PONTIFICAL CATHOLIC UNIVERSITY OF ECUADOR
COMMUNICATION, LINGUISTICS AND LITERATURE FACULTY
MULTILINGUAL SCHOOL OF INTERNATIONAL BUSINESS AND INTERNATIONAL RELATIONS

SENIOR DISSERTATION BEFORE COMPLETION OF THE DEGREE OF
MULTILINGUAL BACHELOR ON BUSINESS AND INTERNATIONAL RELATIONS

A COMPARATIVE ANALYSIS OF THE DIVERGENT TRAJECTORIES IN THE OIL SECTOR BETWEEN ECUADOR AND NORWAY FROM 1970 TO 2012

MABEL CRISTINA BUSTAMANTE DÍAZ

JULY, 2017
QUITO-ECUADOR

TABLE OF CONTENTS

TABLE OF CHARTS

TABLE OF GRAPHICS

TABLE OF ILLUSTRATIONS

DEDICATION

For the little girl filled with empathy, curiosity and hunger for the world and this life, I hope I continue to stay true to you and make you proud.

DEDICACION

Para la pequeña niña llena de empatía, curiosidad y hambre por el mundo y esta vida, espero continuar siéndote fiel y no decepcionarte.

ACKNOWLEDGEMENTS

To my dad, who is, was and always will be the great love of my life, thank you for giving me all your youth, hard work and love selflessly so that I could achieve great things in my life. I owe the person I am today to you, your laughter, your teachings and your spirit. Thank you daddy!

To my close family, who have been there for me in rough times, have seen me grow throughout my college years and have been fountain of inspiration for inner peace, love, affection, honesty and integrity. Abuelito Antonio, Tia Nenita, Tia Mari, thank you in so many ways.

To my close friends, both those who I have the privilege to stand with today and those no longer here, whom I make responsible for countless hours of laughter and conversation, and with whom I have felt true fraternal love, may all our foolish young dreams come true!

To all the teachers during my career that have taught me to question what has been established and most importantly to question myself, I thank you for broadening my mind, soul and spirit: Pablo Medina, Jorge Mora, Lourdes Aguas, Paola Lozada, Juan Carlos Valarezo and Sergio Arias, may all of you continue to transcend through your teachings, for generations to come.

To you all and to everyone else that I could not mention due to the extension limit, THANK YOU!

AGREDECIMIENTOS

A mi papá, quien es, fue y siempre será el gran amor de mi vida, gracias por darme toda tu juventud, trabajo duro y amor desinteresadamente para yo pueda lograr grandes cosas en mi propia vida. La persona que soy hoy te la debo a ti, a tu risa, tus enseñanzas y a tu espíritu. Gracias papi!

A mi familia cercana, que han estado allí para mí en tiempos difíciles, me han visto crecer a lo largo de mis años universitarios y han sido fuente de inspiración de paz interior, amor, afecto, honestidad e integridad. Abuelito Antonio, Tia Nenita, Tia Mari, gracias de muchas maneras!

A mis amigos íntimos, a los que tengo hoy el privilegio de estar al lado y a los que ya no están, a quienes hago responsable de innumerables horas de risa y conversación y con los que he sentido verdadero amor fraterno, que todos nuestros locos sueños de jóvenes se hagan realidad!

A todos los maestros de mi carrera que me han enseñado a cuestionar lo que ha sido establecido y sobre todo a cuestionarme, les doy las gracias por ampliar mi mente, alma y espíritu: Pablo Medina, Jorge Mora, Lourdes Águas, Paola Lozada, Juan Carlos Valarezo y Sergio Arias que todos ustedes sigan trascendiendo a través de sus enseñanzas, a generaciones por venir!

A todos ustedes y todos los que no he podido mencionar por limite de extensión, GRACIAS!

I. TOPIC

A COMPARATIVE ANALYSIS OF THE DIVERGENT TRAJECTORIES IN THE OIL SECTOR BETWEEN ECUADOR AND NORWAY FROM 1970 TO 2012

II. ABSTRACT

A comparative analysis of the divergent trajectories within the oil sector in Ecuador and Norway in the time period understood from 1970 to 2012, through a description of the development of the oil sector with its various actors, and making special emphasis on the initial stages of the sector in each country, will seek to explain the development of the dynamics between the institutions responsible for the operation, management and control of the sector. It will also seek to understand the underlying reasons for the decisions taken in terms of public policy and state intervention for the sector which will ultimately put forward the alignments needed to delimit the divergent trajectories and denote the different results obtained from the exploitation of the resource in economic, political, and environmental terms. The importance of the oil sector not only at international levels, but also for the internal economy of each country, therefore the quality of life of its citizens will be analyzed through the theoretical foundations of complex interdependency and sustainable development, in order to conclude inductively with the results. These same results that were influenced by underlying dependency relations amongst the various actors and on growing pressures for environmental conservations and protection due to the limited carrying capacity nature of the sector itself, will conclude in the different scenarios oil dependency scenarios displayed by each country.

Key Words: Oil sector, Ecuador, Norway, Actor dynamics, Public policy, Economy, Environment, Oil dependency

III. RESUMEN

El análisis comparativo de las trayectorias divergentes en el sector petrolero en Ecuador y Noruega en el período comprendido entre 1970 y 2012, a través de una descripción del desarrollo del sector petrolero con sus diversos actores y haciendo especial hincapié en las etapas iniciales del sector en cada país, tratará de explicar el desarrollo de las dinámicas entre las instituciones responsables de la operación, gestión y control del sector. También buscará comprender las razones subyacentes de las decisiones tomadas en términos de política pública y de intervención estatal para el sector, que en última instancia presentarán las alineaciones necesarias para delimitar las trayectorias divergentes y denotar los diferentes resultados obtenidos de la explotación del recurso en términos económicos, políticos y ambientales. La importancia del sector petrolero no sólo a nivel internacional, sino también para la economía interna de cada país y por lo tanto la calidad de vida de sus ciudadanos será analizada a través de los fundamentos teóricos de la interdependencia compleja y el desarrollo sostenible para concluir inductivamente con los resultados; mismos resultados que fueron influenciados por las relaciones subyacentes de dependencia entre los diversos actores y por las crecientes presiones para la conservación y protección del medio ambiente debido a la naturaleza limitada de capacidad de carga del propio sector concluirá en los diferentes escenarios de dependencia petrolera presentados por cada país.

Palabras claves: Sector petrolero, Ecuador, Noruega, Dinámica de actores, Política pública, Economía, Medio ambiente, Dependencia petrolera

IV. ZUSAMMENFASSUNG

Eine vergleichende Analyse der abweichenden Trajektorien innerhalb des Ölsektors in Ecuador und Norwegen in der Zeit von 1970 bis 2012, durch eine Beschreibung der Entwicklung des Ölsektors mit seinen verschiedenen Akteuren und besonderes Augenmerk auf die Anfangsphasen der Sektor in jedem Land, wird versuchen, die Entwicklung der Dynamik zwischen den Institutionen zu erklären, die für die Operation, das Management und die Kontrolle des Sektors verantwortlich sind. Es wird auch versuchen, die zugrunde liegenden Gründe für die Entscheidungen in Bezug auf die öffentliche Ordnung und die staatliche Intervention für den Sektor zu verstehen, die letztlich die für die Abgrenzung der abweichenden Trajektorien erforderlichen Ausrichtungen vornehmen und die unterschiedlichen Ergebnisse aus der Ausbeutung der Ressource bezeichnen Wirtschaftliche, politische und ökologische Begriffe. Die Bedeutung des Ölsektors nicht nur auf internationaler Ebene, sondern auch für die Binnenwirtschaft jedes Landes und damit die Lebensqualität seiner Bürger wird durch die theoretischen Grundlagen komplexer Interdependenz und nachhaltiger Entwicklung analysiert, um mit den Ergebnissen induktiv abzuschließen . Gleiche Ergebnisse, die durch die zugrunde liegenden Abhängigkeitsbeziehungen zwischen den verschiedenen Akteuren und den wachsenden Druck für Umweltschutz und Schutz durch die begrenzte Tragfähigkeit des Sektors selbst beeinflusst wurden, werden in den verschiedenen Szenarien der Ölabhängigkeitsszenarien, die von jedem Land angezeigt werden, abschließen.

Schlüsselwörter: Ölsektor, Ecuador, Norwegen, Schauspieler Dynamik, Politik, Wirtschaft, Umwelt, Ölabhängigkei

V. INTRODUCTION

The discovery of mass amounts of crude within the national boundaries of Ecuador and Norway at the beginning of the seventies, allowed both countries to immerse themselves within an industry that would both fuel and constrain the economic, political and environmental spheres. Two inexperienced countries, at the mercy of the multinationals, in their initial phases, with political and economic pressures to take full advantage of the sector's benefits, have provided over the course of the four decades to analyze a comparative narrative that intertwines both the creation, formulation, and adaptation of public policies with the dynamics displayed amongst the various actors involved, both state and non-state that all lead to understanding the divergent paths of each country within the oil sector, as well as the complex results in both countries, which appear to be two sides of coin in economic terms, but rather similar in environmental terms.

The working hypothesis for this investigation seeks to prove whether or not state intervention which formulated the public policies for the oil sector affected the role of the private companies and the dynamics between the different actors involved in the sector for Ecuador and Norway, which has laid out divergent trajectories in terms of management of the resources obtained and the results of these for each country. In order to do so, it is necessary to go back four decades, analyzing historically the evolution and development of the oil sector in each country, so that the main causes and characteristics of the public policies established for the oil sector can be explained and understood both in their creation and modification, so that further analysis of resource management and their results can be compared.

In this regard, the first chapter will contemplate a historical overview of the oil sector in Ecuador from 1970 to 2012. The initial decade from 1970 to 1980 allows the study to capture the major adversities and pressures faced during the formulation of public policies for the sector, and the underlying economic incentives for the different structural approaches the Ecuadorian state established during that time. With the price of the barrel rising due to external international factors, also came the rise of the "Ecuadorian Dutch Disease" which proved that the eighties was a decade

of adaptation and reformulation as well as the creation of new state entities in the pursuit of further increasing and also gaining better control over the benefits obtained from the oil sector. Through the newly established state company PETROECUADOR, Ecuador entered the last two decades to be analyzed with its ongoing lack of horizon coupled with internal political instability, and an economic crisis which had been cooking ever since the massive inflow of cash from the oil sector in its initial decades and had finally reached its boiling point through the dollarization of the national currency. The persistent changes within the regulations established for the oil sector, all throughout the four decades gave way to an utter neglect and disregard of the environmental impacts that the industry was having in the Amazon region of the country. The first chapter will review the internal and external factors that put forward nationalization public policies for the sector and set the path for the complex interdependent relationships between the state institutions and the foreign companies involved in the oil sector.

The second chapter will also constitute a historical analysis of the development of the oil sector in Norway, a country also lacking in expertise, infrastructure, and know-how in its initial phases. The first decade of the oil sector in Norway was characterized by putting forward the principles for the alignment of strategies and alliances between the state institution Statoil and the various tenders to which licenses were awarded. As in the case of Ecuador, the first decade of the oil sector in Norway, set the path for the construction of large projects in which case, in comparison to Ecuador, Norway had almost full operatorship over, thanks to the agreements reached between state institutions and private corporations in terms of research, development and human capital training. However, the growth in production, sales and revenues of the state-owned company Statoil reached an alarming influence in the economy of the country which reached its limit during the 1980's after various scandals of billions of dollars in over budgeting. The last two decades analyzed showed that in the breaking point of the excessive influence of Statoil in the Norwegian economy, and faced with the dilemma of partially privatizing the state-owned company in order to maintain competitiveness in an international arena or maintaining the status quo of the company and not losing a part of the State's revenue flow, redirecting the State's efforts into further maturing and

privatizing the oil sector would not only allow the sector and all adjacent Norwegian industries that had formed, due to the presence of the sector, to become more competitive, but it would also detach some of the complex interdependent schemes, especially in economic terms, that the oil sector was having over the economy of the nation.

Regardless, of the course of action taken in each country in the attempts to further control a struggle for power, especially in economic terms that had arisen in the relationships between state and non-state actors, the main public policies taken to forge the divergent paths were analyzed through the complex interdependency theory and the sustainable development theory, in order to fully understand the underlying motives of each actor within each decade, so that an examination of the results at the end of the period investigated could reply to explaining the results obtained in the different institutions where the management of the oil sector resources had been carried out both in Ecuador and in Norway.

According to the interdependency theory, all actors worldwide interact with each other based on relationships of dependency which can be further described and measured with the help of two dimensions: sensitivity and vulnerability. Sensitivity is referred to as the contingency necessary in order to lay off the costs imposed by external factors before any public policy is passed to modify a specific situation. On the other hand, vulnerability refers to the disadvantage an actor may perceive while experimenting continuous costs from an external factor, even after the public policies have been modified. In this regard, both states and non-state actors (independent organizations, multinationals, corporations, international institutions) carry out interactions determined by external factors which, in turn, account for the particular state of being of each one of those actors involved. The expanding and deepening of ties between actors make it possible for these to experience asymmetrical relationships in the actions and policies taken amongst the parties involved. This is due to the costs taken or not from the parties, that in turn determine the autonomy and power of these within their interactions (Rana, 2015).

Additionally, the core essence of the sustainable development theory is not only to allow human beings a decent life, whatever their world view finds it to be, but rather it makes its cornerstone in taking precautions to protect the viability of future generations to also have a chance at a decent life and be able to satisfy all their human needs; therefore, a continuous, vigorous and viable development (Spachenberg, 2000). However, sustainable development is limited by several factors such as the space availability, waste absorption, soil capacity, renewable and nonrenewable resources and the "carrying capacity", also known as the number of individuals or organizations that an area or surface can withhold given its productivity (Bossel, 1999).

According to this theory, in order to capture the reality of a region in terms of sustainable development, it should be understood that the internal politics of a country can help measure the effectiveness of public policies through system integration and correlation with other independent systems in order to achieve sustainable development (Bossel, 1999). From it certain indicators have been developed which help explain just how close or apart public policies have come towards a viable and perdurable growth through the overlapping of the three main spheres the theory proposes: economic, environmental and social. For this research in particular, the social sphere will be analyzed only in terms of how well it has been combined with the economic and environmental spheres in order to attain sustainable development within the oil sector and its development in Ecuador and Norway correspondingly. It will not be analyzed as a separate element within the investigation due to the complexity of comparing cultural and historical aspects of the societies involved, thus would put out of focus the main objectives of the investigation itself. The combination of these spheres results in new forms of sustainable development that although are incomplete, respond to specific problematics. In this sense, according to the combination of economic and environmental sustainability leads to viability within the public policies, the combination of economic and social sustainability results in equitable public policies, and finally, the combination of environmental and social sustainability leads to bearable public policies. The public policies put forward throughout the different time periods of the development of the oil sector both in Norway and in Ecuador will shed a light on just how well these

managed to be viable, equitable and/or bearable for the sector, the economy and the environment in which these were enforced in.

Additionally, in order to fulfill the comparison of the public policies implemented both in Ecuador and in Norway for the oil industry sector between 1970 to 2012, in the third chapter of this investigation, in order to determine whether or not these have paved the way for the sector to have any adherence to both theoretical foundations presented, a method of examination and analysis of public policies themselves and their corresponding evolution, established by Knopfeld, Larrue y Varone will be used, which seeks to illustrate just how the public policies for the sector, integrated the various actors (political and administrative authorities, target groups and beneficiaries), how the policy networks were formulated on these basis (who was in charge of what), what were the actions plans to be carried out in order to enforce these public policies (further nationalization vs. privatization) and what were the final products of these decisions in economic and environmental terms, all of which had to adhere to the objectives established nationally for the sector in each country (Knopfeld L. , 2017). The concluding chapter will also understand the distinct levels of sensitivity and vulnerability within the oil sector of each country in order to finally conclude with the overall economic and environmental results of having discovered crude within Ecuador and Norway correspondingly as well as, ratify the hypothesis.

Given the fact that the oil sector for both countries has embodied the economic fuel of each of its economies in the 21st century, the comparative analysis is of interest to both Ecuadorians and Norwegians and all citizens of oil nations and the world due to the fact that the majority of products consumed nowadays, contain some amount of an oil derivative, the majority of transportation means use it and our economies thrive off of it. Oil has become the "black gold" of our era and understanding the dynamics behind a sector that not only influences state and non-state actors but also withholds influence over economic asymmetries and climate change, can motivate us towards finally letting go of the "black gold rush" or at support initiatives that work towards that.

In addition, this investigation may shed light through this deductive analysis to those interested in public policy, economic policy, international relations and resource management herein, the close relationship of this investigation to the fields of study of Multilingual Bachelor in Business and International Relations.

CHAPTER I
THE OIL SECTOR IN ECUADOR FROM 1970 TO 2012

"…the tragic day could come in which the history of Ecuador could be written in three phases: Colon discovered it, Bolivar liberated it, and oil rotted it" [1]

Arturo Usiar Pietri 1990

The historical study of the oil sector in Ecuador from 1970, a decade that initiated with the oil sector in the country, to 2012, is crucial for understanding the development of the public policies forged within the sector. The time period allows the study to capture the major adversities and pressures faced during the formulation, readaptation and implementation of public policies for the sector, as well as understand the underlying economic incentives for the different structural approaches the Ecuadorian state has had throughout the curse of the time period mentioned.

1.1. Initial policies for the sector from 1970 to 1980

The early stages of the oil sector in Ecuador represented a time of both adaptation and transition of the public policies involved. These were aimed to further benefit the state through an increase of the revenues perceived and regulation of the actors. In this subchapter, the initial policies and their corresponding reformations will be described in order to comprehend the capacity of adaptation of the public policies established to foresee sensitivity and vulnerability points. Throughout the first decade of prominence of the oil sector in the country, the channels of communication such as contract types, price references and legal limitations would set the path for the following years of exploitation of the resource, the dynamics amongst state and non-state actors and the direction of both the sector and the country itself.

[1] Comment made by Arturo Usiar Pietri, Venezuelan politician and international analyst of the 21st century

1.1.1. The “Oil Boom"

Near the end of the sixties, the Texaco- Gulf Company discovered commercial amounts of petroleum in the amazon region of Ecuador, specifically in Well No. 1 in the town of Lago Agrio (Guevara, 2001). The company would later find more oil deposits in the amazon regions of Shushufindi and Sacha. These discoveries set the path for the “Oil Boom” in Ecuador which was launched in the 1970´s through the promulgation of the Hydrocarbons Law created in 1971. This law succeeded the Petroleum Law of 1937 with certain innovations in it, but preserved its fundamental principle, by indicating that any petroleum deposit found within Ecuadorian territory was an inalienable and imprescriptible patrimony of the country and therefore, should be explored and exploited by the Ecuadorian government (Reyes, 2003). With this in mind, the law would seek for all foreign oil companies already established in Ecuador to change from concession permits with virtually no limits or delimitations and far less benefits for the Ecuadorian state to association contracts, by first undergoing through a transition phase which included incorporating the modality of Contract Types as an initial negotiation phase between state and private enterprises within the oil industry sector (Guevara, 2001).

The law was reformed twice, first through Supreme Decree No. 430, in 1972, which made all previous concessions be obliged in the subscription of new contracts, to the newly established Hydrocarbons Law of 1971, and the second through Decree No. 317 (1972), in which the Contract Type was created (Reyes, 2003). This so-called Contract Type contained some general aspects for the concession of blocks within the amazon region of Ecuador, such as: fixing the maximum area extension at 495.000 hectares, royalties paid by the foreign companies that rose from 12.5% to 18.5% in conformity with oil production levels, a maximum exploitation period of 20 years, cost free revision of equipment and industrial machinery at the end of each concession, crude oil at production cost prices for national consumption and compensation works for the amazon region, which included the construction of civil works (road from Lago Agrio to Papallacta, Lago Agrio Airport, among others) (Reyes, 2003). It was also the first time that the concept reference price was introduced for the commercialization of the natural resource which gave the Ecuadorian government a basis to regulate the royalties, fees, and other state contributions (Reyes, 2003). With the review of income tax percentage payments, the Ecuadorian government was

able to increase its revenue from 22.74% in 1966 to 71.42% in 1975 reaching 87.31% in 1977 (Reyes, 2003).

CHART 1

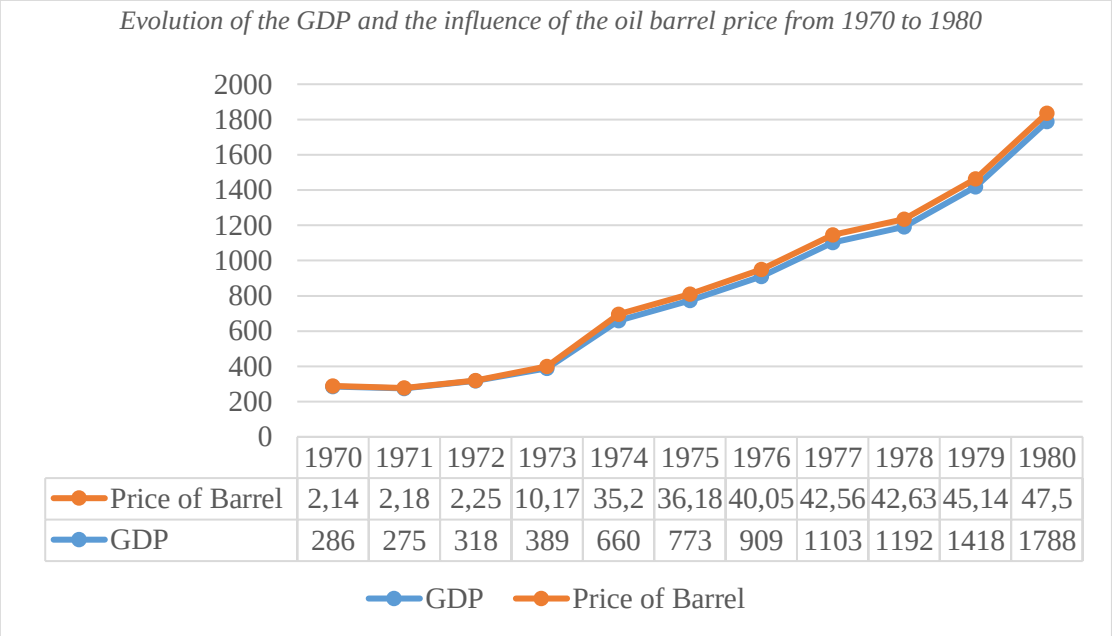
Changes in initial public policy for the Ecuadorian oil sector

Changes in initial public policy for the Ecuadorian oil sector			
Legal Framework for the Oil Sector	Extension	Royalties paid to the Ecuadorian State	Time
Petroleum Law 1937	No limit	12.5%	No limit
Hydrocarbons Law 1971 -Reform No. 430 -Reform No. 317	495 000 ha.	18.5%	20 years with possibility of extension

Source: (Reyes, 2003)
Elaborated by: Mabel Bustamante Diaz

GRAPHIC 1

Evolution of the GDP and the influence of the oil barrel price from 1970 to 1980



Source: (Banco Central del Ecuador, 2017)
Elaborated by: Mabel Bustamante Diaz

With the reformation of the contract types, the decade of 1970´s was the decade with the highest economic expansion for the Ecuadorian state, exportations continued to rise during this decade and went from 190 million in 1970 to more than 1300 million by 1980

(Santelices, 2013). In this sense, the oil sector for Ecuador went from having a back seat in terms of GDP participation to a leading role, going from 0.64% in the GDP structure in 1972 to 2.8% just one year after and was projected to continue course (Jimbictipandama, 2004). The accelerated growth in monetary flows caused Ecuador to be seen as an attractive state, eligible for vast amounts of credit which in turn increased the overall buying capacity and importations rose from $284 to $ 2.242 million in a period of 8 years (Fernández, 2016). The oil "boom" gave way to an unimaginable economic growth and influence of the sector within the country and with this the need to create an institution that would foresee its control and regulation in order to undermine the growing influence of the non-state actors whilst capture as much as possible of the incoming economic benefits in the attempts of creating a more economically equitable arena for the parties involved.

1.1.2. The creation of CEPE

In sight of what was established by the Hydrocarbons Law passed in 1971, and with the astronomical growth of the economy due to the increasing participation of the oil sector, the Ecuadorian government sought to create a state institution that would be in charge of the selection of foreign companies within the oil industry sector for the subscription of exploration, exploitation, industrialization and commercialization contracts, which gave birth to the Ecuadorian State Petroleum Corporation, also known as CEPE for its Spanish initials on June 23rd, 1972 (Wilson & Garzón, 1981). The Ecuadorian State, through its newly established institution would then enter the international petroleum arena by becoming a member of the OPEC in November 1973. Within the organization, the Ecuadorian state proposed an energy cooperation project which would then devise itself in the creation of the Latin-American Organization for Energy, also known as OLADE for its Spanish initials (Sandoval, Calero, & Gordillo, 1986).

On the other hand, on a national level, CEPE formulated new dispositions that would help enhance compliance with the Hydrocarbons Law (1971) which through the decree No. 566 put an end to the monopolization of the internal commercialization of the natural resource by Anglo, company that had been established in the coastal region in the 1920's long before industrial amounts of oil had been discovered in the amazon region of the country. In the initial stages of the development of the oil sector in Ecuador in the seventies,

Anglo negotiated with the government at that time, operatorship of the internal commercialization of crude oil in the attempts of maintaining the company competitive within the industry despite massive oil well production in the amazon region. However, due to the new governmental dispositions, it had to give all rights to CEPE in July 1975 (Sandoval, Calero, & Gordillo, 1986). Despite regaining legal basis in order to distribute the resource within the national territory, the Ecuadorian state gave in to external pressures and although in October of 1974 the OPEC increased the price of the crude in 10%, the Ecuadorian state perceived only 4%. The leading companies within the oil sector at that time, which had successfully pressured the Ecuadorian state to abide in favor of handing over the remaining 6%, had been able to do so through the argumentation that the country was in desperate need of their expertise, know-how and technology support, especially for the early stages of the sector (Sandoval, Calero, & Gordillo, 1986).

CHART 2

Influence of the oil exportations in the GDP total income of Ecuador from 1973 to 1980

Influence of oil exportations in the GDP total income of Ecuador from 1973 to 1980			
Year	Total net income from exportations* (Millions of USD)	% of GDP	Average from 1973-1980
1973	139	16.5%	12.65%
1974	487	4.9%	
1975	458	13.6%	
1976	524	12.7%	
1977	510	9.4%	
1978	484	9.1%	
1979	995	15.8%	
1980	1399	19.2%	

Source: (Banco Central del Ecuador, 2017)
Elaborated by: Mabel Bustamante Diaz
Note. * Calculated by subtracting incomes made by foreign companies and external purchases of goods and services (derivatives) from total oil net exportation

Also, under the new legislation controlled by CEPE, the minimum quota for production was established at 210,000 barrels per day; however, despite the favorable fiscal measures made in favor of the foreign companies, these maintained production levels lower than those required in the minimum quota. Low levels of production were due to a lack of further investment from foreign companies; however, this did not render CEPE from perceiving lower revenues. In the case of the operator Texaco, CEPE was able to take its 25% share in production on the basis of the established minimum quota and not on the production levels which made it possible for CEPE to export 918,839 barrels in June, 1976 (Sandoval, Calero, & Gordillo, 1986). In December of that same year, CEPE increased the provisional calculation of the income tax for the cost of production, nevertheless various companies extended their exploration period and in 1975, after a substantial increase in production of the Consortium CEPE-Texaco in July, international companies in the sector were able to reduce this income tax (Sandoval, Calero, & Gordillo, 1986).

Due to the lack of clarity of CEPE's minimum quota disposition, in 1976, the Ecuadorian state faced yet another problem, this time with the Ecuadorian Gulf Co., which decided that the 25% stake of CEPE in all the oil productions within the Ecuadorian territory should be fixed on the legal basis of the minimum 210.000 quota the institution itself had established, and not on the real production of the company. The company proceeded then not to deposit the percentage corresponding to the $53 million in exceeding exportations that year, to which the Ecuadorian government reacted with a warning of confiscating the company's assets in Ecuadorian territory. The company then decided to remove itself from Ecuadorian territory offering to sell its assets to CEPE to the values established in the books, which was immediately accepted by CEPE and the payment of $117.4 million was done with which CEPE became the main shareholder, holding 62.5% of the largest oil company in the country (Marshall, 1988).

Within this time period, the external commercialization of crude oil was held through a speculative dynamic of prices for the resource. In September of 1978, CEPE held its first bidding for long term exploitation, and 20,000 barrels of crude oil in the Amazonia region, without indicating within the transaction, the purchase and sales price. These ambiguities in contract celebrations, along with the importation of the majority of derivatives, except for

those that were also supplied through public tendering, led to internal corruption within CEPE (Sandoval, Calero, & Gordillo, 1986).

1.1.3. The debilitation of CEPE

The debilitation of the state controlled institution CEPE, was due to three main factors that the Ecuadorian state did not see to integrate within their policies for the institution during the initial phases of the oil sector. The first factor was the relationship that CEPE forged with the foreign companies within the territory and its short-term projections, which were also worsened by the second factor, the international oil scenario at that time, that finally lead to an economic crisis due to an unsustainable usage of oil revenues (third factor) both within the institution and the nation in later years.

The first factor for the debilitation of CEPE came with the economic boom that made the Ecuadorian state even more attractive for foreign investment, that came in as two main flows. Due to the high level of economic expansion and growth within the decade of the 1970´s state budget rose in 43% compared to the previous decade which lead to the first flow of international investment: international debt mainly used for state investment and funding. The second flow of investment came through the exploitation of the crude oil (Fernández, 2016). Under the new modality of Contract Type, the Ecuadorian state subscribed various contracts with foreign enterprises for the exploration and exploitation of crude oil in the amazon region of Ecuador (Reyes, 2003) among these were: Texaco-Gulf Consortium, OKC Corporation, Ecuatoriana de Petroleos S.A., Anglo Ecuadorian Oilfields Orient, City Investing Co., along with others which altogether did not surpass 20 private enterprises for the oil sector (Guevara, 2001).

The participation of these foreign companies within the initial phases of the oil sector in Ecuador, had to face constant changes in public policies which determined not only consistent changes in the regulation of royalties and benefits, but also the amount of investment that these would make in the sector itself. In 1974, a conflict arose between the government and foreign companies due to the elevated reference prices in comparison to the low production level and its high costs, both of which had been established by CEPE and

which were used to determine the amount of tax liability each company had with the Ecuadorian state (Marshall, 1988). Although production levels had been maintained at the beginning of that year at the established quota indicated by CEPE, from May on, the production of crude oil drastically decreased because the companies judged they would not be in the capacity of selling oil in the global market at the reference prices established (Marshall, 1988).

During the following year (1975) foreign companies pursued negotiations towards reducing the reference price, but instead of renegotiating on lowering the bar for the reference price, the Ecuadorian government decided to curb the heated negotiations by cutting back $0, 43 cents per barrel tax. This lead to a reduction of CEPE's participation in the sector by $15 million in one year (Marshall, 1988).

By 1977, foreign companies were facing serious commercialization problems. Sales to the number one demander, the United States, had gone down with the entry of new suppliers such as Indonesia, which had better quality crude, and which was also more adequate in meeting North American environmental standards. Oil discoveries in Alaska also took its share of the North American market. By 1978, an exceeding 2 to 3 million barrels were being produced worldwide due to the expansion of other markets such as Mexico, the North Sea and the former Soviet Union. On the other hand, the introduction of giant oil tanks reduced transportation costs for the Middle East. These exogenous factors made it difficult for foreign companies to oblige CEPE´s reference price requirements, which lead the state institution to give into enterprise pressures, and it was finally reduced.

The last years of the decade proved to be even more demanding for CEPE, which in turn debilitated the relations between the state institution and foreign companies. According to a study done by Jorge Marshall, in the early stages of the oil sector, foreign companies perceived around 35% of overall exportations income in the country, reaching its highest point between 1972 and 1973. Towards the end of the decade, this percentage was reduced to 1.3%. Although this reflected an increase in revenues paid to the Ecuadorian state, the overall growth rate of the oil sector decreased (Marshall, 1988).

Nevertheless, with the oil revenues, the Ecuadorian state made one of its most important investments for the sector in 1975, the construction of the oil refinery station in the city of Esmeraldas. The location was established near the coast where oil pipelines would transport the crude from the Amazon region so that it could be processed and later exported from the coastal city of Esmeraldas. The construction of the oil refinery station took two years and was done by the Japanese consortium, Sumitomo Chiyoda Chemical Engineering. In May of 1977, the construction was completed and Ecuador began to process 55,600 barrels per day, as well as produce some of its traditionally imported oil derivatives inland (PETROECUADOR, 2016). The internal consumption of derivatives went from 10.77 million barrels per year from 1972 to 1977; to 22.50 million barrels per year from 1977 to 1979 (Marshall, 1988).

CHART 3

Volume, value and unit price of net oil exportations in Ecuador from 1972 to 1980

Volume, value and unit price of net oil exportations in Ecuador from 1972 to 1980 (Millions of barrels and US dollars)							
	Derivatives			Crude Oil			Total
Year	Volume	Price	Value	Volume	Price	Value	(Millions of US dollars)
1972	--------	--------	---------	19.0	2.73	45.09	45.09
1973	--------	--------	---------	65.5	3.97	260.04	260.04
1974	--------	--------	---------	52.6	13.36	702.74	702.74
1975	--------	--------	--------	44.4	11.84	525.70	525.70
1976	---------	--------	--------	54.0	12.00	648.00	648.00
1977	1.7	12.00	20.40	45.7	12.92	590.44	610.84
1978	7.9	11.55	91.25	43.2	12.46	538.27	629.52
1979	7.2	19.69	141.77	45.7	23.04	1052.93	1194.70
1980	8.0	24.40	195.20	39.1	35.20	1376.32	1571.52

Volume, value and unit price of net oil exportations (millions of barrels and US dollars)
Source: (Marshall, 1988)
Elaborated by: Mabel Bustamante Diaz

Although this investment signified an increase in the revenues perceived through oil exportation for the country, it did not hinder the over-indebtedness of CEPE and the Ecuadorian state itself. Given the political instability at that time in the country, due to the military triumvirate that took control in 1976, the usage of oil revenues was waivered into accounts with little or no real significance for the development of the oil sector or the state institution leading it, CEPE (Marshall, 1988).

CHART 4

Three main rubrics of oil revenue destination from1976 to 1979

Three main rubrics of oil revenue destination from 1976 to 1979	
Concept	Average Percentage from 1976 TO 1979
BEDE*	33.3%
National Budget**	27.8%
National Defense Fund***	21.4%

Source: (Marshall, 1988)
Elaborated by: Mabel Bustamante Diaz
Note.
* Official Ecuadorian Institution that financially supported economic and social development programs as well as, act as the counterpart for external debts
** Rubric destined for operative and administrative costs of the government, for example, salaries in the public sector
*** Fund destined for military services and acquisitions

As seen on the chart above, the three main rubrics that the oil revenues were destined to, did little or nothing to support the prevalence of CEPE. The percentage of revenues destined for general research within the oil sector was under 0.034% of all incomes perceived for this time period (Marshall, 1988). The first decade also presented a clear absence of forging the necessary public policies that would act as contingencies in order to overcome these exogenous factors, and lay off the any possible negative costs that these could have and were steadily spilling into the national economy. Viability in economic terms, for this first decade, was not contemplated in the formulation of the public policies for the sector which coupled with the lack of investment both within the sector and for the sector, in addition to the political instability and the growing expenditure through debt of the Ecuadorian government led to a financial crisis of the economic motor, the oil sector, along with the debilitated state institution CEPE.

1.2. Resource management from 1980 to 1990

The policies formulated in the 1970's, startup decade of the oil sector, directed the course of the sector in terms of resource allocation and further investment. It forged the path for the different actors involved to interact with specific delimitations which in turn was influenced by the political and economic instability that the country was entering. In this subchapter, the main causes (both endogenous and exogenous) of the public policies and their continuous reformations will be described in order to understand the resource management within the sector that ultimately lead to the "Ecuadorian Dutch Disease" and the creation of PETROECUADOR.

1.2.1. Contractual reformations

In the decade of the eighties, Ecuador saw three different presidents go through the presidential seat and with that, distinct types of government and oil policies. In an attempt to regain legal, thus economic grounds, the Ecuadorian state issues Law 101 in August 1982, during the presidency of Oswaldo Hurtado, by which all previous contracts were to adhere to the new *"Service Prevision for the Exploration and Exploitation of Hydrocarbons"* contracts. Within this new legal framework, it established in article 2, that the Ecuadorian state would explore and exploit any oil deposit directly through CEPE. CEPE could, however, fulfill its needs on its own or celebrate a prevision of services contracts with any national or foreign company legally established in Ecuador, more or less, what had previously been executed with the exception that these "Prevision of Services" contracts allowed the deduction of production, transportation, and commercialization costs for CEPE. This meant that CEPE could deduct all expenditures inquired upon before it did its final declaration of revenues perceived to the Ecuadorian state (Humbol, 2014).

Furthermore, with this new contract model, CEPE's subcontractors were obligated to use their own funds in the acquisition or usage of machinery, equipment, and technology necessary in order to fulfill the services celebrated in the contracts without involving any type of resource, be it financial, human, or capital, from CEPE. It also established that the subcontractors had the obligation of building any secondary oil pipelines in order to transport the crude oil to the main duct, with the possibility of reimbursement for the values made in

investment. Under this new contract form, subcontractors were not subjected to pay royalties directly to the Ecuadorian state. CEPE as the owner of all production would be in charge of paying the corresponding royalties to the General State Budget. This meant that all income flow, was first received by CEPE, and after deductions made (minus production costs), the revenues remaining would go to the central government. Although the rubrics these revenues were destined to varied from presidency to presidency, the only revenue that was consistent for all oil deposits was that established at 12.5% of all audited production after the corresponding deductions made, in any oil field, destined to military defense and national security matters (Humbol, 2014).

Furthermore, investment was crucial in the 1980's for the oil sector in Ecuador. The regime of president Leon Febres Cordero, welcomed foreign investment, and in 1985 the extension of the oil refinery station in the city of Esmeraldas was done by the Japanese consortium Sumitomo Chiyoda with an investment of $114 million dollars; processing levels rose to 90 000 barrels per day. The first six "Oil Rounds" were carried out in this same year which resulted in the signing of 15 contracts with foreign companies for 17 blocks up for tendering, the majority located in the Amazon region of the country and a few in the coastal areas such as Manabi and Santa Elena. By the following year, exploitation of the resource in the blocks allocated within the Amazon region had already begun. Environmentally protected areas close or within the blocks were modified and the protection laws were changed in order to allow oil exploitation in these areas. The political discourse held that technological developments and the incorporation of corporate responsibility within the contracts held with foreign companies would make the exploitation in the Amazon region viable both for the economy and the environment (Humbol, 2014).

The political discourse was shattered in March, 1987, after the breakage of the Ecuadorian Oil pipeline, due to a combination of elements. The Ecuadorian Oil pipeline which had been constructed in the seventies by the American firm William Brothers had not taken into consideration the changing landscape through which the oil pipe line would have to go through: the dense vegetation and humidity of the Amazon region, the high altitude and colder weather of the Andes, and the hot climate of the coastal region. This lead to the rapid deterioration and rust of the pipeline that eventually lead to its leakage in 1987 after

failing to withstand an earthquake that year. This caused a delay of three months in crude oil production within the country (Humbol, 2014).

Still, in continuance to the foreign investment pattern of that decade, in that same year in the month of July, Ecuadorian authorities inaugurated the refinery of the Shushufindi complex with the capacity of processing 10 000 barrels per day. Along with this, a gas plant was also built in the complex with a production capacity of 25 million cubic feet. The entire complex was created in order to be able to provide for the demand of the national industry consumption by providing extra, diesel type 1 and type 2 as well as jet fuel and other industrial derivatives (Humbol, 2014).

CEPE was the established state-owned company that arose from the need to attack vulnerability levels left behind from the previous decade, as well as respond to complex scenarios that entailed environmental conservation versus economic growth, such as in the reformation public policies to modify protected areas. Towards the end of the decade, it had established itself after having gone through a natural disaster, finding more oil wells (34 million barrels), and opened a new refinery station in the Ecuadorian Amazon. However, CEPE's run would not last long before the State's over expenditures would breach an economic hole in the institution, causing its defunding and decapitalization.

1.2.2. The creation of PETROECUADOR

Despite the efforts from the Ecuadorian government in the stimulation of foreign investment within the oil sector, CEPE found itself profoundly damaged by exogenous and endogenous factors by 1989. In this year, the state enterprise was not able to hold out the economic pressures from the central government and within the institution itself. The dissolution of CEPE at the end of this decade was due to exogenous factors (price of the barrel and rising tensions of the Ecuadorian- Peruvian conflict) that were aggravated by internal public policies (endogenous factors) which resulted in the influence of the oil sector in the "Ecuadorian Dutch Disease" and as an end result the creation of PETROECUADOR.

The term "Dutch Disease" was developed to explain how sharp inflows of foreign currency in one determined sector of the economy can develop into negative impacts for the

host country. It was used to describe the economic situation that the Netherlands was facing in 1977, after years of exploiting large gas deposits, the economy had tumbled down. According to this term, large flows of foreign currency have two main effects if not dealt with adequate public policies. The first effect is that there is an appreciation of the host country's currency which makes exportations less competitive and importations rise. The second effect is that it can lead to a deindustrialization of the other sectors that were not involved in the cash flow, which then again leads back to more importations, creating a vicious cycle that ultimately leads to a negative commercial balance. In the case of the oil sector, a third effect can be perceived due to the nature of the sector itself: unemployment. Unemployment is especially prone to occur in the oil sector since it is a relatively high asset and capital intense business which means that unless other adjacent sectors are not developed, technological advances will continue to displace personnel (Financial Times, 2016).

For Ecuador, the decade of the eighties was the time period in which the disease penetrated the economy and all productive sectors, including the oil industry. The origins of this crisis date back to the initial "oil boom" in the country when oil production started to take a front seat in GDP participation (Gestiopolis, 2001). Although foreign income in the initial decade made the overall economy rise in the first three years after the commercial oil production started in the country, non-oil exports decreased from 81.6% in 1972 to 37.9%% by 1974.

CHART 5

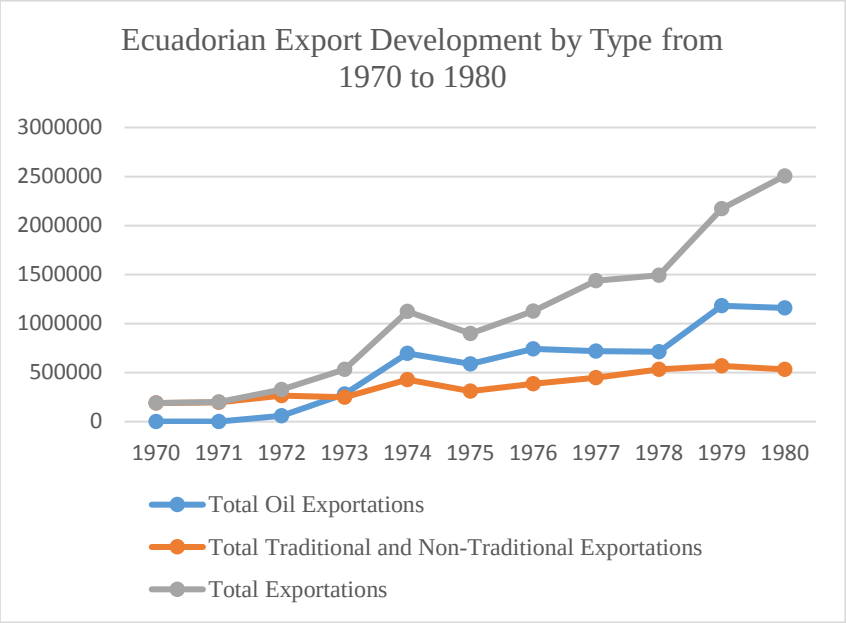
Total exportations by types from 1970 to 1980

TOTAL EXPORTATION BY TYPES FROM 1970 TO 1980							
(expressed in millions of US dollars)							
Year	Total Oil Exports	Percent of Total Oil Exports in Total Exports	Total Traditional Exports	Percent of Total Trad Exports in Total Exports	Total Non-Traditional Exports	Percent of Total Non-Trad Exports in Total Exports	Total Exports
1970	935	0.49	159393	83.92	29601	15.59	189929
1971	2043	1.03	158052	79.39	38980	19.58	199075
1972	59900	18.36	216998	66.50	49394	15.14	326292
1973	282746	53.14	179804	33.79	69498	13.06	532048
1974	696720	62.01	313428	27.90	113400	10.09	1123548
1975	587118	65.45	270304	30.13	39633	4.42	897055
1976	740927	65.72	360476	31.98	25928	2.30	1127331
1977	718107	50.00	419172	29.18	29899	2.08	1436274
1978	713935	47.79	505922	33.87	27390	1.83	1493758
1979	1181630	54.39	521100	23.98	46997	2.16	2172703
1980	1158586	46.23	919656	36.69	262929	10.49	2506242

Source: (Banco Central del Ecuador, 2017)
Elaborated by: Mabel Bustamante Diaz

GRAPHIC 2

Ecuadorian export development by type from 1970 to 1980

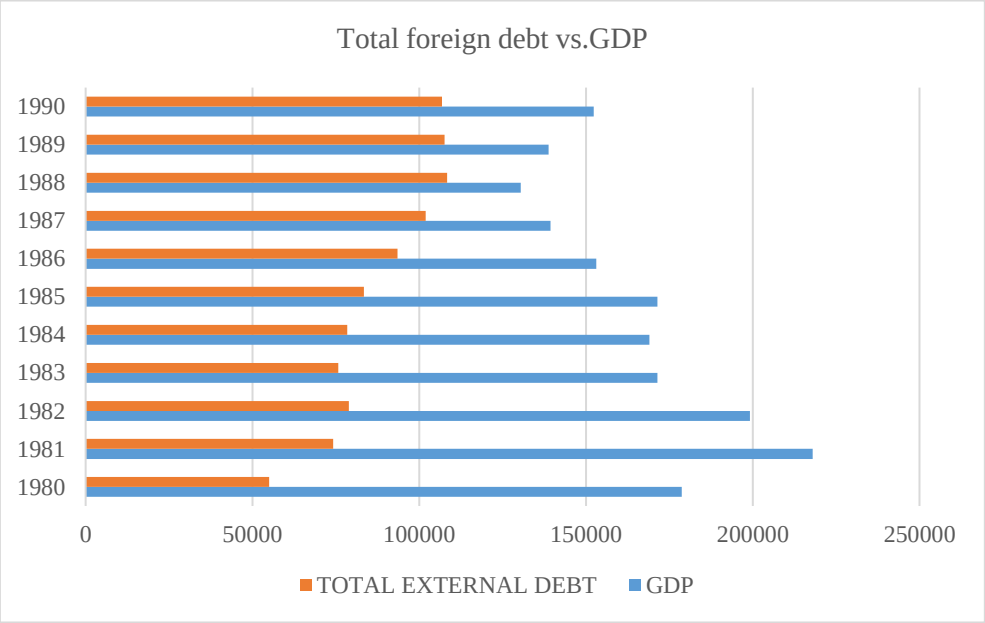


Source: (Banco Central del Ecuador, 2017)
Elaborated by: Mabel Bustamante Diaz

As one of the first symptoms to be felt by the "Ecuadorian Dutch Disease" was that growing cash flow from the revenues perceived in the oil sector, paradoxically caused the stagnation of traditional sectors such as banana, cacao, shrimp, coffee and tuna exportations; as well as non-traditional sectors, such as the textile industry, manufacturing and other added value goods for exportation (Gestiopolis, 2001). Although some growth was perceived in the early years of the decade, stagnation started in 1974 only to continue to further deceleration of the sectors in the economy by the end of the decade.

Nevertheless, the income flow from the oil sector was rapidly spent by the Ecuadorian state in the 1970's. This lead to the second symptom, the exchange rate deregulation and inadequate fluctuations of the national currency, which also lead to a rise in importations. Along with the rise of importations, the Ecuadorian state forged the expansion of the public sector in 1973 which lead to having a surplus in the GDP of the Ecuadorian state budget of 3% in 1973 to a deficit of 5.5% by 1977 (Gestiopolis, 2001). In order to sustain the monumental growth of government expansion, Ecuador sought to increase its foreign debt.

GRAPHIC 3
Total foreign debt vs GDP

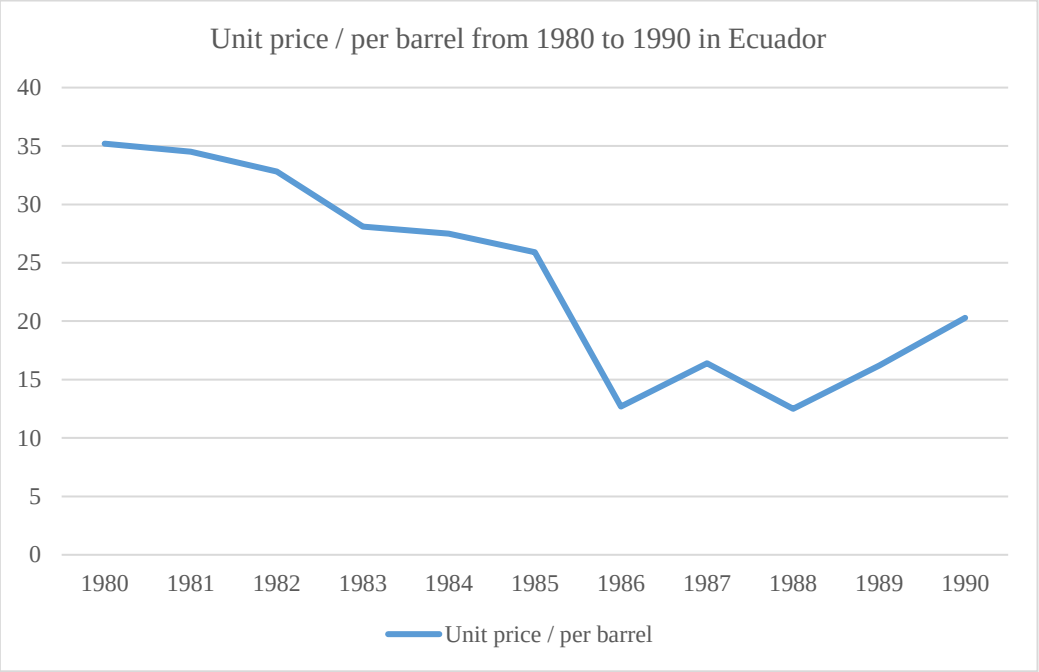


Source: (Banco Central del Ecuador, 2017)
Elaborated by: Mabel Bustamante Diaz

As seen on the graphic above, during the initial years of the 1980's, there was a substantial breach between the total foreign debt and the GDP; however, as the decade progressed, the increase in importations lead to over indebtedness of the Ecuadorian state, which made the breach shorten by the end of the decade. This was aggravated by the fluctuations in the price of the barrel. At the beginning of the decade the price was set at $35 dollars per barrel, it progressively continued to decrease, and by 1983, it had gone down to $32.5 until reaching its lowest point in 1986 at the price of $12.70 per barrel before going back up and ending the decade with a price of $20.30 per barrel (Gestiopolis, 2001).

GRAPHIC 4

Unit price per barrel from 1980 to 1990

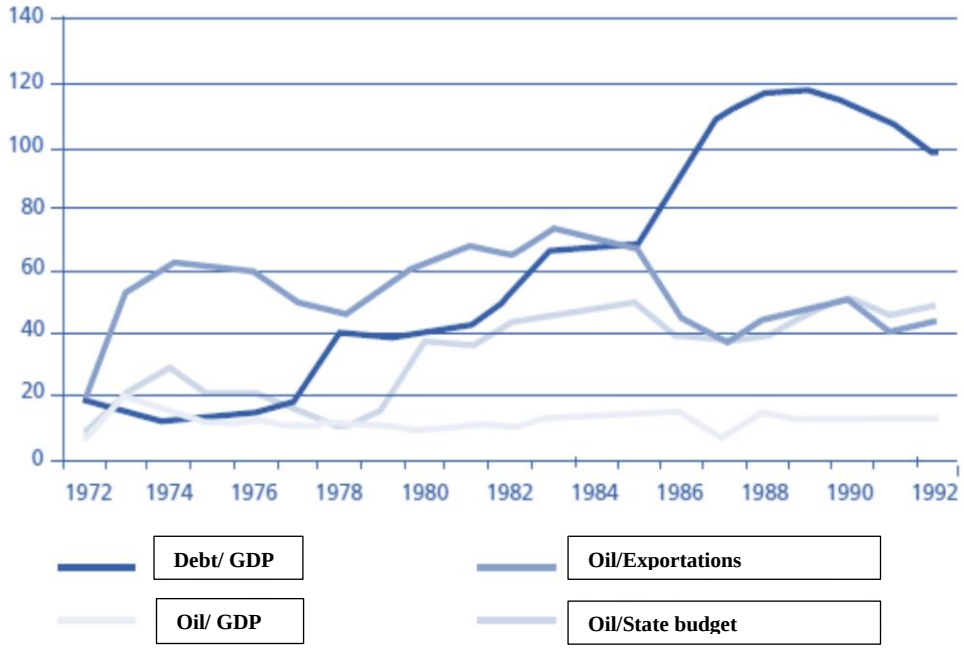


Source: (Banco Central del Ecuador, 2017)
Elaborated by: Mabel Bustamante Diaz

All factors both endogenous and exogenous to the Ecuadorian state, suggested the influence of the oil sector and the initial policies taken for the sector were direct causes of the "Ecuadorian Dutch Disease" in the eighties. The oil industry had become not only the economic fuel in the seventies, but also the economic leverage and anchor in the eighties.

GRAPHIC 5

Participation of oil and the external debt in the GDP

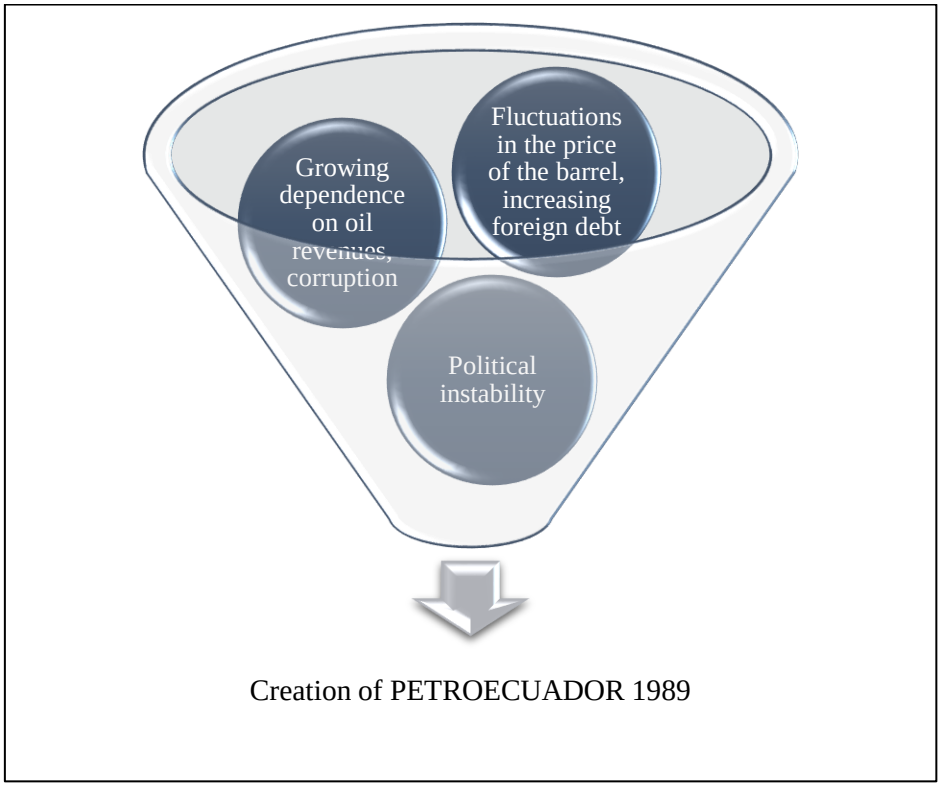


Source: (Fontaine, 2002)

As seen on the graphic above, oil participation in State's budget grew parallel to its exportations, which meant the direct influence of oil production and revenues in the State expansion of the eighties. The low peaks of oil participation in the nations GDP were rippled by high peaks in debt participation in relationship to the GDP (Fontaine, Petróleo y enfermedad holandesa en el Ecuador, 2002). This meant that during times of low oil incomes for the central government, debt was the solution of the Ecuadorian state in order to maintain the parallel relationship between oil exportations and state budget. These unsustainable relationships along with internal corruption scandals within CEPE, both in the celebration of the new provision of services contracts and in the non-existing book keeping of the institution itself, in addition to rising tensions due to territorial limit boundaries with neighboring country, Peru, lead to the desperate dissolution of CEPE and anticipated birth of PETROECUADOR in 1989 (Gonzalez, 2004).

GRAPHIC 6

Endogenous and exogenous factors for the creation of PETROECUADOR



Source: (Gonzalez, 2004)
Elaborated by: Mabel Bustamante Diaz

1.3. The adaptation process in Ecuador from 1990 to 2012

During these two decades, the Ecuadorian state faced severe reformations in the adaptation of process of the public polices within the oil sector, due to the presence of the ongoing economic crisis, that reached its boiling point through an unsustainable inflation peak that caused a plunging devaluation of the national currency and finally a dollarization transition. The ever-changing public policies within the sector were welcomed with each new presidency and the State became the biggest loser in the whole turmoil as PETROECUADOR and its subsidiaries saw themselves lose revenues due to legal breaches found in the forms of contracts celebrated with the foreign companies, all whilst rising environmental problems lead to the creation of activist groups and research documents that proved that the extraction of the "black gold" wasn't all that favorable for the Ecuadorian society nor the environment, after all.

1.3.1. PETROECUADOR facing economic and environmental crisis

The birth of the also state owned company PETROECUADOR in the nineties started off with yet again more public policy reformations, due to political and economic instability the country was facing at that time. During 1991 to 2000, six presidents had come and gone and a process of dollarization of the national currency took place at the end of that decade. The changes in the economy of the country reflected the desperate attempts of the different regimes to stabilize the country from an economic crisis, in the majority of cases using the revenues from the oil sector to appease the economic ripples on the Ecuadorian society.

By 1991, PETROECUADOR through one of its subsidiary companies, PETROAMAZONAS, had already taken control of the majority of operations and installations that had once been in the hands of Texaco. The contract with the Texaco Company was by far, the most significant in terms of revenue income since this paid 87% in income taxes while others averaged from 15 to 44%. However, the auditing of the other contracts that paid much less income taxes was done by private companies that were later linked to politicians of that decade who sought to finance their political campaigns through agreements reached with the foreign oil companies, allowing these to submit loss statements to the Ecuadorian IRS system (Humbol, 2014).

For PETROECUADOR it had been stipulated that it should transfer 90% of its utilities to the Ecuadorian state and the remaining 10% were to be reinvested in the company, however; due to the low revenues perceived by the central government from the contracts celebrated with foreign companies, during the presidency of Sixto Duran Ballen it was decide to modify this percentage. A reform was made to the National Budget Law with which it established that the state-owned company would transfer 100% of its utilities to the Central Bank (Humbol, 2014). The measure was taken in hopes of responding more effectively to the accumulating and growing foreign debt that was taking over the Ecuadorian economy in the nineties.

Along with the reformation made previously, it was determined that a decentralization of the budget management needed to occur in all the existing subsidiaries of PETROECUADOR. In accordance with these dispositions, in November of 1993, a new

modality of contracts were introduced, the *"Exploration and Exploitation of Marginal Camps"* through the law N.44, where it was established that all the contracts celebrated between PETROECUADOR and any national or foreign contractor would obtain rights of carrying out the exploration and exploitation activities within any subsidiary of the state owned company by compromising to make direct investments both to the area tendered and to the subsidiary in charge (Humbol, 2014). In that same year, Ecuador announced it would remove its participation from the OPEC, since it considered that the participation fees were much higher than the benefits the State received in return from the organization (Humbol, 2014).

During the nineties, the fluctuation of the price of the barrel within Ecuador varied dramatically, which had also been generated by the fluctuations in the exchange rate of the national currency, and which made the economy experience one of the worst inflation processes in its history. In this regard, the prices increased more than 50 times in comparison to the previous decade due to the debilitation of the national currency.

CHART 6
Inflation and devaluation rate of national currency from 1990 to 1999

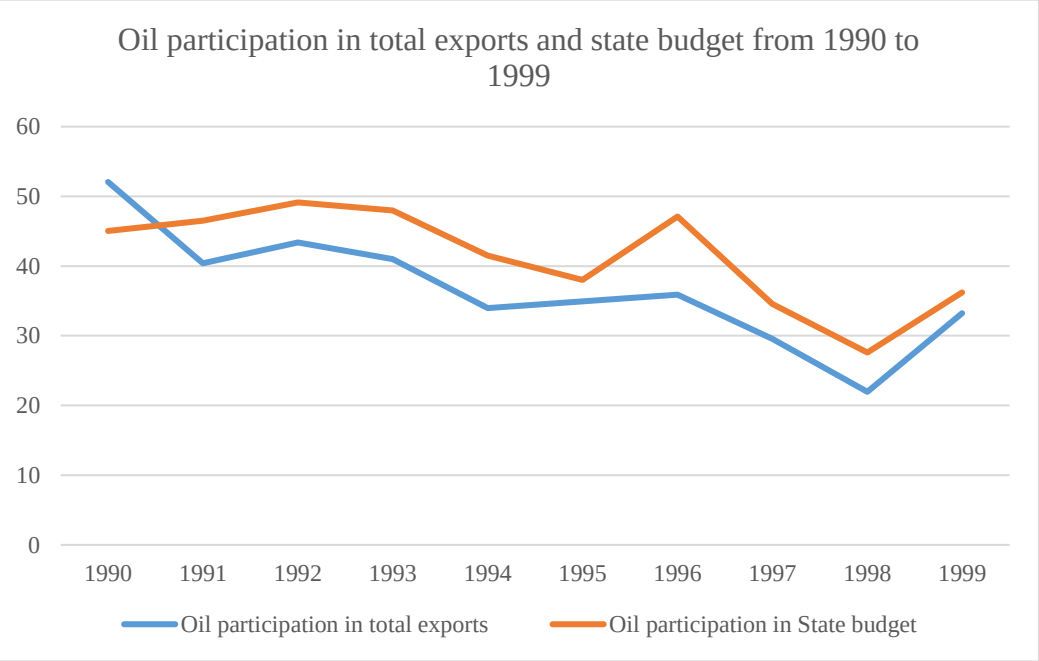
YEAR	Average inflation per year %	Average devaluation rate of national currency %
1990	48.5	35.44
1991	48.7	44.68
1992	54.6	55.87
1993	45.0	1.45
1994	27.3	13.21
1995	22.9	27.21
1996	24.4	24.13
1997	30.7	22.36
1998	36.1	46.94
1999	60.7	180.43

Source: (Humbol, 2014)
Elaborated by: Mabel Bustamante Diaz

As a response to this problematic, in 1994, through the executive decree No. 433, new policies were created to fix the prices for the fossil fuel for its internal consumption.

Also, through this decree the installations of the main oil pipeline, constructed in the initial phases of the sector were transferred to PETROECUADOR for its management. In order to help stimulate the national economy that was suffering one of its worst financial crisis, the proceeds from fuel sales were destined to the "Ecuadorian Economic Reactivation System", which made way for seven rounds of tendering that took place from 1990 to 1997, and awarded more than 500 thousand hectares in the Amazon region to approximately 10 foreign companies and brought $ 61 million US dollars in foreign investment. Oil participation in total exports maintained itself on average above 35 % and oil participation fueled State budget reaching in various years almost 50% (Banco Central del Ecuador , 2013).

GRAPHIC 7
Oil participation in total exports and state budget from 1990 to 1999



Source: (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz

However, despite the legal efforts made in order to encourage economic stabilization, decree No.433 also damaged PETROECUADOR's income since it allowed foreign companies to make changes in the contracts celebrated with the Ecuadorian state; therefore, most foreign companies modified the modality of their contracts, from *"Prevision of Services for the Exploration and Exploitation of Hydrocarbons"* contracts to *"Participation Contracts"* or *"Delegation of Services"*. These contracts made PETROECUADOR lose participation in revenues since the percentage of revenue dividends went from an average of

37% for foreign companies and 63% for the State to approximately 20% state, 80% foreign enterprises (Humbol, 2014).

CHART 7

Evolution of Main Contract Types

Contract Type	Law and Year with which it was passed	Institution	Characteristics
Service Prevision for the Exploration and Exploitation of Hydrocarbons	Law 101 (1982)	CEPE	• CEPE could outsource and subcontract for any of the activities within the sector • Subcontractors had the obligation of using their own funds and resources to carry out the any activity • Subcontractors had the obligation of building any secondary oil pipelines with possibility of reimbursement for investments made • Foreign companies did not pay royalties directly to the central government; CEPE was in charge of paying the totality of the royalties perceived by the sector after making all the corresponding deductions

Exploration and Exploitation of Marginal Camps	Decree. 433 (1994)	PETROECUADOR	• State company could continue to outsource any of its activities • Any subcontractor had the right to use and work in any of the state company´s subsidiaries as long as it committed to directly invest in the area and subsidiary at use • Main and secondary pipelines would be in charge of PE and foreign companies would have to pay royalties to the state company for their usage
Participation Contracts & Delegation of Services	Decree No.433 (1994)	PETROECUADOR	• Contracts celebrated for outsourcing purposes of activities for a time period no longer than 5 years • Subcontractors were not obliged to invest in the area or subsidiary at work

Source: (Humbol, 2014)
Elaborated by: Mabel Bustamante Diaz

Crude oil production levels from the state-owned institution, PETROECUADOR, and its subsidiaries, went down from 81% of all national production in 1993 to 58% by the end of the decade. Private companies absorbed the remaining percentage mainly incentivized by the terms of royalty payments for the government in the new contract modalities. Substantial economic growth was witnessed for these companies with approximately 50% annual growth in oil production levels from 1990-2000, all while state production levels declined in approximately 2% annually. This meant the rise of private company production

levels was parallel decrease in state revenues, despite the fact that during this time period oil prices went up from $16, 60 US dollars in 1991 to $24.92 US dollars by the year 2000 (Humbol, 2014).

During this same time period, private companies in the sector were starting to be put under the spot light in sight of new studies concerning the alleged environment issues that the exploration, extraction and production of the oil sector caused in the Amazon region of the country. The impacts of the leading concessionary until then, the Texaco Company had on the region,| were only noticeable once PETROECUADOR took over its installations in the early nineties. In fact, the first systematic investigation carried out in the region of influence of the Texaco Company wasn't even done by PETROECUADOR but instead by a legal consulting agency FCUNAE which was in charge of carrying out a survey for the delimitation of land lots (Fontaine, 2003).

The investigation was done by an American lawyer, who had lived in Ecuador since 1989 and was working for the legal consulting agency. According to Kimerling's report, the 30 largest oil spills from the "Trans-Ecuadorian Pipeline" caused the loss of 403.200 barrels of crude oil and approximately more than 6 million cubic meters of gas had been liberated through the open incineration of fuel in the Amazon region since its initial commercial discoveries. Although there were persistent inaccuracies in Kimerling's investigation, it provoked other ecological movements to carry out their own investigations in order to determine the influence of the oil sector in the environmental situation of the "golden region" of the country (Fontaine, 2003).

In 1992, during the presidency of Rodrigo Borja, a Canadian firm, HBT Agra was delegated to carry out the environmental auditing of the activities done by the Texaco Company in the Amazon region of the country. The paper turned into a brawl between the president that was unwilling to present the preliminary research done by the company on the basis that the investigation had not yet been concluded, and the National Congress, which demanded to know the results. After the auditing commission from Congress finally got a hold of the documents, these were rejected on the basis of lacking fundamental basis, structure, and organization of the content, as well as dubious bibliography. However, this

event served to spark up conversations about the topic that everyone seemed to be putting under the rug.

In 1994, an open debate was held with the Congress commission in charge and the participation of environmentalist organizations, representatives from PETROECUADOR, the Ministries of Energy and Finance in addition to representatives from the Ecuadorian Association of Geologists. The head topic: "The Forum for petrol, nature and life". The discussion gave as a result the creation of a following commission that would be in charge of controlling all oil activities in the Amazon region of the country. Only three months after its creation, a report was submitted to the Ecuadorian authorities where it clearly evidenced the Texaco Company's responsibilities for the negative environmental impacts on the areas which it had had influence upon. The report established that the company would be liable to pay for collateral damages in the area or would otherwise be demanded against by the Ecuadorian state (Fontaine, 2003).

On the other hand, the government was faced with a dilemma; it could not reject the accusations made by the Congress on behalf of its commission, and it also could not afford to scare foreign investment in a time of internal economic crisis. This led to no formal actions taken by the state and the parallel formation of the "Defense Front for the Amazon", also known as FDA for its Spanish initials. In 1995, the Front, grouped the demands of 30,000 individuals and presented it to the Supreme Courts of the southern district of New York, location of the Texaco Company's head offices. There were seven main allegations in the demand presented, which were: negligence, public nuisance, private nuisance, strict reliability, medical monitoring, death and conspiracy charges (Fontaine, 2003).

According to the accusations made by the Front, 49% of the demands presented were those related to the environmental contamination of oil companies in their day to day operations, while another 30% were due to accidents caused in the production cycle of the crude oil. The largest percent of demands had to do with the contamination of rivers and streams, the contamination of the soil which was done by dumping residues of oil in large holes in the ground that were not permeabilized nor covered, contamination to the crops and animals, and finally contamination to the potable water used for domestic consumption. The second main cause for the demands were the contaminations originated from accidents

within the production cycle of the oil sector. These accidents caused the loss of crude oil and were due to deficient or non-existing maintenance processes, delays in the operations for machinery renewal, ruptures in the secondary conducts of the Ecuadorian pipeline and in some cases even sabotage (Fontaine, 2003).

The international oil company denied any responsibility in the accusations made, arguing that their area of influence reached only 3.8% of all the Ecuadorian Amazon region, and that there were no consistent scientific tests done that proved the company was in fact the sole responsible for the alleged charges. The Ecuadorian government, on the other hand, did not give legal support to the demanding group, maintaining their position of "sovereign immunity" for PETROECUADOR and the government which in 1997 made the New York judge Rakoff deny the requalification of the demand putting a strain on the group's appeals (Fontaine, 2003).

The Texaco Company case was one of the first to get media attention both within the country and internationally in terms of the environmental impacts the sector had on the areas of influence, but it was not enough for the Ecuadorian state to take actions in a decade in which foreign investment was desperately needed from its largest financial resource in order to secure economic stability of the country once more.

By 2001, the country had already gone through a dollarization process making the payment of the external debt an economic priority in order to gain back its stability. Various options were created in order to assume this payment, among which were the privatization of specific PETROECUADOR subsidiaries, the liquidation of some State assets, and motivation of preselling crude oil at fixed prices to foreign companies. Hopes were laid in foreign investment for the oil sector but despite the commercial openness of the country at the beginning of the new millennium, more than 60% of all foreign companies in 2002 reported loss to the Internal Revenues Services (Humbol, 2014).

In this same year, the "Fund for stabilization, investment and reduction of public debt" also known as the FEIREP for its Spanish initials was established in order to capture all, if any, revenues from the sector, and direct these to the economic stabilization of the Ecuadorian economy. The FEIREP fund proceeded the "Petroleum Stabilization Fund", also

known as FEP for its Spanish initials created in 1998, which had been created to capture all the revenues perceived from higher oil prices than those budgeted, and served to offset reductions in oil revenues. In addition to this fund, three more were created in the new millennium decade in order to liberate the Ecuadorian economy from an oil dependency (Ortega, 2015):

- The Fund for Saving and Contingencies, also known as FAC for its Spanish initials (2005)
- The Special Account for Production and Social Reactivation, also known as CEREPS for its Spanish initials (2005)
- The State Fund for Investment in Strategic Sectors and Hydrocarbons, also known as FEISH for its Spanish initials (2006)

All of the funds created in this decade had specific purposes, but one general objective, to serve as a financial back up for the future development of the country and avoid requesting large sums in public and private debt in order to cover the State's budget plan. By 2007, all funds accumulated counted with approximately $4,500 million dollars (Ortega, 2015). But in April of 2008, at the start of the presidency of Rafael Correa and with a majority of votes from the newly formed General Assembly, these funds were transferred to the General State Budget for that year. The transfer was done on the basis that it was much more needed in investment for social development projects that would in the end have its returns in economic activation and stabilization of the corresponding areas to be invested upon.

For the most part, as the country continued to try to stabilize itself in economic terms, sustainable development problematics arose as the sector was facing the early consequences of not integrating economic and environmental spheres for the areas of influence which became unbearable for the citizens that had to suffer the direct consequences of none equitable public policies and sought through legal action a way of compensation. Nevertheless, the government's position of not intervening, whilst trying to economically and politically stabilize the country once more, did not deflect the issues that had risen and would create a desire for contract renegotiations to take place.

1.3.2. Contract renegotiations

Towards the end of the period to be analyzed, new reforms to the Hydrocarbons Law were made in 2010 in the attempt to have a more efficient control of the revenues perceived from the oil sector. Two lines of action were delimitated for the creation of these reforms, but both forged a further reinforcement of the nationalization process of the oil sector in Ecuador. The first had to do with the clarification of functions that the various state institutions in the oil sect had. With this, it was clarified that:

- The Ministry of Renewable and Non-renewable Resources would act as the institution in charge of determining the public policies for the hydrocarbons.
- The Hydrocarbons Secretary (created in 2009) would act as the administrator of the hydrocarbons patrimony in the country and as the State representative in all oil contracts.
- The Hydrocarbons Regulatory and Control Agency, which would be in charge of auditing all the operations done in the oil production in all its phases both for technical aspects, as well as economical aspects.
- The state-owned companies PETROECUADOR EP and PETROAMAZONAS EP that would be strictly in charge of the commercial management at the same level as the private operators (Petrominas, 2012).

Additionally, PETROECUADOR reformulated a strategy for its Personnel Training Center, department within the state institution that had been created in the initial phases of the oil sector in Ecuador, during the initiation of CEPE itself. Despite the existence of the department, this had little or no impact to the institution and the development of the oil sector itself because it had been dedicated towards giving trainings in administrative and financial aspects of the state owned institution. It was not until 2009, when the reformulation of policies changed not only the name but the nature of the department itself. It was reformed to the Institute of Petroleum Studies of PETROECUADOR, and through this institution PETROECUADOR would be able to offer petroleum oriented careers. Along with this, the newly formulated intuition would integrate a department of research and development for the sector that would be in the capacity of generating products, patents and or services related to the oil sector. The institution would also be able to carry out the personnel exchange

programs for further human capital specialization. The Institute of Petroleum Studies of PETROECUADOR, would thus be the answer to discontinue with persistent outsourcing of services and expertise that both CEPE and PETROECUADOR had been traditionally accustomed to. However, by 2012, both the institution and the department of research and development disappeared after a changing of administrative authorities and lack of binding alignments in the integration of the institution and the department of research and development with the company´s production and operational systems (Ona, 2017).

The second line of action had to do with the optimization for operational and administrative processes within the state-owned companies PETROECUADOR EP and PETROAMAZONAS EP. In 2010, three "Optimization and Recovery" contracts were signed in order to increase production levels and overall the tested reserves within the country with an investment of 2.800 million dollars. In that same year, PETROECUADOR EP was able to raise production levels from 486 million barrels to 515 million barrels, and with the price of the barrel at $90 US dollars, this meant an additional one thousand million dollars for the State (Petrominas, 2012).

Following these new dispositions, the Ecuadorian State also proceeded to submit all oil sector contracts to renegotiations in 2010, in hopes of obtaining better gains for the State. The renegotiations were made with four objectives in mind:

1. Make State participation better in terms of oil rents
2. Attract foreign investment for the risky exploratory activities
3. Increase the oil reserves and,
4. Increase the production of private blocks (Petrominas, 2012)

According to the official results, of the 23 existing contracts in the Amazon region in 2010, 14 were able to be renegotiated, and the remaining 9 were suspended due to lack of agreements reached. Still, official results estimated that from 2010 to 2012 the Ecuadorian State received an additional 2,795 million in oil revenues, product of the renegotiations. In order to be able to reach an agreement, foreign companies were obligated to transfer from their previous "Participation" contracts to the new modality of "Prevision of services with tariffs" contracts. The fundamental difference between "Participation" contracts and

"Prevision of services with tariffs" contracts is that the latter does not require for the State to give away property rights of the resource in the areas where the concessions are granted. Also, in general, the difference between the two types of contracts with the way of assessing and possible operational risk. The "Prevision of services with tariff" contract makes the State reach a contractual agreement for a fixed payment per barrel with each determined operator for the established time in the contracts (Petrominas, 2012).

However, critics to the new modality of contracts determined that these allowed the operator to have fixed and stable incomes, which was not the case for the Ecuadorian state. For example, if international prices of the crude oil would have fallen to the levels of 2006 when it was fixed at $40 US dollars per barrel, and taking into consideration that the majority of the renegotiations were established from $35 to $41 US dollars in favor of the companies, the Ecuadorian state would have gained only $5 per barrel from these renegotiations (Villavicencio, 2014).

CHART 8

Tariffs established for the "prevision of services" contracts, renegotiated in 2010

Tariffs established for the "Prevision of Services" contracts, renegotiated in 2010				
Company	Field	Previous Tariff	New Tariff	Difference
Andes	Tarapao	35.16	36	-0.16
Petroriental	Block 14	41.44	41	-0.44
Petroriental	Block 17	43.39	41	-2.39
Agip	Block 10	47.07	36	-12.07
Repsol	Block 16	33.22	36.96	2.37
Enap	MDC	16.29	16.72	0.43
Enap	PBH	19.93	20.77	0.84
Petrobell	Tiguino	30.87	29.6	-1.27
Pegeso	Purna	16.47	21.1	6.63
Petroaud	Palanda	33.21	31.9	-1.31
Petroaud	Pindo	26.98	28.6	2.62
Tecpetrol	Bernejo	21.26	24	2.74
Repsol	Tivacuno	29	27.25	-1.76

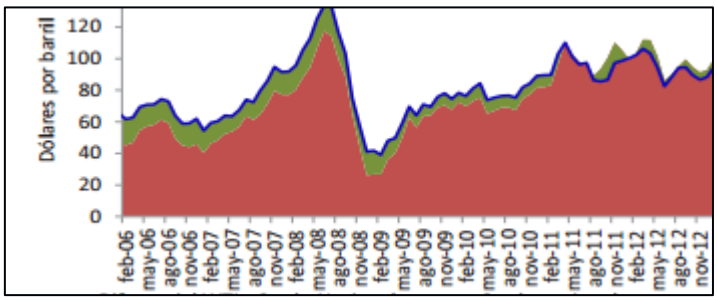
Source: (Villavicencio, 2014)

As seen in the chart above, the majority of new tariffs renegotiated between the Ecuadorian state and the foreign operators in 2010, were less than those agreed upon in the

previous contracts before the contract renegotiations. However, the Ecuadorian state did not perceive losses, since international barrel prices stabilized at above $100 US dollars per barrel from 2010 and on.

GRAPHIC 8

Development of price of the barrel

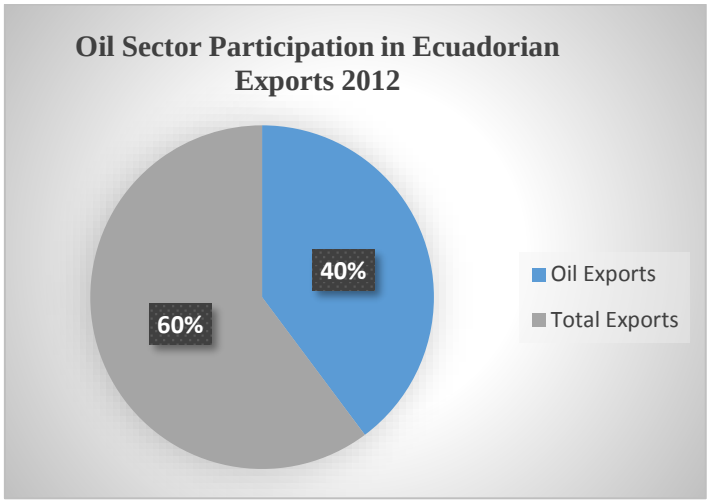


Source: (Ministerio Coordinador de Politica Economica , 2014)

A new national Constitution was formulated in 2008, and with it came renewed aspirations of changing the productive matrix of the country by using oil revenues for larger more diverse productions that would end the nation's economic dependence on the sector. The new Constitution would enhance strong state intervention through the generation of public policies especially in the regulation of the nation's economy and public spending initiatives, that would bring forward new areas of investment and potential growth. However, as seen on the charts below, by 2012, the oil sector still withheld a strong presence in the Ecuadorian economy.

GRAPHIC 9

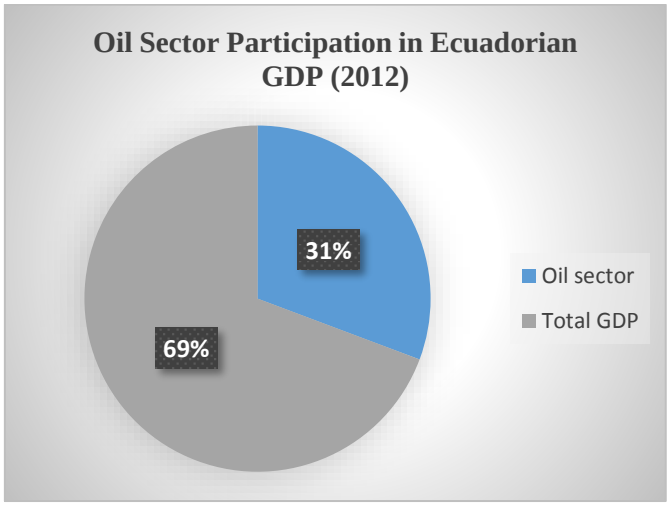
Oil sector participation in Ecuadorian exports for 2012



Source: (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz

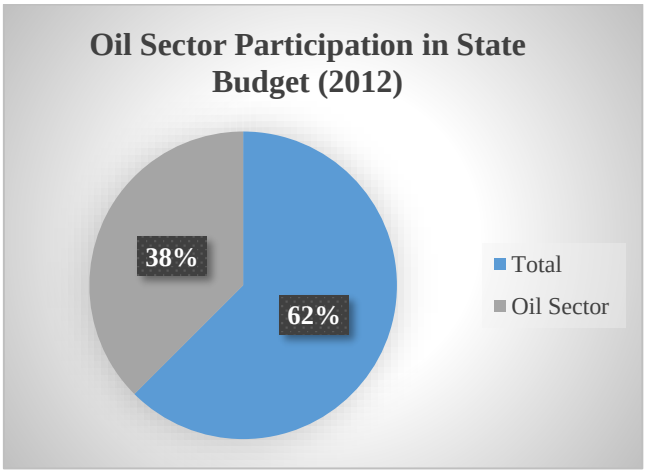
GRAPHIC 10

Oil sector participation in Ecuadorian GDP for 2012



Source: (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz

GRAPHIC 11
Oil sector participation in state budget for 2012



Source: (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz

As seen in the graphics above, the oil sector had a strong presence in the Ecuadorian economy up until 2012, despite the fact the new regime of president Rafael Correa had elaborated new economic guidelines that would seek to discontinue the economic dependency the country had on the oil sector, lessen the disadvantages of the Ecuadorian state against the competences of the foreign companies, thus increase revenues and decrease costs: lower vulnerability levels. In addition, with these new economic guidelines, new definitions of "good living" standards were incorporated thus the introduction of environmental friendly projects that would align with these new causes (Republica del Ecuador, 2009).

1.3.3. The Yasuni ITT Project

As one of the most innovative initiatives from the Ecuadorian government in its pursuit to achieve sustainable development, as well as continue to forge an alternative economic growth of the nation, the Yasuni ITT Project was launched in 2007, but was officially presented to the world in 2008. The initiative was categorized as "holistic and revolutionary" since it would allow the Ecuadorian state to restrain from exploiting 20% of proven oil reserves in the country or approximately 846 million barrels, found within the Yasuni ITT area, that is one of the world's richest areas in biodiversity, in exchange for international compensation for the 407 million metric tons of CO2 that would not be

generated. This represented a creative way of maintaining economic growth by integrating sustainable development principles in collective global action that would allow the country to free itself from the economic dependence of natural resource extraction activities (Larrea, 2008).

The biodiversity of the Yasuni ITT area was a tremendous factor for negotiations in terms of compensation payments for the Ecuadorian state from the international community. In this regard, according to scientific studies, the area is home to 2,274 species of trees and bushes, and in just one hectare, it holds 655 species of these, which is more than the total of native tree species in the United States and Canada combined. There have been 593 species of birds found as well as 80 species of bats, 150 amphibians, 121 reptiles, more than 4000 species of plants, and more than 100,000 species of insects. Needless to say, the area with the largest proved oil reserves was also the same area with the highest percent of endemism in the country and one of the highest in the world (Larrea, 2008).

With these environmental motives the Ecuadorian state would seek for the international community to compensate in half of the revenues the country would perceive if it would exploit the area. The plan was to channel all the international compensation funds in a capital fund administered by an international trust fund that would count with the participation of the main contributors. The fund would also allow the country to develop on alternative renewable energy programs by taking advantage of the enormous hydroelectric, geothermic, aeolic and solar potential present in the territory (Larrea, 2008).

This in turn would preserve the exploitation of the Yasuni ITT area where studies had proved the existence of approximately 846 million barrels of crude oil, which would mean 107 thousand barrels per day for approximately 13 years, and then a declination phase that would allow the exploitation of wells in the area for another 12 years. The overall CO2 emission that would not be generated through this initiative would be comparable to the annual emissions of Brasil (332 million metric tons) and France (373 million metric tons). Taking into consideration the monetary values of the Emissions Reduction Certificates from the European market which in May of 2009 was established at $17.66 US dollars per metric ton, the economic value of the initiative was of 7,188 million US dollars (Larrea, 2008).

For this reason, the Ecuadorian government elaborated a plan of contributions for the countries that had participated in the Kyoto Protocol, and on the basis of the total contribution expected in function of the national GDPs at that time, and taking into consideration a time period of 13 years, the following was established in order for the Ecuadorian government to meet its financial objectives (Larrea, 2008).

CHART 9

Planned contributions for Yasuni ITT project

Country	GDP (millions of USD)	% of GDP	Total contribution	Anual contribution for 13 years
USA	12417	36.98	2983.2	229.48
Japan	4534	13.50	1089.3	83.80
Germany	2795	8.32	671.5	51.65
Great Britain	2199	6.55	528.3	40.64
France	2127	6.33	510.9	39.30
Italy	1763	5.25	423.5	32.57
Spain	1125	3.35	270.2	20.78
Canada	1114	3.32	267.6	20.58
Russia	764	2.27	183.5	14.11
Australia	733	2.18	176.0	13.54
Netherland	624	1.86	150.0	11.54
Belgium	371	1.10	89.1	6.85
Switzerland	367	1.09	88.2	6.78
Sweden	358	1.07	85.9	6.61
Austria	306	0.91	73.5	5.66
Poland	303	0.90	72.8	5.60
Norway	296	0.88	71.0	5.46
Denmark	259	0.77	62.2	4.78
Greece	225	0.67	54.1	4.16
Ireland	202	0.60	48.5	3.73
Finland	193	0.58	46.4	3.23
Portugal	183	0.55	44.0	3.03
Republic of China	124	0.37	29.9	2.30
Hungary	109	0.33	26.2	2.02
Luxemburg	37	0.11	8.8	1.84
Slovenia	34	0.10	8.3	0.64
Iceland	16	0.05	3.8	0.20

Source: (Larrea, 2008)

A few years into the campaign, Roque Sevilla, who was director of the technical commission for the Yasuni ITT project, made public announcements to the BBC that the project was until 2012 a total failure in terms of securing the international contributions; the main causes he stated in the interview was the economic crisis in Europe and the indecisive Ecuadorian position towards exploiting the area, made contributors skeptical about the destination of their contributions. Until 2012, the Ecuadorian government had secured $13.3

million in concrete deposits while a remaining $116 million were left in commitments (Mena, 2013). The initiative to carry out a sustainable development project in the oil sector was much more attractive on paper than it was in the Ecuadorian bank accounts, which led to a generalized disbelieve in international cooperation and worldwide collective action in alleviating the environmental damages of fossil fuel usage.

All in all, this first chapter has sought to describe the development of the oil sector in Ecuador which can be understood through three crucial time periods. The first decade of prominence of the oil sector in the country, the channels of communication such as contract types, price references and legal limitations that would set the path for the following years of exploitation of the resource, the dynamics amongst state and non-state actors and the direction of both the sector and the country itself. The second decade which was characterized by the identification of the main causes and characteristics of the public policies developed for the oil sector in Ecuador, especially those concerning its initial stages, which put light on both the endogenous and exogenous factors that led to continuous reformations to decrease sensitivity and vulnerability levels within the sector and further nationalization in the State´s desperate attempts to try to lessen the effects of the "Ecuadorian Dutch Disease" which ultimately led to the culmination of this decade with reestablishing a new state enterprise that would be in charge of the sector: PETROECUADOR. Finally, during the last decade to be analyzed the ever-changing public policies within the sector were welcomed with the economic and political instability the country was facing at that time and the state actors became the biggest losers in the whole turmoil as PETROECUADOR and its subsidiaries saw themselves lose revenues due to legal breaches found in the forms of contracts celebrated with the foreign companies all whilst rising environmental problems lead to the creation of activist groups and research documents that proved that the extraction of the "black gold" wasn't all that bearable for the Ecuadorian society nor the environment after all.

CHAPTER II
DEVELOPMENT OF THE OIL SECTOR IN NORWAY FROM 1970 TO 2012

"Formula for success: rise early, work hard and strike oil." [2]

Jean Paul Getty

The description the oil sector and its development within Norway from 1970 to 2012 will allow the research inquire in the determining factors that led to the creation of the initial public policies that protected state sovereignty within the sector, and how these were able or not to meet their projected goals. The study of the oil sector in Norwegian history will also expose the ability of Norwegian authorities to handle change in the attempt to preserve rule of law over a large and influential sector.

2.1. The start of the oil sector from 1970 to 1980

The initial decade for the oil sector in Norway, was characterized with the presence of expert foreign companies, which intended to grab ahold of the market niche the sector was forming. Nevertheless, political consensus and stability within the country, would allow Norway to forge public policies that created the necessary platform for technological, know-how, and expertise transfer to take place. The dynamics forged between state institutions, state-owned and non-state-owned enterprises would set the path for a slow but stable economic integration and growth of the sector in the Norwegian economy.

2.1.1. The creation of the "10 Commandments for Oil"

In 1971, Norway began its first industrial size production in the Ekofish field on the Norwegian continental shelf. Ten years before this, new studies proved discoveries of gas and oil deposits in the Norwegian continental shelf, which made foreign companies as well as the Norwegian state, enthusiastic about leaving behind its dependency on coal and imported oil. Norway did not count with the expertise required for continental shelf oil exploration or extraction, so, in 1962, it received an offer from Phillips Petroleum. This

[2] Quote of Jean Paul Getty, an American business man, founder of the Getty Oil Company

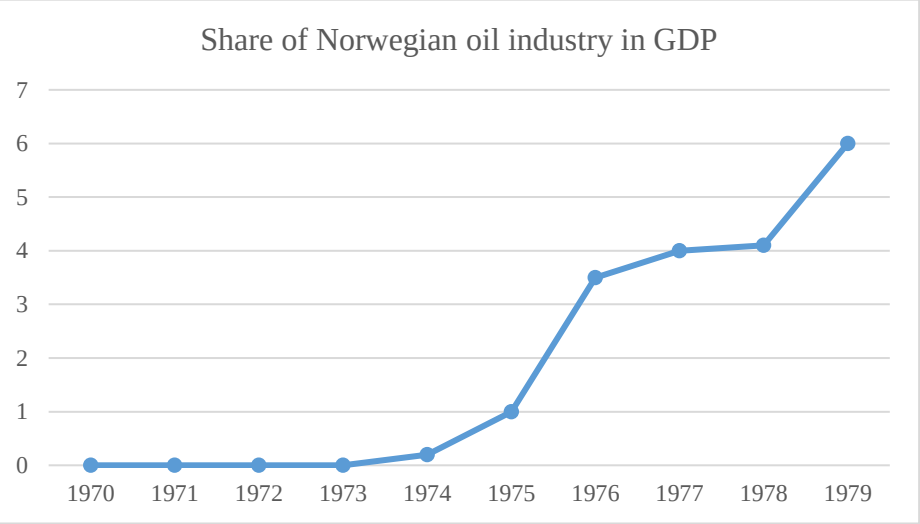
application requested exploration license for all of the Norwegian North Sea territory and, in turn, the Norwegian state would receive 160,000 dollars per month. Although the Norwegian state did not count with the technical expertise to start the exploration itself, it did not give in to the offer, since it was seen as an attempt to monopolize the oil industry sector by a single company. So, under Einar Gerhardsen´s government, Norway announced its sovereignty over the Norwegian continental shelf in 1963, and from then on, only the government would be able to award concession and licenses for exploration and production (Ministry of Petroleum and Energy , 2013).

A set of public policies were applied in the early phases of the sector in order to ensure the State's interests. The first measures leading towards a Norwegian petroleum system were the granting of concessions and taxation laws. The public policies established the parameters for the choosing of foreign companies in tenders and areas or blocks of the North Sea to be open for tendering. It also gave way to some flexibility within the concession granting system by allowing negotiations between the parties for the terms and conditions of each individual concession. Despite the openness from the Norwegian government in adjusting the terms and conditions according to each case, it still preserved a nationalistic approach by maintaining at all instances sovereignty over all areas where the natural resource was found, taxation laws that forged the integration of the sector in the national economy, and the obligation given to foreign companies to employ Norwegian subcontractors and services (Engen, 2009).

The integration of Norwegian industry in the oil sector, favored the specialization of the engineering industry for shipbuilding and the ship owning business. During the initial phases of the shipbuilding specialization for the oil sector, process transformation stages for building itself lead to an emphasis on sectional or division-by-division construction. This led to an increase control in operational and administrative evaluations to monitor individual processes, which contributed to both greater knowledge and expertise through a "learning by doing" process. For the ship owning business, Norway had already established a competitive advantage in the adjacent sector. Although oil companies transported half of the crude oil in the 1970's, the other half was being transported by independent shipping companies, which meant that Norwegian ship owners were already part of the international oil system (Engen, 2009).

Despite the growth of Norwegian industry through its integration to the new oil sector, the Norwegian state's participation had its costs which were reflected in the extensive bureaucratic management model. The transfer of both knowledge and technologies to Norwegian competences increased the costs of the oil sector exploitation for foreign companies. This was reflected in the slow increase of the participation of the oil industry in the GDP of the country. In its initial years, this figure maintained itself at less than 0% but by 1974 it started to rise when the maturing of the management model started to set in. By 1976 this percentage rose to 3.5% and by the end of the decade it was established at above 5% (Engen, 2009).

GRAPHIC 12
Share of Norwegian oil industry in GDP



Source: (Engen, 2009)
Elaborated by: Mabel Bustamante Diaz

In order to maintain the integration processes and transfers while preserving national objectives, the Norwegian parliament established the "10 Oil Commandments" in 1971 (Norwegian Petroleum Directorate, 2010). The following were established in order to forge a directed and controlled growth of the oil industry for Norway:

> *1. National supervision and control must be ensured for all operations on the Norwegian Continental Shelf*
>
> *2. Petroleum discoveries must be exploited in a way in which makes Norway as independent as possible of others for its supplies of crude oil*
>
> *3. New industry will be developed on the basis of petroleum*
>
> *4. The development of an oil industry must take necessary account of existing industrial activities and protection of nature and the environment*

> *5. Flaring of exploitable gas on the Norwegian Continental Shelf must not be accepted expect during brief periods of testing*
>
> *6. Petroleum from the Norwegian Continental Shelf must as a general rule be landed in Norway, except in those cases where socio-political consideration dictated different solution*
>
> *7. The state must become involved at all appropriate levels and contribute to a coordination of Norwegian interests in Norway´s petroleum industry as well as the creation of an integrated oil community which sets its sights both nationally and internationally*
>
> *8. A state oil company will be established which can look after the government´s commercial interests and pursue appropriate collaboration with domestic and foreign oil interests*
>
> *9. A pattern of activities must be selected north of the 62nd parallel which reflects the special socio-political conditions prevailing in that part of the country*
>
> *10. Large Norwegian petroleum discoveries could present new tasks for Norway's foreign policy* (Norwegian Petroleum Directorate, 2010)

These Ten Commandments gave path to the objectives behind the regulations established for the oil sector in Norway, as well as the creation of state institutions that would forge public policies that aimed towards a viable, equitable and bearable growth of the oil sector, whilst forging the continuous growth of other adjacent sectors.

2.1.2. The creation of Statoil

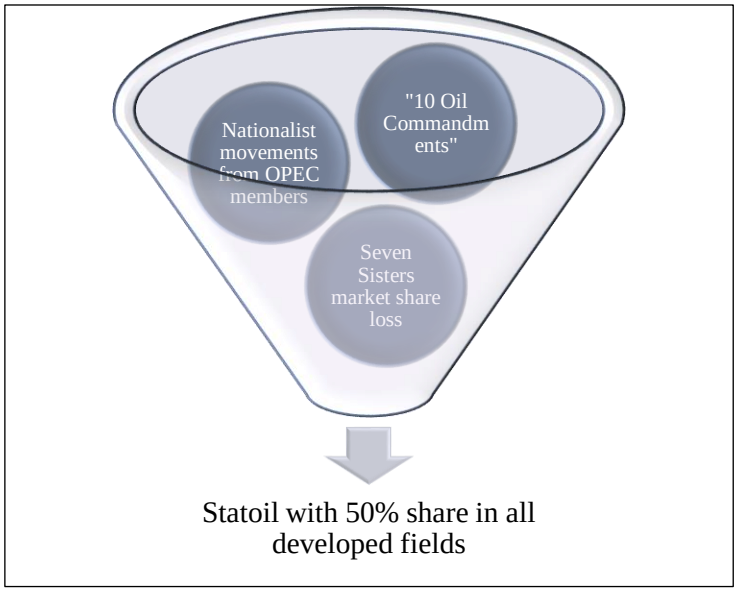
Given the parameters established for the following 30 years of the oil sector in the "10 Commandments", the Norwegian government, supported by the Labor party at that time, decided to create Statoil, the state-owned company that would foresee the nation's commercial and financial interests in 1972. The creation of Statoil also led to more competitiveness in its initial phases, since it had to endure and surpass the presence of private domestic companies that had been willing to take on the challenge before the Norwegian parliament settled on the creation of the state-owned enterprise. In order to succeed in its performance, Statoil developed two main functions in the oil sector which are summarized in the following: to foresee the State's financial equity in awarding licenses and transportation means and to be a conduit for the transfer of technology that would in turn lead to economic development (Gordon & Stenvoll, 2007).

The Norwegian state, through its newly created institution, decided to take participation only after a well had been confirmed which allowed the company to rein from high exploration costs in the North Sea, thus, the interest in technological transfer in its initial

phases (Gordon & Stenvoll, 2007). However, excessive exploration costs in the early stages of the oil sector in the Norwegian Continental Shelf did not render foreign company interests. Although Norway chose not to join the OPEC, during the early years, it was directly influenced by the climate of the oil industry worldwide.

The startup of Statoil was parallel to the "Seven Sisters Crisis" and their loss of market share due to high demands from developed countries such as Europe and the USA, as well as political instability in the Arab world provoked by nationalization movements (Engen, 2009). The "Seven Sisters" (conformed by Exxon, Gulf, Standard Oil of California, Texaco, Mobil, BP and Shell) at that time, were facing renegotiations with their host countries on the basis of demands for higher taxation payments on concessions. This created a niche for smaller independent companies that were willing to comply with the new nationalist dispositions. As their market share decreased, the opportunity of opening new markets in more politically stable countries, such as Norway, became far more attractive despite high exploration and technological costs (Engen, 2009).

GRAPHIC 13
Exogenous and endogenous factors for the creation of Statoil



Source: (Engen, 2009)
Elaborated by: Mabel Bustamante Diaz

The international arena at that time, allowed the Norwegian state to enhance its revenues from the sector by establishing 50% share in all developed fields within its domain,

which ensured the company's equity at an early stage. However, maintaining half participation of all oil production within the country would not suffice in order for Statoil to obtain its objective of economic development within the sector. Other policies were formulated in order for its program to achieve growth expected. This meant investment in infrastructure, specifically in oil pipelines, which allowed the Norwegian state to have control of transportation services, as well as price and volume in oil production levels. Furthermore, investment was also carried out in the development of human capital, which was done in conjunction with the foreign companies during the time of the licenses awarded. Although this practice built up know-how among Statoil's employees, it still had to internally train its staff (Gordon & Stenvoll, 2007). Statoil continued to forge new policies in the aims of integrating systems that would consolidate its position in the oil market sector and advance in the development of the institution as an independent player, thus in the future lessen dependency levels with foreign companies.

2.1.3. The consolidation of Statoil

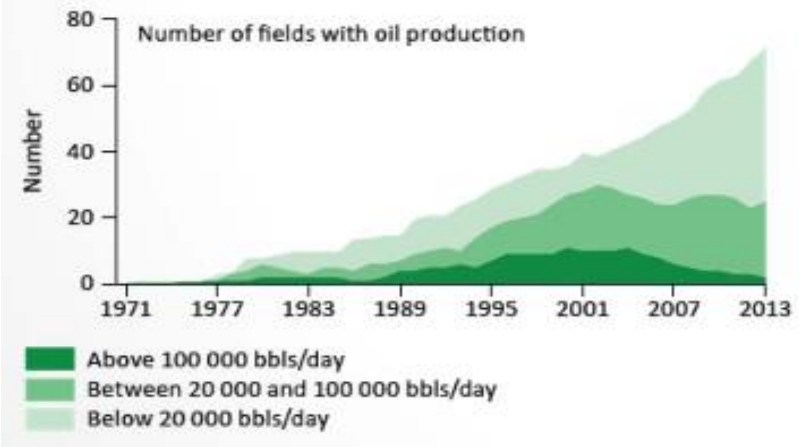
In order for Statoil to consolidate its position in the oil sector, as the institution in charge of the financial and commercial interests for Norway, the Norwegian Parliament otherwise known as the "Storting", created alongside Statoil, the Norwegian Petroleum Directorate in 1972 and a new division for Petroleum and Mining within the Ministry of Industry (Norwegian Petroleum Directorate, 2016). The Norwegian Parliament at that time saw it necessary to divide the oil sector into these three state institutions so that each specific function could be developed and attended to. In this regard, the new division in the Ministry of Industry would take on the role of establishing public policy for the sector; the Norwegian Petroleum Directorate would serve as the administrative function in providing related studies, statistical data collection in addition to regulation for the sector (Claes, 2014).; and Statoil would focus its functions towards the business operations of the sector, mainly those inquired through licensing of foreign tenders (Norwegian Petroleum Directorate, 2016).

In the early years of Statoil, oil productions were fixed at a slow growth with an average of below 20,000 barrels per day from 1970 to 1976. However, with the rise of licenses awarded and with the "Goodwill Agreements" that came along with the concessions, production levels began to rise, and the Statoil noticed the necessity of developing

cooperation agreements with the foreign companies in terms of research and development for the oil industry (Mohn, 2015)

GRAPHIC 14

Barrels produced per day vs. number of fields with oil production



Source: (Norwegian Petroleum Directorate, 2016)

The "Goodwill Agreements" were based on the understanding reached between the Ministry, the Royal Norwegian Council for Scientific and Industrial Research, one of five research institutions that had been established in Norway after World War II and the international enterprises within Norway (Vorobyov, 2012). Among that established in these "Goodwill Agreements", was the subcontracting of Norwegian investigation institutes and companies by the foreign companies that had been awarded licenses in the North Sea. It also included the collaboration in studying of or funding of studying in the modernization and testing of processes such as drilling, field facilities construction, storage, construction of off shore platforms, underwater structures and systems and transportation (Vorobyov, 2012). This generated the so called 50/50 agreements which established that any operator or concessionary in the Norwegian territory would have to assume 50% of all research necessary for the development of the oil sector where it was allocated (Vorobyov, 2012).

CHART 10

Example of companies that collaborated in the 50/50 agreement from 1977 to 1979

Companies that collaborated in the 50/50 agreement from 1977 to 1979		
Company	Amount allocated for R&D (million USD) *	Percentage allocated to Norwegian firms and institutions
Shell	54 USD	73%
ESSO	20 USD	80%
ELF	14.8 USD	63%

Source: (Vorobyov, 2012)
Elaborated by: Mabel Bustamante Diaz
Note.
*Values calculated with the average exchange rate of NOK to USD from 1977 to 1979

As seen in the chart above, the 50/50 agreement by the majority of operators in Norway surpassed 50% in allocating services to Norwegian institutions or enterprises which enhanced the technological, know-how and expertise transfer at the same time it diversified the revenue rubrics obtained from the oil sector, and where these were destined to. In order to oversee the compliance in the implementation of these agreements, tasks were established in order to follow up the progress of these activities such as: regular updates to the Ministry on plans and course action, quarterly newsletters in order to inform the Norwegian scientific community of advances in agreements established, biannual meetings between Norwegian research institutions and industrial companies, in conjunction with annual information and data recollection (Vorobyov, 2012). Although the "Goodwill Agreements" had no legal repercussions or economic sanctions within the concessions established, these would give the international enterprises "Goodwill Points" in future rounds of licensing (Engen, 2009). The binding relationship of the "Goodwill Agreements" with the "Goodwill Points" and the awarding of licenses, gave Norway the opportunity of developing a diverse portfolio in regard to the oil sector, which meant lowering sensitivity levels especially in economic terms for the nation within its early stages.

2.2. Adapting policies for the sector between 1980 to 1990

The second decade of the oil sector in Norway proved to be a period for re adaptation and formulation of new strategies within the sector. Previous public policies forged for the sector in the 70's, allowed Norway to put into use expertise acquired in the construction of large projects, creating a cycle that fed off of its main pillars: investment, production and revenues. Nevertheless, the growth of production, sales and revenue caused the alarming

influence of the state-owned company Statoil within the Norwegian economy. The measures taken to avoid the exceeding power of the state-owned company and lessen vulnerability levels of the public policies established in the first decade would create institutional and economic division in order to be able to better attend the sector´s objectives.

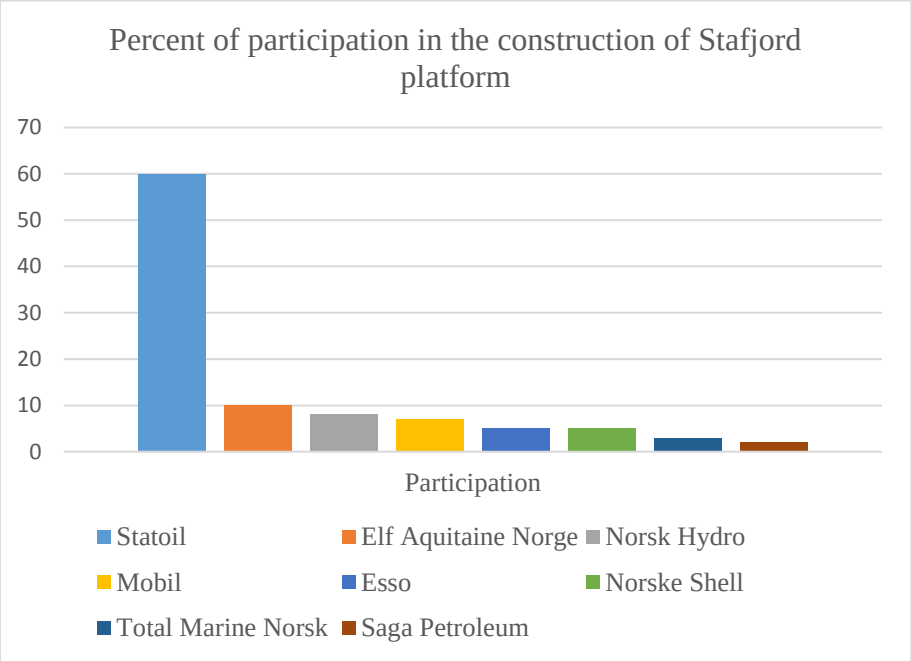
2.2.1. Putting into work research and development policies

During the 1980's, previous policies forged through the "Goodwill Agreements" made it possible for Norway to take on big projects that not only put into work all the research and development matured in the sector, but also strengthened the organizations and their links between the different actors involved (Engen, 2009). During the 1980's, the Norwegian state, through its state-owned company Statoil, took on two large strategic projects that set the parameters for future oil extraction platforms in the North Sea. These were the Statfjord C and the Gullfaks platforms (Engen, 2009).

Construction plans of Statfjord C took place at the beginning of the decade in 1980. A joint venture between various companies was formulated in order to take on the construction of the platform and the oil pipeline and "Karsto" terminal station leading to it. Within the joint venture, Statoil had 60% of participation making it for the first time, operator of a big off shore oil project. Still, other Norwegian and foreign companies also collaborated in its construction (Offshore Technology , 2016).

GRAPHIC 15

Percent of participation in the construction of Statfjord platform



Source: (Offshore Technology , 2016).
Elaborated by: Mabel Bustamante Diaz

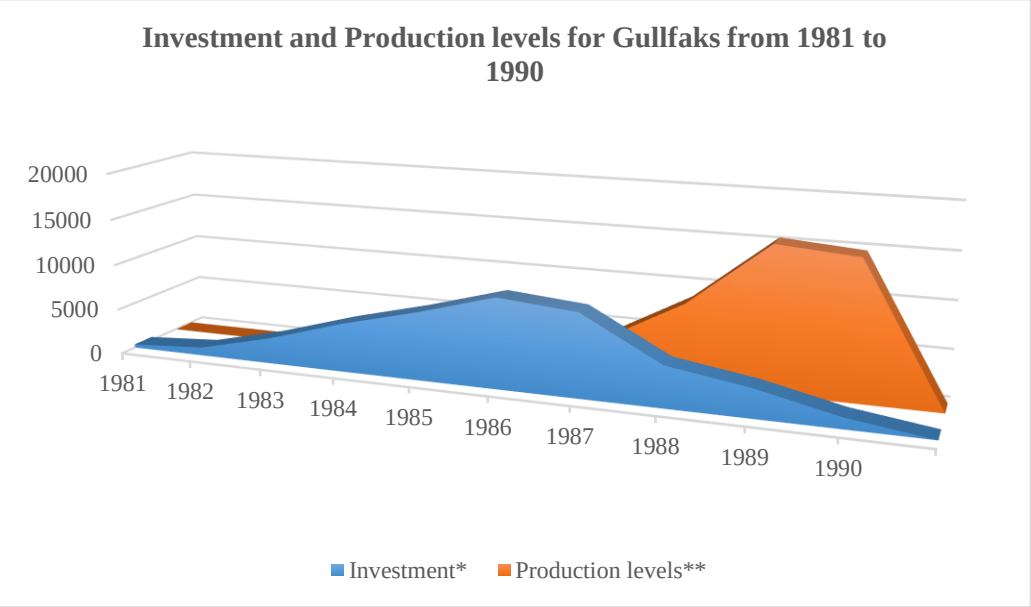
As seen in the graphic above, the participation of foreign companies Mobil and Esso, in this case combined, had 12%; thus, the collaboration with Norwegian companies was crucial for the construction of the biggest project taken on by Statoil at that time. By 1985, when the construction of the platform was nearly complete, evacuation chutes made of galvanized steel rings covered in rope were introduced being the first of its kind to be placed on an off-shore oil extraction platform. Finally, in January of 1987, Statfjord began producing and production levels of that field peaked in that same month with a record of 850,204 barrels of oil per day (Offshore Technology , 2016). The success was well received; after the crash of the oil barrel prices at the beginning of the decade, oil revenue flows decreased while high investment costs only started to be perceived after the finalization of these great projects.

With this success, both in technology implementation and innovation, as well as that obtained in the growth of production levels from Statfjord platform, the Norwegian state gave green light to the construction of the next mega off shore project: Gullfaks A platform. Currently conformed by two more stages (Gullfaks B and Gullfaks C), this was the first field to be constructed solely by Statoil. It proved to be the ultimate challenge in construction

capacity for the state-owned company, as well as for the Norwegian industries, which supported the project with 80% of the supplies needed. Construction for the Gullfaks field started with stage A in 1983 with a water depth of 133 meters and a total of 330 beds built that used up 630,000 tons of concrete for construction, one of the largest platforms of off shore oil extraction, and the largest platform in the Norwegian territory at that time. Just one year after the initiation of the construction of stage A commenced, stage B was approved. By the end of the decade, works on the final stage, stage C, had already begun and combined all three stages had more than 800 beds built with more than two million tons of concrete with an expected service life of more than 30 years (Statoil, 2014).

GRAPHIC 16

Investment and production levels for Gullfaks from 1981 to 1990



Source: (Statoil, 2014)
Elaborated by: Mabel Bustamante Diaz
Note.
*Investments in millions of US dollars
** Production levels in millions of US dollars per barrel

An inverse relationship can be noticed with the experience of these two grand oil platform projects. The investments made in research and development as well as, in adjacent industries for the oil sector, had its returns once these began to be applied. As the application of the findings increases, construction stages finalize and production levels rise, investment goes back down demonstrating a cycle pattern between investments, production, therefore revenues.

Although research and development policies forged in the initial phases of the oil sector in Norway provided the sector with the expertise and specialization needed in order to conduct these two projects, learning from failures and accidents also accounted for precautions taken in the construction of these platforms, thus their success. In this regard, at the beginning of the decade, the greatest accident of an oil platform in the history of the North Sea occurred in one of the first commercial platforms of Norway, the Ekofisk Edda platform. The accident occurred when one of the three leg bracings collapsed due to fatigue, causing the drilling platform which had been designed in a pentagon form to brake from the anchor cables, which made the structure tilt from one side until finally capsizing (Officer of the Watch, 2013).

At the time of the accident, 165 men were in platform. The platform counted with seven 50-man lifeboats and twenty 20-man lifeboats. However, in response to the accident only 42 men were able to be rescued, the majority of whom were taken from the sea by supply boats nearby. The aftermath of the accident indicated the weaknesses and possible threats to the oil sector industries. The investigation of the process of capsizing of Alexander L. Kielland gave as a result various findings that were later encouraged to be taken into consideration by the Norwegian industry (Officer of the Watch, 2013). Among these were:

- The failure and fatigue of one of the leg braces was due to bad quality welding and furthermore, to inadequate inspections of the structure.
- The progressive fatigue of the structure was not able to be identified due to lack of design checks.
- Construction codes did not require structural resistance; thus, the damage tolerance was not evaluated in case of an emergency.
- Inadequate or non- existing evacuation plans and their time of response unto possible emergencies (Officer of the Watch, 2013).

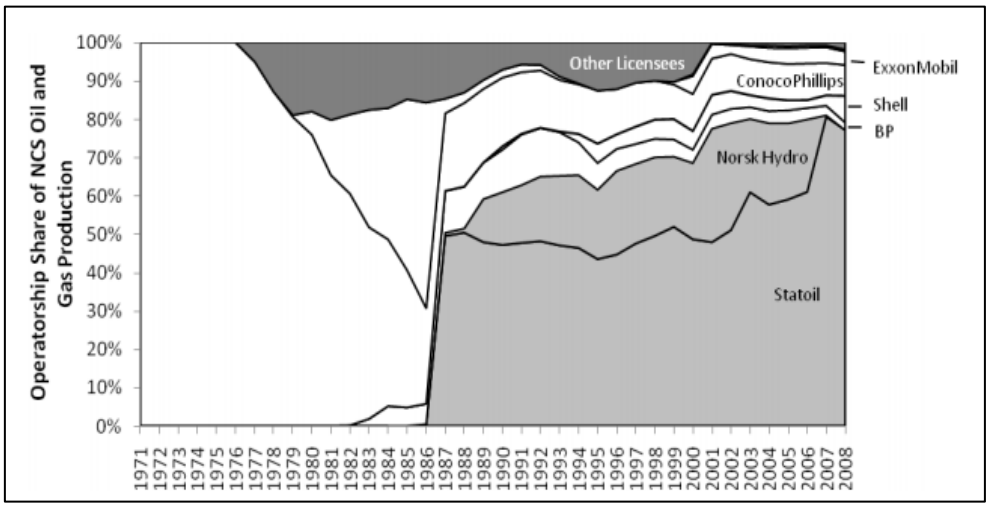
Although the Alexander L. Kielland accident was the worst in terms of human loss, capital loss, as well as environmental contamination, it served for the formulation of measures necessary to lay off any disadvantage that could be detected beforehand through the implementation of controls, monitoring and codes in order to avoid any future accident to escalate into the capsizing of an off-shore structure.

2.2.2. The creation of the State's Direct Financial Interest

The increase in production levels due to the opening of large new platforms, especially those where Statoil become sole operator, made the state institution be in the center stage of licensing, operatorship and economic revenues. Despite the international fluctuations for the price of the barrel that reached its lowest point in 1986 at $12.70 US dollars (Gestiopolis, 2001), the success of the new large platforms and the peaks in their production at that same time made Norway numb of the external factors that otherwise would have led to an economic bubble in the oil sector and the nation's economy. From 1986 to 1990, the shares of the Norwegian Continental Shelf were shifted to Statoil's management and operatorship (Thurber & Istad, 1992).

GRAPHIC 17

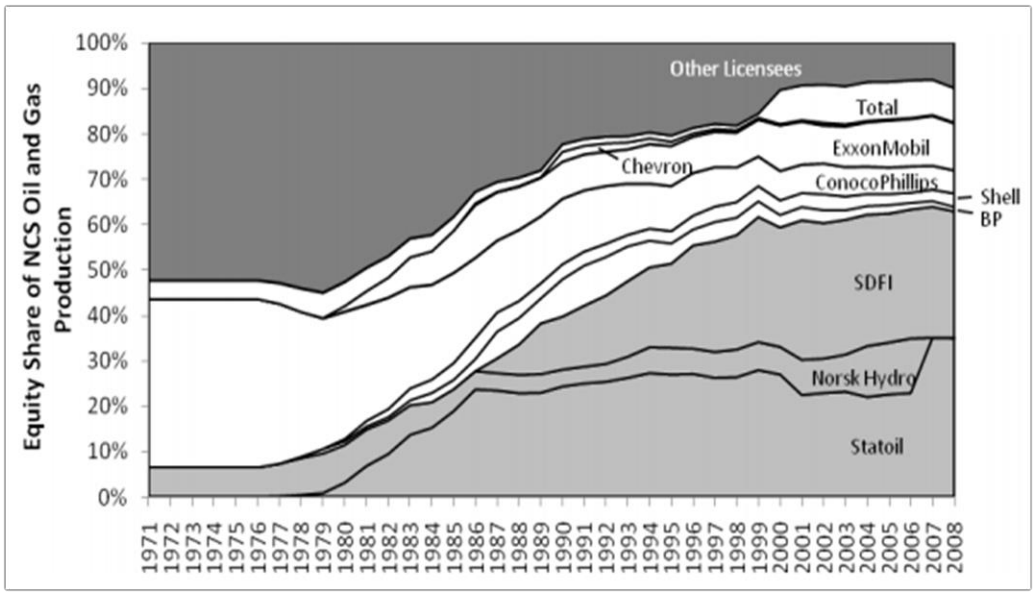
Equity share of NCS oil and gas production



Source: (Norwegian Petroleum Directorate, 2016)

GRAPHIC 18

Operatorship share of NCS oil and gas production

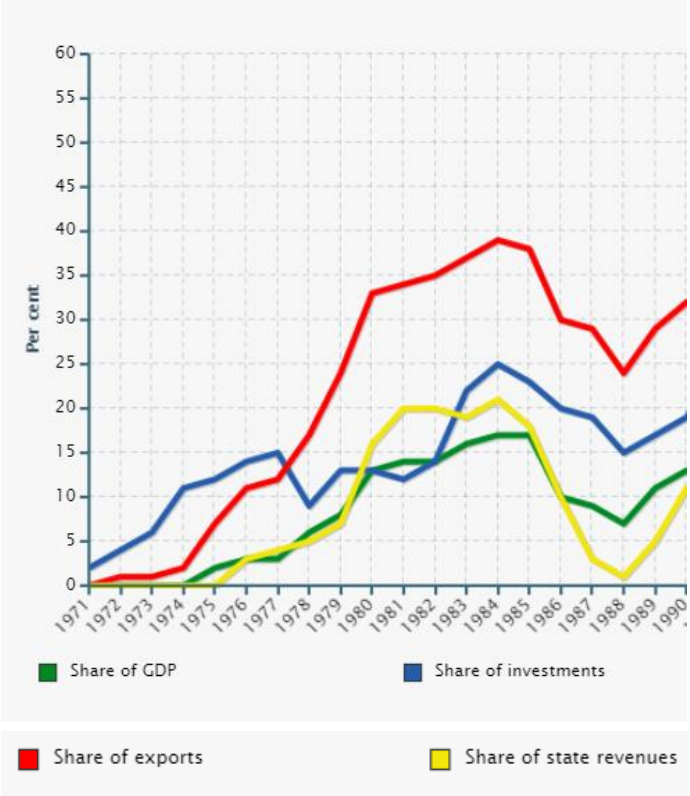


Source: (Norwegian Petroleum Directorate, 2016)

Statoil also sought to expand some of its existing facilities such as the Mongstad refinery in 1986. The expansion would give the refinery to go from 6.5 million tons of crude oil to 10 million by 1989. However, the expansion of the refinery made government authorities aware of the excessive influence and power of the state-owned institution in the oil sector. The initial budget for the realization of the project was set at 825 million USD when it was approved in 1986; however, by September 1987, the first warnings of overspending were made at an estimated 500 million USD. In January of 1988, a final sum of 789 million USD was reportedly overspent. The scandal of over $780 million US dollars of over expenditure led to the resignation of all the board members including the CEO of Statoil at that time, Arve Johnsen, which until then had been the first CEO to have ever resigned from the company (The New York Times, 1987).

GRAPHIC 19

Oil sector and its influence in macroeconomic indicators of Norway

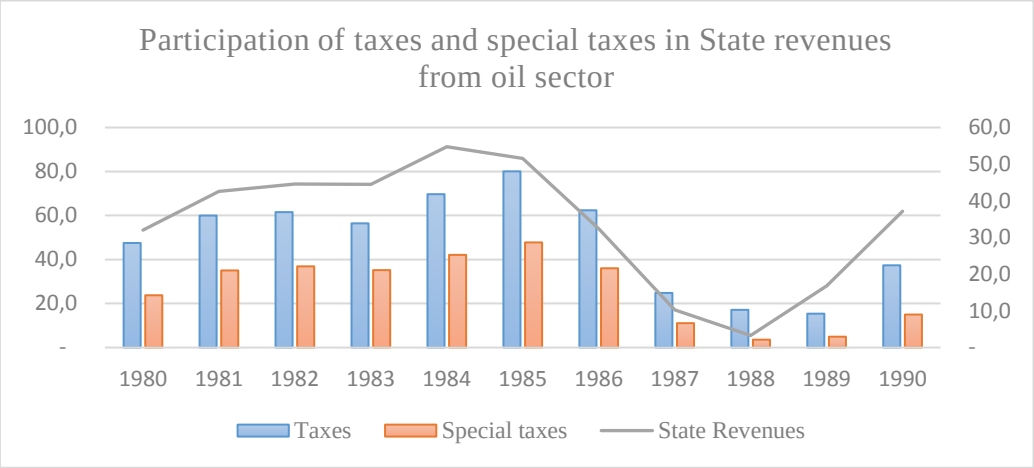


Source: (Norwegian Petroleum Directorate, 2016)

Despite the fact that most of the producing fields in the Norwegian Continental Shelf had peaked in the mid-eighties, the economic figures until the end of the decade did not demonstrate this growth in production. At the beginning of the production peaks in 1984 until 1986, State revenues were on average set at 16% while share in GDP was established on average at 15%. In 1988, State revenues from the oil sector dramatically sank reaching an all-time low with 1% and share in GDP of the sector at 7%. Although participation of the oil sector in the State revenues and share of GDP declined dramatically that year, shares in exportations and investments maintained at above 15% as shown in the chart above (Norwegian Petroleum Directorate, 2016). The figures did not add up by the end of the decade, and the Norwegian state decided that it was advisable to create new tax policies for the fields with exceeding production levels in order to obtain coherent State revenues from the production peaks of the sector in the eighties. In addition to the special taxes created for the areas of extraordinary production levels, the government also implemented taxes on petrol according to the amount of lead emissions (Ministry of Finance Norway , 2007).

GRAPHIC 20

Participation of taxes and special taxes in state revenues from the oil sector



Source: (Ministry of Finance Norway , 2007)
Elaborated by: Mabel Bustamante Diaz

As seen in the graphic above, special taxes peaked in the same years that production levels peaked in the mid-eighties. However, 1988 continued to be a critical year in which State revenues from the oil sector were lower than that perceived from the total taxes recollected by Statoil. This situation was explained by Statoil authorities through the over expenditure it had had to go through in the expansion of the Mongstad refinery. Investment levels were higher than the revenue levels for the company that year. The scandal was the breaking point for the Conservative Party of the time that had taken seat at the beginning of the decade and had tried, unsuccessfully, to leverage Statoil's power in the oil sector at the start of the decade. After the Mongstad incident, and in order to maintain control of excessive power and influence of Statoil both within the industry and in the nation's economy, the Norwegian parliament sought to divide Statoil's cash flow in two (Thurber & Istad, 1992). One part of the oil sector's revenues would go directly to Statoil in order to cover its commercial function within the sector and another part would go to the newly created institution: State's Direct Financial Interest also known as the SDFI. This meant that not only revenues would be directly injected to the Norwegian economy, but that the state would also have holdings in various oil fields, pipelines and offshore facilities (Norwegian Petroleum Directorate, 2016). The percent to which the new state institution was awarded varied in each license, but maintained a ratio of 1/3 of Statoil's dividends. It also meant that as co-owner of the oil sector, it had to cover its part of costs in terms of investment, research

and development. However, in that same proportion it received the corresponding revenues generated for each production it took part (Norwegian Petroleum Directorate, 2016).

All of the policy adaptations taken place in this decade inspired the creation of the "Norwegian Long-Term Program" that was launched in the 1990's. This program had the initiative of reducing other taxes by increasing environmental taxes in the sectors with the highest participation in the nation's GDP. Among these industries was the oil industry which accounted by the end of the decade for 11% of total GDP (Norwegian Petroleum , 2016). In 1989, the Norwegian government took on its first preparation committee to address future decision-making and policy implementation of the economic instruments to be used for an environmental and innovation policy in the oil sector. In this regard, new taxes were to be allocated for the emission of fossil fuels in the sector both to take precaution of the environmental hazards of disregarding this topic and to forge innovation in the absorption of vertical processes. The results from this Commission noted that 60% emission of sulphur dioxide, a chemical residue of the oil sector which is known to be one of the main causatives of acid rain, and 40% of carbon dioxide, main causer of the greenhouse effect, were exempt of taxation. The corresponding studies were done in order to determine the economic instruments to be used taking into consideration the costs that the institutions charged would have to endure in order to change previous methods. In this regard, the State's Direct Financial Interest, funded various studies and carried out the necessary research until the policies to be applied were agreed upon and the corresponding socialization of these was done to all the sectors that would have to adhere to them (Ministry of Finance Norway , 2007). This process meant the coordination and integration of public policies through the various institutions and actors, as well as reaching consensus on bearable and viable means for the sector to continue is production within the nation.

2.3. The expansion of the oil sector from 1990 to 2012

The final period to be analyzed for the oil sector in Norway presents a challenging scenario for the State as it tries to combine both public and private objectives for the sector while trying to stay true to the objectives formulated for the sector under the "10 Oil Commandments". This last period, also signified the expansion of the once, solely state-

owned company and its incursion into new business ventures outside of Norwegian territory, that allowed the nation to create an economic mattress for future generations.

2.3.1. The maturing of Statoil

Diving into the nineties, the state-owned company continued to fulfill the functions that the Storting had delegated to it, however, as to operations, it matured by expanding the activities both in terms of technology and location which made the nineties a transition decade for the maturing of the state enterprise.

Given that Statoil had been reduced from its participation in the oil revenues through the creation of the SDFI, it had to seek other more creative ways of financing in which it could take advantage of the acquired experience from the eighties as an operator. This led the company to take into consideration broadening their portfolio both domestically and internationally. For the domestic part, it sought to take a niche of the market in massive gas production and expand its vertical processes. The alliances between Norwegian suppliers and foreign suppliers, especially those from Eastern Europe in the eighties, led the company to make a breakthrough in the petrochemical sector with the creation of Borealis, founded as a side start-up company in which Statoil held 50% share that would be in charge of research and development in the petrochemical adjacent field (Gordon & Stenvoll, 2007).

On the other hand, as an international perspective, it decided to make its own efforts in acquiring foreign contracts as well as, make an alliance with British Petroleum which resulted in a strategic move in terms of start-up cost on an international level. The most significant collaborations developed within the Statoil-BP alliance were three foreign discoveries located in Angola, Azeri/Chirag/Guneshli and in Vietnam. Likewise, Statoil also pursued to expand international market by making efforts outside of the BP alliance in Ireland, the US (two times), Iran and Venezuela (Gordon & Stenvoll, 2007).

The company continued to solidify its diverse portfolio by taking on various projects both within the Norwegian Continental Shelf and abroad, as it did in 1997 with the development of the Lufeng field off the shores of China. For the Norwegian government, Statoil was beginning to appear more like a private operator than a state-owned enterprise, and despite some talks about the privatization of the company in the late nineties,

government policies were still skeptical on the outcomes of taking the decision. Taking advantage of its maturing diverse portfolio, the Aasagrd field was developed entirely by the company in the late nineties and represented a technological leap with the construction of various pipelines and export infrastructure for the platform. However, like the Monstad refinery expansion in the previous decade, the field was developed with "lack of budgetary controls and project mismanagement", which ultimately led to an over budget of $2.6 billion US dollars of that originally established for the field. Given the fact that Statoil was still a state-owned company, the over budget of the Aasagrd field signified losses for the Norwegian State as well (Gordon & Stenvoll, 2007).

Much like the Monstad refinery scandal, once the Aasagrd field over budget was made public, the resignation of the board and the president of the company, Mr. Novik was inevitable. However, on his last discourse given in 1999, Mr. Novik made it clear the problematic of keeping Statoil entirely state owned if wanted to elongate the life expectancy of the company long after the oil resource be substituted (Gordon & Stenvoll, 2007).

2.3.2. The privatization of Statoil

Entering on to the new millennium, the oil sector in Norway had to face the dilemma of partially privatizing the state-owned company in order to maintain competitiveness in an international arena where the barrel price had established at above $100 US dollars made the oil industry much more attractive and lucrative for private companies or maintain the status quo of the company and not lose a part of the State's revenue flow.

Given previous experiences in the Monstad and Aasagrd, public policy making in Norway shifted towards a more flexible and liberal dispositions rather than nationalistic aspirations which made the company confident in gaining back control over its main purpose: "improving the return of capital". The application of privatizing the state-owned company was sent out in 2000, but authorities did not make a decision until a year later after analyzing one of the most controversial matters: the transfer of the SDFI back to Statoil so that it would acquire more market value. In 2001, through various reformations made in the functions of the state institutions involved in the oil sector, Statoil was enlisted both in Oslo

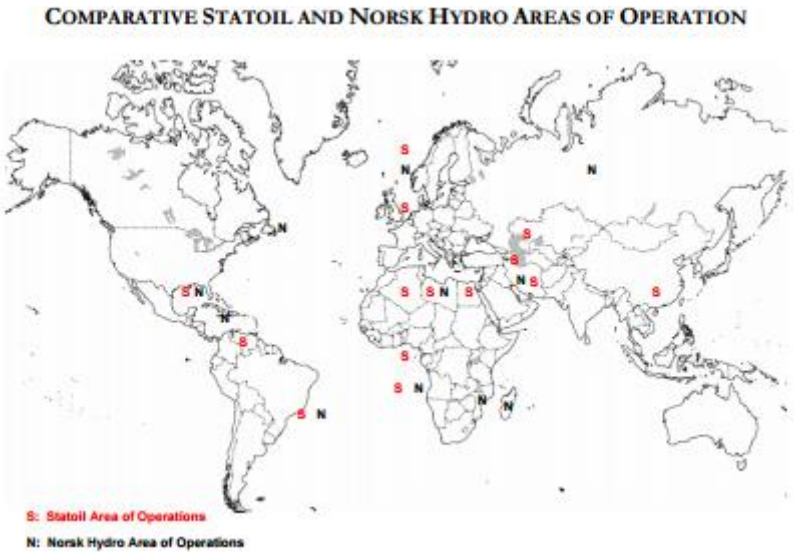
and New York. On the other hand, the new dispositions clarified the functions of the following institutions:

- Statoil would be partially privatized (21% to start off with projections of further privatization) and would acquire 15% of SDFI, to make it attractive for investors
- Norsk Hydro and other Norwegian companies would be able to acquire up to 6.5% of SDFI
- The SDFI would be transformed into Petoro, which would from then on be in charge of the commercial operation of the state's resources (Gordon & Stenvoll, 2007).

In the following years after the partial privatization, Statoil would continue to work on building the main pillars towards becoming a global competitor in the industry sector. In this sense, it sought to: *"consolidate and rationalize Norwegian holdings, international portfolio diversification, intensify operations and increase investments"* (Gordon & Stenvoll, 2007). It did this by merging with Norsk Company, a leading industrial Norwegian company, in upstream operations in 2005. As seen on the chart below, the companies had similar areas of operations held on an international level. The corresponding analysis was done and the merger sought to produce "cost savings" by consolidating efforts in overlapping areas of influence.

ILLUSTRATION 1

Comparative Statoil and Norsk Hydro areas of operation



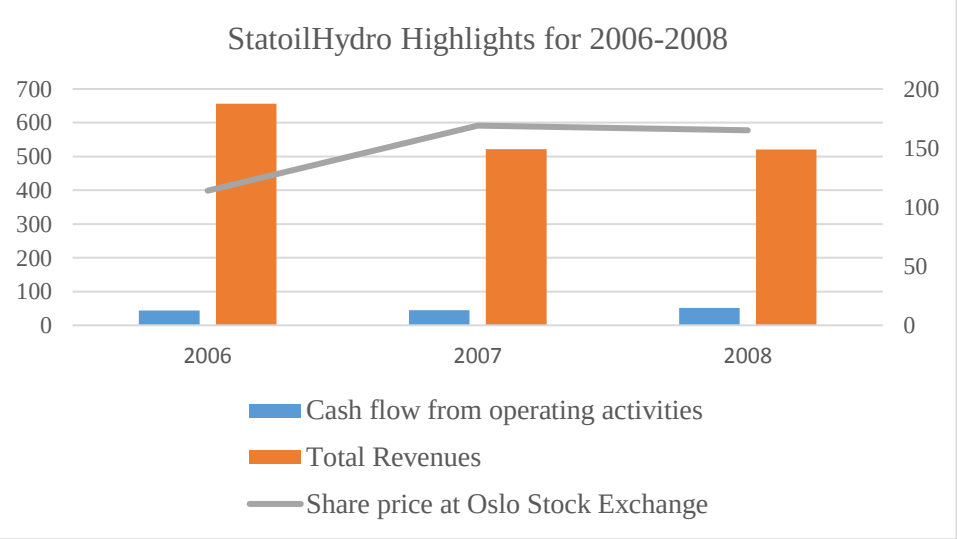
Source: (Gordon & Stenvoll, 2007)

In a way, the merger was also celebrated in order to maintain competitiveness within the oil sector since competition was tough already with other international players. The merger also meant combining the government's share which was established at 62.5% for the combined company, which signified an 8% decrease of the government's shares prior to the merger. Nevertheless, the merge took place which meant a shift in the Norwegian government towards pursuing a more corporative like institution that could be competitive when faced with resource constraints. In this sense the two main constraints that the merged company tried to relax were:

- *Entry barriers of investment opportunities*
- *Limited availability of experienced human resources* (Gordon & Stenvoll, 2007)

The next three years, would be used to merge not only human and material assets but also bureaucratic administrative processes as well. As shown in the chart below, despite the fact that the company's total revenues decreased, cash flow provided by operating activities and the company's average share price in the Oslo Stock Exchange Market increased. In fact, share price for the company was fixed at an average of $149.38 US dollars during this time period (StatoilHydro, 2008).

GRAPHIC 21
Statoilhydro highlights for 2006-2008



Source: (StatoilHydro, 2008)
Elaborated by: Mabel Bustamante Diaz

The newly merged company was then named, StatoilHydro, and with its new name came a new strategy for building long-term, sustainable growth. The strategy was built on four main pillars that had to do with:

- *Maximizing the long-term value creation on the Norwegian Continental Shelf,*
- *Building and delivering profitable international growth*
- *Developing profitable midstream and downstream positions*
- *Creating a platform for new energy solutions and production* (StatoilHydro, 2008)

In this regard, maximizing the long-term value creation in the NCS meant that the company would take on the remaining exploration potentials in the NCS in order to maintain or presumably increase its one-third participation. It also meant that the company would increase its efforts into enhancing operations and performance through regulatory and efficient drilling systems as well as, carry out an Improved Oil Recovery Plan in order to maximize the combined assets of the new company on a national level (StatoilHydro, 2008).

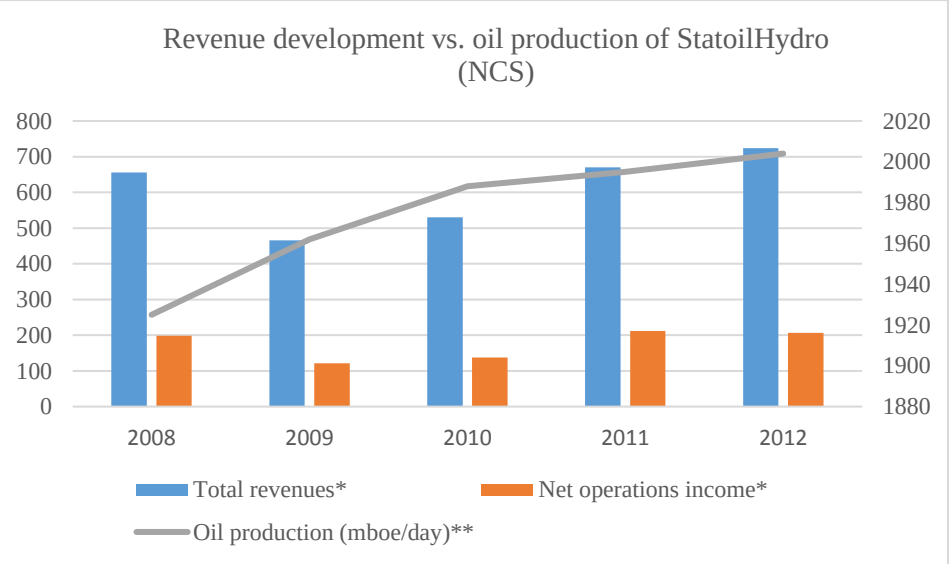
On the other hand, in order to deliver profitable international growth, StatoilHydro would have to focus on reorganizing and assessing projects in order to meet the budgets established. It was now in full capacity to pursue further international expansion with larger capital, physical, and personnel resources. A competitive advantage the newly formed company would have above all other private companies is its background as a national oil company, and it would seek to grow upon that advantage with other national owned oil companies seeking to form international alliances (StatoilHydro, 2008).

Within the new company's strategy is the developing of midstream and downstream activities for the oil industry. In the oil sector, midstream activities are those that refer to transportation, such as pipelines, barge, oil tankers, etc. It also englobes storage and wholesale marketing of crude oil or its derivatives. On the other hand, downstream activities refer to the refining of the crude oil and the purifying of natural gas as well as the distribution processes and methods of these derivatives. Both activities would now be potentialized with the combination of assets and expertise acquired through the merge (StatoilHydro, 2008).

Finally, the company would pursue to acquire in its portfolio a profitable business in reducing the greenhouse gas emissions from the oil sector. In this sense, collaborations would be made in order to make StatoilHydro a key player in the industry of carbon capture, storage, and further usage. It would seek to take advantage of the company's offshore experience to make commercial investments in renewable energy projects, especially those aimed towards large scale offshore wind power generation (StatoilHydro, 2008).

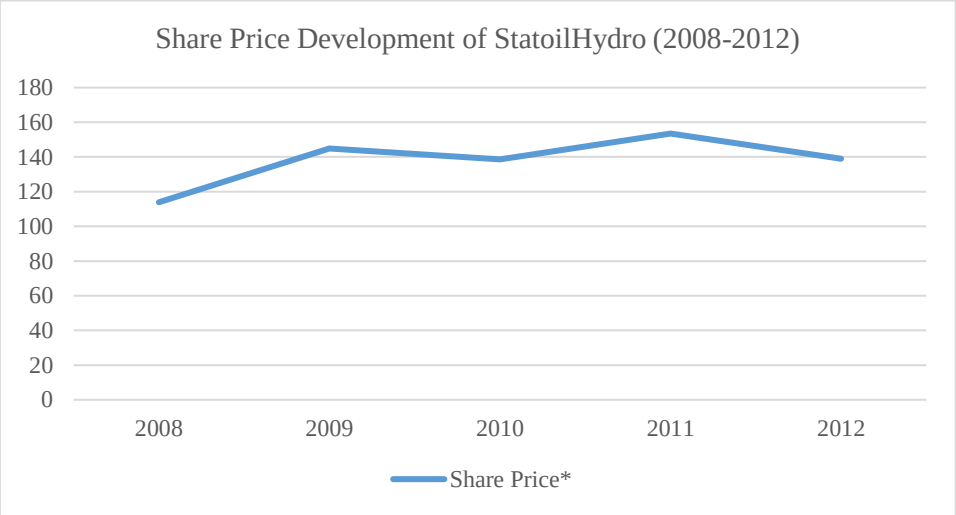
During the following years, StatoilHydro on average improved its financial statements, operation and production levels, but share value for the company in the stock exchange markets decreased, which can also be explained through the uncertainty of international oil price fluctuations.

GRAPHIC 22
Revenue development vs. oil production of Statoilhydro (ncs)



Source: (StatoilHydro, 2008)
Elaborated by: Mabel Bustamante Diaz
Note.
* Expressed in million US dollars
** Expressed in million barrels per day

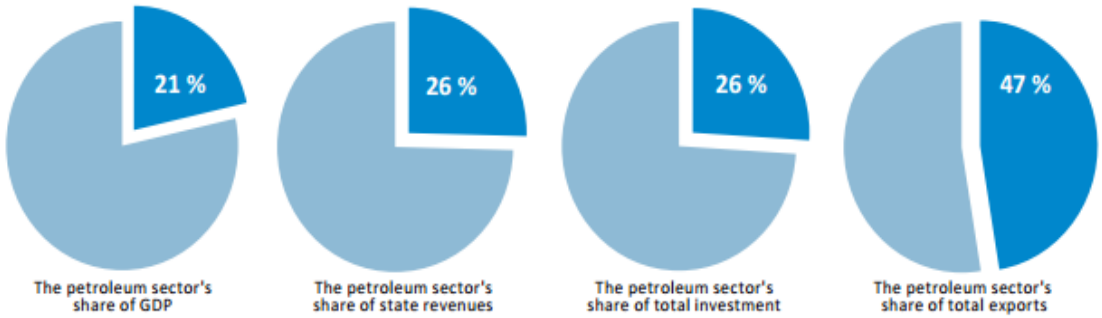
GRAPHIC 23
Share price development of Statoilhydro (2008-2012)



Source: (StatoilHydro, 2008)
Elaborated by: Mabel Bustamante Diaz
Note.
* Expressed in US dollars

The economic expansion of StatoilHydro also meant a strong presence of the oil sector in the Norwegian economy and by 2012, the petroleum sector in Norway accounted for 47% of all exportations, which meant it contemplated nearly half of the country's industry. In the same sense, the oil sector held 21% of total GDP and 26% of the state's revenue (Norwegian Ministry of Petroleum and Energy , 2012).

GRAPHIC 24
Macroeconomic indicators for the oil sector in Norway 2012



Source: (Norwegian Ministry of Petroleum and Energy , 2012)

The influence of the oil sector in the nation's economy had to be yielded in order for the Norwegian government to be able to handle the whips of international oil price fluctuations, the ongoing pressures in developing alternative renewable energy as well as falling proved oil reserves worldwide. For this reason, the Norwegian state, had already developed a long-term perspective in the 1990's that would help deviate the oil sector's income by rendering the nation's economy from its dependence into a fund, the Government Pension Fund (Norwegian Ministry of Petroleum and Energy , 2012).

2.3.3. The creation of the Government Pension Fund

The creation of the fund dates back to the 1990's as a solution for directing large flows of income into the economy so that both present and future generations may be able to perceive the benefits of the oil sector exploitation and in order to avoid the "Dutch Disease" in for coming years in a global arena where the price of the barrel fluctuated with enormous flexibility. The objective of the fund was to create a financial mattress for the Norwegian economy by making long-term investments of the excess revenues of the oil sector abroad which would then dissipate the risks of an oil centered economy (Brother, 2015).

The fund got its name in 2006, and from then on formed part of a pension expansion program in which the Norwegian state considered that 100% of oil excess revenues needed to be channeled through the Government Pension Fund Global, in order to support the government's initiative in creating the savings necessary for the growing public pension expenditures. In order to create these savings, the Norwegian state also established a limit of 4% of total assets withdrawals from the fund annually (Brother, 2015).

For the fund to work in favor of the government's long term perspectives, it had to deal with certain issues that could have possibly deviated the fund and reliability. In this regard, the Norwegian government developed first of all a long-term investment policy for foreign investments in order to obtain sustainable economic development. For this matter, it had to take into consideration not only investing aboard but investing aboard wisely in "*well-functioning, efficient and legitimate financial markets"* (Brother, 2015).

The second strategy that the Norwegian government used was investing small in order to disperse the risk of loss. Since the investments were linked to the future economic stability of the country, large shares of investment in particular companies would have been a liability for the Norwegian economy. It was then established that the Government Pension Fund Global, would own from 2 per cent of any given company and without exception would not surpass 10 per cent (Brother, 2015).

In order for the fund to continue working despite any possible changes in the political directions of the nation and changes in the heads of state, transparency policies were established in order to disclose all information concerning investments, revenues and overall economic status of the fund. By 2012, the funds value was established close to 1000 million USD dollars. Information transparency has led to active public participation in directing the business ventures of the fund worldwide, for which the Norwegian government has established certain policies that set ethical standards for the managing of the fund (Brother, 2015).

These guidelines were established in 2004 by the Storting, in which the Fund would not be able to invest in companies directly or indirectly linked to human rights violations or conflict situations that encourage or permit killing, torture, deprivation of freedom, child labor, forced labor, gross environmental degradation, and corruption. However, despite these guidelines, the Fund can make investment in arm-producing companies with a few restrictions such as investments linked directly or indirectly to the creation of nuclear weapons. The exclusion of some companies due to the recommendations of the Council of Ethics has brought up a great debate among the international community as well as internally. Nevertheless, the process of screening the companies before they are eligible to be part of the Fund's portfolio continues. For example, Walmart was screened a few years back due to employment and human rights as well as some 17 tobacco companies (Brother, 2015).

Despite the ethical approach of the Fund in its investments, the Fund itself was created on the basis of the oil sector revenues, sector which is one of the largest contributors of CO2 emissions. Large debates have been carried out in this sense and in December of 2012, the Minister of Finance of Norway received recommendations in order for the Fund

to address climate-related issues through the possible injection of larger investments in renewable energy initiatives and companies as well as a mechanism to exclude the worst cases of climate offenders from the Fund. The Fund continues to give Norway sustainable economic development for the country but it still has a long road towards becoming completely independent from the oil sector which ironically makes Norway economically stable (Brother, 2015).

Altogether, this second chapter has aimed towards describing the development of the oil sector in Norway taking in consideration crucial time periods for the insertion of the oil sector within the nation. The initial decade was characterized by an overflow of foreign enterprise influence, which Norway sought to manage with maturity in terms of creating public policies that would allow for technological, know-how and expertise transfer to take place. This led to a much slower economic growth of the oil sector within the country in its initial stages but would assure a stable economic and industrial integration for the following decades. The previous public policies forged in the sector in the 70's, allowed Norway to put into use the expertise acquired in the construction of large projects, creating a cycle that feeds off of its main pillars: investment, production and revenues. Nevertheless, the growth of production, sales and revenue caused the alarming influence of the state-owned company Statoil within the Norwegian economy. The identification of the main causes and characteristics of the public policies forged for the oil sector in Norway, led to understanding the measures taken to avoid the exceeding power and vulnerability points of the state-owned company which during the second period to be analyzed, would create institutional and economic division in order to be able to better attend the objectives established within the "10 Oil Commandments" in its initial decade whilst forging a further privatization process of the oil sector in the attempts to maintain competiveness. The last decade to be analyzed, meant the expansion of the once, solely state-owned company and its incursion into new business ventures outside of Norwegian territory, that allowed the nation to create an economic mattress for future generations; economically diversifying the oil sectors portfolio, creating an economic buffer against any endogenous and exogenous factors. Although initiated through ethical alignments, the oil sector in Norway has risen a lot of critics in terms of integrating both public and private objectives.

CHAPTER III
RESULTS FROM THE MANAGEMENT OF RESOURCES OBTAINED IN THE OIL SECTOR OF ECUADOR AND NORWAY

In order to determine the divergent paths taken by Ecuador and Norway in regard to the oil sector, its development, its use in the national economies, and the environmental impacts; it is necessary to make a comparison of how the public policies for the sector in each country determined the influence of the oil sector and the dynamics amongst the various actors in the economic and environmental results for the time period studied.

3.1. Evolution of national economies in regard to the oil sector for Ecuador and Norway respectively

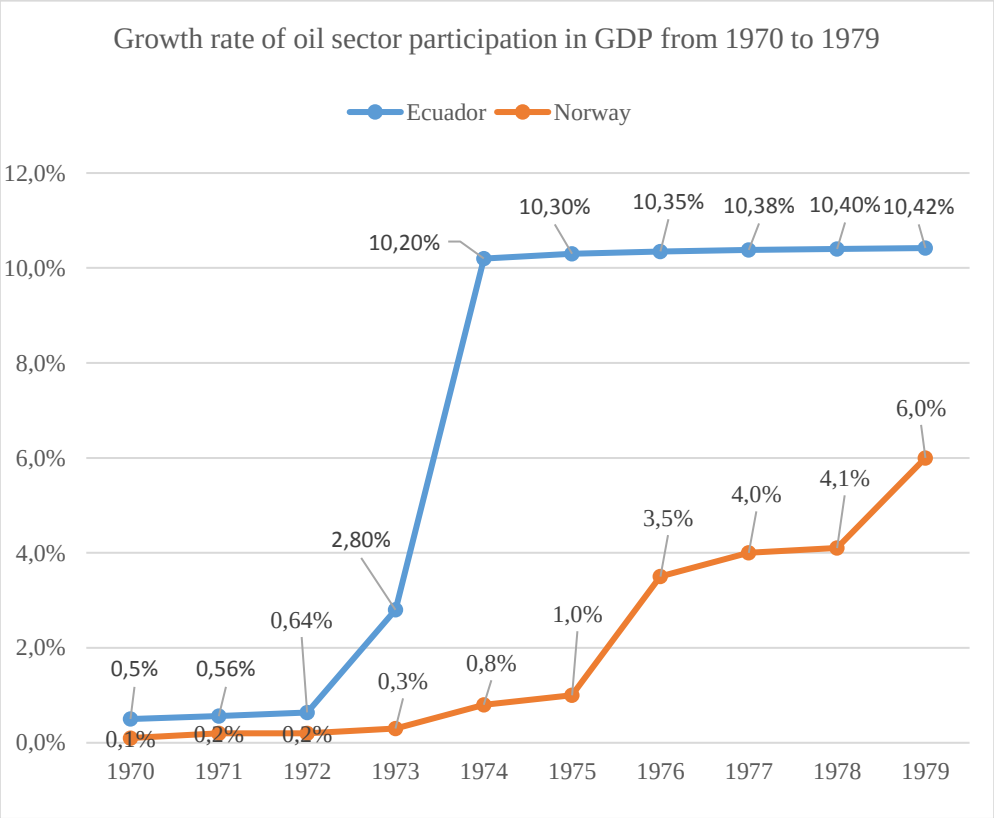
The evolution of the national economies in each country and how the oil sector has influenced its development will lead the investigation to explain the results obtained in the different institutions where the management of oil sector resources has been carried out in Ecuador and Norway correspondingly, as well as, the underlying complex interdependence relations carried out by the various actors within the sector, which has led to the corresponding outcomes. Within this time frame of 42 years, the cycle of the public policies involved for the oil sector in both countries can be analyzed both in their capacity of creation (sensitivity) and their capacity of adaptation (vulnerability), which in turn can help explain how the channels of communication, in this case the public policies that set the rules, contributed to the dynamics amongst the various actors involved, ultimately leading to the viability, effectiveness and perdurability of each of the decisions taken within the sector itself.

3.1.1. Economic growth rate in the first decade of the oil sector

Given the fact that the oil sector was unexploited in industrial amounts before 1970 in both countries and was the economic motor for both in the following years, there is a clear relationship between national economic growth rates and the development of the oil sector. The new economic influence of the oil sector meant for both countries the entry of external

factors and actors of influence thus the necessity to create public policies that would regulate their participation. For both countries, the initial decade of the oil sector supposed an overwhelming income of revenues that were then distributed according to the initial internal public policies established.

GRAPHIC 25
Growth rate of oil sector in GDP from 1970 to 1979



Source: (Norwegian Petroleum Directorate, 2016)& (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz

As seen in the graph above, the first decade of the oil sector in each country caused shocks to the economy that were reflected in the growth percentage rate of oil sector participation in national GDP's. At the starting year for both countries, 1970, both had already had a small presence of the sector (less than 1%) within their countries. For Ecuador, the presence of the oil industry dated back to colonial times but was mostly done in the coastal region of the country, while for Norway, the extraction of crude oil had been accidentally provoked through the extraction of natural gas inland. Nevertheless, the starting points, 0.1% for Norway and 0.5% for Ecuador, sought to be dramatically changed after the discovery of industrial amounts of deposits in both countries.

The first three years of the oil sector in each country was characterized by the creation of public policies that would lead the sector towards each of the nation's objectives. Growth rate for these three initial years did not surpass 1% in terms of GDP participation for the sector in each country. However, as the public polices put in place at the beginning of the decade started to settle in, these began to have their corresponding effects both within the sector and for the sector itself in reference to the national economies.

The theory of Complex Interdependency, suggests that the calculations for power within the new world system are more complex and derive from a combination of elements both new and already existing within each nation. These new elements described by Keohane and Nye, refer especially to the growing participation of non-state actors; multinationals. In order to be able to control these new elements, mechanisms have been established through what Keohane and Nye refer to as channels of communication which can either be, formal such as laws, decrees or regulations established by the state and thus mandatory for the entering parties or it can also be informal through agreements or arrangements made through the cooperation between state actors and non-state actors. These channels of communication, search for a balance of power amongst the actors involved (Rana, 2015).

CHART 11

Economic influence of the channels of communication in the initial decade

Country	Ecuador	Norway
Channels of Communication	Internal Public Policies 1. Hydrocarbons Law 1971 • Limited time extension (20 years) for foreign companies • Territory extension limit (495 00 ha.) for foreign companies • Rise of 6 more points to be paid in State royalties (established at 18.5%)	Internal Public Policies 1. "10 Oil Commandments" • Transfer of know-how & technologies from non-state actors to state actors • Limited territory put up for tendering rounds under Norwegian terms and conditions • No fixed percentage of state royalties; revenues depended on each contract

External Factors	1. Rise in the international prices of the barrel from $2.50 US dollars to $ 35.20 US dollars (1974)	1. Rise in the international prices of the barrel from $2.50 US dollars to $ 35.20 US dollars (1974)
Institutions Involved	• The National Congress • CEPE	• The Norwegian Parliament • Statoil
	Internal Public Policies 1. Average GDP participation growth rate of 1.125 % annually	Internal Public Policies 1. Average GDP participation growth rate of 0.2% annually
Economic Results in GDP Participation	External Factors 1. External shock of 9.075% in GDP participation growth rate in 1974	External Factors 1. External shock of 0.6% in GDP participation growth rate in 1974

Source: (Reyes, 2003) & (Norwegian Petroleum Directorate, 2010)
Elaborated by: Mabel Bustamante Diaz

According to the table presented above, the public polices or channels of communication forged in the initial years of the oil sector for each country had diverse levels of sensitivity Sensitivity, explained in complex interdependence terms refers to the contingency necessary in order to lay off the costs imposed by external factors before any public policy is passed to modify a specific situation, whereas, vulnerability within this theory refers to the consequences faced once public policy has been established; implementation phase (Rana, 2015). In the case of Ecuador, the channel of communication between state and non-state actors, the "Hydrocarbons Law of 1971" set the rules for the foreign companies that were already in the territory but were now interested in gaining rights over the Amazon region (Reyes, 2003). It established detailed premises for all competing companies in terms of time and territory, as well as royalties to be paid to the Ecuadorian central government. On the other hand, Norway gave general outlines for their interested tenders which allowed for a competitive race to take place, in which competitors sought to push forward the interests of the Norwegian government in terms of industry development and integration in order to win the concessions. Although this meant for Norway a very slow

start in regard to the revenues perceived, due to the fact that being able to fulfill the objectives established to win the concessions meant that foreign companies had to incur in excessive costs, this in turn caused the sector to grow resistance unto external factors.

The rise of international prices for the oil barrel in 1974, from $2.50 US dollars to $35.20 US dollars, led to unpreceded returns from the sector in both countries. Nevertheless, for each country, the intensity of impact this external factor had on the economy was correlated to the initial public policies made at the beginning of the decade. In this regard, Norway perceived an external shock of 0.6% in GDP participation growth rate, as opposed to the average 0.2% growth rate it had had annually. For Ecuador, the impact of the external factor was much larger as it experienced an increase of 9.075% in GDP participation growth rate in 1974, as opposed to the average 1.125% it had been growing.

Despite the considerable expansion of growth rate, the oil sector had in GDP participation in Ecuador, the revenues perceived by the Ecuadorian state also reflected the high vulnerability, otherwise understood as the disadvantage an actor may perceive while experimenting continuous costs from an external factor even after the public policies have been modified or created to handle with it (Rana, 2015). As mentioned in the subchapter "*The creation of CEPE"*, the Ecuadorian government of that time gave in to pressures from the leading foreign companies, thus, receiving only 4% of the total 10% perceived due to the increase of the price of the barrel. This left the remaining 6% to stay as internal earnings for the foreign companies on the basis that these needed to sustain this percentage in order to re-invest in the sector that desperately needed modernization of processes and machinery (Sandoval, Calero, & Gordillo, 1986).

As for Norway, through the state-owned company Statoil created at the beginning of the decade (1972), it was determined during the *"Crisis of the Seven Sisters"* that led to the colossal rise of the oil barrel prices in 1974, that State participation in all revenues would be established at 50% Engen, 2009). Although this figure made Statoil have an important role within the sector at an early stage, the Norwegian state also did not perceive the totality of this percentage. However, unlike Ecuador, this was due to the fact that in accordance with the initial public policies regarding infrastructure investment and human capital specialization, the state-owned company sought to destine a significant amount of its

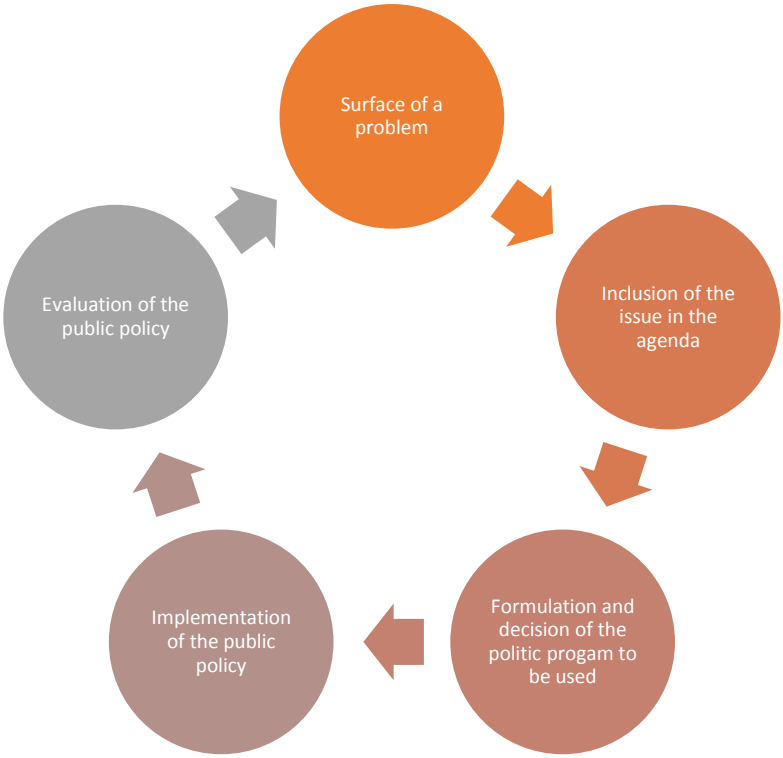
revenues towards the construction of main and secondary pipelines as well as reaching "*Goodwill Agreements*" for the training of personnel in alliance with foreign companies (Vorobyov, 2012). This in turn allowed the Norwegian economy to be less vulnerable to the fluctuations of the price of the oil barrel since it had already been redirecting the vast amounts of income to fulfill these policies.

The first decade the oil sector had presence in both countries, established the public policies for the sector and their corresponding sensitivity and vulnerability levels that were reflected with the arrival of an external factor: the fluctuation of the price of the barrel. Once the price stabilized toward the middle of the decade, the growth rate for the oil sector in Ecuador did not surpass 0.10% all throughout the 70's. On the other hand, for Norway, the growth rate of the oil sector in GDP participation maintained itself from 1-2% annually. These figures represented different scenarios of both perdurability and viability for the public policies forged in this initial stage and their future adaptations and reformations for the following time period of the sector.

3.1.2. Economic integration of the oil sector in the 1980's with other sectors of the economy

In order to further compare the economic integration of the oil sector with other sectors of the national economies in Ecuador and Norway correspondingly, the method of analysis of public policy presented by Knoepfel, Larrue and Varone, will be used to determine the stages of public policy formulation and the main characteristics of these, so that further comparison can be done in regard to the fulfillment of goals and objectives and overall concrete economic results. In this regard, both Ecuador and Norway, found themselves in the implementation stage during the 1980's but had to go back a stage once direct and indirect problems arose in the expansion projects taken place in both of the countries that decade.

GRAPHIC 26
Stages of public policy formulation



Source: (Knopfeld L. , 2017)
Elaborated by: Mabel Bustamante Diaz

For Ecuador, through Supreme Decree, Law 101 was passed in 1982, which changed once again the modality of the contracts to be held with foreign companies in the country. Through this new modality, "Prevision of Services for Exploration and Exploitation of Hydrocarbons", CEPE the state-owned company would be the sole owner of all oil productions with Ecuadorian territory, but withheld the right to outsource to foreign companies through licensing in order to fulfill the exploration and extraction activities it could not do on its own. This gave way to the outsourcing of foreign companies for the extension of the oil refinery station in Esmeraldas in (1985) and the construction of the Shushufindi refinery in 1987. CEPE would also be in charge of paying the corresponding royalties to the Ecuadorian government once all the costs of production were deducted.

Furthermore, for Norway, the "Goodwill Agreements" continued to forge a relationship of technical, know-how and expertise exchange from international firms to national enterprises and investigation institutes. This also allowed the state-owned company, Statoil, to venture off into carrying out two of the largest platform construction projects in

the North Sea: The Statfjord C in 1986 and Gullfaks in 1987. Within the projects, alliances with Norwegian firms that had already been specializing their production in order to better accommodate to the sector's needs, had priority and more percentage of participation within the projects than the alliances made with foreign companies.

CHART 12

Major expansion projects for the oil sector during the 1980´s in Ecuador and Norway

	Public Policies	Characteristics	Projects	Actors Involved	Operatorship percentage of state-owned companies	Direct Financial Costs
Ecuador	Law 101 (1982)	• New modality of contracts; "Prevision of Services for Exploration and Exploitation" • CEPE sole owner of any oil production • CEPE could outsource any activity to a qualified foreign company • Foreign companies had the obligation to act independently in terms of human, technologic and material capital • Foreign companies did not pay royalties to the Ecuadorian government; CEPE did after making cost deductions	1. Expansion of the oil refinery station in Esmeraldas (1985) 2. Shushufindi Refinery station (1987)	1. CEPE 2.Foreign companies awarded outsourcing contracts	Project #1 0% Project #2 0%	1. $114 million USD 2. $ 435 million USD

Norway	Contracts based on "Good will Agreements" (1980)	• Statoil would have 50% participation in all oil production • Mandatory subcontracting of Norwegian companies and suppliers for foreign companies • 50/50 agreements for technical, know-how and expertise transfer • Royalties paid both from Statoil and from foreign companies to the Norwegian state	1. Mongstad refinery expansion (1985) 2. Statfjord C platform (1987) Gullfaks platform (1987)	1. Statoil 2. Norwegian companies and suppliers 3.Foregin companies	Project #1 60% Project #2 100%	1. $789 million USD 2. In total $ 687 million USD

Source: (Reyes, 2003) & (Norwegian Petroleum Directorate, 2016)
Elaborated by: Mabel Bustamante Diaz

As shown in the table above, the development and investment within the sector was crucial for this decade through the expansion of previous refineries and the creation of new ones. In this regard, for Ecuador, CEPE acted solely as an administrator of the outsource contracts without taking any participation in the operation activities of the projects. As for Norway, operatorship came as an obvious next step to be taken from the "Goodwill Agreements" by putting into practice all the strategic human and industry development alliances made between foreign companies and the state-owned enterprise. This allowed Statoil to acquire 60% of operatorship in the Mongstad project and after its successful completion, 100% of the Statjord C platform projects in 1987.

Nevertheless, Norway presented an administration scandal in the over expenditure of the planned budget for the Mongstad refinery, which had originally been placed at $789 million USD in 1986. By 1987, when the project was being completed, a total of $780 million USD had been reportedly over spent. Along with the resignation of the entire board

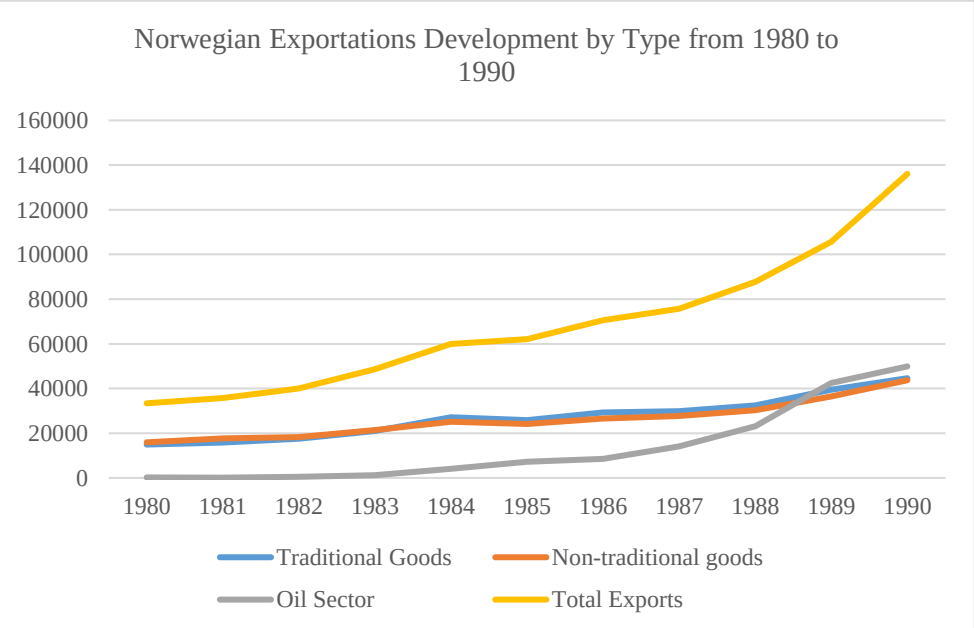
from Statoil, the Norwegian state sought to create new tax policies that would leverage the impact of negative internal factors, such as the one presented in the Mongstad case (The New York Times, 1987).

The integration of the oil sector with other adjacent sectors, especially those concerning research and development clouted the ripples of a dubious administration which was also coupled with one of the worst oil spills in the history of the North Sea, the Alexander L. Kielland incident. The incident also proved the existence of technical failures in the process of construction which all together worsened the image and impact of the state-owned company (Officer of the Watch, 2013).

Although the oil sector in Norway during the eighties proved to be especially difficult in terms of controlling the growing influence of the sector in the overall economic growth, it was able to do by leveraging the independent bolster of other unallied sectors of the economy.

GRAPHIC 27

Norwegian exportations development by type from 1980 to 1990

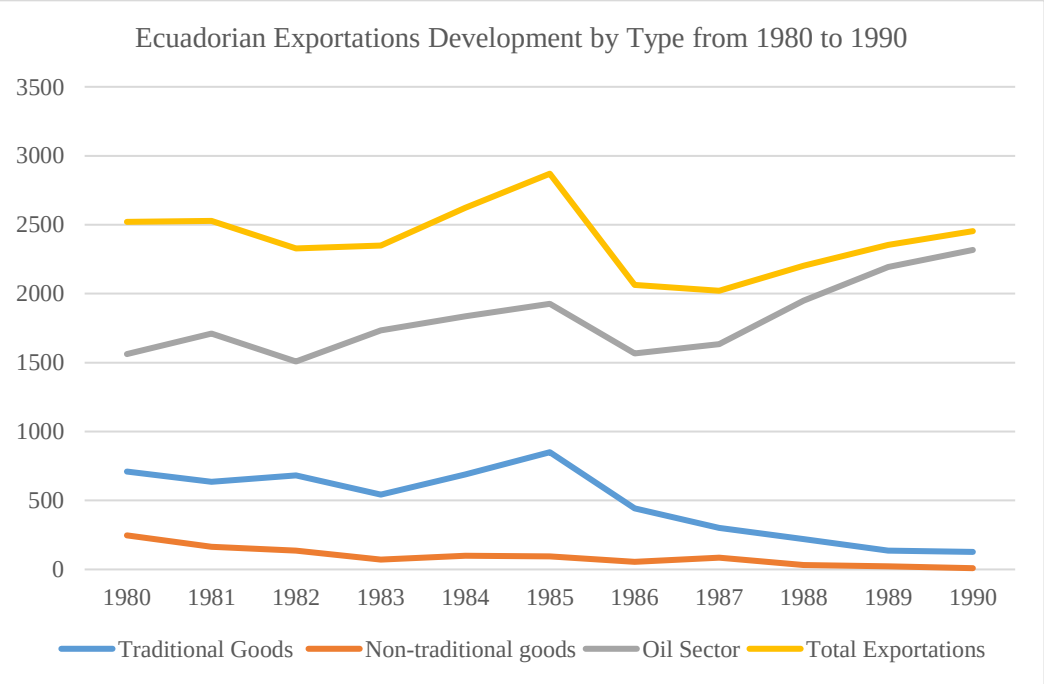


Source: (Norges Bank, 2017)
Elaborated by: Mabel Bustamante Diaz
Note. Expressed in millions of USD

As shown in the graphic above, the exportation structure for Norway in the 1980's had a persistent growth in total exportations with parallel growth of both traditional and non-traditional goods. The oil sector in this case represented a much slower growth in comparison to that of the other sectors but after the large investments were done in the construction and expansion of refineries and platforms, these investments began to grow in productivity, therefore participation, which can be seen towards the end of the decade when the oil sector exceeds both traditional and non-traditional exportations.

For Ecuador, the scenario played out quite differently, as Ecuadorian authorities sought to direct more attention towards the returns of the oil sector, it began to overshadow other sectors within the economy, that would have otherwise helped balance economic shocks through their further sustainability, presence and development.

GRAPHIC 28
Ecuadorian exportations development by type from 1980 to 1990



Source: (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz
Note. Expressed in millions of USD

As seen in the graph above, Ecuadorian export development in the eighties was characterized by a breach between oil exports and all other exports. The communing

relationship between total exports and oil exports began to be more evident after the fall of the price of the barrel in 1986. An economic dependency began to forge and the undeniable relationship between total exportation highs and lows began to be linked to oil price peaks and bases. This also meant a loss of attention in other sectors of the economy such as the traditional goods and further stagnation of non-traditional goods.

According to the complex interdependency theory, dependency refers to a state or institution that is determined or significantly affected by external factors. However, interdependency in its most practical terms refers to mutual dependency (Keohane & Nye, 2017). Although internally the national economies were being weighed down by the presence of the oil sector, the extent to how much it did so, was a mere reflection of the interdependent public policies each country had laid down for the sector.

The decade of the eighties tested the capacity of resilience of the sector's public policies for both countries and was decisive point to be able to carry out the corresponding reformations in order to align the outcomes with national objectives. For Norway, the measures to be taken after the over expenditure scandal consisted of creating new tax policies for over productions and dividing Statoil's revenues into two separately operated accounts. The revenues of the oil sector would be granted first, to Statoil for its commercial administration fees and the second would go directly to the Norwegian state through the newly created "State's Direct Financial Interest" otherwise known as SDFI. With the creation of the SDFI, funding for studies were carried out in order to establish margins and tariffs for environmental taxation policies and regulations for the sector, at the end of the decade. This meant that, aside from taking away excessive economic influence from Statoil, the creating the SDFI also made the Norwegian state regain power over "low priority" issues that needed to be attended in order to comply with the national goals established for the sector (Ministry of Finance Norway , 2007).

On the contrary, for Ecuador, the dependency of the oil sector in the national economy and its ever-growing participation within the structure of the economy worsened with the low productivity of independent as well as adjacent sectors. This, along with an increase of importations in order to be able to cater to national demands caused the devaluation of the national currency and the over indebtedness of the Ecuadorian state, led

to the “Ecuadorian Dutch Disease” and the creation of PETROECUADOR, state institution that replaced CEPE and would try to alleviate the economic crisis that had been boiling under the flames of the oil sector (Gonzalez, 2004).

3.1.3. Development of the institutional dynamics for the oil sector

The last period to be analyzed for the oil sector in Ecuador and Norway from 1990 to 2012, was delineated by the maturing of the functions of the various state institutions involved and their dynamics with other non-state actors. Various events during the 1990’s determined the necessity for the functions of the various state institutions to be clarified.

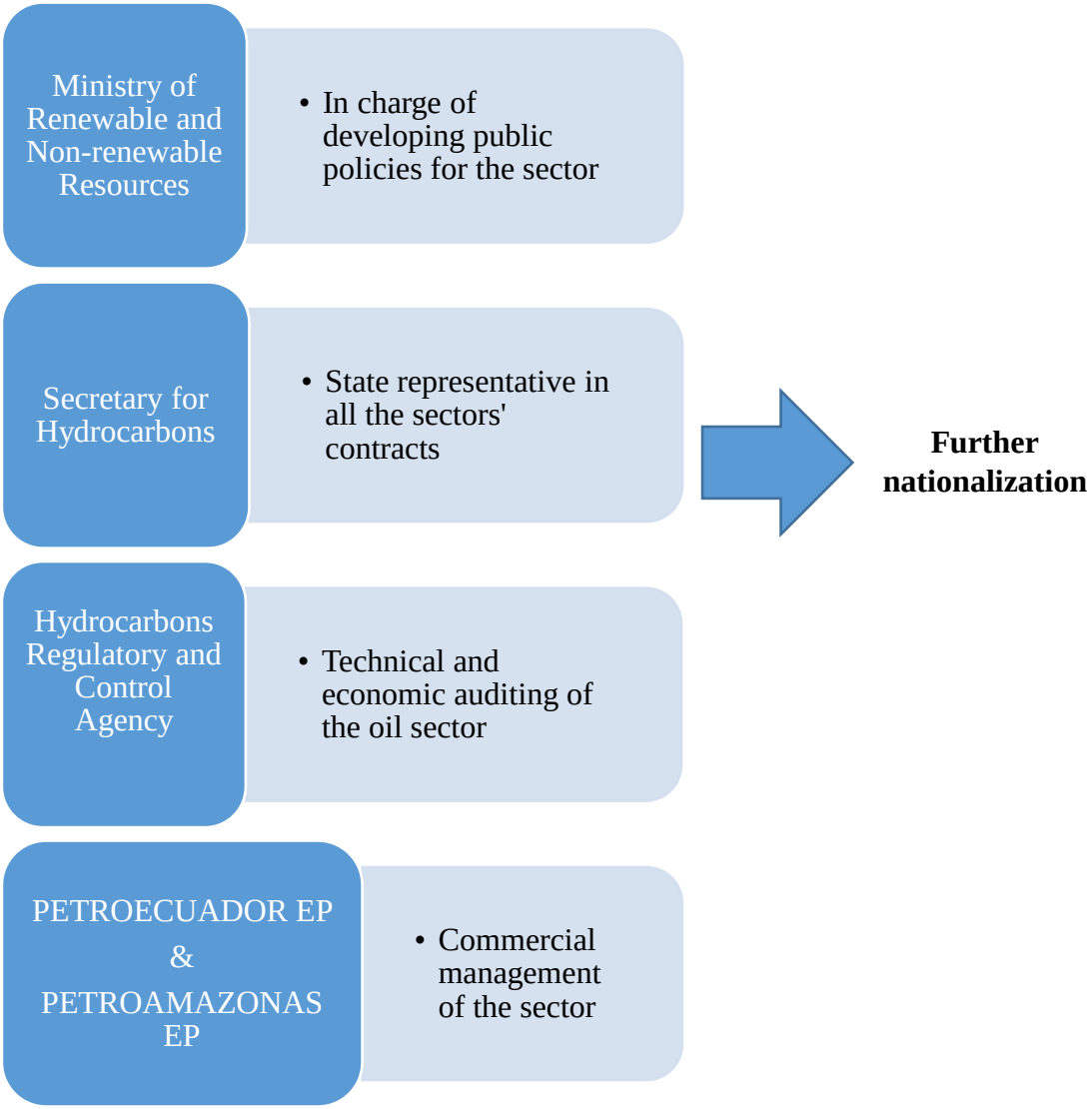
For Norway, despite the creation of the SDFI during the end of the previous decade, Statoil still had to seek new and alternative ways to reach their financial goals. With this in mind, the company sought to expand its operations both within the country and abroad. Gas production, the specialization in vertical processes for the sector and the foundation of Borealis (petrochemical research center) were only a few of the paths the company took to expand their portfolio within Norway. However, the most important project it carried out by itself, the Aasagrad field, left a bitter taste for the Norwegian government, that once again had to face loses due to over expenditures. Although the company had been growing steadily, due to the new initiatives taken and the recent alliance with British Petroleum that allowed the company to incur in international projects in countries like Venezuela, Iran, USA, and Angola; the over expenditure led to the partial privatization of the company in hopes of maintaining its main goal: improving revenues (StatoilHydro, 2008).

Conversely, for Ecuador the 1990’s represented a time of reformulation of policies in hopes of trying to safeguard not only the sector but also the newly dollarized economy. Through the Law N.44, the Ecuadorian state eliminated the ratio 90 to 10, being 90% to be paid to the Ecuadorian state in revenues and 10% to be reinvested in the sector, to 100% going directly to the Ecuadorian state in order to prioritize paying off of the foreign debt. The Decree N.433, also made the nineties especially complicated for the sector since it dictated the right for the companies that had celebrated contracts with PETROECUADOR to be able to change the modality of their contracts which meant overall less royalties paid to the Ecuadorian state. This created a vicious cycle in which production levels from the

fields operated by PETROECUADOR dropped, due to lack of investment within the state institution and absorption of these fields from foreign companies, both allowed them to gain additional presence within the sector while maintaining growing revenues. This ultimately lead the urgent transfer of oil revenues into the "Ecuadorian Reactivation System" in the attempt to stabilize revenue flows from the sector.

For both countries, entering the new century meant a clear division of the functions to be fulfilled within each of the institutions involved for the sake of improving revenues, for Norway and stabilizing returns for Ecuador. In the case of Ecuador, the creation of new state institutions pushed forward the State's desire to optimize the operational and administrative processes within the sector in order to achieve a stable flow of revenues.

GRAPHIC 29
Further nationalization of the oil sector in Ecuador



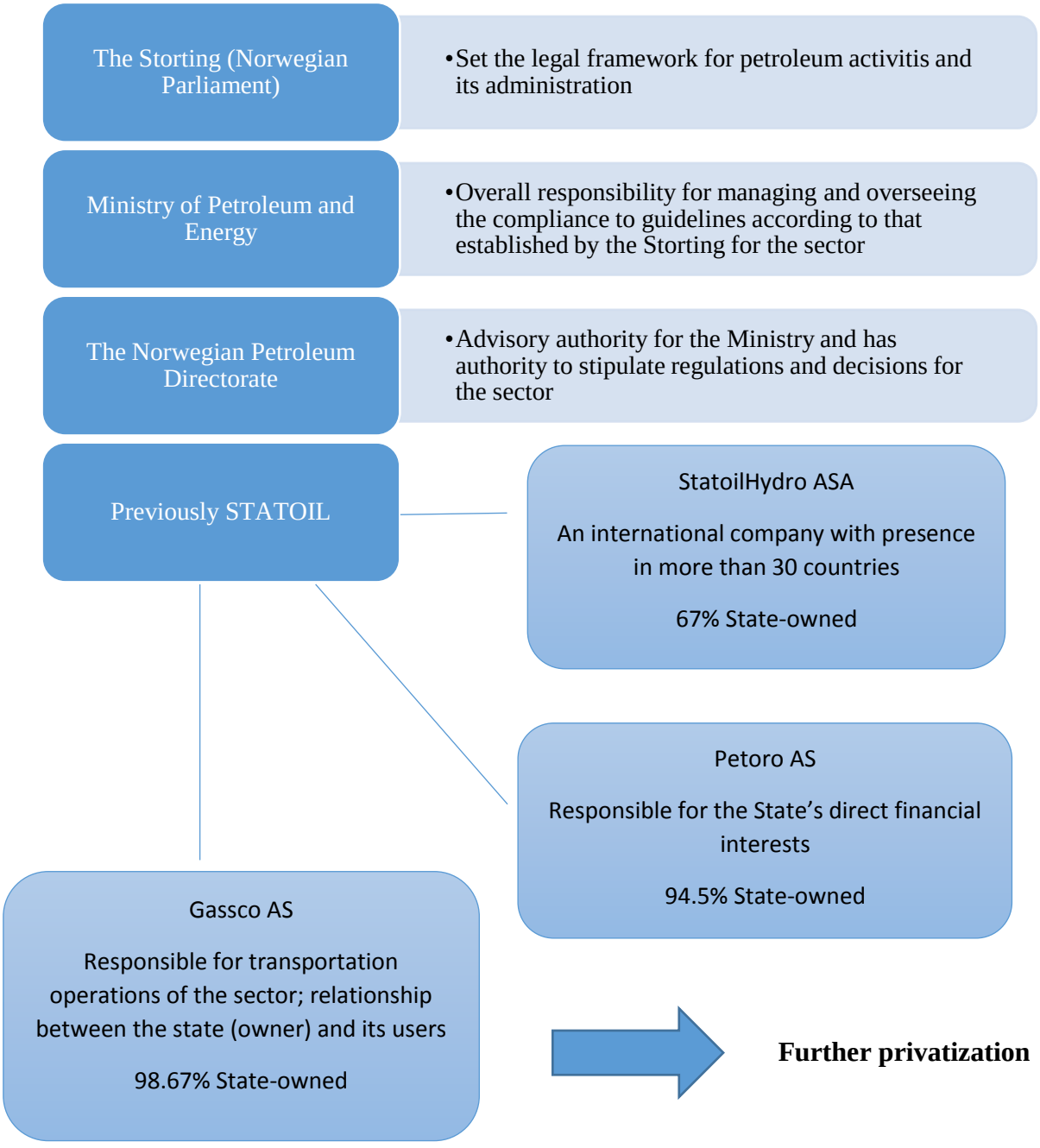
Source: (Petrominas, 2012)
Elaborated by: Mabel Bustamante Diaz

Norway on the other hand, presented a distinct scenario, as the State risked its revenue flows by partially privatizing Statoil in order to make it more competitive internationally. In order to do so, Norwegian authorities thought it necessary to merge 15% of the SDFI back into Statoil so that this would acquire larger market value and make it more attractive for investors. In addition to this, Statoil would merge with the Norwegian company Norsk in order to further develop long-term projects in overlapping areas or regions of influence. With this merge, the new company StatoilHydro ASA, not only increased production levels but also price share prices of the company in international stock markets. Also, the SDFI itself would be partially sold to national companies up to 6.5% and the SDFI

would transform into Petoro AS, a research and development company that would also be in charge of managing the licensencing on behalf of the state. Finally, in 2003, Gassco AS, was created so that StatoilHydro ASA could delegate the transportation operations of both oil and gas to the company. Although state institutions were present, especially in the control and regulatory phases of the oil sector, commercial aspects of it began to be shifted to the private sector in order to continue improving revenues flows (Gordon & Stenvoll, 2007).

GRAPHIC 30

Further privatization of oil sector in Norway



Source: (Norwegian Ministry of Petroleum and Energy , 2012)
Elaborated by: Mabel Bustamante Diaz

According to the complex interdependence theory, institutions are the base units that can be analyzed through their structure of processes and the way these processes influence or feed off of each other. These base units are used to form the political systems which are then translated into the national structure and can have a distributive character or a

negotiating character depending on the type of interdependency relations reached at base level (Keohane & Nye, 2017).

The course of action taken by each of the countries in order to stabilize the returns from the oil sector delimitated the orientation of the public policies either towards further nationalization and state domain over the sector, in other words a distributive character or with further privatization and commercial liberty of the sector; a negotiating character. These orientations would ultimately lead to the overall influence of the sector in the economy of each country, thus the development of the sector itself.

3.2. Influence of the oil sector in the structure of the economy of Ecuador and Norway respectively

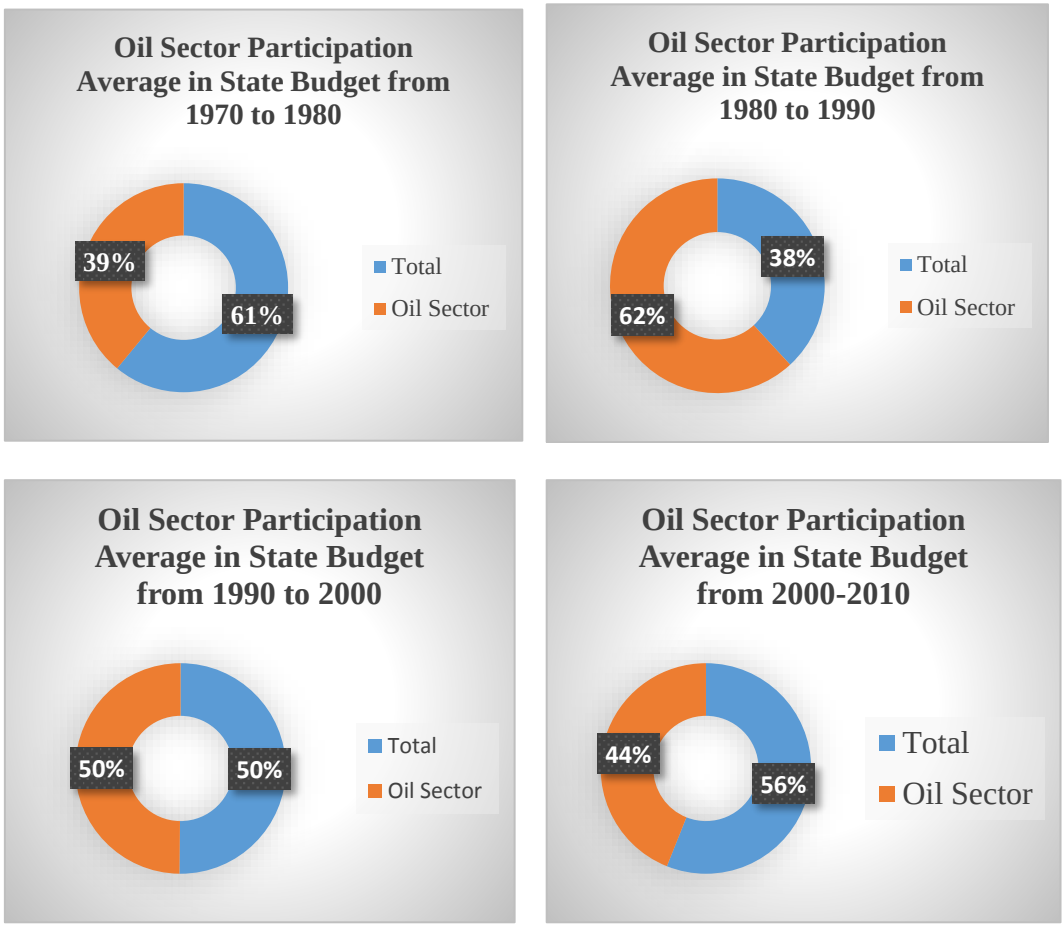
In order to be able to explain the influence of the oil sector in the structure of the economy of Ecuador and Norway, it is necessary to make a comparison over the time period studied, of the evolution of macroeconomic indicators such as state budget and GDP and the oil sector's participation in these, which could also allow the research to conclude with other structural aspects such as oil influence in overall exportation and investment. This in turn could lead to the explanation of the results obtained in the different institution where the management of the oil sector resources took place and how well these fulfilled with their individual objectives through time.

3.2.1. The development of oil sector participation average in State budgets

Since the initial decade of the oil sector both in Ecuador and Norway, there has been a close relationship between the development of the economies and the inflows from the sector. In this regard, the evolution of the oil sector participation in the economic structure of each country's State budget can give a good indication of just how the management of the sector aligned with the national objectives established for the sector and the level of oil revenue dependency experienced within each of the countries.

GRAPHIC 31

Macroeconomic indicators for the development of oil sector participation in state budget for Ecuador from 1970 to 2010

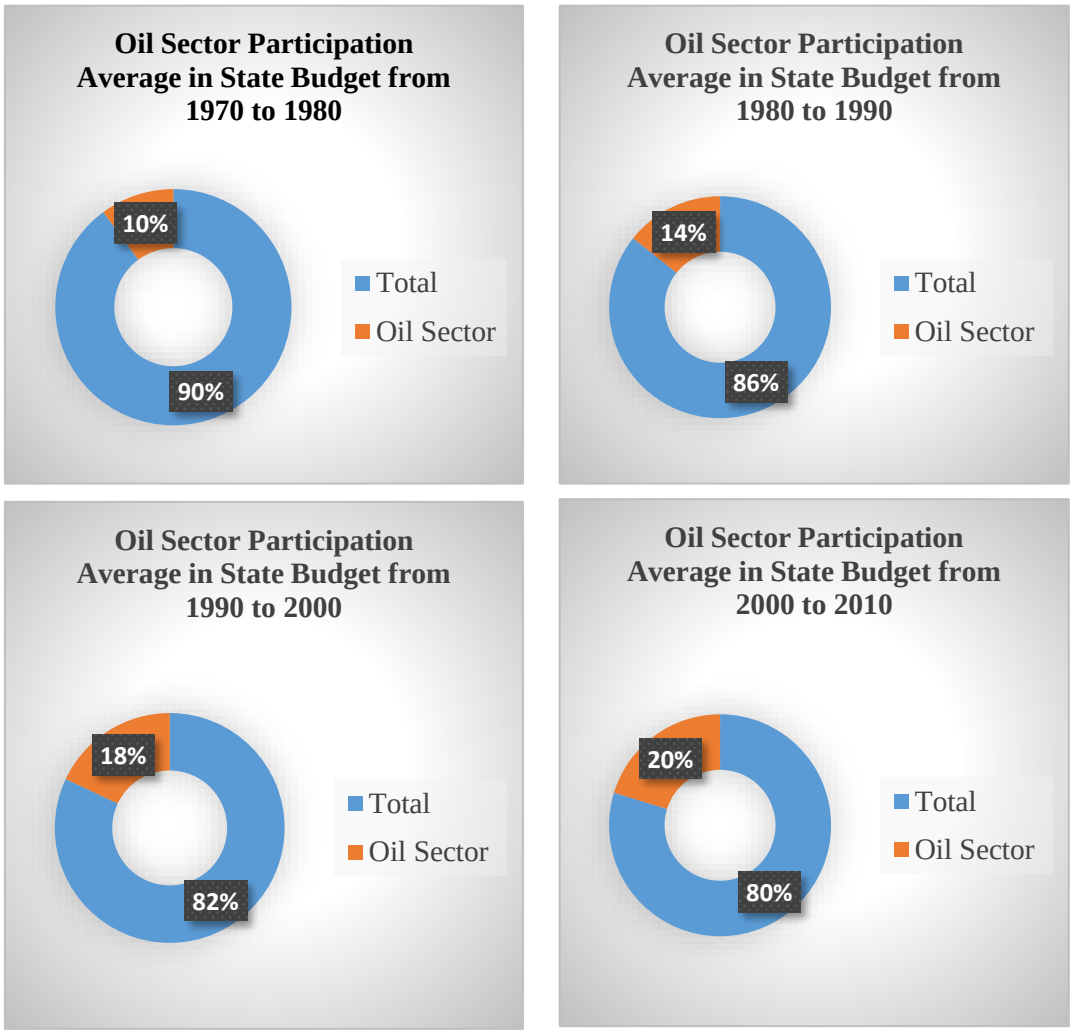


Source: (Banco Central del Ecuador , 2013)
Elaborated by: Mabel Bustamante Diaz

As seen in the graphics above, the evolution of the oil sector participation average in State budget has had an important role for each decade ever since the discovery of industrial amounts of crude within the Ecuadorian territory. The first two decades of the presence of the oil sector within the Ecuadorian economy were characterized by the massive inflows of revenues from the sector and the absorption of these in the national economy. During the first decade, the participation average of the sector was established at a ratio of approximately 40 to 60, the latter being the total State budget; however, by the end of the second decade, this ratio had switched with the overgrowing presence of oil revenues in the State budget, the average participation of the sector was then established at 60% of total State budget. The following two decades portrayed the desire of the public policies within the country to limit the influence of the sector over the national economy. This was especially

emphasized during the end of the last decade, when in 2008, Rafael Correa, candidate for presidency approached the nation with a plan to change the productive matrix to lessen the dependency on oil. However, although in some percent the participation average in State budget had decreased, the sector still consisted the main source of income for the nation well over any other sector in the country that time period.

GRAPHIC 32
Macroeconomic indicators for the development of oil sector participation in state budget for Norway from 1970 to 2010



Source: (Norges Bank, 2017)
Elaborated by: Mabel Bustamante Diaz

As for Norway, the oil sector participation average in the State budget also presented its largest growth within the first two decades, with a 4% rise. However, the percentage of participation in State budget did not reach the levels that it did for Ecuador in any of the 4

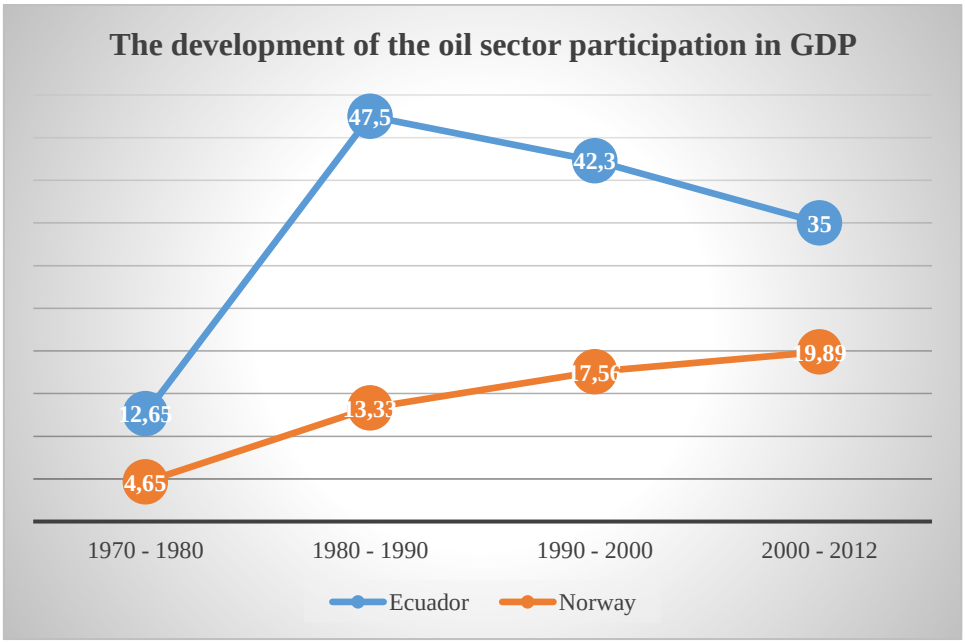
decades. During the last two decades, average participation in the State budget seemed to stabilize at no more than 25% due in great part to the reinvestment of the revenues obtained from the sector into the sector itself with the initiation of large projects in the 1990's and the partial privatization of the state company Statoil by 2000. Although this broadened the company's portfolio in both national and international terms, it also lessened the influence of the sector in the national economy and made the reinvestment of revenues from the sector perdurable throughout the decades. This was done in order for the company to become a competitive player within the private sector and also helped alleviate massive inflows of returns into the economy thus, repelling a dependency on the sector.

3.2.2. The development of oil sector participation in the gross domestic product

The indicator of gross domestic product can lead to an overall view of the health of the economy in terms of keeping balance between exportation and importations as well as, other factors such as productivity and investment. The development of the oil sector participation in the gross domestic product of each country can also explain the sector's sustainable and competitive development.

GRAPHIC 33

The development of the oil sector participation in GDP



Source: (Banco Central del Ecuador , 2013) & (Norges Bank, 2017)

Elaborated by: Mabel Bustamante Diaz

As seen in the graphic above, the first decade started off with a relatively slow integration of the sector in the national economies in comparison to the following decade. From 1980 to 1990, the oil sector in both countries experienced a full launch in the GDP of each nation. For Ecuador, the increase was far more noticeable with 47.5% of the oil sector in the national GDP nearly 4 times more than that in the previous decade, while for Norway, the increase of 8.65% set the bar at 13.33% of oil sector participation in national GDP.

Nevertheless, in the following two decades, as public policies began to settle in, readapt, and mature and with the presence of external factors, both countries made the corresponding reformations in order to try to limit the influence of the sector. In this regard, for Ecuador the further nationalization of the sector's processes as well as the renegotiation of contracts with foreign companies led the State to capture more revenues into its State budget, however, the participation of the sector in GDP decreased. This can be explained through the lack of further investment within the sector that increased the importation of derivatives and other goods and services for the sector in order to meet the growing national consumption demand, which was established at an average of 30% of total importations from 1990 to 2012 (Ministerio Coordinador de Politica Economica , 2014). The presence of the oil sector within national GDP also decreased during this decade, due to the persistent growth of the national foreign debt, in the attempt to stabilize the economic crisis, the country was going through before giving in to a dollarization process.

On the other hand, for Norway, participation of the oil sector in the GDP maintained a consistent growth without any noticeable down falls during the four decades. This can also be explained through the strategic alliances the State made with foreign companies in order to develop adjacent industries, such as the petrochemical and transportation industries for the oil sector. This also meant that Norway was meeting the national consumption demand and with further privatization processes, it was starting to sell its surpluses both in crude oil as well as, in human capital for know-how and expertise to foreign companies. The further privatization of the State companies led Norway to maintain a level of control over the influence of the oil sector within the State budget; at the same time, it allowed the nation to perceive a sustainable growth of the sector in GDP development.

3.2.3. The future of the oil sector in the economic structure of each country

The economic structure by 2012 for each country and the influence of the oil sector within it has had a close relationship to both the development, implementation and re-adaptation of public policies for the sector. Means for further sustainable of the sectors revenues have also differed within this last period and the overall role of the sector has matured either into an irreplaceable instrument for State budget and economic growth or a complementary tool for larger State projections. Either way, the oil sector has had an undoubtedly important role in the develop of both countries and their corresponding societies.

During one of the major attempts of the Ecuadorian state to try to untie the close links of the sector to the national economy, the Yasuni ITT project was presented as an alternative both for foreign investment funding and national revenue sources. As explained previously, the fund was first in an innovative attempt to create global co-responsibility in a plan that would not only limit or economically punish the emission of carbon dioxide gases but would compensate the net emissions avoided (Mayor, 2016).

The plan was constructed through the collection of data from the various non-governmental organizations like Oilwatch, Fundacion Pachamama, Accion Ecologica, amongst others, in the Amazon region that had seen first-hand the negative impacts left behind from the experiences of oil extraction activities with foreign companies in the region, especially that experienced with Chevron-Texaco. This information was then structured and presented into the Yasuni ITT proposal in 2007 by the ex-minister of Energy and Mines, Alberto Acosta. The project would then be divided into two phases, the first phase which consisted of planning and designing the project from 2007 to 2010. The second phase consisted of presenting the project to the international community in 2010 so that an international trust fund could be arranged in order to capture the international compensation (Mayor, 2016).

The project consisted of being able to rise in international compensation, half of the monetary value the Ecuadorian state would gain if it were to exploit the approximately 846 million barrels the region had in reserves. This would mean that 3.600 million dollars of

international compensation would have to be insured for a period of 13 years in order for the oil reserves to stay underground and untouched (Mayor, 2016).

Despite enthusiasm within the international community during the presentation of the project, the majority of the compromises made simply stayed in intentions and real monetary transfers were not made. European countries like Spain, Norway, Germany and Italy considered the exchanging the foreign debt the Ecuadorian government had with each country towards their contributions within the project and other countries such as Bolivia, Brazil and Taiwan had interest in getting involved within the project in order to create similar projects. However, absence of a clear strategy in the campaign in order to gather international compromise, continuous changes of the director and objectives of the project and above all the lack of trust of the international community due to delays in the creation of the trust fund in the UNDP, let the project fall down. With the withdrawal of Germany, country that had proclaimed giving 60 million dollars annually for the project, the Yasuni ITT lost its drive and the negotiations rounds for the exploitation of the region began in 2012 (Mayor, 2016).

The collapse of the Yasuni ITT project also evidenced the difficulties of the Ecuadorian state to penetrate a complex international interdependence system that saw the initiative both positive but potentially dangerous as explained through the discourse of the German minister for Development Cooperation, Dirck Niebel in 2011. During his explanation of why Germany retracted from the project he assured that compensation for avoiding carbon dioxide emissions would not ensure the integration of environmentally friendly public policies and would certainly not detain deforestation and degradation emissions. On that basis, compensation for avoiding carbon dioxide emissions under the conditions established for the UNDP trust fund would not ensure the conversion of the Ecuadorian state to an environmentally friendly and sustainable growth. On the other hand, if given the right to acquire international compensation for the avoidance of carbon dioxide emissions, other countries would feel the urge to follow lead and rewarding a country for simply having the natural resources within their territory would not suffice (Trumpf, 2011).

By 2012, oil sector participation in Ecuadorian was established at 40% of total exports, 31% of national GDP, 38% of State budget and 19% of investment in the sector from total investments done that year (Ministerio Coordinador de Politica Economica ,

2014). The panorama for the Ecuadorian oil sector continued to look similar to that of previous decades in which the sector was used as back bone of an economy that kept trying to find its way to launch itself from being a traditional exporter of primary resources to a more developed economy with value-added products that would allow the country to have sustainable economic growth.

The inconsistencies that the influence of the oil sector could have within the economic sphere of the nation, motivated Norway to invest the oil sector's revenues in the creation of the Government Pension Fund Global. The fund would undermine the fluctuations of the prices of the barrel through long-term investments that would obtain equal or more profits for the Norwegian economy than the oil revenues itself. The Fund was integrated in 2006 and consisted of three main pillars for its investment all carried out abroad. The sectors for investment, 60% equities, 35% fixed income and 5% real estate, were to be all managed by Norges Bank, the country's central bank on behalf of the Ministry of Finance. The main objective is to continue building financial wealth for living and future generations. Through the integration of the fund to the global economy, volatility and fluctuations of the oil sector are not only dispersed but also un felt by the Norwegian population that in 2012 had already accumulated 1 million NOK per habitant or approximately 117 thousand US dollars per person thanks to the fund (Norges Bank, 2017).

The Fund's market value has grown steadily and rapidly with the broadening of the Fund's portfolio, reaching 48 million by 2012 (Norges Bank, 2017). Nevertheless, criticism has arisen around the Fund especially towards its role in environmental issues. Given the fact that the Fund is essentially endowed by the state oil company StatoilHydro, its avocation for the promulgation of cleaner more sustainable practices in the screening of its investments is considered to be hypocritical. Exploration activities have started to move farther north into to the region closest to the Arctic Circle, which has caused the concern of environmental activists. This region, which contains a much more sensible ecosystem is considered to be especially prone to negative effects from oil extraction activities due to its terrain and weather conditions. In order to be able to carry out further extraction activities, the Norwegian state has sought to by carbon dioxide emission certificates from other countries (Pictures, 2016).

On the other hand, the Fund was harshly criticized due to the fact that within its equity investments, several ventures in foreign oil companies within Latin America, the United States and parts of Africa are contained. The Fund's outlines however, ensure investing solely in companies that comply with the highest technological standards that lead towards sustainable and environmentally friendly practices. Nevertheless, the Fund's outlines seem to benefit Norway in more than just economic terms as its presence in the global market strengthens through its scattered participation in various strategic sectors around the world. In addition to this, the Fund's outlines for company screening make the process of selection for investments economically beneficial for the country and ethically correct in compliance to norms established by the Council of Ethics but aren't necessarily helpful for a sustainable development of the host countries (Pictures, 2016).

Through the redirecting of oil revenues, the Norwegian state was able to counteract the large cash inflows in the national economy. By 2012, the oil sector counted with 21% of total GDP share, 26% of State revenue share, 26% total investments and 47% of total exports for that year (Norwegian Ministry of Petroleum and Energy , 2012). Sustainability in economic terms for the oil sector was at sight especially after the creation of the Fund, however, environmental sustainability and the oil sector were still antagonistic terms that the Norwegian state despite all the public policies that encouraged cooperation, research and development within the sector, did not seem to integrate fully.

3.3. Influence of the oil sector in the environment of Ecuador and Norway

The sheer nature of oil extraction activities provokes strong links to the environmental impacts this sector has over the regions where the activities are conducted. Although different in terrain and conditions, both Ecuador and Norway have experienced the impacts of extracting natural resource from their territories. Sustainable development within the sector will be analyzed through the capacity of the public policies to be viable, equitable and bearable within their areas of influence correspondingly and will emphasize on the results obtained from the extension to which the integration of economic and environmental objectives within each country was reached leaving the social sphere to be approached transversally due to the complexity of exclusively accessing completely

different cultures and societies. Sustainable and development are in essence antagonistic terms, and the interdependent relationships withheld within and in favor especially of the oil sector worldwide will secure the extraction of the last drop of oil within each country, reason why environmental regulations and restoration measures have been implemented to lessen the end results generated by the sector.

3.3.1. Environmental regulations for the sector

The environmental regulations for the oil sector in each country are agreed upon first within the Constitution of each nation and are then disaggregated to middle and lower level institutions where the implementation of the regulations both take place and are controlled. Although the environmental policy for both of the countries has originated mainly on the basis of the solution and remediation of problems presented within the sector, planning, implementation and integration of processes divers greatly.

In the case of Ecuador, the "Environmental Regulation for Hydrocarburial Activities" was established in 2000, through presidential decree and although it has had many reformations throughout the years, is still in force to this day. The regulation consists of an interdependent hierarchy system than involves various institutions both within the head ministry in charge, what used to be the Ministry of Mines and Petroleum now, Ministry of Renewable and Non-renewable resources and sub secretaries in other ministries, National Direction of Environmental Protection and Sub secretary of Environmental Protection coordinated by the Ministry of Environment in order to be able to carry out the disposition set in the regulation for the oil sector. The necessity for the creation and the principles behind this decree were established after the Rio Declaration on Environment and Development in 1992. Amongst the main characteristics of this regulation, it establishes in one of its first articles that:

> *"…it is within the State's obligations to foresee the protection of its people by allowing them to live in safe and ecologically balanced environment that guarantees a sustainable development reason for which it is considered to be of public interest the conservation of ecosystems, biodiversity and integrity of the genetic patrimony of the country, as well as, the prevention of environmental contamination, sustainable exploitation of natural resources and the requirements that both public and private activities must oblige by in order to preserve the environment…¨*(Registro Oficial , 2011)

The objectives were set; the conservation of the environment was a national duty the State had to rise up to. However, inconsistencies within the same document as well as, with other legal frameworks that prevail in jurisdiction such as the national constitution, made the document both vague and easy to overlook by those who had to comply with it. The document contains various chapters dedicated towards the detailing of certain environmental studies to be conducted and received by Ecuadorian authorities before, during and after any of the phases for oil extraction. Amongst these, are an environmental impact or base line study, environmental auditing and a special exam to be conducted in particular areas.

According to the regulations, these documents would have to be presented to corresponding authorities for their approval before any concession could be made (Registro Oficial , 2011). This in essence constitutes one of the first contradictions within this document since, during the rounds of concessions from 1990 to 2012, these documents were presented after rewarding concession (if presented at all) in a collaboration work done by PETROECUADOR and the company involved (Olmedo, 2011). The document also contains specific charts and tables for the maximum limits and quantities established for each type of contamination: general waste, liquid waste disposal, contaminating emissions to the atmosphere and fresh water contamination (Articles 28 through 33), while maintaining vagueness in the situations that could lead to complaints and sanctions. Perhaps one of the most controversial article within this regulation is the article that indicates that, it is strictly prohibited to carry out exploratory drillings in protected areas which include national parks or protected areas. Additionally, within the third chapter, an Environmental Rehabilitation Fund is mentioned, which according to the regulations, should be fomented through a trust fund between PETROECUADOR and the company at stake in order to be able to cover the costs of environmental remediation after the activities have been concluded (Registro Oficial , 2011).

Hereof, it seems as though the regulation system for the hydrocarbons sector in Ecuador was more accepting of negative environmental impacts, thus pursing a regulation system that emphasize remediation and post rehabilitation of the sector rather than a structured environmental plan that would lead to an integration of systems and sustainable development. The regulations set for the oil sector in Ecuador, were not internally developed through a conscious desire of the preservation of ecosystems and/or forge an authentic

sustainable development but were rather the result of international pressures of that time that saw it positive to foment the incorporation of some type of environmental control over possibly hazardous activities for the environment. Care for the environment of future generations within this framework of regulation meant contemplating even before any activities had been started, the remediation process it would have to go through afterwards.

For Norway, a conjunction of environmental policies has been built through the integration of various state institutions. The Norwegian Storting or Parliament dictates the main outlines for the sector which are then derived to the Ministry of Petroleum and Energy. The head ministry for the sector in turn delegates the environmental regulations to the Ministry of Climate and Environment which works through the Norwegian Environmental Agency together with the Norwegian Petroleum Directorate and the Norwegian Oil and Gas Association (and internal industry association) in order to carry out, oversee and control the dispositions set by the Parliament and the Ministry of Petroleum and Energy. The environmental policies were established in general back in the beginning of the oil sector by the Norwegian Petroleum Directorate and implemented through the then state owned company Statoil. However, through the years, and as the sector has grown, the environmental issues brought up by the sector needed to be delegated to the specialized institutions for further care and conservation (Norwegian Petroleum Directorate, 2017).

According to Norwegian regulations, all awarding and licenses, have to present by law an environmental impact assessment to the Norwegian Environmental Agency prior to the presentation of a plan for development and operation of any oil field to the Ministry of Petroleum and Energy. Within the environmental impact assessment, which consists of a document where the specific possible effects on the environment of a project are measured, it must also include the environmental effects of the activities on trade, industry as well as, any economic and social direct or indirect effects. Additionally, there are certain environmental permits the companies looking to forge into the oil sector in Norway must have in order to initiate activities. Amongst these are the CO2 emission permit, NOX emission permit, produced water discharge permit, chemical discharge and oil discharge permits. All of these permits are regulated by the Pollution Control Act which also established clear limits for permissible, "normal" amounts of contamination within the oil sector and are subject to inspection before and during operations. In addition to these

permits, flare and venting regulations are stipulated in the Petroleum Act. This type of contamination is controlled on the basis of the operational size of the field, type of technology used and other geographical factors specific to each case (Thomson Reuters Legal Solution, 2014). Within the Petroleum Act, there is an entire chapter dedicated to detailing the compensation values and efforts any national or foreign company must take in case of an oil spill or any environmental accident within the sector. The Act also stipulates that if an event were to occur, there is legally no ceiling for the compensation the company must give out both economically and materially to the area affected and the people within it (Thomson Reuters Legal Solution, 2014).

The regulation system of Norway, establishes a system of extreme and immediate compensation methods that both force and pressure any company looking to explore within the oil sector to take special precautions towards complying with environmental laws. As much as Norwegian legislation has safeguarded the development of the oil sector within its territory in paper, this is not always true for the sustainable development of the environment in which the activities take place. In 2010, after Norway and Russia came to an agreement of the demarcation line between the two countries, a rising discussion arose after the 23rd licensing round for blocks in the Barents Sea. This sea is considered to be one of the last remaining seas with clean, fragile and diverse ecosystems due to the specific geographical conditions due to the presence of favorable ocean currents and shallow waters. According to Norwegian legislation, if an environmental affectation were to occur within Norwegian territory, the responsible or polluters would have to compensate in all aspects even if these were found to be unintentional or lack of company liability. This means that even though an "accident" can occur, the Norwegian Petroleum Act remains strict to its compensation policies, giving priority to where it occurs rather than how.

In this regard, however, many environmental analysists consider the legislation to have a fault and a major legal gap that represents a serious threat to the ecosystems of the Barents Sea. For example, an oil spill was to take place near the demarcation line between Norway and Russia, affecting areas of Russia, and the polluters were licensed in Norway, it would seem obvious that the affected party would be able to sue the polluters in their own countries for compensation. But this is exactly where the fault takes place. It would seem that with a court judgement, the Norwegian licensee or polluter would have to oblige by the

compensation terms, however; Norwegian legislation does not recognize contamination outside of its territory and with that, if the polluter on the Norwegian side does not willingly recognize the dictamen put by Russian courts, there is no legal or formal way of forcing the compensation forward. There are no international treaties made with Russia, as done with other European countries *for mutual recognition and enforcement of court judgements* (Nickelsen, 2016).

Norwegian legislation for environmental conservation within the oil sector has proved to be stern, strict and extensive in compensation methods within its territory and although this had struck hard in the companies that venture into the sector, the question still arises, is taking care of the environment at home enough, when the development of the sector itself affects the sustainable development of other environments that are not within the national boundaries?

3.3.2. Environmental impacts generated by the oil sector

In order to understand the environmental impacts, the oil sector has had in each country a definition of "environmental impacts" should be made. According to the English Dictionary Collins, an environmental impact is the *effect on the environment created by an industry, service plan or project* (Collins Dictionary , 2017)*t.* However, a much more profound understanding can be made through the classification the UNDP has made when referring to environmental impact (Olmedo, 2011). According to this classification an environmental impact could be classified within the following categories: loss of food safety, insecure access to fresh water due to changes in ecosystems, exposure to natural disasters, the loss of biodiversity and vulnerability towards health epidemics. This would also lead to recognize as environmental impacts both the direct and indirect effects that a project, service or industry has over its region of influence. Given the nature of the oil sector and due to the high levels of contamination in all of the phases (exploration, extraction, transportation and use) of the resource, the environmental impacts this had in each country are undeniable.

For Ecuador, due to the presence of the oil sector in the Amazon region of the country, the entire supply chain represented a constant threat to the environment in which it

was found. According to a study made by the activist group, "Accion Ecologica", the different phases of the oil extraction process affected the environment in the different categories mentioned by the UNDP. As part of the exploration activities, the seismic prospection process was carried out in the Amazon region. This process consists of creating artificial movements in the earth surface with explosives in order to capture the magnetic waves of the region and this way build an ultrasound of the diverse existing structures and layers of the earth, including the potential storage of hydrocarbons. The average seismic prospection leads to approximately 1000 km of trees being cut down. In Ecuador, according to an independent study done by Kimerling in 1993, the seismic activities of just one of the companies present in the Amazon region, Arco, within the Block number 10, deforested 1046 hectares of primary forest, which means virgin and untouched by mankind, and caused 2170 hours of sound pollution within the region due to the presence of helicopters. Additionally, explosive pipes and toxic waste were found in the rivers and forest areas surrounding the region of influence and hunting of endemic species as well as intense fishing was done by the workers that came into the region (Olmedo, 2011).

Another example of the environmental impacts the oil sector has had in the Amazon region of Ecuador, has to do with the perforation phase in which the largest form of contamination within this phase is the so called "drilling mud". The perforation phase contaminates the environment in two aspects, with the exposure of the waste generated by the cuts, which in the majority of cases consists of rocks that could contain heavy metals, radioactive substances or other contaminating elements, but it also contaminates with the usage of the "drilling mud" which is a substance that is placed in the area to be perforated in order for the machinery to slid easier into the ground and reach greater depth. This substance contains various metals, inorganic salts, detergents, organic polymers and inhibiters of corrosion amongst others. This deadly cocktail, was the main substance to be found in the "discharge pools" left behind by the Texaco company. The open pools located in a high precipitation region, and are still open to this day, were of generally 75 by 70 meters and contaminated the adjacent areas and fresh waters thus the wildlife within it and the communities that survive off of it. The type of perforation done by the Texaco company was done one well at a time, individually. This type of perforation, also known as vertical perforation, contaminated approximately one hectare of natural ecosystems surrounding it directly and approximately 50 hectares indirectly (Olmedo, 2011).

Although many companies during the renegotiation rounds of 2010 proposed using a more environmentally sustainable perforation system, the "cluster perforation technique", this in reality did not reduce levels of contamination since it generated more waste and brackish water, geological water formations with extremely high levels of sodium chloride. Oil platforms are physical evidences in the Amazon region of the contamination caused by the oil sector since these altered the behavior of the wildlife within the areas, which caused modifications in their spawning, feeding and migration routes. The environmental effects that the oil sector has had and continues to have within the Amazon region of Ecuador have not been completely documented as certain companies have yet to present environmental auditing or the environmental impacts of their activities to the corresponding authorities (Olmedo, 2011). Nevertheless, the presence of the sector is felt not only directly within the Amazon jungle but indirectly through the generations of populations both human and animal surrounding it.

ILLUSTRATION 2
Environmental impacts of oil sector in Ecuador

Source: (Ecuavisa , 2013)

For Norway, the environmental impacts of the oil sector have also been felt by its region of influence despite the difference in terrain compared to Ecuador. The extraction of industrial amounts of oil in Norway took place in the North Sea and from 2010, in the most

northern parts of its continental, shelf located in the Barents Sea. Notwithstanding, the phases of oil exploration and oil extraction are similar to those used for ground extraction with some variations in the equipment and machinery. For the first two decades of the oil sector in Norway, exploration and exploitation processes were done without taking much regard of the environmental impacts and despite the fact that the companies within the sector were required to present by law, the corresponding environmental impact assessments with the sufficient monitoring back-up, annually, these differed and were even found to be misleading after an expert analysist group reviewed all the reports submitted at the end of the eighties. There were inconsistencies in the methods used for sampling, monitoring and control which not only made it difficult for authorities to pursue legal action towards any company that might have displayed a rupture in their activities and the environmental regulations for the sector but also made the environmental situation of the region of influence vague and unclear in terms of affectations and contamination percentages (Gray, Bakker, Beck, & Nilssen, 1999). According to a study done by the Marine Environmental Research Group, the main sources of contamination from the oil sector in Norway are water formations also known as brackish water and drill cuttings that disperse dense toxic substance within the waters of the region (Bakke, Klungsoyr, & Sanni, 2013).

As in Ecuador, formation or produced water contain vast amounts of chemical elements both synthetic and natural in quantities that are not found in the surface where endemic ecosystems develop and take place. Due to the intensity in volume of the chemical substances within produced water, and the rapid dispersion of it through water and specifically ocean currents, the discharge of this substance has led to major concerns within the environmental activist community in the region. With the help of natural endemic species such as the Atlantic cod and blue mussel, a study carried out in 1997 showed that the levels of contamination from produced water discharges in the existing fields had body burden effects such as DNA damage, digestive gland histochemistry alterations and membrane damage. Additionally, the study demonstrated that complex chemicals due to oil associated compounds found in formation water, modulated the endocrine physiology of the Atlantic cod. This study concluded that the components interfered with the blood steroid flows in female samples which would interfere in future generations in terms of growth and rupture of species reproduction cycles. Despite efforts of the Norwegian authorities to control the

discharge of formation water, in 2012 130 million cubic meters were discharged into the Norwegian Continental Shelf (Bakke, Klungsoyr, & Sanni, 2013).

Likewise, in Norway, the contamination through drilling waste, specifically, "drilling mud" has had major environmental effects in the Norwegian Continental Shelf. In 1993, Norwegian regulations banned the use of oil-based drilling mud and from then on water based muds or synthetic based muds, muds containing organic liquids more biodegradable, began to be used. However, the environmental impacts caused before the coming of the regulatory legislation were and still are noticeable. Within a case study, hydrocarbon pollution due to the presence of drilling mud around the seafloor of some wells extended up to 10 km distance. Physical contamination of the seabed can still be seen as large piles of cutting waste reach up to 25 meters, with an environmental footprint of 20 000 square meters and reaching volumes of up to 45 000 cubic meters per field. The most affected region continues to be the most diverse in ecosystems, the northern part of the Continental Shelf, which is due in great part to the existing strong ocean currents that run through the southern part of the region. Some analysist argue that these same currents could in reality be causing further pollution through further dispersion of contaminants. The difficulties presented in the determination of base line levels and post activity levels in terms of environmental impacts within the Norwegian Continental Shelf has led to a vague acceptance of contamination issues within the oil sector thus in some cases further negligence of the existence of a growing problematic by the corresponding authorities (Bakke, Klungsoyr, & Sanni, 2013).

Despite the ambiguity with which the environmental impacts caused by the oil sector are treated within the Norwegian territory, Norway imposes itself as a leading nation in the promulgation of reducing the environmental loads from the sector internationally. Within its international initiatives, Norway participates in the Ospar convention on discharges to the sea, the Kyoto protocol on GHG emission and the Gothenburg protocol on emissions of gasses with acidifying effect as well as volatile organic compounds (Jaera, 2013). Nevertheless, the presence of the oil sector has led to an ongoing dilemma within the Norwegian territory as capacity loads seems to have peeked already and production levels of older wells have started to decline, determining the environmental aftermath could put at

risk new explorations that could revive the sector in further explorations closer to the Arctic circle.

ILLUSTRATION 3
Environmental impacts of oil sector in Norway

Source: (Green4Sea, 2016)

3.3.3. Environmental remediation cases

The term sustainable development in essence refers to the care taken in meeting today's needs without compromising future generations in being able to achieve their own needs (Barlund, 2017). The concept of sustainable development was forged after the realization that human activities were in fact accelerating natural processes and that this could lead to devastating consequences for humankind and all other inhabitants within the Earth. The formalization of the concept took place in the World Commission on Environment and Development, also known as the Brundtland Commission through the promulgation of the document "Our Common Future" a document that was led by a Norwegian scientist, Gro Harlem Brundtland, which also exposed the characteristics, main risks and rewards of re directing development to more environmentally sustainable practices (Commission on Environment and Development: Our Common Future, 2017). Although the oil sector both in Norway and in Ecuador has tried to incorporate within its policies, regulations towards achieving a sustainable development within the sector, the presence of ecological damage is undeniable. So what happens when the damage has already been done?

How can taking care for future generations take place when current generations are affected by the environmental impacts today? In order to do so, both countries have implemented different types of environmental remediation systems.

Given past experiences in which foreign and national companies have had little to no impacts in their attempts of environmental remediation, the Ecuadorian state decided to put forward a national environmental remediation plan in 2008. The plan or "Program for Environmental and Social Remediation" also known as PRAS for its Spanish initials, contemplated within its objectives to implement a national information system in order to design, promulgate and validate remediation plans for environmental and social issues that would also need technical monitoring and evaluation in order to be able to carry out an integral system of rehabilitation (Ministerio del Ambiente , 2017). Despite the political action taken in order to achieve a clean slate that would allow the Ecuadorian state start with true sustainable methods, practices and procedures, especially within the oil sector, the remediation carried out until this date has been proven to be deficient and insufficient for the areas affected.

The most renowned cause both nationally and internationally in terms of environmental remediation and its defects within the Ecuadorian territory has been the case of the liabilities paid by the Texaco company. According to court documentation, the company did not comply with any environmental regulations when it was carrying out its "remediation" plan. To start off, the companies subcontracted by the giant, were not even recognized nor authorized by Ecuadorian authorities to carry out such procedures. According to some analysists, the process of "remediation" turned out to be much more harmful for the environment than the original contamination itself. This was due to the fact, that during Texaco's remediation process through the subcontracted companies, IECONTSA and CANONI, solid waste recovered from the affected areas and oil residues were incinerated openly. Additionally, according to technical investigations done post remediation process, during the trial held between the Ecuadorian state and the multinational in international courts, approximately 500 pools were hidden before 1990 by the company. Also, formation water had not been reinjected to the wells that were no longer in use properly and platforms had been abandoned without having taking into consideration the corresponding closure

procedures to ensure the avoidance of future pollution (Arandia, Chavez, Freile, & Miranda, 2011).

It would have seemed logical that once the state-owned company PETROECUADOR, took over the possession of the fields once operated by Texaco, the situation for the remediation process would have improved. Nevertheless, this was not the case, and on this basis, Texaco has been able to successfully refute its entire responsibility before international courts. After the transfer of the blocks to PETROECUADOR, little or insignificant actions have been taken towards an honest remediation. From 2000 to 2004 PETROECUADOR used less than 1% of its budget towards the protection of the environment and a scarce 2% for the reinjection of formation water within the region. To make matters worse, contradictions began to arise from the different reports submitted by the state-owned company and the Sub-ministry for Environmental Protection. According to PETROPRODUCTION, subsidiary of PETROECUADOR, 38 wells had been reinjected with formation water until 2008, but according to the Sub-ministry, of these 38, 35 did not comply with the environmental regulations for the correct treatment of these waters (Arandia, Chavez, Freile, & Miranda, 2011).

Although accessing the problem through the intervention of a specific program like the PRAS could be beneficial in terms of gathering information towards the understanding of national scope of this problematic, the terms and conditions linking the different institutions involved and obtaining serious commitments from these is still to be seen.

In the case of Norway, despite strict legislation and compensation sanctions for environmental affectations within the sector, remediation methods still struggle to capture contaminations and oil spills that occur in Arctic weather conditions. Although by law, the polluter must cover all costs of a remediation process, this is overseen and administered by the Norwegian Pollution Control Authority, and monitored through the national contingency plan that runs down to base line action plans in each municipality. Therefore, organizational structure for contingency reactions in Norway is led by the Norwegian Pollution Control Authority which counts as back up for major oil spills, with the commitment of the Directorate of Labor, entity that makes use of local public offices for man power, transportation and the supply of emergency goods. Additionally, according to Norwegian

legislation, the armed forces can be called in at critical points of intervention during a remediation process. Nevertheless, despite having structured guidelines and policies of action for remediation processes within the oil sector, real problematics have arisen in practice due to the rough conditions of the Northern Sea, ineffective response of the licensee and inadequate or insufficient equipment (Guenette, Aasnes, & Follum, 2015).

In 2011, a transportation ship owned by the multinational Shell, the Godafoss, that was carrying approximately 200,000 gallons of crude oil began leaking around the Hvaler archipelago, part of Norway's only marine preservation area. Within a week of the leakage, some 26,000 gallons of oil had been able to be removed from the contaminated area. However, oil had already started to come ashore, affecting the reserve that homes vast amounts of marine mammals, sea birds and cold-water coral reefs. Although oil spills have occurred since the initiation of the oil sector in the1970's, this was the first that struck real controversy between the licensee and the Norwegian State. According to Shell authorities the harsh weather conditions caused delays in the containment process and the mobilization of the equipment and machinery necessary for any remediation action to be taken afterwards. Norwegian authorities however, had split opinions on the topic. Although the Norwegian Costal Authorities coincided that the containment would have to be prolongated, the Norwegian Coast Guard begged to differ adding that *the oil slick continued to widen out* and that the relatively no experience of oil spills close to shores in Norway would cause long-term effects over the ecosystems of the area that would not be able to be estimated, thus remedied for (Alaska Wilderness League, 2011).

The incident proved that despite legal measures taken in order to try to avoid oil accidents or spills through economic turn offs, such as large compensations, once these occurred, the remediation measures would not only have to face unconceding opinions from Norwegian authorities that could lead to legal misunderstandings, it would also have to face technical and human difficulties due to the specific Arctic conditions.

With all that has been previously mentioned, this third chapter has sought to explain the results obtained in the different institutions where management of the oil sector resources has been carried out in Ecuador and Norway correspondingly through an analysis of the evolution of the national economies in each country, the influence of the oil sector in the

structure of each economy, and the influence of the oil sector in the environment of Ecuador and Norway. In this explanation of how the oil sector has influenced both Ecuador and Norway, within a time frame of 42 years, where the cycle of the public policies involved for the oil sector in both countries illustrated their capacity of creation (sensitivity) and their capacity of adaptation (vulnerability) helped explain how the channels of communication, in this case the public policies, that set the rules, contributed to the dynamics amongst the various actors involved, ultimately leading to the viability, effectiveness and perdurability of each of the decisions taken both in economic and environmental terms within the sector itself.

VI. ANALYSIS

Toward the conclusion of this investigation, it can be deduced that the main objective: to analyze the determining factors of the divergent trajectories of the oil sector between Ecuador and Norway and their effects on both countries was achieved. According to the complex interdependence theory, the notion of independent internal and external policies within the XXI century is a fallacy that is undermined with the participation of more actors, especially those not originated from the state and the "battle" of conflict of interests, and power that transcend national boundaries and once hierarchal agendas. This would explain the formulation of the channels of communication, which explained through this theory can either be formal: laws, regulations and/or any other legal bonding such as contracts or permits or these could also be informal, such as agreements and/or arrangements that aren't necessarily legally mandatory but are achieved through mutual understanding and "good will" amongst the various actors, thus explaining the eventual results, displayed through the dynamics of the various actors within the constraints of the channels of communication established and created upon state intervention for the multinationals interested in exploring the oil reserves of each country.

According to Keohane and Nye, once the threat of national security in military terms is left aside, all actors in the international exchange of goods and services, start at the same level. This explains the need of Ecuador and Norway's state intervention in the initial decade of the oil sector for both countries, which sought to put forward the rules of engagement for the multinationals in the sector but ultimately really tried to maintain control over the national resource. Nevertheless, complex interdependent relations were forged from state to non-state actors, state to state actors and non-state to non-state actors. Although, in many cases these were not symmetrical relationships, all of these relationships represented costs in their interactions for the parties involved; making them interdependent relationships.

The cost and benefits of developing these interdependent relationships led both Ecuadorian and Norwegian authorities to reformulate, readapt and change public policies all throughout the eighties in the attempts of conserving larger benefits for the state. In practical terms, the costs and benefits of an interdependent relationship can be analyzed through the economic development of the actors involved, in regard to the specific activity. The co-

relationship held between the actors involved in the structural economic development will also give hints towards interpreting who has had the majority of costs and which actor has had the majority of benefits. This could explain, the creation of PETROECUADOR for Ecuador, and the SDFI in Norway during the eighties. These two, state institutions, were both created in the attempt to capture more effectively the revenues, or in this case the economic benefits of the oil sector. However, perceiving benefits is just one part of the interdependent relationship, the other half has to do with how those benefits are distributed.

Despite the changes made to the existing interdependent relationships in the eighties and the creation of state institutions that sought to put the balance on the State's side, new adversities arose and a quest for a balanced interdependent system continued. In agreement with that established by Keohane and Nye, all actors will try to improve their inflow of benefits, in which case for the oil sector that would be achieved through the consensus of first the oil nations amongst each other, embodied in the OPEC then of the oil nations with the corresponding oil multinationals within each country, that could lead in raising the price of the barrel, however, raising benefits rarely means a win-win situation for the parties involved. In the majority of the cases, raising benefits also increases relative costs and a scenario more prone to an inefficient distribution of benefits.

This was demonstrated through the expansion projects that took place both in Ecuador and in Norway during the eighties. These projects caused the infrastructural expansion of the oil sector which both states could benefit from either through direct foreign investment or through internal investment that would have its future returns; however, the costs were also felt accordingly. Ecuador felt both the direct costs through the financial payments done to the multinationals that were outsourced for the projects and the indirect costs in terms of further multinational dependency due to its lack of participation and operatorship within the cornerstones of the initial phases of the sector. Norway also felt the direct financial costs through the overbudgeting mishaps presented within the projects and the indirect costs of the solely state-owned and mayor operator company, Statoil with an excessively growing and worrying influence in the sector and the economy of the country.

In this regard, it is necessary to note that for both countries, the escalation of interdependent relationships within the oil sector did not necessarily mean the creation of

scenarios of efficient cooperation within the actors, but rather situations of further asymmetrical dependency models to be replicated, if not taken the corresponding actions. And it is these same asymmetrical dependency relations that are the source of influence of the actors involved and originate the dynamics amongst these.

Hereof, the definition of power through the complex interdependency model puts forward that power, in international relations, and does not only refer to the ability of actor A to influence actor B into doing something actor B would otherwise not have done; the control over resources, but it also emphasizes the ability of actor A to influence the results of the control of the resources that actor B has. In order to do so, different mechanisms were adjusted into the public policy systems for the oil sector in Norway and Ecuador correspondingly.

For Norway, partial privatization of the state companies involved offered the opportunity of dissolving the economic sensitivity of the sector while maintaining a certain degree of political vulnerability that would allow the Norwegian authorities to be able to react in critical situations. This measure also led the way to the creation of the Government Pension Fund Global, a fund that allowed Norway to control the results of the oil sector not only for the present but for generations to come. On the other hand, for Ecuador, further nationalization of the oil sector has led to a continuous growth in the sensitivity and vulnerability levels in economic and political terms for the oil sector. This could explain the appearance of the Yasuni ITT project during the last period of study of the oil sector, as a mean to demine the overall power of the sector in the Ecuadorian state by radically changing the perception of an extractivist country to a non-extractivist country and seeking compensation for it.

The presence of the oil sector in both countries has forged distinct scenarios for the proliferation of linking strategies amongst the various actors within the oil sector. These strategies, according to Keohane and Nye, modify the relationships between the states, multinationals and trans governmental organizations, which in turn creates a plot of ever changing agendas, in which the immediate topics are not necessarily those put by the highest hierarchical authority, or in typical realism, considered to be the state, but are instead put forward by any actor with sufficient influential power. This was the case of the

environmental concern that started to spread in the oil sector, especially after the Brundtland Commission in 1987, and was aggravated by the environmental impact reports carried out by various environmental activists' organization, all of which set the agenda within the sector towards, environmental conservations and remediation.

The report presented to the Commission on Environment and Development to the UN, formalized the notion of sustainable development which according to its Norwegian creator, Gro Harlem Brundtland, refers to the ability of meeting the current generations needs without compromising the ability of future generations to meet their own. In this regard, given the nature of the exploration and extraction activities of the oil sector, the challenge for both countries were more in alignment towards a clear and effective remediation process rather than compromising the existence of the sector itself.

Nevertheless, even within a remediation process, both countries have had to face what was referred to as institutional gaps, by the Brundtland Commission. This meant that both countries had to now take into consideration broadening their typically narrow economic and political concerns for the sector. However, as the report establishes, the interlocking relationship between economic development and environmental destruction are inevitable. The need for economic growth and political power in the majority of cases, triumphs over costly institutional and infrastructural reformations.

The implementation of special taxes for carbon dioxide emissions, limit tables for permissible contamination or polluted water discharges permits are examples of measures that were implemented by both countries in the attempt to compensate for the inevitable impacts of the oil sector on the environment. The creation of environmental agencies and institutions were merely stop points for analyzing how to better profit from the environments accelerated degradation process due to the presence of oil extraction activities.

In accordance to that established in the Brundtland Commission Report, these institutions give the governments and its citizens the false illusion that these entities will end the environmental impacts generated by economic pressures. In this regard, Ecuador has not only failed in the attempt of enhancing environmental control over the sector but it has also led the nation to inherit problems related to previous contaminations of the industry which

result in inadequate remediation processes and present economic burdens for the State itself. Although Norway has been able to successfully persuade the non-state actors to take precaution, comply with environmental legislation and, most importantly, pay the corresponding economic duties for their activities, this did not mean the elimination of environmental impacts. This also did not mean a change in the environmental impact assessment on the projects abroad.

The ability to anticipate environmental damage has grown but no real measure has been taken to prevent or in that case, lessen the ecological dimensions the oil sector has had in each country. All in all, the presence of the oil sector has changed the historical development of both Ecuador and Norway especially through its economic influence. Norway was able to establish, through time, the public policies that would allow the network of influences and power to be balanced among the actors in order to support a perdurable economic growth that has had its core roots in the oil industry. Ecuador has used the oil sector as its means for balancing off the internal political instability and reducing its economic costs.

Nevertheless, the oil sector has had a major role in both of the countries since its creation, the divergent paths can therefore be explained through a complex interdependency theory that denotes two oil based economies (Norway and Ecuador) and one oil dependent nation (Ecuador) in economic terms. The divergent economic paths have also led to a divergent path in terms of environmental protection, legislations and remediation; however, both countries are not too distant from each other in terms of overall environmental impacts caused by the oil sector.

VII. CONCLUSIONS

The work hypothesis formulated for this investigation has been proven to be true since state intervention that formulated the public policies for the oil sector in both countries did affect the role of the different actors involved and their dynamics between these which ultimately laid out the paths for the divergent trajectories in terms of management of the resources obtained from the sector and the results of these for each country through the following conclusions:

- The interdependency relations between state and non-state actors delimitated through public policies in the initial decade of the oil sector determined the economic growth rate of the sector in overall GDP and the levels of political and economic sensitivity and vulnerability to external factors for each country.
- Ecuador perceived less integration of the oil sector with other sectors of the economy in the eighties due to the reformations made in contract modalities celebrated with foreign companies that hindered the transfer of human, technology, expertise and know-how transfer from non-state actors to the state institutions in charge.
- The lack of investment, research and development policies along with successful pressures from the multinationals in the first two decades of the oil sector, led the Ecuadorian state to perceive less benefits in economic and technologic terms and to destine the revenues of the oil sector entirely to lifting the economy creating an economic bubble characterized with massive inflows of cash into the economy, fluctuations in national currency in order to maintain international competitiveness, rise in importations in order to meet national demand due to stagnation of other sectors of the economy and rise in total foreign debt resulting in the "Ecuadorian Dutch Disease".
- The creation of ethical alignments and objectives for the oil sector in Norway through the creation of the "10 Commandments" as well as, the political consensus and stability allowed the State to carry out a high intense transfer of technology, expertise and know-how system that resulted in slow economic growth but a high integration of the oil sector with other sectors of the economy as well as, the creation and development of Norwegian companies willing to carry out adjacent processes for the sector such as petrochemical studies and transportation.

- The redirection of a large amount of oil revenues towards fulfilling integration and development objectives in Norway, led the nation to be less economically dependent on the sector, less vulnerable to oil barrel price fluctuations and effective in avoiding an economic bubble due to the large cash inflows from the sector, within the country.
- The development of the institutional dynamics for the oil sector in both countries in the 1990's led to the characterization of the base units into a systematic arrangement of power distribution through further nationalization of the oil sector in Ecuador and an organization that favored power negotiation through partial privatization processes in Norway.
- The creation of PETROECUADOR, and further nationalization of the sector was not a result of institutional evaluation but rather a desperate measure taken by the Ecuadorian state in the nineties in order to try to stabilize revenue inflow form the oil sector so that national economic balances and the payment of the foreign debt could be attended to.
- The partial privatization of Statoil and other solely state-owned companies within the oil sector was part of a process of dynamization process for further competitivity of the companies not only at national levels but in the international arena, all in order to achieve economic viability.
- The influence of the oil sector in the evolution of the structure of the economy in Ecuador was characterized by a large participation in State budget and total exports that supports the evidence found from the negative results obtained in the renegotiation rounds carried out in 2010, in which the licensees within the oil sector did not increase royalties paid to the Ecuadorian state, making it clear that the agenda for the oil sector was clearly established by the multinationals and followed by the oil-revenue dependent state of Ecuador.
- The influence of the oil sector in the evolution of the structure of the economy in Norway, portrayed the State's capacity of public policy adaptation in order to maintain its original agenda and undermine excessive influence from the sector through control, supervision and partial privatization leading to an unaccelerated but steady growth and a long-term economic plan that would act as an economic mattress through the creation of the Government Pension Fund Global.
- Damage in both countries in terms of ecosystem contamination and pollution from the oil sector has tried to be repaired through the creation of compensation and

remediation systems, however, this proves that the oil sector and true sustainable development of the environment are antagonistic concepts that were merged together, as a false solution to environmental impacts and crisis brought up by the sector.

- There has been a historical lack of environmental concern and protection of the oil sector in Ecuador which cripples the State's voice and bargaining power in remediation and compensation processes requested to the multinationals and also provokes an inefficient cycle of funds since the State itself has had to destine funds in a national remediation system, also known as PRAS.
- The strict taxes and economic compensation measures taken in Norway in order to safeguard the environment have helped the sector maintain certain control within its national boundaries, however, as Statoil and many other public companies were privatized, these have incurred in international oil exploration and extraction activities for which the same rigorousness of environmental conservation has not taken place which proves that the concern for environmental sustainable development of the oil sector in Norway is a fallacy supported by the multinationals in order to maintain their status quo and participation in the State enterprises within the country by being perceived as corporately responsible companies.
- Although initially at the similar starting points, Ecuador and Norway forged divergent trajectories in the terms of management of the resources obtained from the sector, in which case Norway has exceeded through its effective and efficient capacity of public policy adaptation and transformation by creating economic sustainability for the country, while Ecuador still struggles to find and implement the adequate public policies, due to the underlying complex interdependence relations established in the early decades of the sector in the country with the non-state actors involved, that could ultimately mitigate the nations strong and unsustainable economic dependency on the sector.
- State intervention in both countries set the path for the results of the sector correspondingly; which in Norway meant meeting the objective of improving revenues from the sector whilst maintaining a perdurable growth that would allow the following generations to benefit economically from the extraction of the non-renewable resource and in Ecuador meant relaying on the price of the barrel for

international bargaining power and resorting to it as petty cash without any real perdurable impact in the economy.

- The complex interdependency and the sustainable development theory, used for the historical description and analysis of this investigation took into consideration the political, economic and environmental spheres as comparable variables since these have been affected directly and there is verifiable proof through the time period investigated, such as: legal documentation referring to the regulations, restrictions and control of the oil sector, economic data from the national oil companies and central banks, audits done to foreign oil companies, and scientific publications of post evaluations done to the areas of influence, especially in environmental concerns. However, it was not able to approach the social sphere as an individual element due to the complexity of defining comparable variables of the different societies and cultures involved. The social sphere was thus approached thru the capacity of the public policies to respond to sensitivity and vulnerability levels through reformation and adaptation processes that took place in each country which lead to the creation of bearable, equitable or viable policies that answered specific problems as these arose but as the investigation shows, never fully reached a combination of these three elements of sustainable development in either of the nations studied.
- In the analysis of the development of public policies for the oil sector in Ecuador, with the methodology proposed by Keohane and Nye, there were persistent inconsistencies in the three initial phases: surface of a problem, inclusion of the issue in the agenda and formulation and decision of the political program to be used. The recollection of economic data lead to believe that corruption within the state institutions involved in the management of the oil sector took place however, without any post evaluations or official pronouncements on the topic, the surfacing of problematics was continuously dealt as economic imbalances due to the over indeptness, national currency fluctuations, and other economic factors. This meant an incorrect assessment of the problematics, incorrect inclusion of the issues into the national agenda both time wise and manner wise and finally inappropriate formulation of political programs to be used within the country.
- Through the complex interdependency theory, it can be deduced that Norway has been able to stabilize in economic terms the sensitivity and vulnerability levels within its oil sector however, contradicting points in the Government Pension Fund Global

could cause far worse ripples in the Norwegian economy due to the size and reach the Fund has.

- Through the complex interdependency theory, it can be deduced that Ecuador has not been able to stabilize in economic terms the sensitivity and vulnerability levels within its oil sector and there is a tendency of the public policies to respond to immediate problem solving rather than strategic future planning.
- Through the complex interdependency theory, it can be deduced that Ecuador and Norway have not managed to stabilize sensitivity and vulnerability levels in environmental terms which is shown in the incapacity of forging public policies that are equitable, bearable and viable at the same time and aren't excluding of one or the other thus, resulting in an unsustainable development in both countries.
- The gathering of information about the training, research and development aspects of the oil sector in Ecuador, was done informally through interviews to the authorities at the various institutions were these activities were carried out however, there is a lack of registration of the processes carried out, their integration in the overall development of PETROECUADOR as an institution and the oil sector itself.

VIII. RECOMMENDATIONS

After the corresponding analysis and with the findings listed above, the following recommendations can be made.

- In order to be able to understand the entire spectrum in which the oil sector has impacted, Ecuador and Norway should maximize periodic public reporting of key data such as: statements of financial position, production level surveys, statements of changes in equity, reports on connectivity levels of production to other supply chains, reports on human capital development and integration by phases to specific programs and/or projects and pre and post environmental affects preferably carried out by independent financial and environmental audits and socialized through its publication on the websites of the institutions involved but also in newspapers and business related magazines so that problematic issues can be addressed through a national awareness and both public and private entities can address niches that could be taken care of.
- Given the fact that an immediate relieve of the Ecuadorian economy to its oil revenue dependency is not viable, and taking into consideration that there are already renewable energy programs in course within the country, Ecuador should revise the public policies for the management of the revenues from the oil sector in order to develop an economic fund that could mimic the Pension Fund created in Norway with certain national adaptations. The fund could be authorized, regulated, and set the percentage of revenues to be destined to the fund by the Ministry of Finance and administrated through the Ministry of Environment which in turn would regulate the initiatives, programs and businesses to invest in through the Undersecretariat for Climate Change so that the fund could truly contribute to a change in the productive matrix while creating liquidity in the country's economy.
- Due to the lack of technological and know-how transfer in the oil sector in Ecuador, PETROECUADOR through its Personnel Training Center, could seek to form alliances with other public institutions dedicated towards human capital development such as, the Ecuadorian Service for Professional Training, also known as SECAP for its Spanish initials, so that further professional training can take place without compromising PETROECUADOR´s budget plan, this way it could also seek to

destine economic resources towards carrying out international exchange programs for the specialization of PETROECUADOR´s technicians.

- Due to the global presence of Norwegian oil companies around the world, Norway should consider integrating the "10 oil commandments" it had set for itself and adapting them into the Government Pension Fund Global in order to set the ethical guidelines so that the activities abroad will not replicate scenarios of complex interdependency relationships, especially in "less developed" countries where Norwegian presence could cause unfair balances of power between state and non-state actors. Additionally, an ethical committee could be established in order to enforce the guidelines integrated by financial experts and in part by university students coursing related studies.
- It is necessary for both countries to understand that sustainable development within the oil sector is not an honest response to the permanence of the sector in both countries, strong, binding laws systems, as well as, independent pre and post evaluation strategies for the environment and social surroundings should be conducted and combined in order to reach unnegotiable efficient remediation contracts
- Due to the enormous economic influence the oil sector has had in each country, given the volatile nature of the price of the barrel in international markets and the environmental costs that the sector entails, both countries should initiate the creation of viable political measures leading to the definitive discontinuity of the oil sector in both countries. For Norway, a strategic plan could be developed through the restructuring of Local Development Plans in order to eliminate the presence of the oil sector and integrate and absorb in other ways and according to each locals needs the adjacent oil industries, which in turn would create a necessary reformulation of the County Plans at a regional level to better adapt to the national guidelines of eliminating the oil sector. For Ecuador, a strategic plan could be developed through the recollection of data and further analysis within the autonomous decentralized governments which could lead to strengths and weaknesses, sensitivity and vulnerability levels of each region in order to determine the viability of readapting and incorporating non-oil industries according to each region profile. This in turn could integrate guidelines from a consensus reached between the Ministry of Environment, the Ministry of Industries and Production, the Ministry of Finance and

the Ministry of Agriculture, along with the private bank sector´s collaboration in order to be able to generate fiscal policies that would for example approve individual credits for projects that fully integrate themselves to the objectives gathered in the consensus reached among these different institutions which would build a true alternative economy.

LIST OF REFERENCES

Ecuavisa . (2013). *Afectados por Chevron sufrieron revés en intento por embargar bienes de la petrolera.* Obtenido de Ecuavisa: http://www.ecuavisa.com/articulo/noticias/actualidad/29787-afectados-por-chevron-sufrieron-reves-en-intento-por-embargar

Alaska Wilderness League. (2011). *Norway Oil Spill Clean-up Problems* . Obtenido de Alaska Wild: http://www.alaskawild.org/wp-content/uploads/2014/10/Norway_Spill_Factsheet_070511.pdf

Arandia, W., Chavez, E., Freile, J., & Miranda, I. (2011). *Conflicts linked to the oil exploitatin in three Latin-American Regions.* Obtenido de Trace Briefings : http://www.publishwhatyoupay.no/sites/all/files/PWYP%20Norway_Article%202_ENGLISH%20WEB.pdf

Bakke, T., Klungsoyr, J., & Sanni, S. (2013). *Environmental impacts of produced water and drilling waste discharges from Norwegian offshore petroleum industry.* Obtenido de Marine Environmental Research: http://ac.els-cdn.com/S0141113613001621/1-s2.0-S0141113613001621-main.pdf?_tid=0b1c8dd6-10d5-11e7-9d4f-00000aacb35e&acdnat=1490389465_1e79eed3fdb16cc7d7f38dfa8de3162e

Banco Central del Ecuador . (2013). *Estadísticas Macroeconómicas*. Recuperado el 16 de March de 2016, de Dirección de Estadística Económica : http://contenido.bce.fin.ec/documentos/Estadisticas/SectorReal/Previsiones/IndCoyuntura/EstMacroEstruc2013.pdf

Banco Central del Ecuador. (2017). *Estadisticas Economicas.* Obtenido de https://www.bce.fin.ec/index.php/component/k2/item/757

Barlund, K. (2017). *Sustainable development- concept and action.* Obtenido de UNECE: http://www.unece.org/oes/nutshell/2004-2005/focus_sustainable_development.html

Bonilla Soria, A., & Luna Tamayo, M. (2011). *Estado del país.* Quito: Otto Zambrano Mendoza.

Bossel, H. (1999). *Indicatos for Sustainable Development Theory, Method, Applications*. Obtenido de International Institute for Sustainable Development: https://www.iisd.org/pdf/balatonreport.pdf

Brother, M. E. (3 de March de 2015). *Huffington Post*. Obtenido de The Norwegian Government Pension Fund: http://www.huffingtonpost.ca/mona-elisabeth-brother/norwegian-government-pension-fund_b_6502400.html

Collins Dictionary . (2017). *Definition of environmental impact* . Obtenido de https://www.collinsdictionary.com/

Commission on Environment and Development: Our Common Future. (2017). *Report* . Obtenido de UNECE: http://www.un-documents.net/our-common-future.pdf

Engen, O. A. (2009). *Innovation, Path Dependency and Policy* . New York : Oxford Publishing .

Fernández, G. (2016). *Nota Técnica* . Recuperado el 16 de March de 2016, de Los Shocks Exógenos y el Crecimiento Económico del Ecuador: http://contenido.bce.fin.ec/documentos/PublicacionesNotas/Catalogo/NotasTecnicas/nota48.pdf

Financial Times. (June de 2016). *Financial Times.* Obtenido de Definition of Dutch disease: http://lexicon.ft.com/term?term=dutch-disease

Fontaine, G. (2002). Petróleo y enfermedad holandesa en el Ecuador. *ICONOS FLACSO*, 102.

Fontaine, G. (01 de May de 2003). *FLACSO.* Obtenido de Mas alla del caso Texaco : http://www.flacso.org.ec/docs/gf_texaco.pdf

Gestiopolis. (8 de May de 2001). *La crisis de los anos ochenta en el Ecuador.* Obtenido de http://www.gestiopolis.com/la-crisis-de-los-anos-80-en-ecuador/

Gonzalez, F. (13 de February de 2004). Petroecuador o Petrocorrupcion. *Expreso* , pág. 5. Obtenido de Biblioteca Virtual Banco Central .

Gordon, R., & Stenvoll, T. (2007). *Energy Forum Institute for Public Policy Rice University* . Obtenido de Statoil: A Study in Political Entrepreneurship: https://bakerinstitute.org/files/3911/

Gray, J., Bakker, T., Beck, H., & Nilssen, I. (1999). *Managing the Environmental Effects of the Norwegian Oil and Gas Industry from Conflict to Consensus* . Obtenido de Marine Pollution Bulletin : http://www.brasil-rounds.gov.br/round7/arquivos_r7/PERFURACAO_R7/biblio/Gray%201999.pdf

Green4Sea. (2016). *Norwegian Company sentenced to pay for illegally discharging oil into ocean* . Obtenido de http://www.green4sea.com/norwegian-company-sentenced-to-pay-for-illegally-discharging-oil-into-ocean/

Guenette, C., Aasnes, L., & Follum, O. (2015). *Shoreline cleanup in Norway: Lessons learned and recommendations.* Obtenido de Greenislands: http://www.globalislands.net/greenislands/docs/norway_02007.pdf

Guevara, V. (June de 2001). *Repositorio Instituto de Altos Estudios Nacionales* . Recuperado el 15 de March de 2016, de El Sistema de Contratación en las Actividades del Sector Petrolero y su Incidencia en la Economía del País : http://repositorio.iaen.edu.ec/bitstream/24000/302/1/IAEN-010-2001.pdf

Humbol, R. J. (2014). *Disertacion previa a la obtencion del titulo de Economista.* Obtenido de Aprendizajes de la gestion petrolera y recomendaciones para la gestion minera a gran escala: http://repositorio.puce.edu.ec/bitstream/handle/22000/6838/7.36.001415.pdf?sequence=4

Jaera, L. (2013). *Environmental impact of oil and gas activities.* Obtenido de Environment Agency: https://www.barentswatch.no/en/articles/Environmental-impact-of-oil-and-gas-activities/

Jimbictipandama, T. (April de 2004). *Repositorio Flacso.* Recuperado el 16 de March de 2016, de Derechos Indigenas y Recursos Hidrocarburíferos : http://repositorio.flacsoandes.edu.ec/bitstream/10469/209/4/TFLACSO-01-2004TJP.pdf

Keohane, R., & Nye, J. (2017). *Power and Interdependency* . Obtenido de Universidad Rafael Landivar: http://biblio3.url.edu.gt/Publi/Libros/Poder-e-Interdependecia/01.pdf

Knopfeld, L. (2017). *Analisis y Gestion de Politicas Publicas.* Obtenido de ///C:/Users/mcbd9/OneDrive/Documents/Tesis/Analisis_y_gestion_de_politicas_publicasParte2.pdf

Knopfeld, L. a. (January de 2017). *Analisis y Gestion de Politicas Publicas.* Obtenido de file:///C:/Users/mcbd9/OneDrive/Documents/Tesis/Analisis_y_gestion_de_politicas_publicasParte2.pdf

Larrea, C. (2008). *Yasuni ITT- Una iniciativa para cambiar la historia* . Obtenido de http://www.otca.info/portal/admin/_upload/paises/pdf/yasuni.pdf

Marshall, J. (1988). *ECUADOR: Cuantificación, Distribución y Efectos del Ingreso Petrolero 1973-1988.* Santiago: Cardenas .

Mayor, T. B. (Febuary de 2016). *Porque fracaso la iniciativa Yasuni ITT.* Obtenido de Universidad Complutense Madrid: https://www.ucm.es/data/cont/docs/599-2016-02-04-DT36_Thaia_Becerra.pdf

Mena, P. (16 de August de 2013). *BBC Mundo.* Obtenido de Por que fracaso el proyecto de Yasuni en Ecuador : http://www.bbc.com/mundo/noticias/2013/08/130816_ecuador_yasuni_causas_fracaso_lps

Ministerio Coordinador de Politica Economica . (May de 2014). *Indicadores Macroeconomicos Mayo 2014.* Obtenido de http://www.politicaeconomica.gob.ec/wp-content/uploads/downloads/2014/08/mayo-2014.pdf

Ministerio del Ambiente . (2017). *Programa de Reparacion Ambiental y Social (PRAS)* . Obtenido de Ministerio del Ambiente: http://www.ambiente.gob.ec/programa-de-reparacion-ambiental-y-social-pras/

Ministry of Finance Norway . (7 de February de 2007). *The history of green taxes in Norway* . Obtenido de https://www.regjeringen.no/en/topics/the-economy/taxes-and-duties/The-history-of-green-taxes-in-Norway/id418097/

Ministry of Petroleum and Energy . (9 de October de 2013). *Norway´s oil history in 5 Minutes* . Recuperado el 31st de March de 2016, de

https://www.regjeringen.no/en/topics/energy/oil-and-gas/norways-oil-history-in-5-minutes/id440538/

Mohn, K. (23 de June de 2015). *Four decades of development.* Obtenido de University of Stavanger Business School: http://www.uis.no/getfile.php/Forskning/Bilder/09%20%C3%98konomi/NHH%2023%20June%202014.pdf

Nickelsen, T. (2016). *Norwegian law protects those who pollute the Russian coast.* Obtenido de Apollon Research Magazine: http://www.apollon.uio.no/english/articles/2016/1_barentz-sea.html

Norges Bank. (2017). *Norges Bank Investment Management*. Obtenido de About the Fund: https://www.nbim.no/en/the-fund/about-the-fund/

Norwegian Ministry of Petroleum and Energy . (2012). *Facts 2012* . Obtenido de The Norwegian Petroleum Sector : http://www.npd.no/Global/Engelsk/3-Publications/Facts/Facts2012/Facts_2012_web.pdf

Norwegian Petroleum . (2016). *The Government's Revenues.* Obtenido de http://www.norskpetroleum.no/en/economy/governments-revenues/#fees-and-other-taxes

Norwegian Petroleum Directorate. (15 de December de 2010). *10 Commanding Achievements*. Recuperado el 31 de March de 2016, de http://www.npd.no/en/Publications/Norwegian-Continental-Shelf/No2-2010/10-commanding-achievements/

Norwegian Petroleum Directorate. (7 de June de 2016). *History*. Obtenido de http://www.npd.no/en/About-us/Organisation/History/

Norwegian Petroleum Directorate. (2017). *Environment and Technology* . Obtenido de Norwegian Petroleum : http://www.norskpetroleum.no/en/environment-and-technology/

Officer of the Watch. (29 de April de 2013). *Alexander Kielland Platform Capsizw Accident*. Obtenido de Investigation Report: https://officerofthewatch.com/2013/04/29/alexander-l-kielland-platform-capsize-accident/

Offshore Technology . (2016). *Statfjord Field - a timeline, Norway* . Obtenido de http://www.offshore-technology.com/projects/statfjord-field-a-timeline/

Olmedo, E. (Febrero de 2011). *Por que existen contradicciones entre lo que se dice y lo que se hace en gestion ambiental de Petroecuador.* Obtenido de Facultad Latinoamericana de Ciencias Sociales: file:///C:/Users/mcbd9/Downloads/TFLACSO-2011EOZ.pdf

Ona, E. (7 de July de 2017). Analista de Vinculacion PETROECUADOR. (M. Bustamante, Entrevistador)

Ortega, E. R. (19 de January de 2015). Y los fondos petroleros? *El Universo*.

PETROECUADOR. (2016). *Refinacion de Crudo.* Obtenido de http://eppintranet.eppetroecuador.ec/idc/groups/public/documents/peh_otros/000554.pdf

Petrominas. (2012). La renegociacion petrolera le deja al pais USD mil millones por ano. *Petrominas*, 5-11.

Pictures, J. (Dirección). (2016). *Keep Calm and Drill On* [Película].

Rana, W. (2015, February 2). *International Journal of Business and Social Science.* Retrieved from Theory of Complex Interdependence: A Comparative Analysis of Realist and Neoliberal Thoughts: http://ijbssnet.com/journals/Vol_6_No_2_February_2015/33.pdf

Rana, W. (2015). *Theory of Complex Interdependence: A Comparative Analysis of Realist and Neoliberal Thoughts.* Obtenido de International Journal of Business and Social Science: http://ijbssnet.com/journals/Vol_6_No_2_February_2015/33.pdf

Registro Oficial . (2011). *Reglamento Ambiental de Actividades Hidrocarburiferas.* Obtenido de http://www.ambiente.gob.ec/wp-content/uploads/downloads/2012/09/RAOHE-DECRETO-EJECUTIVO-1215.pdf

Republica del Ecuador. (2009). *Plan Nacional de Desarrollo* . Obtenido de http://www.planificacion.gob.ec/wp-content/uploads/downloads/2012/07/Plan_Nacional_para_el_Buen_Vivir.pdf

Reyes, D. G. (30 de September de 2003). *Repositoria Universidad Andina Simón Bolivar*. Recuperado el 15 de March de 2016, de Peculiaridades del Régimen Tributario Petroleo Ecuatoriano : http://repositorio.uasb.edu.ec/bitstream/10644/2481/1/T0260-MDE-G%C3%B3mez%20de%20la%20Torre-Peculiaridades.pdf

Sandoval, F., Calero, L., & Gordillo, J. (1986). *Aporte de CEPEC a la economía ecuatoriana.* Quito: División de Comunicación y Relaciones Públicas CEPE.

Santelices, G. (2013). *Disertacion Previa a la Obtencion de Titulo de Abogado* . Obtenido de La correspondsabilidad del Estado ecuatoriano en la contaminacion por actividades hidrocarburiferas: el caso Chevron-Texaco: http://repositorio.puce.edu.ec/bitstream/handle/22000/7000/13.J01.001692.pdf?sequence=4&isAllowed=y

Spachenberg, J. (2000). *Sustainable Development Concepts and Indicators*. Obtenido de Sustainable Europe Research Institute: http://web205.vbox-01.inode.at/Data/personendate/js/catxta.pdf

Statoil. (2014). *Gullfaks celebrating 25 years- with pride*. Obtenido de http://www.statoil.com/en/OurOperations/ExplorationProd/ncs/Gullfaks/Pages/GullfaksTurns25.aspx

StatoilHydro. (2008). *Annual report on Form 20-F 2008*. Obtenido de http://www.statoil.com/en/About/CorporateGovernance/GoverningBodies/AnnualGeneralMeeting/AGM2009/Downloads/20f.pdf

The New York Times. (21 de November de 1987). *Oil Scandal in Norway.* Obtenido de http://www.nytimes.com/1987/11/21/business/oil-scandal-in-norway.html?pagewanted=1

Thomson Reuters Legal Solution. (2014). *Oil and gas regulation in Norway: overview.* Obtenido de Practical Law: http://uk.practicallaw.com/6-529-5206#

Thurber, M., & Istad, B. (May de 1992). *Program on Energy and Sustainable Development*. Obtenido de Norway's Evolving Champion: Statoil and Politics of State Enterpernuership: http://pesd.fsi.stanford.edu/sites/default/files/WP_92%2C_Thurber_and_Istad%2C_Statoil%2C_21May2010.pdf

Trumpf, S. (6 de October de 2011). *Niebles einsamer Kampf gegen Yasuni* . Obtenido de Zeit : http://www.zeit.de/politik/ausland/2011-10/yasuni-niebel

Velculescu, D. (9 de July de 2008). *IMF Survey: Norway's Oil Fund Shows the Way for Wealth Funds*. Obtenido de https://www.imf.org/en/News/Articles/2015/09/28/04/53/sopol070908a

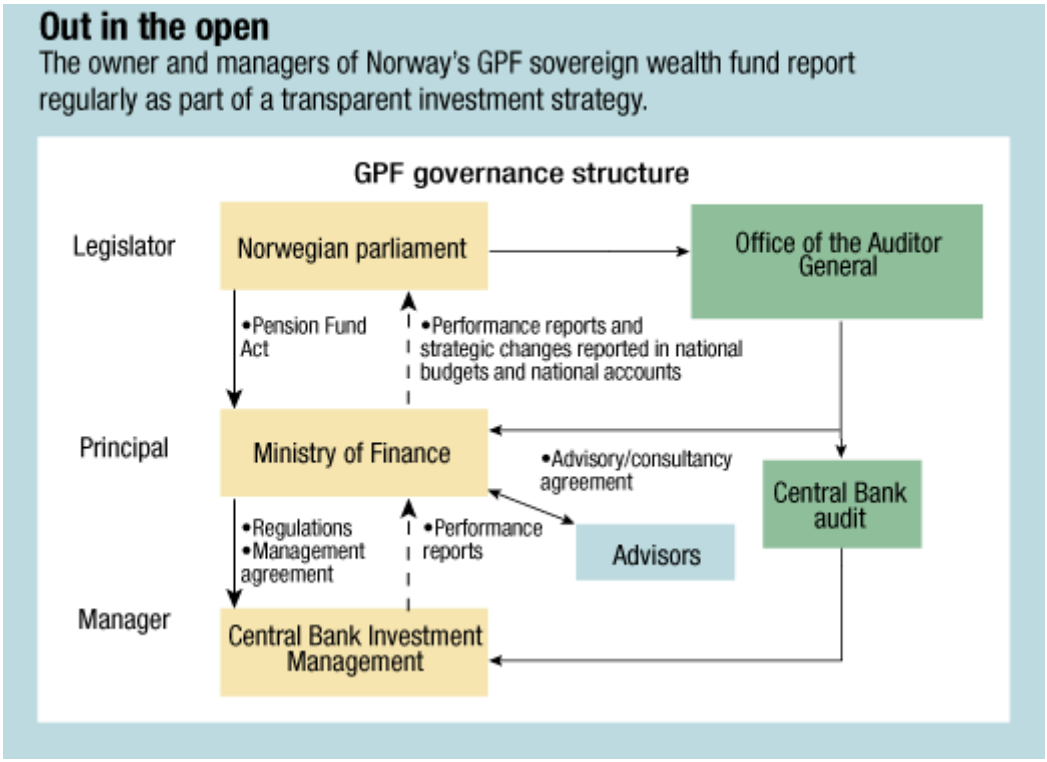
Villavicencio, F. (10 de June de 2014). *Plan V Investigacion*. Obtenido de El "Milagro ecuatoriano" en la renegociacion de contratos petroleros: http://www.planv.com.ec/investigacion/investigacion/el-milagro-ecuatoriano-la-renegociacion-contratos-petroleros

Vorobyov, A. (2012). *Research and technology agreements in the Norwegian concession system of the 1970s-1990s.* Obtenido de Baltic Region: http://www.ssoar.info/ssoar/bitstream/handle/document/34805/ssoar-balticreg-2012-4-vorobyov-Research_and_technology_agreements_in.pdf?sequence=1

Wilson, P., & Garzón, J. L. (1981). *CEPE y la Apertura al Capital Extranjero* (Primera Edición ed.). (A. G. Señal, Ed.) Quito, Pichincha, Ecuador .

ANNEXES

TRANSPARENCY POLICIES FOR NORWAY´S GLOBAL PENSION FUND



(Velculescu, 2008)

The Ministry of Finance—the fund's owner—reports regularly on the governance framework, the fund's goals, investment strategy and results, and ethical guidelines. The Central Bank—the fund's operational manager—publishes quarterly and annual reports on the management of the fund, including its performance and an annual listing of all investments. Detailed information on the fund's voting in shareholders' meetings is also published.