources to the NOCs while putting the IOCs temporarily outside of the oil market or sent them further down in the oil-value chain (i.e. distribution and retail). High oil prices, then, allowed IOCs to invest in high-tech exploration and drilling, allowing operational efficiency advantages bear fruit. NOCs, on the other hand, fell behind technological developments because they preferred to manage the current system instead of investing in research and development to lower the costs and increase revenue (Paul Stevens 2003). Besides, the employment strategy of NOCs creates obstacles for their efficiency, often prioritizing aspects other than the qualifications of candidates (Waelde 1995; Al-Mazeedi 1992).

Another problem with NOCs is the lack of competitive environment, which is an important contributor to the performance of a company (Boardman and Vining 1989; Galal, Jones, and Vogelsang 1994; Nickell 1996). The competition encourages innovation, improves managerial capabilities, and otherwise augments efficiency (Beesley and Littlechild 1983).

The last critique of NOCs is related to their governance structure. Several scholars argue that NOCs do not have strong corporate governance compared to IOCs (Victor 2007; Eller, Hartley, and Medlock III 2007). Since the managers and government officials tend to have conflicting interests over the company, NOCs are generally not successful in developing effective schemes of corporate governance.

3.4. The Role of the Board of Directors as a Part of Corporate Governance

The board of directors in NOCs may be critical because their decision-making power can transform the position of the company in the market. In other words, robust corporate governance can increase the level of supervision over the company's performance, efficiency, and integration into the competitive market environment.

In its broadest definition, corporate governance is "all the influences affecting the institutional processes, including those for appointing the controllers and/or regulators, involved in organizing the production and sale of goods and services" (Turnbull 1997). The concern of corporate governance is to preserve the mechanism which helps owners and shareholders to control corporate insiders and management through legal institutional and cultural mechanisms (Shleifer and Vishny 1997; John and Senbet 1999). A wealth of studies demonstrate the relationship between specific corporate governance characteristics and firm value (Yermack 1996; Core, Guay, and Rusticus 2006; Chhaochharia and Grinstein 2007; Bebchuk, Cohen, and Ferrell 2009).

The board of directors, as a major component of corporate governance, has a significant role in sustaining an effective organization (Fama 1980; Fama and Jensen 1983; OECD 1999; Jensen 1993). The different roles the board of directors play can be collapsed to three main categories: service, strategy, and control (Zahra and Pearce 1989). As part of its service role, boards have the responsibility to represent a firm's interest in the community, increase the connection of the firm with its external environment and pursue regular activities to sustain the functionality of the company (Zald 1969; Pfeffer 1972; Mintzberg 1983). These service activities of the board of directors constitute ways to enhance the company's identity, reputation, commitment to its mission, and most important of all, to ensure its survival (Provan 1980). As part of their strategic role, boards have the responsibility to be a part of mission development of the company, selection and implementation of the company's strategy (Judge and Zeithaml 1990). The primary purpose of the board of directors, stemming from this strategic role is to increase the competitiveness of the company and to maximize shareholders' wealth (Brickley and James 1987). Besides, the strategic role is important in the sense that it sets a specific target for the company. The last role of the board of directors is to control the executive body of the company. It has the power to monitor, evaluate and reward executives and their performance to protect the interests of shareholders, and to decrease agency costs,

which can arise because of the duality in the ownership and control (John and Senbet 1999).

Although almost all of the boards of directors across industries officially carry these roles, not all of them perform each of these functions at the same level of effectiveness. Several factors determine board effectiveness, such as size, composition, and level of independence (John and Senbet 1999). No consensus in the literature exists about the effect of the size of the board. According to Lipton and Lorsch (1992) and Jensen (1993), as the size of the board expands, their capacity for monitoring increases due to increasing levels of expertise in the group. Yermack (1996), though, finds an inverse relationship between the size of boards and the firm value. Similarly, several studies indicate that as the size of boards enlarges, the decision-making process of the board will be harder (Goodstein, Gautam, and Boeker 1994; Eisenberg, Sundgren, and Wells 1998; Forbes and Milliken 1999).

A close relationship seems to exist between the two significant factors of effectiveness; the composition of the board seems to affect its level of independence from shareholders (John and Senbet 1999). Therefore, these two factors can be discussed together. The organizational management literature on board composition primarily focuses on the ratio of insider-outsider (independent) members (Pfeffer 1972; John and Senbet 1999; Van Den Berghe and Levrau 2004). Insider board members usually belong to two of the following groups: members who represent the owner with a major commercial interest in the firm or the foreign shareholders of the firm (Baysinger and Butler 1985). Outsider members, who are independent of the ownership structure, are elected by shareholders, employees, or an assembly which is responsible for the election of board members (Hermalin and Weisbach 1988). The purpose is mainly to create a check and balance system in the governance structure of companies and to show companies' willingness to comply with international corporate governance standards (Baysinger and Butler 1985). According to the findings of many studies, provided that the minimum number of insider members is preserved, the increase in the number of outsider members enhances a firm's performance (Daily and Dalton 1994; Hermalin and Weisbach 2000; Johnson, Hoskisson, and Hitt 1993; Baysinger and Hoskisson 1990).

The insider-outsider classification is not always sufficient to understand the effect of diversification in board composition. Certain demographic criteria, such as gender, age, race, ethnicity, and nationality seem to have an impact on firm performance (Erhardt, Werbel, and Shrader 2003; Shrader, Blackburn, and Iles 1997). Several studies indicate that demographic diversity in its board increases the performance of a firm (Pearce and Zahra 1992; Finkelstein and Hambrick 1996; Bonn, Yoshikawa, and Phan 2004; Carter, Simkins, and Simpson 2003; Erhardt, Werbel, and Shrader 2003). Among studies that examine board composition, the number of studies that specifically focus on nationally of members is relatively small.

Having an international board carries many potential advantages (Randoy, Thomsen, and Oxelheim 2006). The presence of international board members gives international shareholders confidence that their investment will be adequately monitored (Rosenstein and Wyatt 1990). Independent international members, who do not necessarily represent shareholders, may also ease the company's access to foreign investment since the presence of such members sends a signal to companies in the global market that the firm complies with global standards. Therefore, having a foreign member on the board is a step for the globalization process of the company (Oxelheim and Randøy 2003).

3.5. The Conflict Resolution Role of Board of Directors

As mentioned in the previous section, while the duties of the board of directors are addressed in the corporate governance literature, the emphasis is generally on the responsibility of the board to protect the interests of the shareholders. However, there is a growing conflict resolution literature claiming that the board of directors should also address the needs of all the groups who have a stake in the business. The stakeholder theory (Freeman 1984) defines a stakeholder as a broad term, which includes employees, customers, and local communities as well as shareholders (Harjoto, Laksmana, and Lee 2015; Cornell and Shapiro 1987). According to this theory, the board of directors has a responsibility to resolve the conflict of interests between shareholders and non-investing stakeholders, by aligning their interests with each other in order to make the firm perform effectively (Freeman 1984; Jo and Harjoto 2012).

Engagement in corporate social responsibility (CSR) is a common way that board of directors use to protect the interests of all stakeholders (Benson and Davidson 2010; Hillman, Cannella, and Paetzold 2003). The term corporate social responsibility is defined by Friedman (1970) as "to conduct the business in accordance with shareholders' desires, which generally will be to make as much money as possible while conforming to the basic rules of society, both those embodied in law and those embodied in ethical custom." Although the responsibilities of CSR are categorized as "the economic responsibility to be profitable, the legal responsibility to obey the laws of society, the ethical responsibility to do what is right, just and fair and the philanthropic responsibility to provide resources for various kinds of social, educational, recreational or cultural purposes" (Harjoto, Laksmana, and Lee 2015). Contemporary studies generally focus on CSR's social aspect rather than legal and economic aspects. Many claims that focus on social aspects of CSR come at the expense of the economic value of the firm (Jensen and Meckling 1976; Barnea and Rubin 2010). However, when it comes to the conflict resolution role of firms, CSR is accepted as the most effective way of achieving this goal according to the stakeholder theory (Fisman, Heal, and Nair 2005)

As mentioned previously, the performance of boards can change according to their composition. The level of CSR engagement, an aspect of board performance, can also be expected to vary with respect to the composition of boards (Dunn and Sainty 2009; Johnson, Hoskisson, and Hitt 1993; Webb 2004). That said, only a few of these studies examining the relationship between board composition focus on board diversity. Studies that find a connection between board diversity and CSR engagement posit causality in both ways: they either find that board diversity has a positive impact on CSR engagement (Bear, Rahman, and Post 2010; Hafsi and Turgut 2013) or firms which have a commitment to CSR can tend to have more diversity in their board composition (Webb 2004; Miller and Del Carmen Triana 2009). The limit of these studies is that almost all of them focus on gender diversity. Few scholars have looked at the effect the nationality of board members on the CSR engagement, but the present studies find that there is no positive relationship between the presence of international members and CSR engagement (Barako and Brown 2008; Muttakin, Khan, and Subramaniam 2015; Wallace and Naser 1995).

3.6. Conclusion

In today's world, one of the most critical sectors that states use their power to control the economy is the petroleum industry. Therefore, the discussions about NOCs still frequently take place among scholars. Despite the claims that states need NOCs to run their petroleum industry, there is much empirical evidence demonstrating that the performance of NOCs is lower than IOCs, even though NOCs have access to much more resources than IOCs.

The relatively low performance of NOCs raised the question of what causes this difference between these two types of oil companies. Although there are many different answers to this question, it is possible to collect all those answers under a few headings. The first disadvantage of NOCs is that they have conflicting objectives. Since states mostly use these companies as a political tool, their commercial objectives often remain in the background. Another most discussed problem about NOCs is that these companies are generally far from the competitive market environment, which triggers other problems, such as lack of innovation, efficiency, and corporate governance. Because there are many other non-commercial investment areas, arising from political objectives, and they already have a monopoly in the market, they do not invest in technological developments as much as IOCs. As a result, they create a weaker corporate governance system to monitor the performance of the company.

Although these are common problems of NOCs, not every NOC shows these symptoms equally. The changing dynamics of oil market forced NOCs to be more integrated into the international market to sustain their presence in the market regardless of the exterior factors, such as price volatility, political risks, and the diminishing oil resources. Therefore, some of the NOCs stepped to adapt their operational structure and governance structure accordingly. As the literature indicated, corporate governance is a primary monitoring and strategy setting mechanism of a company. The performance of a board also depends on some of the features of the boards, such as its size, composition, and independence. Although each of these aspects carries special importance in their effects on board performance, the composition of a board according to members' nationality is a bit more critical for the integration of NOCs to the international market. Carrying

international members can be an easing factor for the integration process. Besides its effect on integration, the composition of a board is related to the conflict resolution role of the board of directors.



4. METHODOLOGY

In this thesis, my principal aim is to find how and to what extent the integration of the NOCs into the international oil market is related to the presence of international members on the board of directors. In order to find an answer to this question, first of all, I found how many of the biggest 30 NOCs, for which access to annual reports exist, carry international members in their boards. I limited my data from 2012 to 2018, because not all NOCs in my sample have publicly released their annual reports prior to 2012. Only five of these NOCs had at least one international board member on their board during this period.

Since my purpose is to observe the relationship between the integration of NOCs to the international oil market and the presence of international board members, I need to eliminate the effect of other systemic factors to the fullest extent possible. Due to the exploratory nature of the research question at hand, and the lack of systematic data, I will conduct small- N comparative analysis, instead of large-N analysis. Most similar systems design (MSSD) and most different systems design (MDSD) are the two most common methods that may be applied to small-N analysis as I will do in this thesis. MSSD compares cases that are similar in as many characteristics as possible (control variables), and differ only in one aspect (the independent variable) to explain the variation among these cases (the dependent variable) (Bartolini 1993; Sartori 1991; Skocpol 1984). MDSD, on the other hand, compares cases that are as different as possible with regard to control variables but show similarity in the main explanatory variable of interest (Przeworski and Teune 1970).

Depending on the formulation of the research question, both inductive and deductive approaches can be used in both MSSD and MDSD (Anckar 2008). The inductive approach is about discovery. Research starts without a priori hypothesis, and the

hypothesis is generated as the data is collected and analyzed based on an extensive literature background (Cavaye 1996). With the inductive approach, theory can be drawn from the results of data analysis. Mintzberg (1979) explains his idea of inductive research by dividing research into two parts: detective work and creative leap. In the detective work, while collecting data, the researcher carries out an analysis by looking for patterns, commonalities, and consistencies. The creative leap is entirely about the analysis. The researcher can reach a theoretical conclusion by making generalizations from the data.

The deductive approach, on the other hand, is about testing an existing theory. The result can either be validating or falsifying the theory (Cavaye 1996). Yin (1989) describes the use of a deductive approach in research in three phases. First, research starts with generating a hypothesis based on an existing theory. Then, the collection of data about the variables of the research takes place. Lastly, in the analysis part, the findings are compared to the proposal of the theory, which may result with modification in the theory when the findings are inconsistent with the theory.

Whether the dependent variable is constant or varying is another important parameter in our chosen methodology. In MSSD, the first step is to choose systems that diverge with respect to the independent variable while all other variables are kept constant. This assumption, nevertheless, contains a weakness in itself. Since it is impossible to find cases that all have constant background variables, any MSSD model can possibly overdetermine the dependent variable. Besides MSSD, the literature contains arguments that MDSD requires the use of dependent variables that are constant (Landman 2003; Sartori 1991). However, Przeworski and Teune (1970) do not support this idea. They contend that dependent variables might be constant in the design but do not need to be.

This methodological debate highlights two options to design the methodology for this thesis. First, I could use MSSD to select two or more NOCs, which have similar systemic features, whereas they differ on their integration into the international oil market. Then, I could analyze whether they differ in terms of carrying international members on their board. The limited number of available cases makes finding cases with a constant background almost impossible. Therefore, the use of MSSD in this thesis could generate risk to overdetermine the presence of international board members, as it is not possible to find at least two cases that come from mostly similar backgrounds with each other.

MDSD offers visibly more advantages for the research question posed in this thesis. Since my research question focuses on the independent variable rather than the dependent variable, I used a deductive approach in this thesis. Since the method is based on eliminating the effect of all control variables, I selected two of these NOCs which have the most different control variables: Saudi Aramco and Equinor. I will support my arguments emanating from the comparison of these two with anecdotal evidence from the remaining three companies.

In the analysis of Saudi Aramco and Equinor through MDSD, the control variables fall into two categories in terms of the level of analysis; state level and firm level. State level control variables consist of the regime types, the time of first discovery of oil, state's geography, and geopolitical risks. In analyzing the level of market integration, especially in the oil sector, the regime type of the country has been one of the most studied variables. For instance, Jensen (2003) and Bayulgen (2010) study the relationship between regime types and attracting foreign investment, an indicator of market integration. There is also an extensive literature on the relationship between resource management and regime type (Wantchenkon 1999; Smith 2004; Ulfelder 2007; Wright, Frantz and Geddes 2013). Therefore, having the regime of states as control variable facilitates the elimination of the effect of the regime on the data analysis.

The time of first discovery of oil is another factor which needs to be considered because it may affect whether state institutions will shape the governance of oil or the existence of oil will shape state institutions. For instance, several middle eastern countries either founded around the same time with the discovery of oil, such as Saudi Arabia and Iraq, or the countries that were founded later than the discovery of oil, such as Iran, Bahrain, Qatar, Kuwait, Oman, and United Arab Emirates. The oil discoveries in the United States and the North Sea of Norway took place later than the foundation of the state and its institutions.

The geography of a country is also a frequently studied variable when the concern is the market integration of oil companies in the country. In the upstream operations, geography has an impact on the cost of oil production. Some oil fields need more advanced technology to drill, and the cost of drilling in these fields are higher. For instance, while the cost of producing a barrel of oil in Venezuela is around \$65, the cost of producing oil

in Iran is around \$20 (Financial Times 2019c). Therefore, some oil companies are more dependent on high oil prices to remain profitable. Geopolitical risks over the country are also a significant factor in determining the market position of an oil company. The production of companies operating in geographically unstable regions is more likely to be interrupted by external attacks. The risk is also available for the transportation of the oil. For instance, the attack on four oil vessels in the Persian Gulf in May 2019 posed a threat to oil trade in the region (The New York Times 2019).

In addition to state-level variables, firm-level control variables are the authority over the firm, the initial culture of the firm, and the amount of reserve under the control of firms. The authority over the firm is one of the main variables that may have an impact on the market position of oil companies. Whether the state is an absolute authority over the company or not can change the level of performance of the company. When the state is the absolute authority over a company, the company is more likely to put the interest of government over profit-seeking as will be explained in the literature review in more detail. The initial culture of companies also may shape the market position of these NOCs. Although the culture of these NOCs transfer in time, the effect this early culture on the corporate governance of these companies should not be underestimated. While most of the NOCs were created initially as state-owned enterprises and partially privatized later, such as Petrobras and Saudi Aramco. Some others started their operations as private oil companies, and nationalized later, such as PDO and Saudi Aramco. Lastly, reserves under the control of NOCs should be considered in examining the market integration of these companies.

The main independent variable, which is similar across the two cases under inquiry, is the change in the level of integration of these NOCs into the international market in time. The level of integration cannot be observed by itself. However, as an indicator of the change in the integration of a company, change in the diversity in a company can be observed.

The dependent variable is the international members on the boards of the NOCs. I expect that the increase in the diversity in a company would affect the diversity in the board of directors as the major governing body of a company. The diversity in the board can be measured through several aspects, such as gender diversity, diversity in age, etc.

However, the presence of international board members is assumed to best reflect the change that will be measured in this thesis.



5. CASE ANALYSIS

Since the emergence of the petroleum industry, the oil market has always been dynamic and open to drastic changes. As seen in the historical overview, the main factor affecting the oil market are the fluctuations in demand and supply. Any change in the demand and supply directly affects oil prices, market share of companies and their revenues. Although all oil companies are affected by these changes, some of them are more sensitive compared to others. As the literature indicated, NOCs are more vulnerable to changes in the market. Therefore, they need to take some measures to preserve and increase their market share and revenue. The increase in diversity in these companies (mainly diversity in operations, regions, and ownership structure) can be the indicators of measures of these companies. Based on the corporate management literature, NOCs have weaker corporate governance structures compared to IOCs. Therefore, it is natural to expect that as the diversity in the companies increase, the board of these companies will show a change in terms of their international members.

Based on this hypothesis, in this chapter, Saudi Aramco and Equinor, two NOCs selected as most different cases, will be compared. First of all, the variables that make them as different as possible will be explained. After provided that these variables cannot have an effect on the study, the independent and dependent variables of these two cases will be examined. As an independent variable, the diversification in the company in time will be explored. As a dependent variable, the change in the international board members of these companies will be observed. After, explaining all the variables of each cases separately, all the findings obtained from each case will be analyzed. As a result, whether the hypothesis is verified or falsified will be discussed.

5.1. Saudi Aramco

5.1.1. Control Variables

5.1.1.1. Regime of the country

The home country of Saudi Aramco, the Kingdom of Saudi Arabia, was founded in 1932 and is ruled under an absolute monarchy (Wynbrandt 2004). In the Kingdom, ruled by the Saudi dynasty, the King is also the head of government. In this system, government functions are carried out by Saudi Arabian council of ministers, whose members are appointed by the King. In 2016, the council of ministers agreed to the creation of Decision-Making Support Center. The council determined the mission of the center as the government's decision-making process in various areas through scientific and practical ways. The center is managed by the board of directors, which constitutes five members appointed by Royal order. Therefore, just like all the other governance mechanisms, the decision-making support center is not an independent entity. No political party exists, and no general elections are held in the country. The country consists of 13 administrative regions, and the mayors under these administrative regions are also appointed by the King. The only elections that are held are for municipal councils. In the legislation, the Council of Shura plays a role, all the members of which are also appointed by the King. The role of the Council of Shura however, is quite limited. Resolutions discussed in the Council of Shura come into force only if the council of ministers and the King approves these resolutions. The judicial system of Saudi Arabia is based on Sharia law, which is founded on Islamic practices. The judiciary in the Kingdom is not independent. The decisions taken by the judiciary must be in coordination with the executive. Both executive, legislative, and the judiciary system of Saudi Arabia indicate that the King is the absolute authority in the country.

5.1.1.2. Geographic features and geopolitical risks

Saudi Arabia is located in the southwest corner of Asia and is the largest country in the Arabian Peninsula. With the size of more than 2,150,000 square kilometers, the Kingdom occupies almost 80 percent of the Arabian Peninsula (Saudi Arabia MOFA 2017). The country is surrounded by the Red Sea in the west and Arabian Gulf on the east. The neighbors of Saudi Arabia are Yemen and Oman on the south, the United Arab Emirates on the east, and Jordan, Iraq, and Kuwait on the north. Deserts compose over 50 percent of Saudi Arabian territory (Saudi Arabia MOFA 2017).

The Kingdom is located in a historically unstable region, where countless wars have taken place so far. Saudi Arabia became party to some of these wars in the past, for example, the Gulf Wars. Today, the Kingdom still takes part in several conflicts in the region, such as the proxy conflict with Iran and the Yemeni civil war, in which Saudi Arabia held a military intervention. After Houthi insurgents, a group from a Zeydi branch of the Shiite sect of Islam captured the Capital of Yemen and forced President Abdrabbuh Mansour Hadi to resign, the Saudi-led coalition intervened against Iranian backed Houthi insurgents in Yemen (Council on Foreign Relations 2019). While the war in Yemen continues, conflicts directly affect the petroleum industry in Saudi Arabia. For instance, in May 2019, Yemeni rebel drones attacked two oil pipelines, which caused a temporary shutdown of the pipeline that posed a threat for oil supply in the world oil market (Bloomberg 2019d). The Saudi government is also on bad terms with Qatar, against which it has been employing a blockage since 2017 (BBC 2017).

5.1.1.3. Time of the first oil discovery

The increase in oil demand and the fall of supply during WWI created the need to discover new oil fields. However, oil companies, especially the Anglo Persian company, did not expect to find oil in the Arabian Peninsula (Yergin 1991). Only Frank Holmes, a British geologist, had the belief that oil could be found in Bahrain. Holmes gained oil concessions from Bahrain in 1923 (Maugeri 2006). As a result of several initiatives, an American company, Gulf Oil showed an interest in Bahrain. However, the company was a part American group in the Turkish Petroleum Company. According to Red Line Agreement signed by the members of the group, any of the members can act independently in the agreed region, which contains both Bahrain and Saudi Arabia. Since the partners of Gulf

Oil did not agree to operate in the region so that The Gulf had to hand over its concessions in Bahrain to Standard of California (SOCAL) (Yergin 1991). Although the British government was against the presence of American companies in the region at first, the government later accepted SOCAL to operate in the region in 1929. In 1932, the first oil was found in Bahrain, which opened the way for further discoveries in the region.

Less than a year later after the discovery of the first oil in Bahrain, the first step of oil discoveries in Saudi Arabia was taken in 1933, only a year after the foundation of the state, with a concession the agreement signed between the Saudi government and SOCAL (Yergin 1991). To manage the agreement, a subsidiary company, the California Arabian Standard Oil Company (CASOC), was established. As a result of the explorations that started right after the establishment of the company, the drilling began in 1935, and finally, the company discovered a commercial quantity of oil in Saudi Arabia (Maugeri 2006). Since the discovery of oil coincided with the early years of the establishment of the country, Saudi Arabia's economy was built primarily on oil.

5.1.1.4. Initial culture of the firm

Starting from the first drilling, CASOC (today's Saudi Aramco) had steadily increased its performance and discovered several hydrocarbon fields until 1944. At the end of the ten years of operations, oil production in Saudi Arabia reached almost 500,000 barrels per day. In 1944, the company was renamed as Aramco (Business Insider 2017). In 1960, the Ministry of Petroleum and Mineral Resources was established to monitor the activities of the companies in Saudi Arabia and to develop policies about the oil industry. Aramco operated as a private company until 1973, when the Saudi government bought a 25 percent interest of the company. The share of the Saudi government increased to 60 percent in the next year. In 1980, the company was nationalized entirely, and, in 1984, Aramco had its first Saudi President, which was followed by the first Saudi CEO in 1988 (Business Insider 2017). The company was renamed from Aramco to Saudi Aramco in 1988 to reflect this ownership change (Saudi Aramco 2018a). Lastly, in 2000, the Supreme Council for Petroleum of and Minerals was established in order to supervise the oil and gas sector in Saudi Arabia. The council consists of royal family members, government ministers and industry leaders. The Supreme Council actively takes part in

the decision-making process in the oil industry. Therefore, the council consolidates state control over Saudi Aramco. Today, Saudi Arabia is the largest petroleum exporter in the world (Forbes 2018). The petroleum sector comprises 87 percent of budget revenues, 42 percent of GDP, and 90 percent of export earnings (Forbes 2018). The 2018 budget of Saudi Arabia was \$261 billion, the largest budget of the country ever.

The historical dependency on oil, however, has created problems for the country in the long run. Since the Kingdom generates most of its income from the oil sector and public sector, the economy of the country turns out to be highly sensitive to volatility in oil prices. For decades, expatriate workers (expats) have played roles in the Saudi economy. Expats constitute almost one-third of Saudi Arabia's 34 million population and more than 80 percent of the workforce in the private sector (Financial Times 2018b). The level of unemployment for Saudi citizens runs high, and the unemployment rate in the first quarter of 2019 was 12.7 percent. This rate is both due to the lack of job opportunities, especially in the private sector, and the distortions the minimum citizen income the Saudi government distributes to its citizens creates in the job market (Saudi Gazette 2019). To overcome the problems arising from oil dependence, the Kingdom has been trying to imply policies for diversification through five-year development plans since 1970, but the plans have not generated the expected result (Independent 2018a). Oil prices started to decline in the second half of 2014, when the price was around \$110 and reached \$36 in January 2016, the lowest point since the 2001 economic crisis (Macrotrends 2019). The sharp decline in the prices accelerated the actions of Saudi Arabia to decrease the dependency on oil for revenue, and in 2016, the release of Vision 2030², became one of Saudi Arabia's most prominent efforts. The plan focuses on three critical areas, which are to generate revenue outside of the oil sector, to decrease government spending and to diversify national wealth (The Guardian 2016).

5.1.1.5. Amount of reserves and production

According to the latest annual report of Saudi Aramco (2017), the total amount of reserves under the control of Saudi Aramco was 332,897 mmboe, which consists of 256,757

² For detailed information about Vision 2030, please see: <https://vision2030.gov.sa/en>

mmboe crude oil, 36,939 mmboe natural gas, 35,097 mmboe NGLs, and 4,124 mmboe condensate. Saudi Aramco accounts for 16 percent of the world's total reserves (OPEC 2018). According to the report, the total amount of hydrocarbon production of Saudi Aramco was 13.1 mmboe/d, and the share of crude oil production in the total amount was 10.2 mb/d in 2017. Considering that the world's total oil supply was 97.36 mmboe/d, Saudi Aramco is the provider of more than 10 percent of the global oil supply (IEA 2018). The cost of producing a barrel of oil in Saudi Arabia is nearly \$9, which is one of the lowest costs of oil production in the world (Financial Times 2019c). Today, with its \$111,1 billion net annual income from \$355,9 billion annual revenue in 2018, Saudi Aramco is officially the most profitable company in the world (The Guardian 2019).

5.1.1.6. Authority over the firm

Saudi Aramco sustains its operations under the control of the Saudi government. The board of Saudi Aramco includes four ministers, namely the Minister of Foreign Affairs, the Minister of Finance and the Minister of Economy and Planning and the Minister of Energy, Industry and Mineral Resources of Saudi Arabia. Prior to this position, the energy minister, Khalid A. Al-Falih, served as President and CEO of the company from 2009 to 2015 (Saudi Aramco 2017). Since 2015, he served as both Energy Minister and Chairman of Saudi Aramco. The close relations between Saudi Aramco and the energy ministry appears especially in financial relations. Traditionally Saudi Aramco finances ministerial expenses, including the luxury spending of Khalid A. Al-Falih (Financial Times 2019b). Besides funding the energy ministry, Saudi Aramco generates the majority of the state's revenues and invests in infrastructures such as building schools, hospitals, and sports stadiums, at the expense to the company (Financial Times 2019b).

5.1.2. Independent Variable

The diversification attempts of Saudi Aramco takes place in three ways. The first way of diversification is to increase its operations in midstream and downstream levels. The second way of diversification is to increase its operations in different regions other than

Saudi Arabia. The last way of diversification for Saudi Aramco is to increase the diversity in the company's ownership. Until 1980, when Saudi Arabia bought 100 percent of the interests in Aramco, the company had operated as oil-producing and oil-exporting company in Saudi Arabia (Sarbu 2014).

As mentioned earlier, Saudi Aramco was established as an IOC in the beginning, and the company was nationalized in 1980. The first change in the ownership structure of the company took place as a consolidation of state authority over the company. Therefore, nationalization was a retreating step in terms of the company's ownership diversification. A short while after the nationalization, in 1984, Saudi Aramco established an equally owned domestic joint venture called Saudi Aramco Mobil Refinery Company (Samref) with Yanbu Refining Company (a wholly owned subsidiary of Exxon Mobil Corporation) (ExxonMobil 2017). Establishment of the joint venture was the first attempt of Saudi Aramco as a NOC to diversify its operations. In 1989, a year later from the official establishment of Saudi Aramco, the company took another step in a way to go beyond oil production, and to become a vertically integrated company. Saudi Aramco created a refinery joint venture called Star Enterprises, which later became Motiva, with Texaco and Shell (The New York Times 1989). The establishment of Motiva was an attempt to both operational and regional diversity for Saudi Aramco. In 2017, Saudi Aramco became the sole owner of Motiva, North America's biggest crude oil refinery at Porth Arthur, Texas (Saudi Gazette 2017).

Throughout the 1990s, Saudi Aramco had continued its investments in refinery both in Saudi Arabia and internationally. In 1991, the company bought 35 percent interest in the SsangYong Oil Refining Company (renamed S-Oil in 2000) in South Korea (S-Oil 2019). The major step of Saudi Aramco in refinery investments took place in 1993. Saudi Arabian Marketing and Refinery Company (Samarec), the biggest refinery company of Saudi Arabia, was dissolved, and Saudi Aramco took over the assets of Samarec (Shammas 2000). As a result of its merge with Samarec, Saudi Aramco took over the interests of Samarec in Saudi Aramco Shell Refining Company (Sasref). In April 2019, Saudi Aramco agreed with Shell to buy its shares in Sasref, which constitutes 50 percent of the company (Reuters 2019a). As part of its international refinery investments, in 1994, Saudi Aramco acquired 40 percent interest in Petron Corporation, the largest crude oil refiner and marketer in the Philippines (UPI 1993). Following Petron Corporation, Saudi

Aramco continued its international refinery investments in Europe. In 1996, the company bought 50 percent of the interests in Greek refiner Motor Oil (Hellas) Corinth Refineries and its marketing affiliate, Avin oil Industrial Commercial and Maritime Oil Company (Motor Oil 2011). The last refinery investment of Saudi Aramco during the 1990s was Saudi Aramco Base Oil Company (Luberef) in Saudi Arabia. In 1998, Saudi Aramco bought 70 percent of interests in Luberef, a refinery joint venture established between the Saudi government and Mobil Petroleum Company (today called Exxon Mobil). In 2007, Saudi Aramco bought the remaining 30 percent of interests from Exxon Mobil and became the sole owner of the company (Arab News 2007a). As a result of all these attempts, based on direct ownership, Aramco today is the world's fourth-largest refiner behind ExxonMobil, Royal Dutch Shell, and Sinopec (Ramady 2017).

Throughout the 2000s, Saudi Aramco continued to diversify its operations by entering into the petrochemical industry both domestically and internationally. The company created several joint ventures with oil majors. Saudi Aramco entered into petrochemical industry with Rabigh Refining and Petrochemical Company (Petro Rabigh) in 2005 (Amy Myers Jaffe and Ellass 2007). Petro Rabigh was established as a joint venture based in Saudi Arabia between Saudi Aramco and Japan's Sumitomo Chemical. In 2007, Saudi Aramco, Exxon Mobile, and Fujian Petrochemical Company established Fujian Refining & Petrochemical Company in China (Aramco Expats 2007). Saudi Aramco initiated another refinery and petrochemicals company with Total in 2008. The joint venture is called Saudi Aramco Total Refining and Petrochemical (Satorp) (TOTAL 2019). Both of these three early petrochemical investments of Saudi Aramco were created as integrated companies. In other words, in these companies, the processes of petroleum refining and petrochemical manufacturing are co-located. The feedstock for producing petrochemicals comes from the same crude oil that produces petrol and other fuels. Therefore, integrating the processes helps achieve maximum utilization of resources.

In addition to the integrated refinery and petrochemical companies, in 2011, Saudi Aramco initiated a chemical company with the partnership of Dow Chemical company in Saudi Arabia (Dow 2011). The joint venture called Sadara Chemical company was one of the biggest steps of Saudi Aramco investing in downstream operations to increase diversification. Sadara is the world's largest integrated chemical complex, with a production capacity to produce nearly 8 million metric tons of olefin, polyolefin, and an

extensive range of high-value diversified “specialty” chemicals and plastics (Sadara 2011). Saudi Aramco Chairman of the Board of Directors, Khalid A. Al-Falih, explains the significance of the creation of Sadara for Saudi Aramco as following:

"Sadara represents a bold undertaking for both Saudi Aramco and Dow. For us at Saudi Aramco, it is a major driver in achieving our goals of greater integration and value addition. Sadara represents the concrete realization of our distinct, yet complementary, corporate visions" (Aramco Expats 2016).

The investments of Saudi Aramco to integrated refinery and petrochemicals furthered with the creation of a joint venture with Dutch advanced chemical company, Lanxess, in 2016. The joint venture, called Arlanxeo, created as a specialized synthetic rubber company in Netherland (Lanxess 2016). Three years from the establishment of Arlanxeo, Saudi Aramco became the sole owner of the company (Saudi Aramco 2018b). In 2018, Saudi Aramco agreed with Petronas, the national oil company of Malaysia, to create a refinery and petrochemical joint venture called Pengerang Refining & Petrochemical (PRefChem) (Petronas 2018).

In 2018, Saudi Aramco agreed with National Oilwell Varco (NOV) to create a joint venture to set up an integrated on-shore rig and equipment manufacturing and after-market facility. NOV is a provider of equipment and components used in oil and gas drilling and production operations, oil field services, and supply chain integration services to the upstream oil and gas industry. With the joint venture, called Arabian Rig Manufacturing (ARM), Saudi Aramco aimed to develop oil field services within Saudi Arabia. Saudi Aramco Development Company chief executive officer Ziad Al-Murshed explains the significance of ARM for Saudi Aramco as such: “This joint venture with NOV is a major step toward localizing oil field equipment manufacturing and after-market services, starting with rig manufacturing” (NS Energy 2018).

The biggest of all these diversification attempts through petrochemicals took place with Sabic agreement of Saudi Aramco. According to the agreement, Saudi Aramco acquires majority stakes of Sabic, which is a major global chemical company with yearly revenues of \$45 billion (Sabic 2018). In March 2019, Saudi Aramco signed an agreement to buy 70 percent of the company held by the Saudi state worth \$69.1bn (Forbes 2019a). The deal is critical not only for Saudi Aramco but also the Saudi government. The proceeds

from the sale of Sabic will provide part of the funds for the Saudi government to carry out its economic reform plan (Forbes 2019a). For Saudi Aramco, Sabic will be the chemical hand of the company, creating synergies in operations, and an important step in the way to the IPO of Saudi Aramco (Forbes 2019a).

In addition to these joint ventures, to be able to preserve its share in the Asian market, Saudi Aramco had a partnership with Japan on oil stockpiling since 2011. In 2017, the company agreed with Japan to increase its stockpiling capacity in the country (Oil Price 2017). Besides Japan, the company also agreed with South Korea to have crude oil storage in 2019 (Arab Weekly 2019). As part of these investment initiatives, in 2019, Saudi Aramco also agreed with South Korean oil refiner Hyundai Oilbank to buy 17 percent of its shares (Reuters 2019b). Another attempt of Saudi Aramco to grow its business beyond oil is the deal with Semptra Energy again in 2019. According to the deal, Saudi Aramco will buy 25 percent of Port Arthur liquified natural gas (LNG) export project in Texas (Financial Times 2019e).

Besides these solid steps, Saudi Aramco signed several memorandum of understanding (MoU) agreements with several international companies and continues its negotiations for future cooperation. The company announced that Saudi Aramco considers investing in Shale operations with Equinor, which could be the first overseas joint venture of Saudi Aramco on gas explorations (Bloomberg 2019c). Saudi Aramco pursues another negotiation this time with Mukesh Ambani's Reliance Industries to get a minority stake in the Indian Company's refining and petrochemical operations (Business Today 2019).

As mentioned in the introduction of section, Saudi Aramco sustained its diversification attempts in three ways. The joint ventures are the examples of diversification of operations and regional diversification. The last way of diversification, diversifying ownership of the company became an issue for Saudi Aramco in 2016, for the first time after the nationalization of the company. Mohammed bin Salman, deputy crown prince of the Kingdom, announced that the Saudi government was considering listing 5 percent of Aramco shares in the international stock market (The Economist 2016). The IPO is expected to be the largest IPO ever in world history. In the announcement Prince Mohammed commented on the significance of transparency of the company by stating that "Taking the group public would create more transparency and counter corruption, if

any, that may be circling around Aramco” (The Economist 2016). As a matter of fact, for the first time in history, Saudi Aramco officially listed its cost of oil production per barrel in 2018.

Although the IPO has not taken place yet because of the concerns over valuation, the current price of oil and litigation risks, the prospective IPO of Aramco in world markets highlighted the need to credibly signal Aramco’s quality to foreign investors (Financial Times 2019d). Therefore, since the announcement of the IPO, both the Saudi government and Saudi Aramco have taken several concrete steps. In 2017, the Saudi government established a new fiscal regime to regulate its records according to the International Financial Recording Standards. As part of this new regime, the government cut the tax on the company’s income from 85 percent to 50 percent (Reuters 2017). The massive amount of taxes, which is even higher than the royalty payments to the government, decreases the attractiveness of the company to possible investors.

Besides the 2017 tax cut, the government and Saudi Aramco officialized the legal document which administers operations and the structure of the company. In 2019, Saudi Aramco released its bond prospectus, a document that details the operations and finances for potential investors in an IPO, especially to elucidate relations with the energy ministry of the Kingdom (Forbes 2019b). The prospectus reveals that in 2018, Aramco paid \$101.7 billion as income tax and royalty payment, and an additional \$60 billion in dividends (Saudi Aramco 2019). After all the discussions and delays, the date for the IPO has been announced for 2021 (CNBC 2018). All these steps to increase transparency, attempts to change the legal status of the company from state enterprise to joint-stock company and even the statements of Saudi officials signal that Saudi Aramco is open to transform its ownership structure in the near future, which is a facilitative factor for its integration into the global market (Financial Times 2018a). The revenue from this IPO is also key to MBS’s plans to diversify the Saudi economy, and his planned investments to boost Saudi employment.

The future IPO has not only transformed relations between Saudi Aramco and the government, but has also fostered the mentioned investments of the company in various operations, especially in petrochemicals, since 2016. Saudi Officials claim that Saudi Aramco’s worth reaches \$2 trillion, but various analyses indicate that the numbers are not

realistic, and the company can reach that value only if the oil prices rise above \$100 (Bloomberg 2019a). Saudi Aramco decided to increase the weight of operations other than oil to convince the investors that Saudi Aramco is ready to retain its market value even after the oil. The energy minister, Khalid A. Al-Falih, explains the intention of Saudi Aramco as such, “We are no longer going to be inward-looking and focused only on monetizing the Kingdom’s resources... Going forward, the world is going to be Saudi Aramco’s playground” (Financial Times 2019a).

Table 1. Major Diversification Attempts of Saudi Aramco

Diversification in the Company	Year
Establishment of Motiva (The First Refinery)	1989
Merger with Samarec (Refinery)	1993
Establishment of Petro Rabigh (The First Petrochemical)	2005
Establishment of Sadara Chemicals	2011
Announcement of IPO	2016
Merge with Sabic Petrochemicals	2019

5.1.3. Dependent Variable

Saudi Aramco was an international oil company until its nationalization in 1980. The shareholders of Saudi Aramco before its nationalization were major American companies, namely Exxon, Texaco, Socal, and Mobil. Therefore, the board of Saudi Aramco was mainly composed of non-Saudi members who were representatives of these shareholders (Ramady 2017). The first two Saudi members were appointed to the board in 1959. One of these members was Abdullah Tariki, the first Saudi Oil Minister appointed by King Saud. When he was appointed as a board member, he was Director-General of Petroleum and Mineral Resources. The second Saudi appointee was Hafiz

Wahbah, an Advisor to the late King Abdul-Aziz and a former Envoy to the U.K (Ramady 2017).

Following the nationalization, the first major change made in the board of Saudi Aramco was in 1984. Ali Al-Naimi was appointed as the first Saudi president of Saudi Aramco (MEED 2017). Before being appointed president, Al-Naimi has served for Saudi Aramco for almost 30 years. Four years after the presidency, he was appointed as the first Saudi CEO of Saudi Aramco. The same year, Saudi Aramco had the first Saudi Chairman. Hisham Nazer, Minister of Petroleum and Minerals of the time, became the Chairman of Saudi Aramco (Aramco Expats 2015). With Hisham Nazer, the appointment of Minister of Petroleum and Minerals as Chairman of Saudi Aramco became a tradition for the company. Ali Al Naimi (1995–2015) and Khalid Al Falih (2015–present) became the subsequent chairmen of Saudi Aramco (Ramady 2017).

The changes in the top positions of the company during the 1980s were signs of the Saudization of the company. As a major corporate governance body, the board was also shaped according to Saudization. Instead of international members, several Saudi government officials became a part of the board. However, in its rebirth as a Saudi company in every sense, Saudi Aramco did not cut all relations with the former consortium. Evidently, the board was not entirely transformed, although Saudi Aramco was 100 percent nationalized. After the reorganization of the board in 1988, two of the previous shareholder representatives and a banker were appointed as board members — namely Clifton Garvin, Harold Haynes, and Rodney B. Wagner (Shammas 2000).

Before being appointed as a board member of Saudi Aramco, Clifton Garvin served as Chairman and CEO of Exxon (former shareholder of Aramco) from 1975 to 1986. He was in office when the oil crisis erupted during the 1970s. Garvin was in belief that the world is running out of oil. Therefore, he focused on the diversification of operations (The Wall Street Journal 2016). In 1981, during one of his interviews, Garvin stated that the U.S. would need to rely more heavily on nuclear power and develop synthetic fuels. Since Garvin had the idea that oil was shrinking, during his term at Exxon, the company entered into electronic office equipment business, which later terminated after his term came to an end (The Wall Street Journal 2016). As a proponent of diversification, he served on the board of Saudi Aramco until 1998.

Harold J. Haynes was another international board member of Saudi Aramco after the nationalization. Haynes became the president of Standard Oil Company of California (today called Chevron) in 1969. Then, he served as the CEO and the Chairman of the company from 1974 to 1981. Standard Oil was one of the shareholders of Saudi Aramco during the time of Haynes. He served on the board of Saudi Aramco until 2001.

Rodney B. Wagner was the other international member after the reorganization of the board of Saudi Aramco. Wagner was an international banker at J.P. Morgan Chase & Company. He was an important figure in handling a major debt issue in Saudi Arabia. He brokered a loan package for Saudi Arabia that preserved its liquidity after the first Gulf War with Iraq (The New York Times 2005). Wagner served on the Board of Saudi Aramco until his death in 2005.

In 1996, Clifton Garvin was replaced by James W. Kinnear, who served as the president and the CEO of Texaco (today called Chevron) from 1987 to 1993. During his term in Texaco, Kinnear was known for his efforts to restore relations with shareholders. He aimed to increase the openness of the company. Mr. Kinnear emphasized this mission with these words: “I am absolutely determined to change the image of this company” (Bennett 1987). The focus of Kinnear was mainly on innovation and technology in the oilfields and laboratories.

In 2001, Harold J. Haynes was replaced by Victor Beghini, former president of the U.S.-based Marathon Oil Company until 1999 (Arab News 2001). He served on the board of Saudi Aramco for six years. In 2007, two new international members were appointed as replacement of Rodney B. Wagner and Victor Beghini. One of the new appointees was Peter Woicke. He was a former managing director at the World Bank. The second international member Mark Moody Stuart, the former Chairman of Royal Dutch Shell, was appointed in 2007 and still remains a member of the board (Arab News 2007b). The business principles of Stuart can generally be explained under two categories: partnerships and engagement. He strongly supports cross-sector initiatives, anything that gets businesses working together and preferably with others. The other principle of Stuart is about engagement with other actors. He explains this principle as such:

"There is no good standing on your side of the fence and telling everyone what you think about it. You really have to sit down and try and understand what it is that bothers other people" (Balch 2014).

In 2010, James W. Kinnear was replaced by David J. O'Reilly, former CEO and Chairman of Chevron Corporation from 2000 to 2009 (World Oil 2010). The major step of O'Reilly was to engineer the merge of Chevron with Texaco during the late 2000s. The merger created the second-largest integrated oil company in the U.S. During his presidency over the new company, Chevron Texaco, O'Reilly concentrated on energy generation and the manufacturing and marketing of chemicals in addition to regular oil and gas operations (CNN Money 2005). Kinnear became the first member of Saudi Aramco's board with prior experience on petrochemicals. Unsurprisingly, the time he was appointed to the board of Saudi Aramco was also the time that Saudi Aramco started to make major investments in petrochemicals.

In 2013, James W. Kinnear was replaced by Andrew F. J. Gould, the former CEO and the Chairman of Schlumberger Oilfield Services from 2003 to 2011 (Amy Myers Jaffe and Ellass 2007). During his time at Schlumberger, Gould led the company to acquire Smith International and created a bigger oil field service company (The Wall Street Journal 2011). He is credited with rededicating Schlumberger to oil field services, after the company's failure to expand in information technology. Gould is still on the board of Saudi Aramco, and the company made investments in oilfield services during his term. For instance, Saudi Aramco created ARM, a joint venture of manufacturing facilities, in 2018, after he was appointed to the board.

In 2018, following the announcement that Saudi Aramco will arrange an IPO, the company rearranged its board structure and increased the number of international board members from three to five. Peter Woicke left the board, and three new international members were appointed (Arab News 2018). The rearrangement in the board structure was one of the preparations of Saudi Aramco to the future IPO. In the previous form of the board, government officials constituted seven out of ten members. With this change, the ratio of government officials and also Saudi members dropped to six out of eleven. The new form of the board aimed to give the signal that shareholders will be represented on the board. However, the changes in the board are not only signal for future

shareholders. The new appointees are also strategic names for the recent operational strategy of Saudi Aramco.

One of the new board members appointed in 2018 is Andrew N. Liveris. He served as Chairman and CEO of the Dow Chemical Company from 2004 to 2017 (Aramco Expats 2018). In 2011, when Saudi Aramco created a petrochemical joint venture (Sadara) with Dow Chemical, Liveris was the CEO of the Dow Chemicals, and he positioned Dow as the largest foreign investor in Saudi Arabia (Financial Times 2018c). During the establishment of Sadara, Liveris focused on the significance of the joint venture for the diversification in the operations of Saudi Aramco.

“Sadara is an extraordinary and unique venture that will build upon the strengths of both Dow and Saudi Aramco to deliver the diversified and specialty materials and chemicals needed to drive growth in the entire region and beyond” (Sadara 2011).

Again, during the time Liveris was at Dow Chemicals, the company became the first foreign company to be awarded a Saudi trading license in 2016 (Reuters 2016). The license allows Dow Chemicals to own 100% of any company it establishes in Saudi Arabia, rather than requiring it to have a joint venture with a local partner. Considering the recent investments of Saudi Aramco in petrochemicals, Liveris seems to be a critical figure for the petrochemical business of Saudi Aramco.

Another international board member of Saudi Aramco appointed in 2018 is Peter L. Cella. He served as president and CEO of Chevron Philips Chemical Company from 2011 to 2017. Besides, he served in many other petrochemical companies, such as BASF Corporation, INEOS Nitriles, and Innovene. Cella also held various positions in BP. He served on the boards of Chevron Philips Chemical Company and the American Chemistry Council (Aramco Expats 2018). The extensive experience of Cella in petrochemicals is a fundamental criteria for his appointment to the board since Saudi Aramco has been trying to increase the share of petrochemicals within the company.

The last name appointed to the board in 2018 is Lynn Laverty Elsenhans. Elsenhans became the first woman board member of Saudi Aramco (The Guardian 2018b). Forbes named Elsenhans as one of the most powerful women in the world (Forbes 2008). Her

appointment to the board gives two signals. For the first time in its 86 years of history, Saudi Aramco gave the signal of gender diversification of its board. Second, by appointing a woman member on the board of the biggest company of the state, the Kingdom signals the change in the conservative culture, even if the change takes place slowly.

Elsenhans served as Chairwoman, President, and CEO of Sunoco, a manufacturer and marketer of petrochemical products, from 2008 to 2012. Before Sunoco, she served for Shell, one of the major partners of Saudi Aramco, for almost 30 years. During her time at Sunoco, her biggest move was to decrease the refining business of Sunoco and to focus on retail business since the refinery business caused a loss for the company (Forbes 2008).

Table 2. The Change in the Number of Intl. Board Members of Saudi Aramco

Period	Number of Board Members	Number of Intl Board Members	Ratio of Intl Members
1988- 2013	12	3	25%
2013- 2018	10	3	30%
2018-present	11	5	45%

Table 3. International Board Members of Saudi Aramco (1989-Present)

Name	Occupation	Nationality	Gender	Period
Clifton C. Garvin	Former CEO and Chairman of Exxon	US	Male	1989-1996
Harold J. Haynes	Former CEO and Chairman of Chevron Corporation	US	Male	1989-2001
Rodney B. Wagner	Former international banker at J.P. Morgan Chase & Company	US	Male	1989-2005
James W. Kinnear	Former CEO and Chairman of Texaco	US	Male	1996-2010
Victor Beghini	Former president of US-based Marathon Oil Company	US	Male	2001-2007
Peter Woicke	Former CEO of IFC and Managing Director of World Bank	US/Germany	Male	2007-2018
Mark Moody Stuart	Former Chairman of Royal Dutch Shell	UK	Male	2007-present
David J. O'Reilly	Former CEO and Chairman of Chevron Corporation	Ireland	Male	2010-2013
Andrew F. J. Gould	Former CEO and Chairman of Schlumberger Oilfield Services	UK	Male	2013-present
Andrew N. Liveris	Former Chairman and CEO of The Dow Chemical Company	Australia	Male	2018-present
Peter L. Cella	Former President and CEO of Chevron Phillips Chemical Company	US	Male	2018-present
Lynn Laverty Elsenhans	Former Chairwoman, President, and CEO of Sunoco	UK	Female	2018-present

5.2. Equinor

5.2.1. Control Variables

5.2.1.1. Regime of the country

The history of Norway, the home country of Equinor, dates back to the ninth century. In the recent past, the country declared independence from Sweden in 1905. However, the present constitution of Norway was written in 1814, long before the independence of the country. The constitution is affected by British political traditions, the ideas behind the French Revolution and the constitution of the United States. Accordingly, the official regime in Norway is a parliamentary, democratic, and representative constitutional monarchy. In this system, the King has symbolic political power. The executive function in Norway is exercised by the cabinet and council of state, led by a prime minister. After the elections on January 20, 2019, the cabinet was formed by a coalition of four political parties. The legislative function of Norway is carried out by both the government and the Storting, the unicameral parliament elected within a multi-party system. Lastly, the judicial system of Norway is independent of executive and legislative bodies. The legal system is a combination of customary law, civil law, and common law traditions.

5.2.1.2. Geographic features and geopolitical risks

Norway is a Northern European country, located in the western and northern part of the Scandinavian Peninsula. The country shares the largest border with Sweden. The other countries that Norway shares border with are Finland and Russia. Other than these countries, Norway borders the Barents Sea in the northeast, North Atlantic Ocean in the west and Northern Sea, where the first oil discovered, and Skaggeret inlet in the south. With over 25,000 kilometers, Norway has one the longest coastlines in the world. Therefore, setting the maritime boundaries has been a critical issue for Norway. The country established the maritime boundaries with its neighbors, Denmark, Russia, Sweden, and the United Kingdom (Harsson and Preiss 2012). Today, the continental shelf

of Norway is a significant source for oil and gas, and also the wind power for domestic consumption and mainly for Europe.

As opposed to Saudi Arabia, Norway has been a stable country since the end of WWI. Almost the only concern the country has as a threat to its security is the possible terrorist attacks. The attacks by a right-wing extremist in 2011, which resulted in 77 casualties, brought religious extremism as one of the primary concerns of the country (CNN 2019). Besides domestic issues, the aggressive behaviors of Russia and its growing presence in the Norwegian sea can be a concern for Norway maritime security, but there is no concrete sign in the behavior of Norway, indicating a perception of threat by Russia (Bojesson and Collier 2016).

5.2.1.3. Time of the first oil discovery

The first oil explorations in Norway started in the 1960s, long after the establishment of the regime in the country. In 1962, Philips Petroleum applied Norwegian authorities to get a license to start exploration in the North Sea in exchange for \$160,000 per month (Norwegian Petroleum 2019c). The Norwegian government perceived the demand as giving an exclusive right to Philip Petroleum by handing over its continental shelf to only one company. Therefore, the government decided that these areas can be opened to exploration only if more than company takes part in operations. In 1963, the Norwegian government declared the continental shelf of the Norwegian state in order to consolidate the authority of the Norwegian government (symbolically the King) on the natural resources founded in the shelf. The law also authorizes only the government to give license for explorations. However, due to being the sovereign in the continental shelf, the Norwegian government should also agree with its neighbors for the delimitation of the continental shelf. After reaching an agreement with Denmark and the U.K. in 1965, Norway started to provide licenses for explorations in the continental shelf of the country. The first discovery took place in 1969, and the production from the field started in 1971. Although foreign companies started their exploration activities, the Norwegian government decided to take control in a short while and in 1972 established Equinor (formerly known as Statoil, which changed its name in 2018) as the only owner of the company. Today the petroleum sector comprises 21 percent of state revenue, 16 percent

of GDP and 40 percent of total exports (Norwegian Petroleum 2019d). The ratio of people employed in the petroleum industry in Norway is only six percent of the total employment in Norway (Norwegian Petroleum 2018)

5.2.1.4. Initial culture of the firm

From 1973-1985, the Norwegian government had given more than 50 percent of Norway's petroleum development licenses to Statoil. With this arrangement, the portion of Statoil's cash flow in the gross national product started to get bigger. Therefore, in 1985, the participating interest of Norwegian state in the petroleum industry was divided into two: one part was connected to Statoil, and one was to State's Direct Financial Interest (SDFI), a judicial entity managed by Statoil (Gordon and Stenvoll 2007).

Despite the existence of a NOC (Equinor) in Norway, the government pursues a policy of competition and diversification players in the Norwegian Continental Shelf. Especially since 2000, there has been a significant increase in the number of companies operating in the continental shelf of Norway. While the number was 24 in 1999, the number of companies operating in the Norwegian Continental Shelf reached 56 in 2013. According to the most recent data, in 2018, the number was 39 which is composed of two large Norwegian Companies, four majors, 21 medium-sized companies, 11 small-sized companies, and two utilities (Norwegian Petroleum 2019a). These companies operate in both the exploration and production in the continental shelf. The policies of competition and diversification prevent Equinor from being a monopoly in the Norwegian petroleum industry.

Although the Norwegian government pursues a policy open to foreign investment and diversity, the latest move of Norwegian Sovereign Wealth Fund created a negative impact in terms of oil investments. In 2019, the wealth fund, the world's largest wealth fund with \$1trillion of assets, announced that the fund will phase out of its investments in oil and gas companies (Reuters 2019c). The reason behind the decision is the policy of increasing the share of renewables in investments so that to decrease dependency on oil prices. The only exceptions for the decision are Shell and BP since these companies are involved in renewables (Reuters 2019c). Although the decision is compatible with the policy of the

country, it created a negative signal to international oil and gas companies for their operations in Norway.

5.2.1.5. Amount of reserves and production

According to the Annual Report of Equinor (2018), the total amount of reserves under the control of Equinor is 6,175 mmboe, which consists of 2,558 mmboe oil and condensate, 393 mmboe NGL and 3,222 mmboe natural gas. The total amount of reserves under the control of Equinor is only one sixty of the reserves under the control of Saudi Aramco. The report indicates that the total amount of hydrocarbon production of Equinor was 2.11 mmboe/d in 2018. The cost of producing a barrel of oil is around \$21 - at least two times higher than the cost for Saudi Aramco (Financial Times 2019c). In 2018, the annual revenue of Equinor was \$79,5 billion, and the net annual income of the company was \$7,5 billion (Equinor 2018). The share of net annual income in the annual revenue is one-tenth, whereas the ratio in Saudi Aramco is nearly one third.

5.2.1.6. Authority over the firm

Within the diverse ownership structure of the company, unlike Saudi Aramco, the Norwegian state is not the absolute authority over the company. Equinor has a well-established governance structure based on Norwegian law. Besides the internal rules, since the company is listed on the New York Stock Exchange (NYSE), Equinor is also subject to NYSE's listing rules (Equinor 2019a). The corporate governance structure of the company is composed of general meeting, nomination committee, external auditor, corporate assembly, the board of directors, corporate executive body, and corporate audit.

The general meeting is the supreme body of the company. All the shareholders are invited to annual general meetings, and each share owns an equal right to vote at the meetings. Decisions of shareholders should comply with Norwegian law or Equinor's articles of

association³. In the election of people by shareholders, individuals that get the most vote gets elected. However, certain decisions such as resolutions to abandon preferential rights related to shares, merging or demerging, change in the articles of association of Equinor, and changes in the amount of share capital, should be accepted by two thirds of the total number of shareholders at the meeting in which at least two thirds of shares are represented. Members of the two bodies of Equinor, nomination committee and external auditor, are elected in the general meetings by shareholders. The nomination committee is responsible for preparing recommendations for the elections of shareholder-elected members of both corporate assembly and board of directors in annual general meetings. The external auditor is an independent body, and the primary duty of the external auditor is to control the firm's competence, capacity, local and international availability and the size of the fee.

Corporate Assembly is another body, mainly responsible for the election of the members of the board of directors. Companies subject to Norwegian Public Limited Liability Companies Act should elect the members of corporate assembly if the number of employees of the company is more than 200. Therefore, two-thirds of the Corporate Assembly of Equinor is elected through an Annual General Meeting and one-third by its employees. Another significant part of corporate governance, Corporate Executive Body is responsible for the operations of the company. Moreover, the body proposes strategies for the company. Lastly, the corporate audit has a duty to monitor the management of the business.

Both the earlier governance strategy of the Norwegian state and current governance structure of Equinor aims at the division of roles and responsibilities between the state and the company. The state has a responsibility to regulate the sector, whereas the companies in the petroleum industry sustain operational activities (Norwegian Petroleum 2019b). The idea behind the division of the roles is that if the state gives autonomy to the companies in the petroleum industry by setting a well-organized framework for operational activities, these companies will function for their benefit. Since society has a stake over gains from the petroleum industry in the country, society will gain from any

³ For the details of Equinor's articles of association, please see:
<https://www.equinor.com/content/dam/statoil/documents/corporate-governance-equinor/equinor-asa-articles-of-association%202018-05-15.pdf>

policy for the benefit of the companies (Norwegian Petroleum 2019b). The Norwegian government sustains its regulations with directorates under six ministries, which are Ministry of Petroleum and Energy, Ministry of Climate and Environment, Ministry of Trade, Industry and Fisheries, Ministry of Labour and Social Affairs, Ministry of Transport and Communications and Ministry of Finance. In this system, with the legislative power, Storting acts as a supervisor over the government and sets a framework for the operations of the companies. Therefore, the Norwegian state has been in the background in the governance of Equinor rather than being the authority over the company since the earlier years of its establishment. The limitation over the power of state in Equinor is empowered by the laws of Norway.

5.2.2. Independent Variable

Equinor builds its diversification in three ways; diversification of the type of operations, internationalization of the operations, and diversification of the ownership of the company. Unlike most national oil companies, Equinor started to diversify its operations only a few years after its establishment. In 1975, Equinor established its first refinery, Mongstad Refining, with the partnership of Norsk Hydro⁴ (Claes 2019). Although this was a step towards vertical integration, Equinor made its major move during the late 1980s. The company acquired the shares of Hydro (30 percent of the total) in Mongstad and expanded the capacity of the refinery. Nevertheless, the expansion of Mongstad was extremely costly and lacking sufficient commercial returns. Therefore, the early attempt of Equinor to diversify its productions resulted in a failure, which is called the Mongstad Scandal (Ryggvik 2015). During the 1980s, Equinor also entered the retail sector of Scandinavia, Baltic Sea Region, and Ireland (Gordon and Stenvoll 2007).

Due to the competition in the Norwegian Continental Shelf and the draining resources in the region, Statoil decided to increase the regional diversity of its operations during the early 1990s. The company internationalized its exploration and production of oil and gas in two ways; either partnering with other companies or solely operation. In 1990, Equinor partnered with BP to make exploration and production in Angola, Azerbaijan, China, and

⁴ Norsk Hydro is a Norwegian Aluminum and renewable energy company, which operates globally. Until October 2007, merge with Statoil, the company was considerably active in an oil and gas industry.

Vietnam (Oil & Gas Journal 1991). In the meanwhile, Equinor started to solely operate in the U.S., Ireland, Iran, and Venezuela (Gordon and Stenvoll 2007).

The first major transformation in the company happened in 2001 when Equinor was listed on the New York Stock Exchange. With the listing, the share of the Norwegian government fell to 81.7 percent. Equinor's CEO of the time described the process as following: "The listing is a milestone for the group. We are now entering a new era" (The Wall Street Journal 2001). The initial listing was followed by public share offerings through which the share of the state fell to 70.9 percent.

Following the privatization, Equinor increased its diversification both operationally and internationally. The company took its latest shape after its merge with Norsk Hydro in oil and gas operations in 2007. The deal was worth \$30 billion, and as a result, the world's largest offshore operator was established (Oil & Gas Journal 2007). After the merge of Equinor with Hydro's oil and gas activities, the share of the Norwegian state in Equinor became 62.5 percent. However, the share was below the two thirds, the minimum share that the Norwegian state can hold according to the decision of Storting in 2001 (Equinor 2019c). Therefore, in 2009, the share of the government in Equinor reached 67 percent. Today, other than the Norwegian government, Equinor has 19 more shareholders. The distribution of the private shareholders is as such; 11.52 percent Norwegian private shareholders, 8.49 percent rest of Europe, 7.18 percent the U.S., 5.77 percent the U.K., and 0.4 percent from rest of the world (Cnn Business 2019).

In 2010, Equinor carried out an IPO of Statoil Fuel & Retail, gas station and fuel unit of the company. With the sale of 40 percent of its share in Statoil Fuel & Retail, Equinor decreased its share in the business related to service stations (Reuters 2010). Equinor sold the remaining shares of Statoil Fuel & Retail in 2012 to increase its investments in new energy, such as offshore wind, and solar energy (Financial Times 2012).

Equinor entered into the renewable energy sector in 2009 by installing the first hywind demo in Norway (Wind Power Monthly 2011). Hywind is a floating wind turbine design, consisting of a giant wind turbine placed on top of a floating vertical spar. The company continued its wind power investments in the U.K. The first large-scale commercial offshore wind investment of the company, Sheringham Shoal (Equinor 40 percent

operator), started to produce in 2011, which produces enough clean energy to meet the energy need of 220,000 homes (BBC 2011).

As part of its new energy solutions, Equinor established a corporate venture fund, Equinor Energy Ventures, in 2016 to invest in renewable energy companies. With its \$200 million total investment capital, the fund is created to contribute to the low-carbon energy projects of Equinor (Bloomberg 2019b).

In 2016, Equinor entered into Solar energy by signing an agreement with Scatec Solar to acquire 40 percent shares of Apodi Solar asset in Brazil. The project was planned to provide electricity to approximately 160,000 households. Equinor and Scate Solar agreed not only for the current project but also for future solar projects in Brazil (CNBC 2017).

The wind farm investments of Equinor, on the other hand, continued with Hywind Scotland (Equinor 75 percent operator), which started production in 2017 and has the capacity to meet the energy need of 22,000 houses (The Guardian 2017). In the same year, Equinor established its second wind farm in the U.K, called Dudgeon (Equinor 35 percent operator), which can produce energy enough to power around 410,000 houses (Energy Voice 2018). In 2019, Equinor expanded regional diversity of its wind farm projects and a new wind park, Arkona (Equinor 50 percent operator) with the capacity to supply the energy need of 400,000 houses, started production in Germany (DW 2019).

As part of the operations of Equinor, the Norwegian government permitted to Equinor and its partners, Shell and Total, to build a large-scale offshore Carbon Capture and Storage projects (CCS) in 2017 to decrease the level of carbon emission (Reuters 2019d). CCS technology is used to capture carbon dioxide, transport and store it, mostly in the underground, to prevent the emission of carbon dioxide into the atmosphere. Equinor has already operational CCS projects since the 1990s.

In addition to already established wind farms, Equinor has two future wind farm projects. The company made an investment to develop Empire Wind Farm and Boardwalk Wind in the U.S. Empire Wind Farm and Boardwalk Wind will most likely have the capacity to supply the energy need of 2 million houses, which is more than the total of established wind farms of the company (Wind Power Monthly 2019). The last wind farm project of

Equinor is the Dogger Bank wind farm, which will be the most extensive offshore wind farm development in the world (Equinor 2019b). The farm is planned to supply the energy need of almost 5 million houses. Other than new projects, Equinor also agreed with Polenergia to acquire a 50 percent share of three wind farms in Poland, called Bałtyk I, II and III (Poland at Sea 2018).

As a further step to become a broader energy company, rather than being only an oil and gas company, the company changed its name from Statoil to Equinor in 2018. The name change, however, does not indicate an immediate change in the portfolio of Equinor. According to the Annual Report (2018) of Equinor, the largest investments of the company are still on the development of oil and gas. As of 2019, the share of wind power constitutes five percent of Equinor's annual investments. The share of wind power in annual income is not reported separately in the annual report. By 2030, Equinor plans to make 80-85 percent of its investments in oil and gas. The remaining 15-20 percent will constitute the company's investments in low-carbon energy alternatives.

Equinor sustains its oil and gas explorations and productions in 30 countries (Equinor 2019d). As of 2018, the company has exploration licenses in 18 countries. Among these countries, in the U.S., Brazil, Canada, Angola, Algeria, Nigeria, Libya, Azerbaijan, Ireland, Russia, and the U.K., Equinor already produces oil. The share of operations in these countries constitutes 39 percent of Equinor's oil and gas production in 2018, and the net income of these operations constitutes 20 percent of the total income of the company (Equinor 2018).

Table 4. Major Diversification Attempts of Equinor

Diversification in the Company	Year
Establishment of Mongstad	1975
Privation of the company	2001
The merge with the Hydro Norsk	2007
The first Wind Power project	2011
The first Solar Power project	2016
The name change from Statoil to Equinor	2018

5.2.3. Dependent Variable

From the establishment of Equinor in 1972 to 2007, the board of directors of the company had been composed of Norwegian members. The first international members were elected in 2007, following the merge of the company with Norsk Hydro in the same year (StatoilHydro 2007). The first international members of Equinor were Roy Franklin and Kurt Anker Nielsen.

Roy Franklin was first elected to the board in 2007 and served until 2013. In the 2015 elections, he was re-elected, and he is still on the board of Equinor. Franklin worked for BP, Paladin Resources, and Clyde Petroleum. Besides his executive roles, he has also served on the board of several oil and gas companies, namely, Premier Oil, Cuadrilla Resources Holding, and Energean Israel. Besides, Franklin is a part of the boards of Kerogen Capital, an equity firm, and Wood plc, an energy company (Equinor 2018). Considering that he has other directorships in the past, R. Franklin appears to be a well-recognized figure in the global oil and gas industry. In addition to his reputation, his experience in BP for almost 18 years is worth to mention in understanding his role in the board of Equinor. BP is one of the major partners of Equinor in its international

operations, for instance, in the offshore drilling operations in Brazil. Therefore, the experience of Roy Franklin on the board may give a positive signal for relations with BP.

The second international member appointed to the board of Equinor in 2007 was Kurt Anker Nielsen. Hydro's election committee recommended Nielsen to the 2007 elections of Equinor's board (Equinor 2007). He was also a member of the board of Hydro. Nielson has held senior management positions in Novo and Novo Nordisk, which are healthcare companies, in Denmark (StatoilHydro 2007). Although he served on the board of several companies, he had no oil and gas experience other than Equinor.

In 2009, Kurt Anker Nielsen was replaced by Jakob Stausholm (Statoil 2009). He held several managerial positions in Shell for 18 years. His experience at Shell is noteworthy because Shell is one of the partners of Equinor in its international oil exploration and also in the carbon capture storage investments (Offshore Energy Today 2016). Stausholm served on the board of Equinor as a shareholder representative until late 2016. After he was appointed as CFO of the Maersk Group, he resigned from the board of Equinor to prevent any conflict of interest (Offshore Energy Today 2016).

In 2010, the number of international members on the board of Equinor rose to three, and Lady Barbara Judge was elected as the new member. She holds American and British citizenships. Lady Judge is a prominent figure for both the U.S. and the U.K. She held critical positions in the U.K. She was the executive chair of the UK Atomic Energy Authority, deputy chair of the Financial Council of the U.K. On the other hand, she became the youngest person ever appointed by the president of the United States to the position of commissioner, U.S. Securities, and Exchange Commission (Independent 2018b). BBC Radio Four's Woman's Hour describes her as "one of the best-connected women in Britain" (The Guardian 2018a). Her power in the U.K. could be a facilitative factor for Equinor in increasing its operations in the U.K., especially in wind power after 2011.

In 2012, the number of international board members of Equinor increased to four. As a result of the increase, Maria Johanna Oudeman was elected as a shareholder representative to the board (Statoil 2012). She was a member of the executive committee

of Akzo Nobel, the world's largest paint and coatings company and a major producer of specialty chemicals, with operations in more than 80 countries.

In 2013, Roy Franklin and Lady Barbara Judge left the board, and two new international members were elected as shareholder representatives; James Mulva and Catherina Hughes (Statoil 2013). James Mulva was a former President and the CEO of ConocoPhillips and Philips Petroleum (Reuters 2015). Catherina Hughes worked for Schlumberger Oilfields company for 20 years in different parts of the world. She holds Canadian and British citizenships. In 2015, Mrs. Hughes resigned from the board of Equinor with the excuse that her upcoming marriage would create a conflict of interest (Market Watch 2015). After her resignation, the number of international members fell to three, and this number did not increase until 2018.

In 2016, after the resignation of Jakob Stausham, Jeroen van der Veer was elected as a shareholder representative member. The entire experience of Van der Veer is in Royal Dutch Shell. From 1971 to 2009 he worked for Shell in several positions (LNG World News 2016). Eventually, he retired as the CEO of Shell. Van der Veer is still on the board of Equinor. Van der Veer is a proponent of moving from fossil fuels to renewables. In describing his vision of the energy future, he focuses on three pillars: energy savings, natural gas and the increased use of low-carbon or zero-carbon electricity.

“First, the world is still not doing enough to save energy. Second, for large parts of the world, natural gas is the best transition fuel, as it is widely available, and a lot of infrastructure has been created for it. It’s not perfectly clean, but it scores very reasonably on greenhouse gas emissions and on water footprint. Thirdly, as the world is using more and more electricity, we need to develop renewable energies that are much cheaper than they are today. This means we need to develop new technologies first and then build large-scale projects.” (Energypost.eu 2016)

In 2018, the number of international board members increased to four (Equinor 2018). Maria Johanna Oudeman left the board, and two new members were elected instead. The increase in the number of international members took place after the name change of Equinor. Anne Drinkwater is one of the new elected international members. A. Drinkwater’s entire experience was in BP. Besides that, she has served as a board member of Aker Solutions, which is an engineering firm producing systems required to unlock

energy generated from oil, gas, and offshore wind (Equinor 2018). Thereby, Equinor had its first board member having an experience in offshore wind. The last international board member, who was elected at the same time with Drinkwater, is Jonathan Lewis. He has several experiences in engineering and construction companies, such as Capita and Amec Foster Wheeler (Equinor 2018).

Table 5. The Change in the Number of Intl. Board Members of Equinor

Period	Number of Board Members	Number of Intl Board Members	Ratio of Intl Members
2007-2010	10	2	20%
2010-2012	10	3	30%
2012-2015	10	4	40%
2015-2018	10	3	30%
2018-Present	11	4	36%

Table 6. International Board Members of Equinor (From 2007 to Present)

Name	Occupation	Nationality	Gender	Period
Roy Franklin	Former manager at BP, Paladin Resources, and Clyde Petroleum	UK	Male	2007-2013/ 2015-Present
Kurt Anker Nielsen	Former manager at Novo and Novo Nordisk	Denmark	Male	2007-2009
Jakob Stausholm	Former manager at Shell and Maersk Line	Denmark	Male	2009-2016
Lady Barbara Judge	Former Chairman of U.K. Atomic Energy Authority	UK/US	Female	2010-2013
Maria Johanna Oudeman	Member of the executive committee of Akzo Nobel	Netherland	Female	2012-2018
James Mulva	Former President, Chairman and CEO of ConocoPhillips and Phillips Petroleum	US	Male	2013-2015
Catherina Hughes	Former manager at Schlumberger Oilfield Services	Canada/France	Female	2013-2015
Jeroen Van Der Veer	Former CEO of Shell	Netherland	Male	2016-Present
Anne Drinkwater	Former manager at BP	UK	Female	2018-Present
Jonathan Lewis	CEO of Capita and former manager at Amec Foster Wheeler	UK	Male	2018-Present

5.3. Analysis of Findings

The individual case analyses of Saudi Aramco and Equinor starts by indicating that the companies differentiate from each other in terms of both state-level variables and firm-level variables. While the regime in Saudi Arabia, the home country of Saudi Aramco, is an absolute monarchy, Norway, the home country of Equinor, is ruled via democracy. Due to the geographic features of Saudi Arabia, Saudi Aramco sustains its oil exploration and production in the onshore, whereas Equinor's oil exploration and production takes place mostly in the offshore since the hydrocarbon reserves of Norway are found in the continental shelf of the country. Due to its geographic location, the operations of Saudi Aramco are under high political risks, whereas Equinor operates in quite stable regions compared to Saudi Aramco. Another difference between these two companies is the time of their establishment. Saudi Aramco was founded around the same time with the foundation of Saudi Arabia. Therefore, the new state was created based on petroleum in the country. On the other hand, in Norway, petroleum was found long after the foundation of the state. In other words, when oil was discovered in the country, Norway had already well-established institutions.

The differences between Saudi Aramco and Equinor are not only limited to the features of their home countries. They differentiate from each other regarding the features of the firms. The first difference is the initial cultures of these companies. Saudi Aramco was created as an international oil company by some of the oil majors, and the company was nationalized almost 50 years after its establishment. Equinor, however, was created as a 100 percent government-owned company and was privatized in 2001. Related to the variation in the ownership structure of Saudi Aramco and Equinor, these two companies have different authorities in their management. In Saudi Aramco, the Saudi state is the authority over the firm, whereas, in Equinor, shareholders have the power over the company.

These variables provide sufficient evidence that Saudi Aramco and Equinor are least likely cases. Therefore, the relationship between the independent and dependent variables can be measured by eliminating the effect of these variables. The next step measures the

change in the diversification in the companies and the change in their international board members.

The first major attempt of Saudi Aramco to diversify its operations was taken in 1989. The company created the Motiva refinery with Texaco and Shell as the first step towards being a vertically integrated company. During the same year, Saudi Aramco restructured its board, replaced most of its international members with Saudi members with the effect of nationalization. However, the company kept three international members on the board. Clifton C. Garvin and Harold J. Haynes, two of these three members, were the former chairman and CEO of Exxon and Chevron Corporation. These two companies were among the major oil companies, and were also former shareholders of Saudi Aramco. The appointment of the two top figures from these companies even during the early times of the nationalization was an indicator of the intention of Saudi Aramco to keep international experience on its board.

Saudi Aramco continued its investments in refinery domestically and internationally. The major step of the time to diversify its operations was the acquisition of the interests in Samarec in 1993. With the purchase of Samarec, Saudi Aramco took over the refineries under the company and increased its partnership with major oil companies. Considering the early partnerships of Saudi Aramco, in this new era, the relations with partners gained more importance. A few years after the purchase of Samarec, Saudi Aramco made a change in its board and appointed James W. Kinnear as a new international member. Kinnear was the former Chairman and CEO of Texaco, one of the major partners of Saudi Aramco. Besides, he was known with his principle to restore relations and build a positive image to the outside.

Another significant development for Saudi Aramco was the entrance of the company into the petrochemical industry. In 2005, Saudi Aramco entered in petrochemical business by creating a joint venture, Petro Rabigh. Throughout the 2000s, Saudi Aramco increased its share in petrochemicals, especially creating integrated petrochemical joint ventures. Simultaneously, Saudi Aramco made a change in its board and appointed two new international members. One of these appointees, Mark Moody Stuart, was the former Chairman of Shell, one of the major partners of Saudi Aramco. Besides, he is quite a

proponent of diversification and partnerships, which was gaining more importance for Saudi Aramco.

Saudi Aramco sustained its policy of diversifying its operations through petrochemical investments. In 2011, the company created Sadara petrochemicals joint venture with Dow Chemicals. Related to its partnership with Dow Chemicals, Saudi Aramco appointed Andrew N. Liweris, former Chairman and CEO of Dow Chemicals, to its board. Liweris was also known for his close ties with the Saudi government. He initiated several investments in the country.

The most significant diversification attempt of Saudi Aramco caused the biggest change in the board of Saudi Aramco. After the announcement of the IPO in 2016, Saudi Aramco increased the number of international members from three to five in 2018. The new figures appointed to the board are experienced executives on mostly petrochemicals. The increasing weight of members with petrochemicals background helped the company to increase its operations in petrochemicals. Evidently, Saudi Aramco bought the shares in Sabic, the biggest petrochemical company of Saudi Arabia, in 2019.

As in Saudi Aramco, changes in the board of Equinor has proceeded parallel to the changes in its operations and structure of the company. Although Equinor was privatized in 2001, the major change in the company took place with its merge with Norsk Hydro in 2007. The merge created a need to represent the shareholders on the board and also a need to have a more diverse board structure. Therefore, in 2007, two international members were elected to the board of Equinor. One of the members was elected as the shareholder representative.

Another major attempt of diversification made by Equinor was when the company entered into renewable energy in 2011 with investments in the U.K. to wind power tribunes. As the diversity in the operations of Equinor increased, the numbers of international members on the board increased in two subsequent election terms. While the number was two, it increased to three in 2010 and four in 2012.

However, in 2015, following the resignation of one of the international members, the number fell back to three. There is no empirical evidence on its relationship with the

board change, but 2015 became the first year that Equinor released loss. In 2018, the company changed its name from Statoil to Equinor, to better reflect the diversity in its operations. With this change, the number of international board members went back to four. Besides, Equinor elected its first international member with experience in renewables.

The analysis of the relationship between the diversity of the operations and the international board members indicated two things. As the government is the only owner of the company, Saudi Aramco does not hold any shareholder representatives. Besides, all the members are directly appointed to the board. Therefore, the identity of the international members plays a significant role in their appointment. As seen in the findings, Saudi Aramco has appointed international members who are directly related to the priorities of the company at the time. In other words, the international appointments made to Saudi Aramco's board reflect the policy direction of the company at the time.

In Equinor, the system does not work as in Saudi Aramco. The first international member of the company was elected after the privatization of the company. Therefore, most international board members were elected as shareholder representatives. Unlike Saudi Aramco, these members are not directly appointed. Instead, they are elected by several bodies of the company. As seen in the analysis, due to the structural difference between these two companies, in Equinor, what reflects the change in the diversity in the company is the change in the number of international members. However, in Saudi Aramco the specific characteristics of the members also matter.

Table 7. Comparison of Saudi Aramco and Equinor

	Saudi Aramco	Equinor
The Regime in the Country	Absolute Monarchy	Democracy
Geographic Features	Onshore Production	Offshore Production
Geopolitical Risks	High	Low
The time of first discovery of oil	The early times of the state	After establishment of institutions of the state
The Initial Culture of the firm	Created as a private company, nationalized later	Created as a state-owned enterprise, partially privatized
Amount of Reserves under the control of the Firm	332,897 mmboc	6,175 mmboc
Authority over the firm	State	Shareholders
Diversity in the Firm	Low to Med	Med to High
The Number of International Board Members	Increased	Increased

6. CONCLUSION

Deriving from the increasing needs of NOCs to be more integrated into the global oil market, this thesis aimed to test the hypothesis that there is a positive relation between the level of integration of NOCs into the global market and the presence of international members on their boards. The literature on the position of SOEs in the global market, the position of NOCs in the energy market, the role of corporate governance, specifically, the of board directors in the management of companies, created the basis for the research question of this thesis.

As mentioned earlier, the literature on NOCs provides enough evidence to argue that NOCs perform poorer than IOCs, and that NOCs are less integrated into the market than IOCs. Therefore, the increase in the diversity of a company to become more integrated into the global market is the independent variable of this thesis. The literature evidently indicates that a well-functioning corporate governance structure is directly related to a company's integration into the market. By corporate governance structure, what is meant is generally the board of directors of companies. The literature on the performance of companies demonstrates that the diversity of board composition in terms of nationality is one of the factors that increases the performance of the board. Therefore, the change in the international board members of NOCs is the dependent variable.

In order to observe the relationship between the change in the level of integration of NOCs into the global market and the change in the international board members of these NOCs, the Most Different System Design is used in this thesis. The two most different NOCs with international members on their board, Saudi Aramco and Equinor, constituted the cases in the thesis. When comparing the two, by checking the selected control variables, the effect of all other variables in Saudi Aramco and Equinor were eliminated as much as possible.

As a result of the analysis, in both cases, a direct relationship between the diversity in the operations and the international board members are observed. However, the extent to how the board of directors reflects this change varied. In Saudi Aramco, the change in the diversity of the operations mainly affects the past experiences of who will be appointed as an international member. Saudi Aramco generally appointed international members considering their previous companies, perspective, and their expertise in the area that the company was trying to develop itself in. However, this was not the only change observed in international members. The company also changed the number of its international members when it decided to diversify its ownership structure.

The board of Equinor reflects the relation between the diversity in the operations and international board members mostly through the number of international members. Starting from the diversification of the ownership structure, the number of international members has increased in most of the company's major diversification attempts. The only change in the board that broke this pattern was in 2015, when the number of international members fell from four to three, despite the increase in the diversity in the operations of the company. Therefore, although the analysis indicates a correlation between the independent and the dependent variables, there can be other variables that cause an unexpected decline in the number of international board members of Equinor.

BIBLIOGRAPHY

- Al-Mazeedi, W. 1992. "Privatizing the National Oil Companies in the Gulf." *Energy Policy* 20.
- Alchian, A.A., and H. Demsetz. 1973. "The Property Rights Paradigm." *The Journal of Economic History* 33: 16–27.
- Alessi, L. De. 1983. "Property Rights Transaction Costs and X-Efficiency: An Essay in Economic Theory." *American Economic Review*, no. 73: 64–81.
- Ankar, Carsten. 2008. "On the Applicability of the Most Similar Systems Design and the Most Different Systems Design in Comparative Research." *International Journal of Social Research Methodology* 11 (5): 389–401.
<https://doi.org/10.1080/13645570701401552>.
- Arab News. 2001. "Aramco Board Restructured." Arab News. 2001.
- . 2007a. "Jadwa Ties Up With Saudi Aramco." Arab News. 2007.
- . 2007b. "Saudi Aramco Board Gets 4 New Members." Arab News. 2007.
- . 2018. "New Board a Continuation of Aramco's History of Strong Governance." Arab News. 2018.
- Arab Weekly. 2019. "Saudi Aramco Looks to South Korea for Downstream Investment." Arab Weekly. 2019.
- Aramco Expats. 2007. "Fujian Ventures Officially Launched." Aramco Expats. 2007.
<https://www.aramcoexpats.com/articles/fujian-ventures-officially-launched/>.
- . 2015. "Hisham Mohieddin Nazer." Aramco Expats. 2015.
- . 2016. "King Salman Inaugurates SADARA and SATORP in Jubail." Aramco Expats. 2016.
- . 2018. "Another Chapter in Board of Directors History." Aramco Expats. 2018.
<https://www.aramcoexpats.com/articles/another-chapter-in-board-of-directors-history/>.
- Aslund, Anders. 1999. *How Russia Became a Market Economy*. Washington DC: Brookings Institute Press.
- Balch, Oliver. 2014. "Mark Moody-Stuart: 'Dine with the Devil' or Lose Your Influence." *The Guardian*. 2014.
- Barako, Dulacha G., and Alistair M. Brown. 2008. "Corporate Social Reporting and

- Board Representation: Evidence from the Kenyan Banking Sector.” *Journal of Management and Governance* 12 (4): 309–24. <https://doi.org/10.1007/s10997-008-9053-x>.
- Barnea, A., and A. Rubin. 2010. “Corporate Social Responsibility as a Conflict between Shareholders.” *Journal of Business Ethics*, no. 97: 71–86.
- Bartolini, S. 1993. “On Time and Comparative Research.” *Journal of Theoretical Politics*, no. 5: 131–167.
- Baysinger, B. D., and R. E. Hoskisson. 1990. “The Composition of Boards of Directors and Strategic Control: Effects on Corporate Strategy.” *Academy of Management Review*, no. 15: 72–87.
- Baysinger, Barry D, and Henry N Butler. 1985. “Corporate Governance and the Board of Directors: Performance Effects of Changes in Board Composition.” *The Journal of Law, Economics, and Organization* 1 (1): 101–24. <https://doi.org/10.1093/oxfordjournals.jleo.a036883>.
- Bayulgen, Oksan. 2010. *Foreign Investment and Political Regimes: The Oil Sector in Azerbaijan, Russia, and Norway*. New York: Cambridge University Press.
- BBC. 2011. “Sheringham Shoal Windfarm’s First Turbine Starts Up.” BBC. 2011.
- . 2017. “Qatar Crisis: What You Need to Know.” BBC. 2017.
- Bear, Stephen, Noushi Rahman, and Corinne Post. 2010. “The Impact of Board Diversity and Gender Composition on Corporate Social Responsibility and Firm Reputation.” *Journal of Business Ethics* 97 (2): 207–21. <https://doi.org/10.1007/s10551-010-0505-2>.
- Bebchuk, L., A. Cohen, and A. Ferrell. 2009. “What Matters in Corporate Governance?” *The Review of Financial Studies* 22 (2).
- Beesley, M. E., and S.C. Littlechild. 1983. *Privatization: Principles, Problems and Priorities*. London: Lloyds Bank Review.
- Bennett, Robert A. 1987. “THE MAN WHO WEARS THE STAR: James W. Kinnear; Winning Friends for Texaco When It Needs Them Most.” *The New York Times*. 1987.
- Benson, B. W., and W. N. Davidson. 2010. “The Relation between Stakeholder Management, Firm Value, and CEO Compensation: A Test of Enlightened Value Maximization.” *Financial Management* 39 (3): 929–963.
- Bentham, R.W., and W.G.R. Smith. 1987. “State Petroleum Corporations: Corporate Forms, Powers and Control.” Dundee.

- Benthan, R.W . 1988. "Legal Status of State Petroleum Companies." In *Petroleum Investment Policies in Developing Countries*, edited by N Beredjick and T Walde. London: Graham & Trotman.
- Berghe, Lutgart A.A. Van Den, and Abigail Levrau. 2004. "Evaluating Boards of Directors: What Constitutes a Good Corporate Board?" *Corporate Governance: An International Review* 12 (4): 461–78. <https://doi.org/10.1111/j.1467-8683.2004.00387.x>.
- Bloomberg. 2019a. "Aramco's Accounts Show \$2 Trillion Valuation Remains a Challenge." Bloomberg. 2019.
- . 2019b. "Company Overview of Equinor Energy Ventures." Bloomberg. 2019.
- . 2019c. "Saudi Aramco Is Said to Consider Shale Investment With Equinor." Bloomberg. 2019.
- . 2019d. "Saudi Pipeline Attack Highlights Risk to Middle East Oil Exports." Bloomberg. 2019.
- Boardman, A. E., and A. R. Vining. 1989. "Ownership and Performance in Competitive Environments: A Comparison of the Performance of Private, Mixed, and State-Owned Enterprises." *Journal of Law and Economics* 32 (1).
- Bojesson, Jacob, and Daily Coller. 2016. "Russia's Growing Threat to Norway and the North Atlantic." Atlantic Council. 2016.
- Bonn, I., T. Yoshikawa, and P. H. Phan. 2004. "Effects of Board Structure on Firm Performance: A Comparison between Japan and Australia." *Asian Business & Management*, no. 3: 105–125.
- Bös, Dieter. 1989. *Public Enterprise Economics: Theory and Application*. New York: Elsevier Science Publishing.
- Boubakri, N., O. Guedhami, C. C. Y. Kwok, and W. Saffar. 2016. "National Culture and Privatization: The Relationship between Collectivism and Residual State Ownership." *Journal of International Business Studies*, no. 47: 170–90.
- Bozec, Richard, Gaetan Breton, and Cote Louise. 2002. "THE PERFORMANCE OF STATE-OWNED ENTERPRISES REVISITED." *Financial Accountability & Management* 18 (04).
- Brickley, J., and C.M. James. 1987. "No Title." *The Takeover Market, Corporate Board Composition, and Ownership Structure: The Case of Banking*, no. 10: 161–80.
- Business Insider. 2017. "From an Unexplored Desert to a \$2 Trillion IPO: The 84-Year History of Saudi Aramco in Pictures." Business Insider. 2017.

- Business Today. 2019. "Saudi Aramco in Talks to Acquire 25% Stake in Reliance Industries' Refining, Petrochemical Business." Business Today. 2019.
- Carroll, William K., and J.P. Sapinski. 2016. "Neoliberalism and the Transnational Capitalist Class." In *The Handbook of Neoliberalism*, edited by Simon Springer, Kean Birch, and Julie MacLeavy. New York: Routledge.
- Carter, D. A., B. J. Simkins, and W. G. Simpson. 2003. "Corporate Governance, Board Diversity, and Firm Value." *Financial Review*, no. 38: 33–53.
- Cavaye, A.L.M. 1996. "Case Study Research: A Multi-Faceted Research Approach for IS," no. 6: 227–42.
- Chhaochharia, V., and Y. Grinstein. 2007. "Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules." *Journal of Finance*, no. 62.
- Claes, Dag Harald. 2019. "GLOBALIZATION AND STATE OIL COMPANIES: THE CASE OF STATOIL." *The Journal of Energy and Development* 29 (1): 43–64.
- CNBC. 2017. "Oil and Gas Giant Statoil Moves into Solar, Acquires Share in 162 Megawatt Brazilian Facility." CNBC. 2017.
- . 2018. "Saudi Crown Prince Says IPO for Oil Giant Aramco Will Happen by Early 2021." CNBC. 2018.
- CNN. 2019. "Norway Terror Attacks Fast Facts." CNN. 2019.
- Cnn Business. 2019. "Equinor ASA." Cnn Business. 2019.
- CNN Money. 2005. "Chevron's Dave O'reilly: Pumped Up." CNN Money. 2005.
- Core, J., W.R. Guay, and T.O. Rusticus. 2006. "Does Weak Governance Cause Weak Stock Returns? An Examination of Firm Operating Performance and Investors' Expectations." *Journal of Finance*, no. 61.
- Cornell, B., and A. C. Shapiro. 1987. "Corporate Stakeholders and Corporate Finance." *Financial Management* 16 (1): 5–14.
- Council on Foreign Relations. 2019. "War in Yemen." Global Conflict Tracker. 2019.
- Cowles, Virginia. 1973. *The Rothschilds: A Family of Fortune*. London: Weidenfeld and Nicolson.
- Daily, C. M., and D. R. Dalton. 1994. "Bankruptcy and Corporate Governance: The Impact of Board Composition and Structure." *Academy of Management Journal*, no. 37: 1603–1617.
- Diwan, Roger. 2007. "The Current Implications of the World Energy Situation for United States Energy Supplies." In *Energy Markets in the 21st Century: Competition Policy in Perspective*. Washington DC: Federal Trade Commission Conference.

- Dow. 2011. "2011 Databook."
- Dunn, P., and B. Sainty. 2009. "The Relationship among Board of Director Characteristics, Corporate Social Performance and Corporate Financial Performance." *International Journal of Managerial Finance*, no. 5: 407–23.
- DW. 2019. "Baltic Sea's Largest Wind Farm Officially Opened." DW. 2019.
- EIA. 2011. "Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays."
- Eisenberg, T., S. Sundgren, and M. T. Wells. 1998. "Larger Board Size and Decreasing Firm Value in Small Firms." *Journal of Financial Economics*, no. 48: 35–54.
- Eller, Stacy, Peter Hartley, and Kenneth B. Medlock III. 2007. "Empirical Evidence on the Operational Efficiency of National Oil Companies." *The Changing Role of National Oil Companies in International Energy Markets*. Houston, Texas: Rice University.
- Energy Voice. 2018. "Equinor Announces £1.4bn Refinancing on Dudgeon Windfarm." Energy Voice. 2018.
- Energypost.eu. 2016. "Jeroen van Der Veer, Ex-CEO Shell, Chairman ING: 'Moving Away from Fossil Fuels Presents Great Opportunities for Oil Companies.'" Energypost.Eu. 2016.
- Eni. 2018. "World Oil Review 2018: Vol 1." https://www.eni.com/docs/en_IT/enicom/company/fuel-cafe/WORLD-OIL-REVIEW-2018-Volume-1.pdf.
- Equinor. 2007. "Recommendation for Board of Directors and Corporate Assembly of StatoilHydro." Equinor. 2007.
- . 2018. "2018 Annual Report and Form 20-F." *Annual Report*.
- . 2019a. "Governing Bodies." Equinor ASA. 2019. <https://www.equinor.com/en/about-us/governing-bodies.html>.
- . 2019b. "Renewables and CCS." Equinor. 2019.
- . 2019c. "The Norwegian State as Shareholder." Equinor. 2019.
- . 2019d. "Where We Are." Equinor. 2019.
- Erhardt, Niclas L, James D Werbel, and Charles B Shrader. 2003. "Board of Director Diversity and Firm Financial Performance." *Corporate Governance: An International Review* 11 (2): 102–11.
- ExxonMobil. 2017. "SAMREF - ExxonMobil and Saudi Aramco Joint Venture." ExxonMobil. 2017.
- Fama, Eugene F. 1980. "Agency Problems and the Theory of the Firm." *Journal of*

- Political Economy*, no. 88.
- Fama, Eugene F., and M. Jensen. 1983. "Seperation of Ownership and Control." *Journal of Law and Economics*, no. 27.
- Financial Times. 2012. "Statoil Sells Petrol Stations for NKr8bn." Financial Times. 2012.
- . 2018a. "Oil Giant Saudi Aramco to Change Its Legal Status." Financial Times. 2018.
- . 2018b. "Record Numbers of Foreign Workers Leave Saudi Arabia." Financial Times. 2018. <https://www.ft.com/content/c710cf30-8441-11e8-a29d-73e3d454535d>.
- . 2018c. "Saudi Aramco Hires New Board Members as It Prepares for IPO." Financial Times. 2018.
- . 2019a. "Saudi Arabia Goes on the Hunt for Global Oil and Gas." Financial Times. 2019.
- . 2019b. "Saudi Aramco Battles Oil Ministry over Use of Company Funds." Financial Times. 2019.
- . 2019c. "Saudi Aramco in Four Charts." Financial Times. 2019. <https://www.ft.com/content/f6a93762-551c-11e9-91f9-b6515a54c5b1>.
- . 2019d. "Saudi Aramco Leaves Questions for Potential Investors." Financial Times. 2019.
- . 2019e. "Saudi Aramco Signs US LNG Deal in Bid to Diversify beyond Oil." Financial Times. 2019.
- Finkelstein, S., and D. Hambrick. 1996. *Strategic Leadership: Top Executives and Their Effects on Organizations*. MN: West: St Paul.
- Finley, Mark. 2011. "The Oil Market to 2030-Implications for Investment and Policy." *Economics of Energy & Environmental Policy* 1 (1): 25–36. <https://doi.org/10.5547/2160-5890.1.1.4>.
- Fisman, R., G. Heal, and V Nair. 2005. "A Model of Corporate Philanthropy." New York.
- Fitza, M., and L. Tihanyi. 2017. "How Much Does Ownership Form Matter?" *Strategic Management Journal*, no. 38: 2726–43.
- Forbes. 2008. "The 100 Most Powerful Women: #39 Lynn Laverty Elsenhans." Forbes. 2008.
- . 2018. "Saudi Arabia." Forbes Best Countries for Business: 2018 Ranking. 2018.
- . 2019a. "Aramco's Sabic Deal Should Be A Warning To Saudi Investors." Forbes. 2019.

- . 2019b. “Beyond The Huge Profit: What We Learn From Aramco’s Bond Prospectus.” *Forbes*. 2019.
- Forbes, D. P., and F. Milliken. 1999. “Cognition and Corporate Governance: Understanding Board of Directors as Strategic Decision-Making Groups.” *Academy of Management Review*, no. 3: 489–505.
- Freeman, R. E. (1984). 1984. *Strategic Management: A Stakeholder Approach*. Boston: Pitman.
- Friedman, Milton. 1970. “Money and Income: Comment on Tobin.” *Quarterly Journal of Economics*, no. 84: 318–27.
- Galal, A., L., P. Tandon Jones, and I. Vogelsang. 1994. *Welfare Consequences of Selling Public Enterprises: An Empirical Analysis*. Oxford: Oxford University Press.
- Gochenour, T. D. 1992. “The Coming Capacity Shortfall: The Constraints on OPEC’s Investment in Spare Capacity Expansion.” *Energy Policy* 20 (10).
- Goodstein, J., K. Gautam, and W. Boeker. 1994. “The Effects of Board Size and Diversity on Strategic Change.” *Strategic Management Journal*, no. 15: 241–50.
- Gordon, Richard, and Thonas Stenvoll. 2007. “Statoil: A Study in Political Entrepreneurship.”
https://www.bakerinstitute.org/media/files/page/9ffcb110/noc_statoil_gordon_stenvoll.pdf.
- Grayson, Leslie E. 1981. *National Oil Companies*. Chichester: John Wiley & Sons.
- Grosse, R., and J. Yanes. 1998. “Carrying Out a Successful Privatization: The YPF Case.” *Academy of Management Executive* 12 (2): 51–63.
- Hafsi, T., and G. Turgut. 2013. “Boardroom Diversity and Its Effect on Social Performance: Conceptualization and Empirical Evidence.” *Journal of Business Ethics* 463–479 (112).
- Hall, Peter H. 1989. “Introduction.” In *The Political Power of Economic Ideas: Keynesianism across Nations*, edited by Peter H. Hall. Princeton: Princeton University Press.
- Harjoto, Maretno, Indrarini Laksmana, and Robert Lee. 2015. “Board Diversity and Corporate Social Responsibility.” *Journal of Business Ethics* 132 (4): 641–60.
<https://doi.org/10.1007/s10551-014-2343-0>.
- Harsson, Bjørn Geirr, and George Preiss. 2012. “Norwegian Baselines, Maritime Boundaries and the UN Convention on the Law of the Sea.” *Arctic Review on Law and Politics* 3 (1): 108–29.

- Hermalin, B. E., and M. S. Weisbach. 2000. "Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature." 8161.
- Hermalin, Benjamin E, and Michael S. Weisbach. 1988. "The Determinants of Board Composition Author (s): Benjamin E . Hermalin and Michael S . Weisbach Source : The RAND Journal of Economics , Vol . 19 , No . 4 (Winter , 1988), Pp . 589-606 Published by : Wiley on Behalf of RAND Corporation Stable URL : H." *RAND Journal of Economics* 19 (4): 589–606.
- Heungjo, An, E. Wilbert, A Wilhelm, and Stephen W. Searcy. 2011. "Biofuel and Petroleum-Based Fuel Supply Chain Research: A Literature Review." *Biomass and Bioenergy*, no. 35.
- Hillman, Amy J., Albert A. Cannella, and Ramona L. Paetzold. 2003. "The Resource Dependence Role of Corporate Directors: Strategic Adaptation of Board Composition in Response to Environmental Change." *Journal of Management Studies*. <https://doi.org/10.1111/1467-6486.00179>.
- Horn, M.J. 1995. *Th Political EconoMy of Public Administration: Institutional Choice in the Public Sector*. Cambridge: Cambridge University Press.
- Howell, Jonathan. 2007. "Privatization of PEMEX." *Law and Business Review of the Americas* Spring: 461–70.
- IEA. 2011. "World Energy Outlook 2012." https://www.iea.org/publications/freepublications/publication/WEO2011_WEB.pdf.
- . 2015. "World Energy Outlook 2015."
- . 2018. "Oil 2018: Analysis and Forecasts to 2023."
- Independent. 2018a. "If Saudi Arabia's Economy Is to Survive the Drop in Oil Price, It Must Work on Diversifying Its Industry." Independent. 2018.
- . 2018b. "Lady Barbara Judge: The Rise and Fall of the Pioneering First Female IoD Chair." Independent. 2018.
- International Energy Agency. 2018. "Key World Energy Statistics." <https://doi.org/10.1002/art.1780270204>.
- Jaffe, Amy Myers, and Jareer Ellass. 2007. "Saudi Aramco: National Flagship with Global Responsibilities." https://www.bakerinstitute.org/media/files/page/9f100176/noc_saudiaramco_jaffe_ellclass_revised.pdf.
- Jaffe, Any Myers, and Wallace S. Wilson. 2007. "The International Oil Companies."

- James a. Baker Iii Institute for Public Policy of Rice University, 1–49.
http://www.bakerinstitute.org/programs/energy-forum/publications/energy-studies/docs/NOCs/Papers/NOC_IOCs_Jaffe-Soligo.pdf.
- Jaidah, A. 1980. “Problems and Prospects of State Petroleum Enterprises in OPEC Countries.” In *State Petroleum Enterprises in Developing Countries*. United Nations Centre for Natural Resources, Energy and Transport, New York: Pergamon Press.
- Jensen, M. 1993. “The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems.” *Journal of Finance*, no. 48: 831–80.
- Jensen, M., and W. Meckling. 1976. “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure.” *Journal of Financial Economics* 3: 305–60.
- Jo, Hoje, and Maretno A. Harjoto. 2012. “The Causal Effect of Corporate Governance on Corporate Social Responsibility.” *Journal of Business Ethics*, no. 106: 53–72.
<https://doi.org/10.1111/ajfs.12121>.
- John, K., and L. Senbet. 1999. “Corporate Governance and Board Effectiveness.” *Journal of Banking and Finance*, no. 22.
- Johnson, R. A., R. E. Hoskisson, and M. A. Hitt. 1993. “Board of Director Involvement in Restructuring: The Effects of Board Versus Managerial Controls and Characteristics.” *Strategic Management Journal*, no. 14: 33–50.
- Judge, W., and C. Zeithaml. 1990. “An Empirical Examination of the Board’s Involvement in the Strategic Decision Process.” In *Academy of Management Meeting*.
- Kemp, A.G. 1992. “Petroleum Policy Issues in Developing Countries.” *Energy Policy* 20 (2).
- Kwiatkowski, Grzegorz, and Paweł Augustynowicz. 2015. “State-Owned Enterprises in the Global Economy – Analysis Based on Fortune Global 500 List.” In *Managing Intellectual Capital and Innovation for Sustainable and Inclusive Society*. Bari.
- Landman, T. 2003. *Issues and Methods in Comparative Politics: An Introduction*. 2nd ed. London & New York: Routledge.
- Lanxess. 2016. “LANXESS and Saudi Aramco Rubber Joint Venture to Be Launched on April 1, 2016, under the Name ARLANXEO.” Lanxess. 2016.
- Linde, Coby van der. 2000. *The State and the International Oil Market: Competition and the Changing Ownership of Crude Oil Assets*. Boston: Kluwer Academic.
- Lipton, M., and J. Lorsch. 1992. “A Modest Proposal for Improved Corporate Governance.” *Business Lawyer*, no. 59: 59–77.

- LNG World News. 2016. "Statoil Appoints Ex-Shell CEO van Der Veer to Its Board."
- LNG World News. 2016.
- Mabro, Robert. 1987. *Netback Pricing and the Oil Price Collapse of 1986*. Energy.
- Macrotrends. 2019. "Crude Oil Prices - 70 Year Historical Chart." Macrotrends. 2019.
- Madelin, H. 1974. *Oil and Politics*. London: Saxon House/Lexington Books.
- Marcel, Valerie. 2006. *OIL TITANS: National Oil Companies in the Middle East*. London: Chatnam House.
- Market Watch. 2015. "Statoil ASA: Catherine Hughes Leaves the Board of Directors."
- Market Watch. 2015.
- Martin, S., and D. Parker. 1997. *The Impact of Privatization: Ownership and Corporate Performance in the UK*. London: Routledge.
- Maugeri, Leonardo. 2006. *The Age of Oil: The Mythology, History, and Future of the World's Most Controversial Resource*. London: Praeger Publishers.
- McPherson, Charles. 2003. "National Oil Companies: Evolution, Issues, Outlook." In *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*, edited by Jeffrey M. Davis, Rolando Ossowski, and Annalisa Fedelino, 184–203. Washington DC: IMF.
- MEED. 2017. "Ali Al-Naimi." MEED. 2017.
- Miller, T., and M. Del Carmen Triana. 2009. "Demographic Diversity in the Boardroom: Mediators of the Board Diversity–Firm Performance Relationship." *Journal of Management Studies*, no. 46: 755–86.
- Mintzberg, H. 1979. "An Emerging Strategy of 'direct' Research." *Administrative Science Quarterly*, no. 24: 582--589.
- . 1983. "Power In and Around Organizations." Englewood Cliffs, N.J.
- Mommer, B. 2002. *Global Oil and the Nation*. Oxford, UK/New York: Oxford University Press.
- Motor Oil. 2011. "History." Motor Oil. 2011.
- Muttakin, Mohammad Badrul, Arifur Khan, and Nava Subramaniam. 2015. "Firm Characteristics, Board Diversity and Corporate Social Responsibility: Evidence from Bangladesh." *Pacific Accounting Review* 27 (3): 353–72. <https://doi.org/https://doi.org/10.1108/MIP-05-2017-0088>.
- Nickell, S.J. 1996. "Competition and Corporate Performance." *Journal of Political Economy* 104 (4).
- Niskanen, W.A. 1971. *Bureaucracy and Representative Government*. Chicago:

- University of Chicago Press.
- Nore, P. 1980. "The Transfer of Technology: The Norwegian Case." In *New Policy Imperatives for Energy Producers. International Centre for Energy and Economic Development*, edited by R El Mallakh and D.H. El Mallakh. International Centre for Energy and Economic Development, Boulder Co.
- Noreng, O. 1997. *Oil and Islam: Social and Economic Issues*. Chichester: John Wiley and Sons.
- Norwegian Petroleum. 2018. "Employment in the Petroleum Industry." Norwegian Petroleum. 2018.
- . 2019a. "Diversity and Competition." Norwegian Petroleum. 2019.
- . 2019b. "Fundamental Regulatory Principles." Norwegian Petroleum. 2019.
- . 2019c. "Norway's Petroleum History." Norwegian Petroleum. 2019.
- . 2019d. "The Government's Revenues." Norwegian Petroleum. 2019.
- NS Energy. 2018. "Saudi Aramco, NOV to Set up on-Shore Rig Manufacturing Facility in Ras Al-Khair, Saudi Arabia." NS Energy. 2018.
- OECD. 1999. "OECD Principles of Corporate Governance, Organization for Economic Cooperation and Development."
- . 2017. "The Size and Sectoral Distribution of State-Owned Enterprises." Paris.
- Offshore Energy Today. 2016. "Statoil Board Member Resigns to Take Maersk CFO Role." Offshore Energy Today. 2016.
- Oil & Gas Journal. 1991. "BP- Statoil Partnership Takes Shape." Oil&Gas Journal. 1991.
- . 2007. "COMPANY NEWS: Statoil, Norsk Hydro to Merge in \$30 Billion Deal." Oil & Gas Journal. 2007.
- Oil Price. 2017. "Saudi Aramco Boosts Crude Oil Stockpiles In Japan." Oil Price. 2017. <https://oilprice.com/Latest-Energy-News/World-News/Saudi-Aramco-Boosts-Crude-Oil-Stockpiles-In-Japan.html>.
- Olorunfemi, M.A. 1991. "The Dynamics of National Oil Companies." *OPEC Review* 15 (4).
- OPEC. 2016. "Agreement." OPEC Public Release. 2016. https://www.opec.org/opec_web/static_files_project/media/downloads/press_room/OPEC_agreement.pdf.
- . 2018. "OPEC Share of World Crude Oil Reserves, 2017." OPEC Oil Reserves. 2018.
- . 2019. "Brief History." OPEC. 2019.

- Oxelheim, Lars, and Trond Randøy. 2003. "The Impact of Foreign Board Membership on Firm Value." *Journal of Banking and Finance* 27 (12): 2369–92. [https://doi.org/10.1016/S0378-4266\(02\)00395-3](https://doi.org/10.1016/S0378-4266(02)00395-3).
- Parra, Francisco. 2004. *OIL POLITICS: A Modern History of Petroleum*. New York: I.B.TAURUS.
- Pearce, John A., and Shaker A. Zahra. 1992. "Board Composition From a Strategic Contingency Perspective." *Journal of Management Studies* 29 (4): 411–38. <https://doi.org/10.1111/j.1467-6486.1992.tb00672.x>.
- Petronas. 2018. "PETRONAS, Saudi Aramco Launch Corporate Identity Of Their Refinery And Petrochemical Joint Ventures In Pengerang, Malaysia." Petronas. 2018.
- Pfeffer, J. 1972. "Size and Composition of Corporate Boards of Directors: The Organization and Its Environment." *Administrative Science Quarterly*, no. 27: 218–29.
- Pirog, Robert. 2007. "The Role of National Oil Companies in the International Oil Market," 1–17.
- Plehwe, Dieter. 2016. "Neoliberal Hegemony." In *The Handbook of Neoliberalism*, edited by Simon Springer, Kean Birch, and Julie MacLeavy. New York: Routledge.
- Poland at Sea. 2018. "Polenergia and Equinor Plan Development of the Third Wind Power Plant Project on the Baltic Sea." Poland at Sea. 2018.
- Pollitt, M.G. 1995. *Ownership and Performance in Electric Utilities; the International Evidence on Privatization and Efficiency*. Oxford: Oxford University Press.
- Pratuckchai, Wit, and Watana Patanapongse. 2012. "The Study Of Management Control Systems In State Owned Enterprises: A Proposed Conceptual Framework." *International Journal of Organizational Inovation*, no. 5.
- Provan, J. 1980. "Board Power and Organizational Effectiveness among Human Service Agencies." *Academy of Management Journal*, no. 43: 221–36.
- Przeworski, Adam, and Henry Teune. 1970. *The Logic of Comparative Social Inquiry*. New York: John Wiley.
- Ramady, Mohamed A. 2017. *Saudi Aramco 2030. Saudi Aramco 2030: Post IPO Challenges*. London: Springer. <https://doi.org/10.1007/978-3-319-67750-7>.
- Randoy, T., S. Thomsen, and L. Oxelheim. 2006. "A Nordic Perspective on Corporate Board Diversity." Norway.
- Reuters. 2010. "UPDATE 1-Statoil Fuel up in Norway's Biggest IPO since 2006."

- Reuters. 2010.
- . 2015. “UPDATE 1-Statoil Loses Another Board Member as Chairman Quits.” Reuters. 2015.
- . 2016. “Dow Chemical First Foreign Company to Get Saudi Arabia Trading License.” Reuters. 2016.
- . 2017. “Saudi Arabia Sweetens Huge Aramco IPO with Tax Cut.” Reuters. 2017.
- . 2019a. “Aramco to Buy Shell’s Stake in Saudi Refining JV for \$631 Million.” Reuters. 2019. <https://www.reuters.com/article/us-saudi-aramco-shell/aramco-to-buy-shells-stake-in-saudi-refining-jv-for-631-million-idUSKCN1RX06U>.
- . 2019b. “Hyundai Heavy Says Aramco Buys 17 Percent Stake in South Korean Refiner Unit for \$1.2 Billion.” Reuters. 2019.
- . 2019c. “Norway’s \$1tn Wealth Fund to Divest from Oil and Gas Exploration.” Reuters. 2019.
- . 2019d. “Norway Awards Equinor License to Build CO2 Storage under Seabed.” Reuters. 2019.
- Robinson, C. 1993. *Energy Policy: Errors, Illusions and Market Realities. Occasional Paper 90*. London: The Institute of Economic Affairs.
- Rosenstein, S., and J. G. Wyatt. 1990. “Outside Directors, Board Independence, and Shareholder Wealth.” *Journal of Financial Economics*, no. 26: 175–191.
- Ryggvik, Helge. 2015. “A Short History of the Norwegian Oil Industry: From Protected National Champions to Internationally Competitive Multinationals.” *Business History Review* 89 (1): 3–41. <https://doi.org/10.1017/S0007680515000045>.
- S-Oil. 2019. “History.” S-Oil. 2019.
- Sabic. 2018. “Annual Report.” Sabic. 2018. https://www.sabic.com/assets/en/Images/SABIC-AR-English-2018_tcm1010-18629.pdf.
- Sadara. 2011. “Saudi Aramco, Dow Sign Sadara JV Shareholders’ Agreement.” Sadara. 2011.
- Sampson, A. 1975. *The Seven Sisters*. Sevenoaks: Coronet Books.
- Sarbu, Bianca. 2014. *Ownership and Control of Oil*. New York: Routledge.
- Sartori, G. 1991. “Comparing and Miscomparing.” *Journal of Theoretical Politics*, no. 3: 243–257.
- Saudi Arabia MOFA. 2017. “About Saudi Arabia.” Eye on the Kingdom. 2017.
- Saudi Aramco. 2017. “Saudi Aramco Annual Review 2017.” Annual Review. 2017.

- <https://www.saudiaramco.com/-/media/images/annual-review-2017/pdfs/en/2017-annualreview-full-en.pdf>.
- . 2018a. “Our History.” Overview. 2018.
- . 2018b. “Saudi Aramco Completes Acquisition of Remaining 50 Percent Stake in ARLANXEO Joint Venture from LANXESS, Becoming Full Owner.” Saudi Aramco. 2018.
- . 2019. “SAUDI ARABIAN OIL COMPANY: Global Medium Term Note Programme.” Base Prospectus. 2019. https://www.rns-pdf.londonstockexchange.com/rns/6727U_1-2019-4-1.pdf.
- Saudi Gazette. 2017. “Saudi Aramco, Shell Finalize Agreement to Divide Motiva Assets.” Saudi Gazette. 2017.
- . 2019. “Jobless Rate Drops to 12.7%.” Saudi Gazette. 2019.
- Shammas, Pierre. 2000. “Saudi Arabia: Petroleum Industry Review” 18 (1): 1–86.
- Shleifer, A., and R. Vishny. 1997. “A Survey of Corporate Governance.” *Journal of Finance*, no. 52.
- Shrader, C., V. Blackburn, and P. Iles. 1997. “Women in Management and Firm Financial Performance: An Exploratory Study.” *Journal of Managerial Issues*, no. 9: 355–72.
- Skocpol, T. 1984. “Emerging Agendas and Recurrent Strategies in Historical Sociology.” In *Visions and Methods in Historical Sociology*, edited by T. Skocpol, 356–91. Cambridge: Cambridge University Press.
- Statoil. 2009. “Annual Report on Form 20-F 2009.”
- . 2012. “Annual Report on Form 20-F 2012.”
- . 2013. “Annual Report on Form 20-F 2013.”
- StatoilHydro. 2007. “Annual Report on Form 20-F 2007.”
- Stevens, P. 2008. “National Oil Companies and International Oil Companies in the Middle East: Under the Shadow of Government and the Resource Nationalism Cycle.” *The Journal of World Energy Law & Business* 1 (1): 5–30. <https://doi.org/10.1093/jwelb/jwn004>.
- Stevens, Paul. 2003. “National Oil Companies: Good or Bad?,” no. December 2002: 17. <https://pdfs.semanticscholar.org/49e9/e0b16dd0bb57fbb6c996ec0f5c5cfb2babbd.pdf>.
- The Economist. 2016. “Saudi Arabia Is Considering an IPO of Aramco, Probably the World’s Most Valuable Company.” The Economist. 2016. <https://www.economist.com/middle-east-and-africa/2016/01/07/saudi-arabia-is->

- considering-an-ipo-of-aramco-probably-the-worlds-most-valuable-company.
- The Guardian. 2016. "Saudi Arabia's Attempt to Reduce Reliance on Oil Has the World Rapt." The Guardian. 2016.
- . 2017. "World's First Floating Windfarm to Take Shape off Coast of Scotland." The Guardian. 2017.
- . 2018a. "Barbara Judge Profile: 'The Best-Connected Woman in Britain.'" The Guardian. 2018.
- . 2018b. "No Saudi Aramco Appoints First Woman to Board." The Guardian. 2018.
- . 2019. "Saudi Oil Company Named World's Most Profitable Business." The Guardian. 2019.
- The New York Times. 1989. "Saudi-Texaco Joint Venture." The New York Times. 1989.
- . 2005. "Rodney B. Wagner, 74, Dies; Arranged Loan for Mexico." The New York Times. 2005.
- . 2019. "Claim of Attacks on 4 Oil Vessels Raises Tensions in Middle East." The New York Times. 2019. <https://www.nytimes.com/2019/05/13/world/middleeast/saudi-arabia-oil-tanker-sabotage.html>.
- The Wall Street Journal. 2001. "Statoil Shares Close at Issue Price After Their IPOs in Norway, U.S." The Wall Street Journal. 2001.
- . 2011. "Schlumberger CEO Gould to Retire." The Wall Street Journal. 2011.
- . 2016. "Former Exxon CEO Clifton Garvin Dies." The Wall Street Journal. 2016.
- Toninelli, Pier Angelo. 2000. "The Rise and Fall of Public Enterprise: The Framework." In *In The Rise and Fall of State-Owned Enterprise in the Western World*, edited by Pier Angelo Toninelli, 3–24. New York: Cambridge University Press.
- Tordo, Silvana, Brandon S. Tracy, and Noora Arfaa. 2011. *National Oil Companies and Value Creation*. <https://doi.org/10.1596/978-0-8213-8831-0>.
- TOTAL. 2019. "Total in Saudi Arabia." TOTAL. 2019. <https://sa.total.com/en/total-saudi-arabia>.
- Tullock, G. 1976. *Private Wants, Public Means*. New York: Basic Books.
- Turnbull, Shann. 1997. "Corporate Governance: Its Scope, Concerns and Theories." *Corporate Governance* 5 (4).
- UPI. 1993. "Government Sells Share of Petron to Saudi Aramco." UPI. 1993.
- Victor, David G. 2013. "National Oil Companies and the Future of the Oil Industry." *Ssrn*

- 5 (Mayv): 445–62. <https://doi.org/10.1146/annurev-resource-091912-151856>.
- Victor, David G., David R. Hults, and Mark C. Thurber. 2012. *Oil and Governance: State Owned Enterprises and the World Energy Supply*. Edited by David G. Victor, David R. Hults, and Mark C. Thurber. New York: Cambridge University Press.
- Victor, DG, AM Jaffe, and MH Hayes. 2006. *Natural Gas and Geopolitics : From 1970 to 2040*. Cambridge, UK/ New York: Cambridge University Press.
- Victor, N.M. 2007. “On Measuring the Performance of National Oil Companies.” 64. Program on Energy and Sustainable Development.
- Waelde, T.W. 1995. “The Current Status of International Petroleum Investment: Regulating, Licensing, Taxing and Contracting.” *CEPMLP Internet Journal* 1 (5).
- Wallace, R. S. O., and K. Naser. 1995. “Firm-Specific Determinants of Comprehensiveness of Mandatory Disclosure in the Corporate Annual Reports of Firms on the Stock Exchange of Hong Kong.” *Journal of Accounting and Public Policy* 14 (4): 311–68.
- Webb, E. 2004. “An Examination of Socially Responsible Firms’ Board Structure.” *Journal of Management and Governance*, no. 8: 255–277.
- Wind Power Monthly. 2011. “Hywind and Sway - Norway’s Two Floating Turbine Designs.” Wind Power Monthly. 2011.
- . 2019. “Are Norway’s Fuel Giants Serious about Committing to Renewable Energy?” Wind Power Monthly. 2019.
- World Bank. 2014. “Corporate Governance of State-Owned Enterprises: A Toolkit.” Washington, DC.
- World Oil. 2010. “Saudi Aramco Makes Twelve New Appointments to Board of Directors.” World Oil. 2010.
- Wynbrandt, Jame. 2004. *Birth of a Kingdom. A Brief History of Saudi Arabia*. New York: Facts on File.
- Yergin, Daniel. 1991. *The Prize : The Epic Quest for Oil , Money & Power*. New York: Simon&Schuster.
- Yermack, D. 1996. “Higher Market Valuation for Firms with a Small Board of Directors.” *Journal of Financial Economics*, no. 40.
- Yin, R.K. 1989. *Case Study Research - Design and Methods*. Newbury Park: Sage Publications.
- Zahra, S. A., and J. A. Pearce. 1989. “Boards of Directors and Corporate Financial Performance: A Review and Integrative Model.” *Journal of Management* 15 (2).

- Zald, M. N. 1969. "The Power and Functions of Boards of Directors: A Theoretical Synthesis." *American Journal of Sociology*, no. 75: 97–111.
- Zou, H., and M. B. Adams. 2008. "Corporate Ownership, Equity Risk and Returns in the People's Republic of China." *Journal of International Business Studies* 39 (7): 1149–68.

