Natural resources and the formation of institutional arrangements in developing economies

Ivan Sibongiseni Sibisi
27233571

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ABSTRACT

Oil producing developing countries are always at the risk of becoming the next example of the resource curse phenomenon. Numerous studies agree that the resource curse is not deterministic but can be avoided as a number of countries have managed to develop their economies using oil revenues. One of the factors affecting the performance of oil producing countries is the capable institutions that a particular country develops. It is this element that is examined in this study. The aim is to determine to what extent institutional development is affected by the oil industry.

The study was done by using existing secondary data on the historical formation of institutions and institutional reforms in the oil industry. A mixed research study was conducted, utilizing the content analysis method as well as the correlation method to establish a relationship between factors.

The main finding of the research is that the historical context of institutions is crucial to the understanding oil industry policies and that governments are not influenced by the size of the proven oil resource but rather that the oil rents governments are able to collect from the oil industry are determined by the bargaining power they have in relation to all other stakeholders.

Key words: natural resource curse, institutions, oil, rent seeking

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfillment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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ACRONYMS

IOC – International Oil Company

MNC – Multinational

NOC – National Oil Company

OPEC – Organization of Oil Exporting Countries

OPC – Oil Producing Countries

OECD – Organisation for Economic Co-operation and Development

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CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Introduction

Natural resource endowment is viewed with suspicion due to the negative correlation observed in natural resource rich countries, when tested against economic growth performance. Classical growth theories suggest that an endowment of natural resources should be good for an economy. But it has been proven that this might not be the case and oil has a more pronounced effect on the political stability in these economies, due to the revenues it generates which encourages resource rents extraction.

1.2 Research Purpose

Possession of natural resources has not resulted in economic growth for a number of economies in Africa and South America. One of the factors that explain this phenomenon is institutional arrangements of each country, which differ between countries. The purpose of this research is to develop an understanding of the formation process of these institutions and what implication this has for oil producing developing economies.

1.3 Research Problem

There is an abundance of literature that points to the reasons behind the failures of most countries rich in natural resources and the most popular of these theories is the resource curse theory. This theory explains that resource rich economies performed poorly compared to resource poor economies.

It has been suggested that the poor performance of these economies can be explained by the quality of institutions in these economies, and that all the economies that have avoided the resource curse, did so through a set of good quality institutions that facilitated the development of the mainstream economy by using oil industry resource revenues.

Oil was chosen as the natural resource that would provide the context for the study due to the role it plays in fueling global economic growth, as well as the effect it has on international politics and international foreign policies of a number of developed countries such as the US. This study will attempt to establish how oil industry institutions have evolved and responded to reforms since the 1950's in a complex environment that involves oil producing communities, oil producing governments, International Oil Companies (IOC), parent countries of IOCs, National Oil Companies (NOCs) and NGOs.

In an inter-dependent global economy, the effect of oil on geopolitics connects local political formations to the global economy in ways that are both complex in their scope and elementary in their motivations. The complexity comes about as a result of the nature of oil as a source of energy which has been established as an important factor for economic growth.

1.4 Aim

The research aims were as follows:

Firstly, it was to establish the process by which institutions have evolved in oil rich economies and what influenced the reforms that have been applied to those oil industries.

Secondly, it attempted to establish the incentives that drive different agents in the development of oil industry institutional arrangements.

Thirdly, it attempted to establish why different oil rich countries employ different strategies in the resource rents they extract from oil production processes.

1.5 Research Scope

The scope of the research will be to develop an understanding of the interaction between oil as a natural resource and the formation of institutions in developing economies. The research will only look at those economies that are crude oil net exporters and are considered to be developing economies.

Four countries are selected for this study in Africa and South America as these two continents are similar in terms of natural resource endowment as well as being developing continents so that the human development imperative should be important for countries in both continents.

1.6 Research Motivation

Introduction

The motivation for this study is to develop an understanding of the institutional formation process for the oil industry in light of the number of developing economies that have oil as a natural resource. The importance of this commodity for global economic growth makes it even more crucial that developing economies understand how they can align the development of their institutions to maximize the benefit that accrues to the development of their populations.

Oil in Africa and South America

A number of African countries such as Mozambique, Sudan, Ghana, the Republic of Congo, Nigeria and Angola to name a few have oil and gas resources which are being extracted by international multinationals such as British Petroleum (BP) in Angola and Total's potential involvement in Mozambique's new Mamba gas discovery. Yet these countries are amongst the poorest in the world, measured on the human development index. Below is an abridged table showing four oil producing African countries and their human development index and amongst these listed none make it to the top ten; more especially Nigeria and Angola which are the largest oil producers in sub-Saharan Africa.

Table 1: Human Development Index

Global Ranking	Country	HDI Estimates for 2011
Human Development Index		
64	Libya	0.760
96	Algeria	0.698
148	Angola	0.486
156	Nigeria	0.459

Source: (http://databank.worldbank.org/data/home.aspx, 2012)

The potential for growth for these countries and the implications for the local communities of these underdeveloped regions raises a number of questions. Chief amongst them is why these economies despite the number of opportunities presented by the availability of resources, they have not been able to develop local communities. Many studies have pointed to weak institutions and in some cases a lack of institutions such as in Libya, weak and corrupt governments as the common causes of this failure (Tsui, 2010).

International Oil Industry

The international oil industry has seen more change in the last 50 years than any other resource sectors; this is due in part to the elevation of oil supply to the level of national interest for most economies especially in the developed economies. Change in the international oil industry has been driven both by internal and external factors, internal factors to the oil producing economies and external factors from oil consuming economies.

The history of the industry and its institutional development can be viewed from a perspective of incremental development that resulted from a struggle to maximize benefits for the individual groups, in this case International Oil Companies (IOCs) and Oil Producing Countries. Within these two groupings are subgroups that are complimentary to these groups and have their own agendas and incentives. In the case of the International Oil Companies their parent governments had and continue to have an interest in their activities in securing oil supply for the home economy. Whilst Oil Producing Countries (OPCs) face internal pressures and competition from their own citizens, especially the oil producing local communities in the development of the oil industry as this requires the use of their land which would usually result in the destruction of the environment on which the local community depends on. As more information becomes available to the local community regarding the IOC's activities and the importance of oil as well as the revenues obtained from the extraction, the nature of the compensation required by the local community evolves from merely being environmental to developmental as well as monetary.

It was this availability of information and the price shocks of the 1970's that allowed the second phase in the development of the oil industry after a long period of IOCs

dominance. The IOCs had applied colonial principles to the oil industry by subdividing different regions to each of the formerly known “Seven Sisters” of the oil industry which were BP, Gulf Oil, Standard Oil of California, Chevron, Royal Dutch Shell, Standard Oil of New Jersey and Standard Oil Company of New York (now called ExxonMobil) (Hoyos, 2007). The term “Seven Sisters” was coined by businessman Enrico Mattei in the 1950s to describe the seven oil companies which had formed the “Consortium for Iran” and dominated the oil industry for four decades from the 1940s to the 1970s.

This allocation meant that an OPC had to deal with one IOC and could not get competitive deals from the IOC’s through open competition for their oil exploration concessions as they lacked the required technology for exploration and production (Soligo & Jaffe). The second phase was the forming of OPEC in 1960 that allowed the OPC’s to acquire negotiating information and knowledge which saw the establishment of National Oil Companies (NOC). This new development brought a new dimension to the oil industry as it gave more control to the OPC of their oil resources as was the intention of OPEC.

The third phase of the international oil industry followed a period of oil resource nationalization by the oil producing countries that were members of OPEC and not all followed a similar formula. What were important to the third phase development of the oil industry were the declining share of global oil and gas reserves which shifted from OECD countries to developing countries and the new threat of state-owned companies under the guide of OPEC, which meant that IOCs faced more informed oil producing countries when negotiating for concessions to explore for oil. The old IOCs “Seven Sisters” would later find themselves competing against the new state owned “Seven Sisters” China National Oil Corporation, Gazprom, National Iranian Oil Company, Petrobras, PDVSA, PETRONAS, and Saudi Aramco (Hoyos, 2007). What is most significant about the third phase in the development of the oil industry, is what began with the formation of OPEC and the mandate it set its members regarding ownership of the energy resources, today national oil companies own more than 94 % of global oil and gas reserves and this should have resulted in more revenues for oil producing governments but it remains to be seen if this will result in improvement in the living standards of people in these economies.

The aim of this chapter was to establish for the reader the purpose of this study in the context of human development efforts through the use of oil extraction activities in light of institutional arrangements. The following chapter will present contrasting literature on

natural resources theories regarding the development and reformation of these on this institutions and what implication this has for economic growth and human development.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The literature review focused on three aspects of the oil industry; firstly the resource curse theory as it pertains to the developmental efforts of oil rich developing economies; secondly the development of institutions in the context of historical oil industry institutions as defined in chapter 1; lastly the importance of foreign direct investment in the development of the economy through the oil industry.

2.2 Natural Resource Curse

The resource curse thesis states that the presence of natural resources for an economy has a negative effect on economic growth of the country (Lederman & Maloney, 2008). The resource curse is not a deterministic outcome for all economies that have natural resources and especially for those economies that have recently discovered natural resources, such as the recent discovery of oil in Ghana and shale gas in South Africa. The counter arguments advanced for this theory over the past decade has implications for governments seeking to improve the performance of their economies through the use of oil revenues.

An observation is made that this empirical evidence disagrees with the classic economics that an abundance of natural resources should result in more growth for those countries that possess these resources, compared to those who do not have an abundance of natural resources. The paradox that is apparent is that the richest countries today are poorly endowed with natural resources (Kronenberg, 2004), which does not imply that they never had an abundance of resources in their history. The United States of America was once resource endowed and was able to use these resources to grow the economy and avoid the resource curse. There are other developed economies with natural resources such as Norway, that have managed develop their oil industry without any of the debilitating effects faced by resource rich economies in the developing world by using oil rents to fund the development of the economy to benefit everyone in the country through investing in public goods.

In the early parts of the development of the theory on growth in regards to natural resources, a negative correlation was established between the abundance of natural resources and growth (Collier, Ploeg, Spence, & Venables, 2010). Recently, more work

has been done on this subject to expand our understanding of the mechanisms by which the natural resource curse works, as it has come to be known. This work presented a counter argument to the theory of "natural resources curse" as it found weaknesses in the proxies used for growth and suggested that instead of using exports as proxies for growth, that production is used as some of the goods produced within an economy are consumed inside the country and not exported (Kurtz & Brooks, 2011). Once this was done, the negative correlation first reported by the early research into the subject was no longer evident or weak at best. This called to question the validity of the whole claim about the deterministic nature of the hypothesis.

2.2.1 Rent Seeking

One of the effects of resource endowment is that it promotes rent seeking behavior (Lagerlof & Tangeras, 2008). The literature identifies the agents as being both government officials as well as citizens who need to divide their time between rent seeking activities and non-resource based sectors such as manufacturing (Mare Sarr, 2010). This results in the neglect of the non-resource based sector of the economy, due to the fact that the resource sector usually pays higher wages than the non-resource sector. This has an implication that factor into the Dutch decease as well which is discussed in the next section 2.2.2.

Rent seeking has been shown to be one of the factors that contribute to the natural resource curse but a counter argument has been presented regarding the relationship between natural resource abundance and rent seeking. A conclusion is made that one of the reasons natural resources can be a blessing for a developing economy is that resource based wealth reduces the cost taxation and thereby lowers the of providing public goods. Public goods can be investment in infrastructure, such as roads, sanitation, access to clean water and the education system which form part of social development indicators. The issue that arises from the resource wealth is that besides lowering the cost of public good provision, it can also raise the possibility of a political curse.

2.2.2 Dutch Decease

Another effect of natural resources is the Dutch decease which is based on Netherlands experience which can affect the price of goods in the country. Because of the revenues from resource wealth extraction through rents or employment in the oil

industry, economic activity is focused on resource extraction and the rest of the economy is neglected (Hammond, 2011). This creates an imbalance as the resource sector becomes the main contributor to GDP and all other products need to be imported at high prices.

2.2.3 Institutions

Social institutions are a result of either unintended human action aimed at individual goals or as a common will that is directed towards the establishment of these institutions (Boettke, 1990). Institutional arrangements are understood as emanating from these two scenarios. The institutional arrangements that are of particular interest are those the systems came about through a process of trial and error, as new information becomes available we revise our assumptions in an attempt to achieve more efficient alignment (Brousseau & Raynaud, 2011). The economic process of natural resource extraction involves a similar scenario where there are a number of stakeholders involved who negotiate with varying qualities of information

It has been suggested that the formation of institutions occurs through a negotiation process between different agents representing differing viewpoints and interests, and that institutional arrangements are not static as the very interaction provides opportunities for agents to acquire information about the rules. These agents are driven by certain imperatives aligned to the incentives that accrue to them and their groups. In the case of natural resources these incentives come in the form of huge revenues from resource extraction activities.

2.2.4 Technology and Education

Because of the different phases in the oil industry development referred to in section 2.4, there are linkages between technology and education that can be exploited by governments intending to achieve long-term development of oil producing local communities. The key to economic growth and diversification of the economy lies in the technological absorption rate of the human capital and especially as the operational phase of the oil industry development requires skilled labor, firstly local communities cannot hope to meaningfully participate in the oil industry in the long run without the required skills and lastly, the absorption of technology which will allow the decimation of skills from managerial to technical skills cannot happen without skilled labor, The benefit is that, these skills can later on progress to contribute in the development of

different industries within the economy, thus achieve diversification through skills industry transfer (Kurtz & Brooks, 2011).

2.2.5 Arguments against the Natural Resource Curse

The difficulty in previous studies is that there are too many factors that can influence the outcomes that natural resource blessed economies face. Lederman and Maloney (2008) argue that the USA was able to build its foundations based largely on natural resources while other successful countries such as Australia, Canada, Finland and Sweden are still net exporters of natural resources (Lederman & Maloney, 2008). This disagrees with the argument that natural resource based economies are vulnerable to the resource curse as there are examples of economies that have managed to avoid the outcomes of the so called resource curse.

The failure of most developing countries that have an abundance of natural resources such as oil reserves is seen by many proponents of the resource curse hypothesis as the proof of the existence of this phenomenon. The factors that lead to the success of countries are multifaceted and it would be difficult if not near impossible to reduce them down to a few list of possible pitfalls to be avoided. Although this has been attempted numerous times, its failure is supported by the continuous dismal performance of most resource rich African countries (Hammond, 2011).

2.3 Institutional Theory

According to Brousseau and Raynaud (2011), the function of institutions is to define and enforce orders which are formulated at different levels of a society's structure. Institutions facilitate the interaction of members of society by creating rules of engagement and providing enforcement capabilities in the form of the state. For economies where institutions are not clearly defined or fail to include a subset of the population, alternative intermediary institutions will emerge to facilitate the collective orders that bring about efficiency for that subset of the population. Thus elites are formed in a society which tends to exclude the rest of the population as they seek to maximize benefits for their group. These groups can be formed along racial lines as in South Africa, political, geographical or ideological amongst other formations, whichever presents the lowest transactional costs for the individual members of the group.

Institutions can be any form of local, national or cross-country coordination that results in the lowering of transaction costs for group members, although the level of benefits that accrue to the individual members is not the same, as this is dependent upon their individual bargaining power in relation to one another and the opportunities and options they have due to their connection with independent agents outside the group (Brousseau & Raynaud, 2011). These institutions nonetheless result in the marginalization of those outside the group and keep them from participating with the group in whatever activity on level ground as the members of the group have access to the group's resources. These resources can take many forms and in the case of Nigeria, this was access to OPECs knowledge in its drive to have all their members participate in their own oil industry instead of having IOCs hold the upper hand in terms of industry technology as well as in negotiating agreements for oil exploration and production (Soligo & Jaffe).

Because the agents involved in the formation of these institutions have different heterogeneous coordination needs, they can use their bargaining power to push for the type of institutional formation that suits their desired ends. The formation of institutions is a step by step process of adoption; those groups who are late adopters have less bargaining power in the formation of the orders and have to accept the institutional arrangement as it is since being part of the institutional order has more benefit than being outside of it (Brousseau & Raynaud, 2011). Again the Nigerian experience presents many opportunities for lessons regarding the development of institutions that from the onset excludes certain groups such as the exclusion of the local communities by the colonial government from any involvement in the oil industry in Nigeria. It must be mentioned here that the imperial ideology of the British Empire extended to other countries as well, where US companies were only allowed into the Nigerian oil industry after the weakening of the sterling post-World War II as the British Empire needed to rebuild infrastructure and had to borrow US dollars.

If institutions facilitate the process of negotiation between competing groups, and the balance of power is established early in the formation of institutional structures, then the evolutionary process should be able to determine how institutions can be aligned to maximize the benefits accruing to different interest groups that compete for oil resource benefits. The poor economic performance of natural resource rich countries has been studied extensively and the literature that emerges agrees that the observed negative effects of natural resources are not deterministic, but are an outcome of both historically inherent institutions as well as developmental choices made by

governments. The institutions that are of particular interest for this study are social, political and economic institutions that facilitate the interaction between the state and its citizens in the process of nation building and development. And these institutions are not random although the process might appear so (Boettke, 1990).

A number of theories have been developed over the years that explain the poor economic performance of oil rich economies in Latin America and Africa. The resource curse theory developed an almost predictive outcome for any country that had natural resources, especially oil. Several other papers were written that supported this theory and developed it further to study the factors that give rise to the resource curse. The effects of the resource curse are less severe in economies that have open trade policies as well as good institutions; and the interaction between institutional quality and natural resource exports is not statistically significant (Arezk & van der Ploeg, 2010).

The quality of institutions plays a pivotal role in determining whether resource abundant economies experience the symptoms of the so-called resource curse as institutions facilitate the interaction of different role players and depending on their quality, this can increase transactional costs.

2.3.1 Institutional Development

The literature reviewed indicates that institutions are historical as they are a result of negotiations overtime between different agents representing differing interests within an economy. Furthermore, these agents face different external factors whilst trying to optimize internal deficiencies such as limited access to information and limited resources for implementing policy choices.

No two economies are identical as they have different historical experiences of both political and economic nature; this is especially true for economies that have oil as a major contributor to exports. This historical development or lack thereof of institutions prior to the discovery of oil in any country places it in a position where it can either effectively develop its own industry to achieve self-sufficiency or it remains at the mercy of external factors, such as oil price change shocks.

2.3.2 Oil Industry Policy Development

Oil and gas has the highest energy content compared to other energy sources and it has more byproducts that result from the refining process to produce fuels. By-products such as polymers, plastics (add hydrocarbons by products here) the connection of oil and gas to GDP growth is well established and this indicates the importance of this resource to the natural security of economies around the world especially the developed economies.

The political economy of oil and gas becomes apparent during the Second World War as the control of oil supply became crucial in winning the War for the Allied Forces. World War II saw the use of tankers, ships and planes that required oil as an energy source to move the war machine. Therefore depriving this energy source to enemies and securing it for their own armies became an advantage. This rise of oil and gas into the prominence of national security continued after the war as different nations began the rebuilding process.

The US specifically developed a military capability exclusively designed to secure oil and gas supply for military use to maintain military dominance on the world stage for national security purposes. The US has military personnel between 130 to 150 countries and 900 overseas military bases which allows them to launch operations closer to their targets, whatever those targets may be.

Figure 1: US Military Spending

Due to inherent risks with oil resource development which arises as a function of political structure in a given economy, that can change at any given time and thereby result in changes in standing agreements between IOCs and host government's. Political change can mean a different political agenda that would result in unforeseen changes in policy, which may be in conflict and contrary to standing oil production agreements.

2.3.3 Oil Industry Policy Implementation

Institutions or a lack of institutions in any particular economy has implications for all the stakeholders in an economy, as this is the means by which different agents interact and gain access to oil industry and thereby its economic benefits, whether these benefits are resource rents, employment or business to business involvement. The quality of institutions determines the transaction costs as well as the efficiency of the interaction in technological absorption level of the economy and diversification of the economy from dependence on oil production as a source of economic growth.

Institutions have further implications for the ease and types of benefits that accrue to the oil extracting communities as is evident in the case of Nigeria which has in the past excluded the involvement of local communities in the oil industry (Brousseau, Garrouste, & Raynaud, 2011). The only involvement that local communities have been allowed in the oil industry is as unskilled and skilled labor and this is a direct result of governmental historical policy development since the beginning of the Nigerian oil industry in 1903 where the oil industry was developed with a colonial agenda that tended to exclude local communities through legislation.

If the above is true, then this has an implication for how we arrange our societies in directing the formation of institutions that will support the outcomes we seek in the presence of abundant natural resources.

2.4 Foreign Direct Investment and Oil

The petroleum industry has two development phases, which have an implication on technical, economic and social levels. The development phase which is short-term is characterized by labor-intensive activities as exploration and constructing of refineries

requires more unskilled labor and the operational phase which is characterized by being long-term and skill-intensive. The operational phase requires engineers to run the refineries and the oil fields. These different development periods of the oil industry require different types of investment strategies and focus and due to the long lead-time periods in-between the developmental phases there are opportunities to align the development of local communities in terms of skills with the requirements of the different phase of the oil industry development.

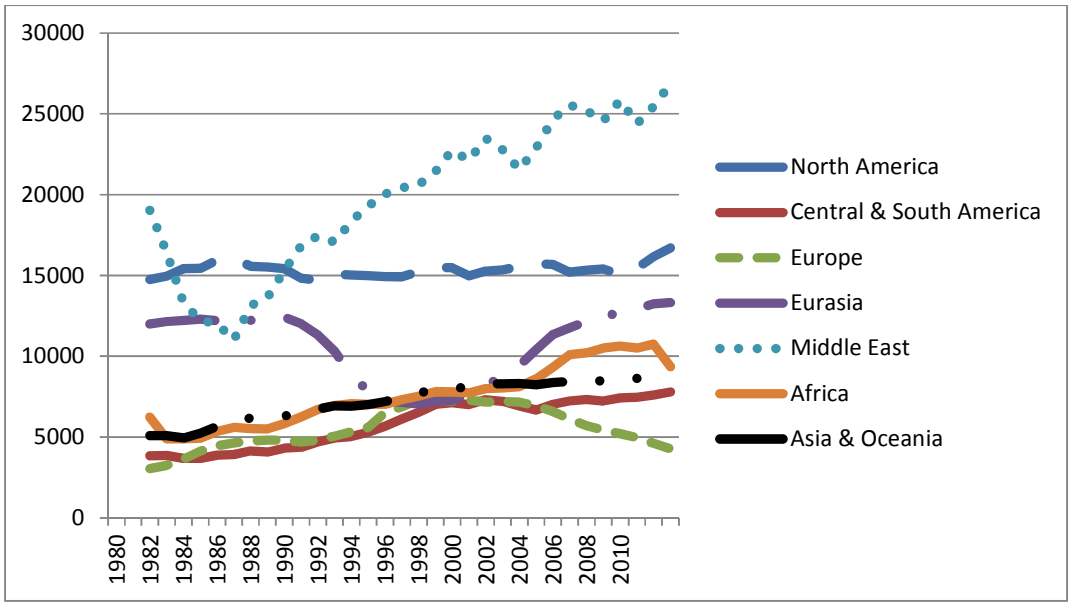
Below is a table indicating the different lead-times between the different phases of the oil industry development. It is clear that between the initial contact between the government and the multinational company interested in exploring for oil there is 5 to 12 years before a possible commercial discovery is made. This is enough time to initiate training programme for the skill levels that would be required at the operational phase (McLin, 1986).

Table 2: Industry development lead-times

	Per Stage	Cumulative
Opening discussion	1 to 3 years	1 to 3 years
Exploration	1 to 3 years	2 to 6 years
Possible Commercial Discovery/ Confirmed Commercial Discovery	3 to 6 years	5 to 12 years
Development	3 to 7 years	8 to 19 years
Production	15 to 25 years	23 to 44 years

Source: (McLin, 1986)

Figure 2: Proven oil reserves per region



Source: *(http://www.bp.com/statisticalreview, 2012)*

2.4.1 FDI Institutions and Oil Industry Development

In 1999, 60 percent of the FDI was concentrated to natural resource based projects and a bulk of this 60 percent went into oil industry development projects. In developing economies both in Africa and South America, FDI plays a crucial role in the development of the oil industries as these countries usually lack the required capital for developmental projects as these projects can be capital intensive. Moreover, most of the time these countries lack the required technical knowledge to conduct exploration studies and the construction of refineries, this information usually flows together with the FDI.

Understanding the interaction between institutions and oil is crucial to the oil producing economies that have been unable to realize the full potential of such resources. The study of this interaction is very important for developing economies which find themselves in the category of those countries that are blessed with resources, especially African countries which despite the opportunities presented by the presence of natural resources are unable to use them in the transformation of their economies, a transformation which will allow for the diversification of human capital.

Governments tend to overlook local communities grievances where oil extraction is concerned due to the revenues deriving from oil production. The example of the oil industry interest overriding those of local communities is seen in the continued conflict in the Niger Delta and the same similar events playing out in Peru, where attempts to halt the development of block 67 were unsuccessful as the government declared that the projects were of national interest and therefore could not be stopped legally. This can lead to political instability as the group that is marginalized or prevented from participating equitable in the oil industry development, seeks alternative means of influencing the process in their favor, this can lead to either political mobilization or armed struggle and in some cases both methods are combined.

Political instability has an effect on FDI such as it did in Rwanda, Niger and the Congo Republic due to the risk associated with the liquidity of FDI. Since it is a long-term investment strategy the political and economic environments need to meet certain conditions for investors to commit their capital into the country and the particular sector. The political environment can affect the FDI trend through the change of industry policies with a corresponding change in political leadership in the country. In some countries the political instability is a result of continued internal power struggles either

between legitimate parties or the incumbent government and armed struggle rebels or social movements within the country calling for industry reforms.

2.4.2 Oil Industry and Economic Development

Recently, the involvement of China in Africa has seen a shift in the type of investment funding available to African economies (Keeman, 2009). What is of particular interest is that China does not impose any demands for their developmental funding in regards to human rights and any other requirements. This presents African states with a choice in terms of funding they attract for their developmental needs (Frynas & Paulo, 2006).

It is important to recognize that China has been able to grow faster than the western economies despite rejecting the institutional formations dictated by the west and developing their own style of capitalism. Their particular institutional formations have been criticized for ignoring human rights, child labor and environmental standards. This has been highlighted by their actions in trading with countries that have been sanctioned by the west, such as Zimbabwe.

Multinationals have been shown to have a hand in the conflict between different groups in oil-rich countries such as Sudan. Patey (2007) concludes that parent governments of multinationals can have a major influence over corporate behavior in regards to human rights abuses and how they respond to it. The case of Sudan shows that when the parent government takes a stance and applies pressure to a multinational corporation, this can lead to change on the part of the multinational which in turn influences the host government in the conflict zone (Patey, 2007). This is possible because the multinational usually has a monopoly over extraction technology and any other alternative partners would be bound by the same demands as they are more than likely, western corporations. The emergence of China as a player in the extraction of resources in the African continent brings a new dynamic for consideration as the western multinationals might lose the bargaining power they once had to the emerging Chinese multinational companies.

Both the western multinational companies and Chinese multinational companies come to countries with natural resources for economic incentives, which is to secure the natural resource for their economies. It is therefore important for developing economies that have natural resources to recognize this fact as the point of departure in their interaction with these multinationals, the fact that they have different requirements

should be judged in the light of maximum benefit for the development strategy of the country in question. This recognition of the reality of the engagement will allow developing nations to be more prudent in their developmental requirements and begin to propose and negotiate better terms in line with their developmental goals.

The criticism that has been leveled against the Chinese policy of engagement with African states is that it does not put conditions in place for its investments into these states, such as compliance with human rights (Keeman, 2009). This means that the bargaining power of African states is increased, because there is another alternative to western investment which usually comes with conditions.

Chinese corporations have not yet reached the level where they can compete with Western multinationals in the extraction of oil. Oil is one of the key resources that economies need to grow and if the growth levels that have been seen in China are to continue, more secure sources of oil will be needed by not only China but all economies in the world. Once China has access to oil extraction technology and know-how, this will result in a new dynamic that might have far reaching effects, especially in conflict zones across Africa.

When institutions in these states are weak and the control of natural resources guarantees a revenue stream, and if this control can only be obtained by force due to the lack of support for the state and how revenues are used, sustained conflict may be necessary (Marton & Matura, 2011). It is this conflict that makes it difficult to find common ground in some of these economies as different groups are focused on control of the natural resources before they can even think of how they should arrange the extraction of these resources to benefit the whole economy and in this regard the developmental cannot begin to form part of the debate (Lujala, 2009).

The involvement of China in African economies in regards to the continents natural resources has given an alternative to these governments where they no longer have to look to the western governments or the Bretton Woods institutions which were formulated without the input of African countries (Frynas & Paulo, 2006). This offers an opportunity for African leadership to choose different institutional arrangements which will be better suited to the African context. Good institutions would include those institutions that facilitate the development of policies that focus on the social development of the oil producing population as well as the development of institutions

that diversify the economy by building capacity in other industries through the use of oil revenues or the foreign direct investment flowing from oil industry activity.

CHAPTER 3: RESEARCH OBJECTIVES, QUESTIONS AND PROPOSITIONS

3.1 Introduction

This Chapter will outline the research objectives for this study that will be answered in the following chapters.

3.2 Research Objectives

The research aimed to evaluate how institutions develop in oil abundant economies and what implication this development mechanism has for economies that have so far failed to use oil revenues to develop their economies, such as Nigeria, Angola and Venezuela whose human development indices are amongst the lowest in the world.

The long-term benefits envisioned for developing countries are an improved literacy rate, employment of more people in industry and an increase of government spending on education.

3.3 Research Propositions and Questions

3.3.1 Research Propositions

i) Proposition 1: Improvement of oil industry policies results in long-term benefits for the economy in the long run.

ii) Proposition 2: The size of proven oil reserves has an influence on what agents prioritize in terms of local community developmental goals. (correlation between proven reserves and HDI/education)

iii) Proposition 3: Oil industry reforms driven by civil society have long-term benefits for a developing economy.

3.3.2 Research Questions

i) Does a stable and consistent application of oil and gas policies result in long-term benefits for developing economies?

ii) Does the size of the natural resource influence the behavior of local agents in developing economies?

iii) What drives the reformation of institutions in the oil and gas industry in developing economies?

CHAPTER 4: METHODOLOGY

4.1 Introduction

The research design for this study was determined by both the nature of the subject and the type of questions that were posed for study, this required a mixed method that would make it possible to study both the qualitative secondary data such as the institutional development in the oil industry as well the quantitative secondary data that was used to establish if there was a link between the institutional arrangement formation process and improvement in the human development index as one of the units of measure. This research methodology was designed to allow the processing and analyzing of this mixed data by doing a descriptive analysis of the data before the detailed analysis.

4.1 Research Design

4.2 Research Methodology

The methodology implemented in this research is both quantitative and qualitative in nature, which used secondary data to statistically determine whether there was a link between the process of institutional evolution and the human development of developing economies in the oil industry (Saunders & Lewis, 2012).

This research was designed in two parts; the first exploratory phase of this research was to investigate the consistency of oil policies over a long period of time, the behavior of agents in response to the size of the proven oil and gas reserves for an economy and the involvement of civil society in the formation and transformation of oil and gas institutions. This section will look at the content of the policies and reforms (Hsieh & Shannon E, 2005).

The second phase of this research was designed to answer three questions in order to understand the effect of institutional development on economic development. The first question was whether consistent oil and gas policies will result in a more inclusive and diversified industry in the long run due to information absorption opportunities; secondly large oil proven reserves result in agent behavior that emphasizes short-term goals over long-term goals, and lastly oil and gas institutional reforms driven by civil society will result in diversified and inclusive economies in the long run.

4.3 Population and Selection

The proposed research population will comprise of countries that fall within the following criteria:

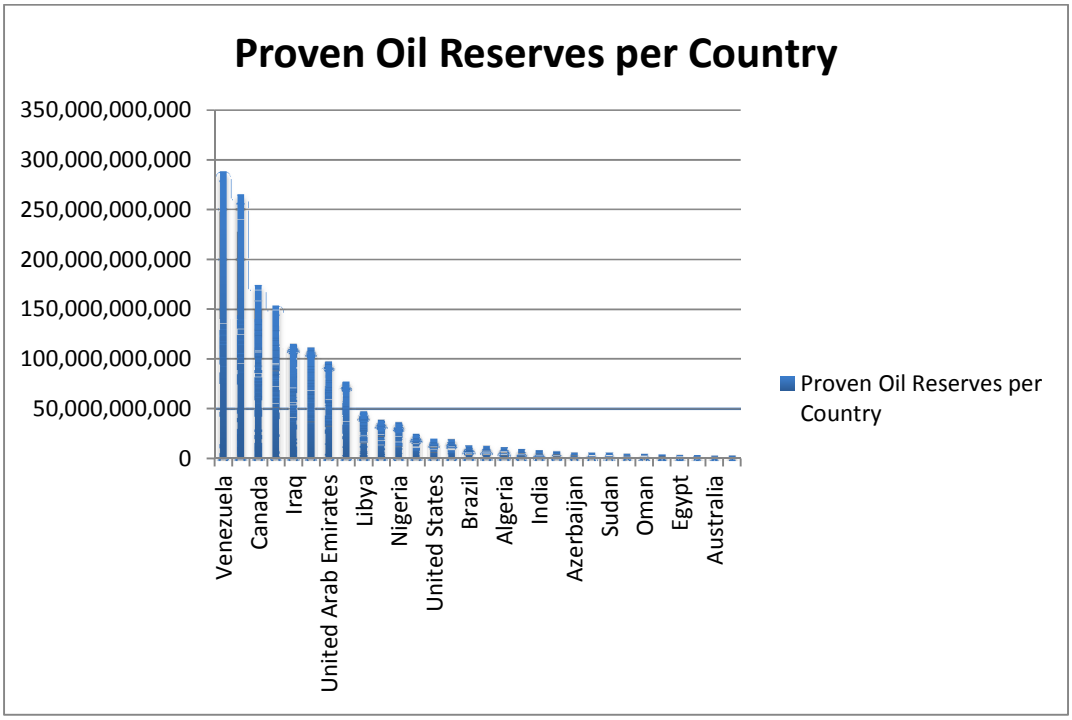
i) Economies in Africa and South America.
ii) Economies that have oil as a natural resource.
iii) Economies with highest proven oil reserves in their regions.

The regions considered for the purpose of this study were, Africa and South America, these two regions were chosen for comparison due to similarities in their historical political and economic arrangements which were very extractive. The level of inequality in these regions, coupled with continued failure over the past decades to develop their economies, was another factor that made these two regions interesting to study. Due to the criteria above, four countries were chosen for the study which was, Brazil, Venezuela, Libya, and Nigeria.

The table below indicates the proven oil reserves per country instead of production capacity. Proven oil reserves unit was used due to the fact that although a country might have a high production capacity, its reserves might be depleting with no discovery of new oil fields thus making it less attractive for both IOC's and other governments as a source of future oil supply, therefore energy security. Furthermore, although a country might have a high production capacity, this does not necessarily indicate the level oil reserves they have.

Production capacity indicates the level of investment in the downstream processing business or a lack of investment when although extracted crude oil meets the economies demand but the processing capacity does not, thus making it necessary to import refined product. Oil producing countries face three industry structures, the first is when a country has enough oil reserves to supply local demand and has adequate capacity to supply finished product for the local demand as well as in some cases where the country has oil reserves but it cannot process all that it produces and has to sell the remainder or even worse it exports crude oil and has to import refined product.

Figure 3: Proven oil reserves per country



Source: (http://www.bp.com/statisticalreview, 2012)

4.4 Secondary Data

The secondary data collected for the four countries was on policy development in the oil industry since the 1900's. For those countries that only discovered oil later, the data gathered started at the point of oil exploration and not the discovery of oil as it is assumed that there would have been policy development to facilitate the exploration for oil. An example of this long phase of development without oil discovery is the Nigerian oil industry which started in 1903 with no commercial discoveries of oil until the 1950's. In the intervening period, a number of companies, joint ventures and individual investors were involved in the Nigerian oil industry with the support of the British government and colonial government which oversaw the marginalization of the local communities and exclusion of Nigerians' from the oil industry and this was the crucial phase in the development of institutions for the Nigerian oil industry (Hoyos, 2007).

The data categorized the type of market structures and political structures in the different countries to understand the type of relationships persisting in these economies between the three stakeholders, the government, the private companies and civil society which would later come to be represented by NGO's. The historical data on the development of institutions in the different economies was used to study the interaction

between the different role players, which will be referred to in this study as “agents”. This would later assist with the analysis of the data in terms of understanding the bargaining process between agents and what incentives drive them to arrive at the different agreements regarding the extraction of the oil resources either for their governments or their companies. This type of information is pertinent to the understanding of the choices taken by different stakeholders in terms of those institutions they chose to support or suppress and what role oil has played in the ability of these stakeholders to negotiate for the entrenchment of policies that maximize benefits for their groups.

4.5 Study Phases

The first part of the study looked at the historical development of oil and gas policies in the six different economies. The exploratory analysis of this study evaluated the content and development of oil industry policies and the subsequent reforms to understand the drivers behind these reforms and if they achieved the goals they were planned to achieve.

The second part of the study looked to under whether the size of the proven reserves had an implication for the agent behavior in choosing short term benefits over long term benefits.

The third part of the study evaluated whether the consistent and stable application of oil industry policies had a positive effect on the long term sustainability of the oil industry, in terms of resulting in a diversified economy through the use of oil industry activities as well as an inclusive oil industry.

4.6 Research Selection

The four countries chosen for the study were selected from countries in two continents, Africa and South America. Oil is the natural resource that is the focus of this study due

4.7 Data Collection

The secondary data will be collected from government websites and journals on politics and economics (Saunders & Lewis, 2012).

Source of information such as the Business Monitor International will be used as they have a lot of data on the global oil supply and demand which is available per region as well or per each country that produces oil.

The following data sources were used to collect the data:
CIA Fact book
United Nations
EIA – Energy Information Agency
United Nations Organisation database
BP Oil Statistics
World Bank Database

4.8 Data Analysis

The initial content analysis of the different government policies for different countries was analyzed for different periods in the development of their economies as well as the different stages of the evolution of their institutions (Hsieh & Shannon E, 2005). Focus was placed on the interaction of institutions with the private sector, government and civil society. The analysis of this data aimed to formulate a model for this interaction using the institutional evolution methods as suggested by Brousseau & Raynaud (2011), to explain how this interaction comes about and how it is sustained. Observation was made with particular interest on whether the institutional reforms were internally or externally driven and what they aimed to achieve, avoid the structure infiltrating forces or confront them positively.

4.9 Research Limitations

Availability of historical records regarding policy implementation and its true intent will not be truthfully represented in the historical documentation which might lead to false assumptions about the intents of the formation of particular institutions but cross referencing of the different sources of information might assist in mitigating this risk.

This study had limitations in its design due to the number of countries that were chosen, due to the restriction of countries to only two continents Africa and South America as well as the focus on oil which meant that no inference could be made about other commodities (Saunders & Lewis, 2012).

CHAPTER 5: RESULTS

5.1 Introduction

This section presents the data that was used to understand the three research questions that were proposed in chapter three and the results have been presented per country under each question.

History of Oil

The history of oil and gas dates back to the eighteen century although there are disagreements regarding the exact date and place of the discovery of oil, nonetheless the modern oil industry began with the early commercialization of the trade of oil in the Baku region in 1872 (Hoyos, 2007).

Most of the countries discovered oil and gas in the late 1800's and early 1900's, whilst in the Middle East oil discoveries were made in the 1930's. Due to a lack of technology these countries had to enter into agreements with American or European International Oil Companies (IOC) for exploration and extraction of oil and gas. The oil industry's development took off after World War II (Hoyos, 2007).

The beginning of World War II highlighted the importance of the control of oil supply, to this end the British forces captured Baghdad in 1917 which gave them access to another oil supply source that they could control for the Allied Forces. This study views the global oil and gas industry as having gone through three different phases of development. The first phase was the development of the oil industry by IOCs which resulted in a dominance that lasted into the 1970s which was only challenged by the establishment of OPEC.

The second phase of the oil and gas industry began with the coming of age of National Oil Companies seeking autonomy in the oil and gas industry for their governments as part of OPECs mandate to their members.

The third phase of the oil industry development is identified in this study as the maturation of NOCs to the level where they control over 94 percent of the global oil reserves and companies such as Petrobras have become world leaders in offshore oil exploration (Guan & Erjia, 2010).

5.2 Question 1: Application of Oil Industry Policies

Does a stable and consistent application of good oil policies result in long-term benefits for developing economies?

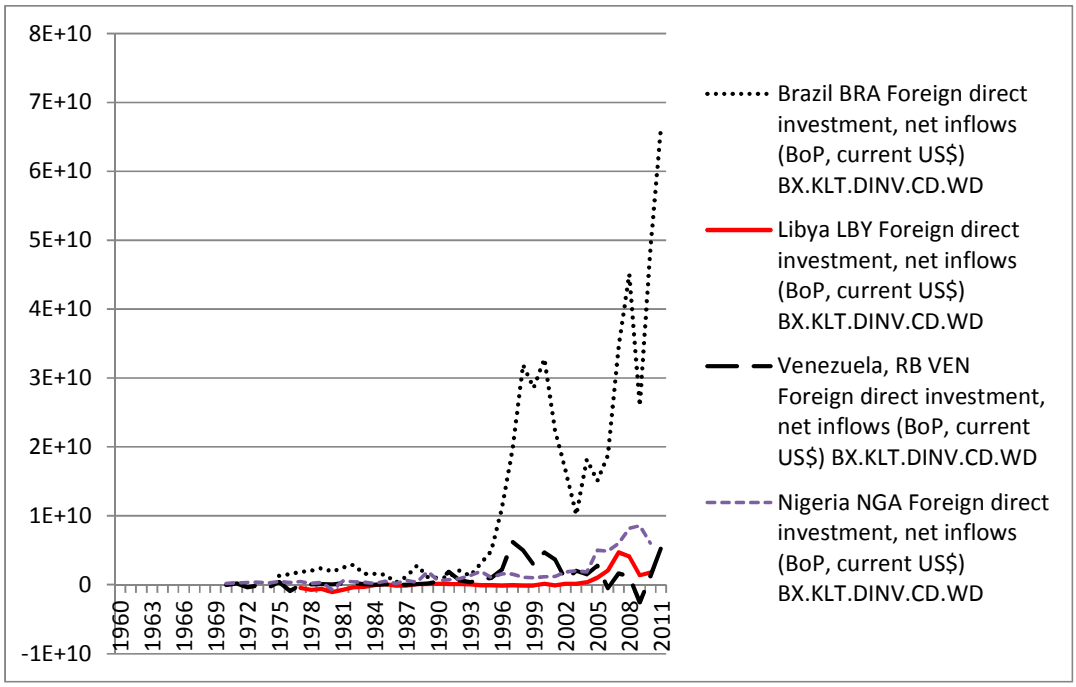
5.2.1 Introduction

This section presents results on institutions in different economies and the path and shape that the development of these institutions followed as the oil industry was being developed. The increase in foreign direct invest in the country and especially in the oil sector is seen as a positive outcome of stable and good institutions that result in business friendly policies thus encouraging FDI through investor confidence.

FDI provides capital for projects in the particular sector that is of interest to the investors but depending on how governments negotiate the terms of agreement, as mentioned in Chapter 2, it is possible to have this development of the oil industry spill over to the development of the infrastructure such as transportation which would be coincident with the transportation of oil (McLin, 1986). The second measure of the successful implementation of reforms will be the level of private participation in public goods investments such as education, health and sanitation.

Below figure 4 presents the combined foreign direct investment of the four selected countries from the 1970s. The data shown indicates that Brazil has outperformed the other three countries in terms of FDI inflows over the past 20 years.

Figure 4: Combined Foreign Direct Investment

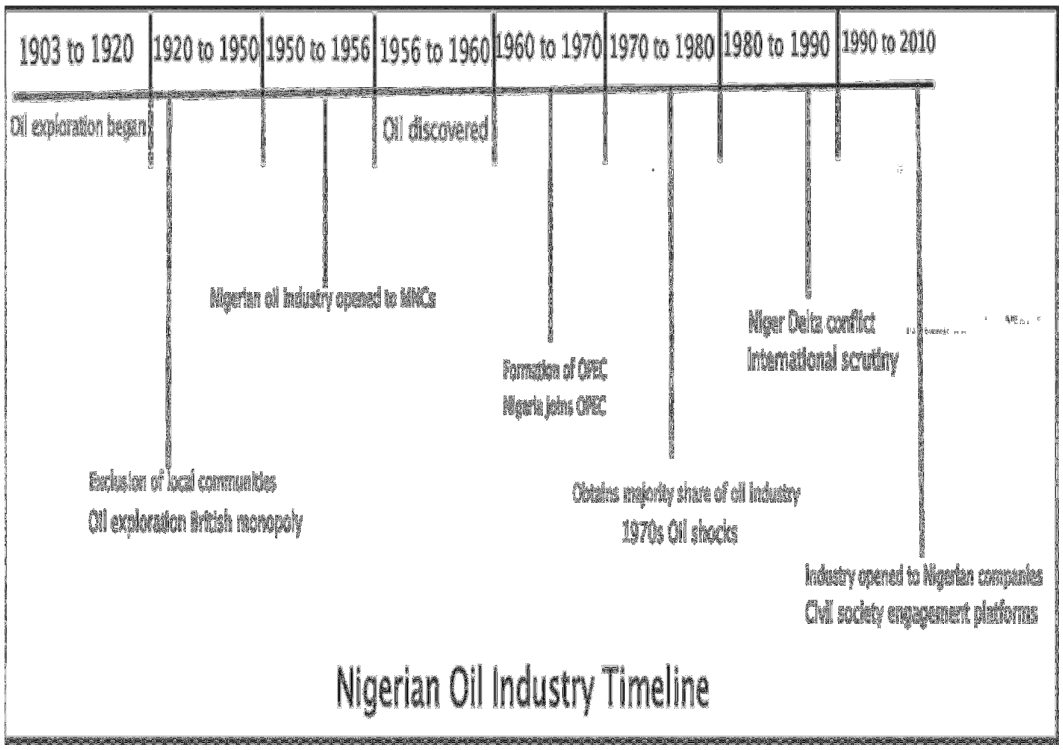


Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

5.2.2 Nigeria Oil Industry Historical Development

From 1903 to the 1930's the Nigerian oil exploration landscape was dominated by the British government as Nigeria was still a colony and therefore the policies governing oil activities in the country were controlled for British interest with no account being made for the local people. Laws were put in place to exclude Nigerian companies from being involved in the oil industry. The search for oil was made a British monopoly through laws such as the "Southern Nigeria Mining Regulation (Oil) Ordinance, which stipulated that only British companies could be involved with oil exploration in the country through the granting of concessions, this restriction extended to foreign companies as well from such as the Dutch company Shell and American Standard Oil. In particular the 1907 Ordinance was drafted without consultation of Native Authorities and the Lagosian elite.

Figure 5: Nigerian oil industry timeline



The Nigerian oil industry time line is presented above by figure 5, where the long period of oil exploration can be seen with oil being discovered in the 1950s after five decades of oil exploration and policy implementation without the actual resource that left a politically polarized region around the oil producing area, the Niger Delta.

The Nigerian exploration period which lasted for five decades until oil was eventually discovered in 1956 was driven by the British colonial government with no regard for the local communities. The Nigerian oil industry was characterized by opposition by the local communities from its beginnings and this historical institutional development would influence the government's oil policy after the oil discovery and this had consequences for the industry structure. The Ordinance that British companies operated under did not require them to obtain permission from land owners or local communities for exploration activities but they were guaranteed protection from anyone who interfered with their activities with the threat of fines or imprisonment. In the 1940's with the intensification of the opposition to the Shell/D'Arcy Joint Venture activities and other operating concessions, the governor recognizing the importance of oil to the future independence of Nigeria sought to negotiate conditions to new concessions for more involvement of Nigeria in the oil industry in order to get the approval and support of the local communities (Ross, 2003).

The governor requested reforms to the oil industry policies that a new local company is formed for the special purpose of developing Nigeria's oil industry; that there would be a system for the Nigerian government to share in the profits earned by the new company; that the government would have a right to appoint one director to the board of the company and lastly for the public to the opportunity of subscribing a certain proportion of the share capital of the company. These demands were rejected and what could have been a step in the right direction for the Nigerian oil industry and the country's economy was overridden by appeals to national interest as the development of the oil industry was seen as key to the economic independence of Nigeria from the British government. Once the development of the oil industry had gained the upper hand over the grievances and interest of the local communities, a clash between the multinationals interests and the local people's interest was inevitable (Ross, 2003).

5.2.3 Oil Industry Institutional Reforms in Nigeria

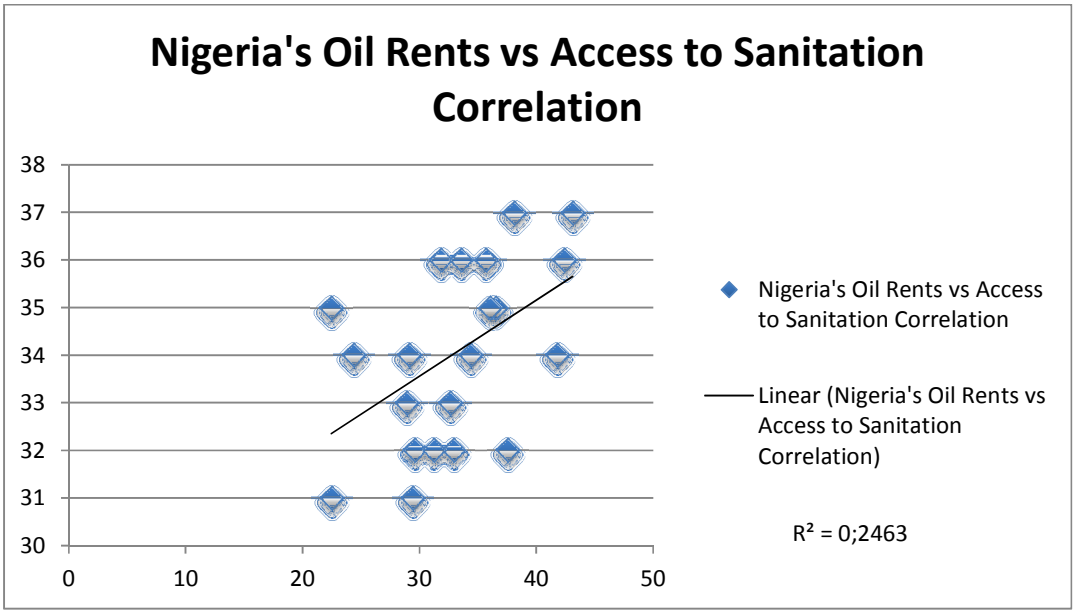
Below is an institutional policy development timeline for the Nigerian oil industry dated from the 1903 to 2010. This timeline shows the different changes to policy as well as whether these reforms were a response to internal or external factors and what they were aimed to achieve.

The institutional development of the oil and gas industry in Nigeria had established the development of oil production as a national interest for the development of the Nigerian economy; as such the opposition presented by local communities was ignored. This characteristic of the Nigerian oil industry development elevated the role of oil in economic development above that of local communities and their concerns whenever there was a conflict between the two, the government would always side with the oil industry.

Democracy in Nigeria was preceded by the military rule that oversaw the continued marginalization of the local Niger Delta community who wanted local autonomy and control of the oil wealth for the Ogoni people, one of the tribes in the Niger Delta. The tension culminated with the killing of nine protesters who had been campaigning for an equitable participation in the oil wealth of the region for its local people, and amongst these nine men was the writer and poet Ken Saro-Wiwa who was hanged in 1995 by the military. These killings by the military brought a spotlight to the oil industry and the involvement of the IOC's in Nigeria, which led to the suspension of Nigeria from the

Commonwealth. The Obasanjo administration initiated oil industry reforms from 1999 to 2007 by setting up structures that would allow a meaningful internal debate amongst government, local community, NGO's and the IOC's after taking over from the military rule. The institutional arrangements initiated during this period were aimed at developing the Niger Delta region by supporting the local community in their efforts for autonomy and therefore the establishment of the General Ogomudia Special Security Committee on Oil Producing Areas was one of the ways to create an inclusive platform and give an option to the dissatisfied local people who had resorted to both political mobilization through protests and armed struggle by attacking oil assets.

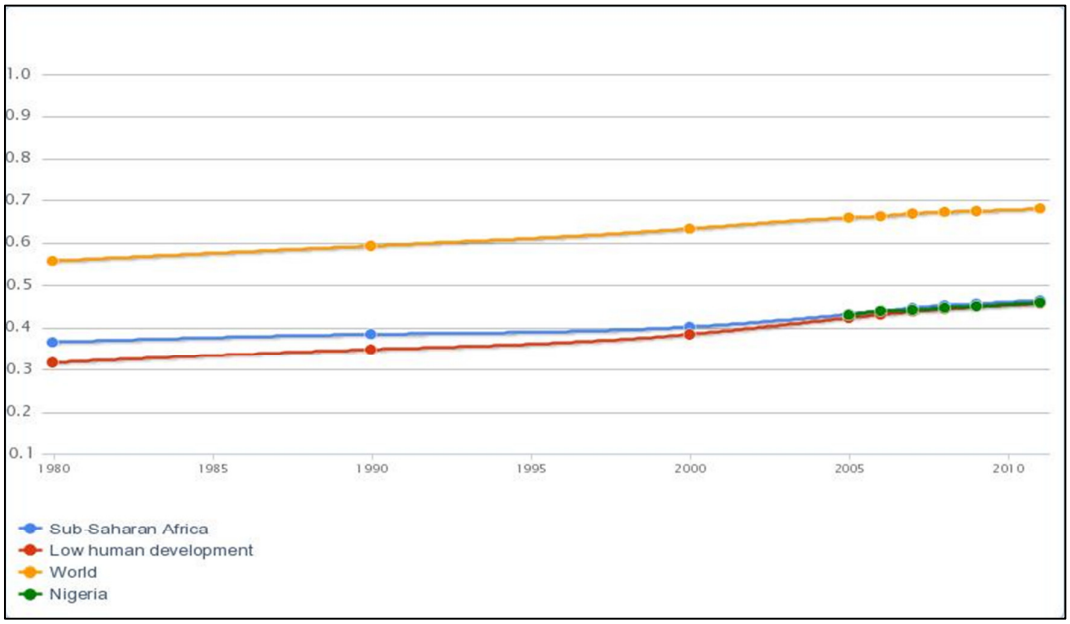
Figure 6: Nigeria's oil rents vs access to sanitation correlation



Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

The correlation between oil rents and access to sanitation for the population is presented in figure 6 above represents a correlation R = 0.496 which is a weak correlation indicating that only less than 50 percent of the access to sanitation can be explained by the resource rents the government secures from the oil industry.

Figure 7: Nigeria's Human Development Index



Source: *(hdrstats.undp.org/en/countries/profiles/NGR.html, 2012)*

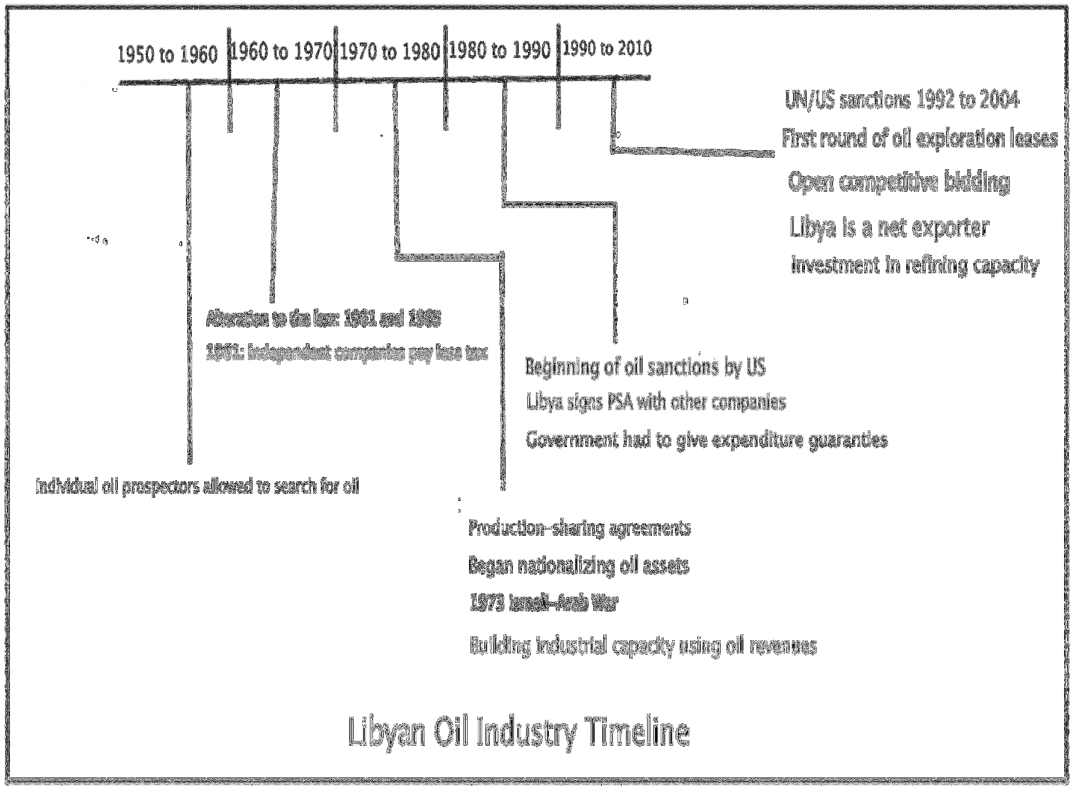
Nigeria's human development index data presented in figure 7 shows that despite the availability of revenues from oil rents, the human development index remains comparable to that of sub-Saharan Africa which falls amongst the lowest in the world, well below the global HDI.

5.2.4 Libyan Oil Industry Historical Development

The history of Libya as a country began at the end of World War II when the United Nations created the United Kingdom of Libya from three different states that had no national unity and appointed a king who had no interest in ruling these states or building a nation from these three states. Prior to the end of World War II these three different states were under colonial rule which had left a lasting impression on the local population. The discovery of oil in the country allowed the rulers of Libya from the king Emir Indris Sanusi to Gaddafi the power to not develop the necessary institutions for a functioning state.

Below in figure 8 is a development timeline for the Libyan oil industry dated from 1950 to 2010. This timeline shows the different changes to policy as well as whether these reforms were a response to internal or external factors and what they were aimed to achieve.

Figure 8: Libya's oil industry timeline



The Libyan government initiated the oil exploration programme as a response to the growing importance of oil. Within two years of signing the first concession to explore for oil, the first significant oil field was discovered in 1959. Between 1961 and 1965, Libya had reformed their oil industry law to support small businesses; this meant that independent companies in the Libyan oil industry paid less tax than the large multinational companies. This reform was designed to support an earlier initiative which had allowed individual prospectors to search for oil in Libya thus breaking the monopoly which was otherwise held by multinational companies elsewhere, in places such as Nigeria.

Other events were playing out that were connected to the growth of the oil industry. As oil exports were growing and Libya was becoming one of the richest nations in the world, due to the lack of equity and involvement of the local people in the oil wealth, resentment was growing for the rule of king Emir Indris Sanusi and in 1969 the young Colonel Muammar al-Gaddafi led a successful coup d'état and replaced the king with Gaddafi as the new leader of the country. This was the beginning of reforms in both the oil industry institutions as well as Libya's foreign policy which would later place it in a clash with the western powers.

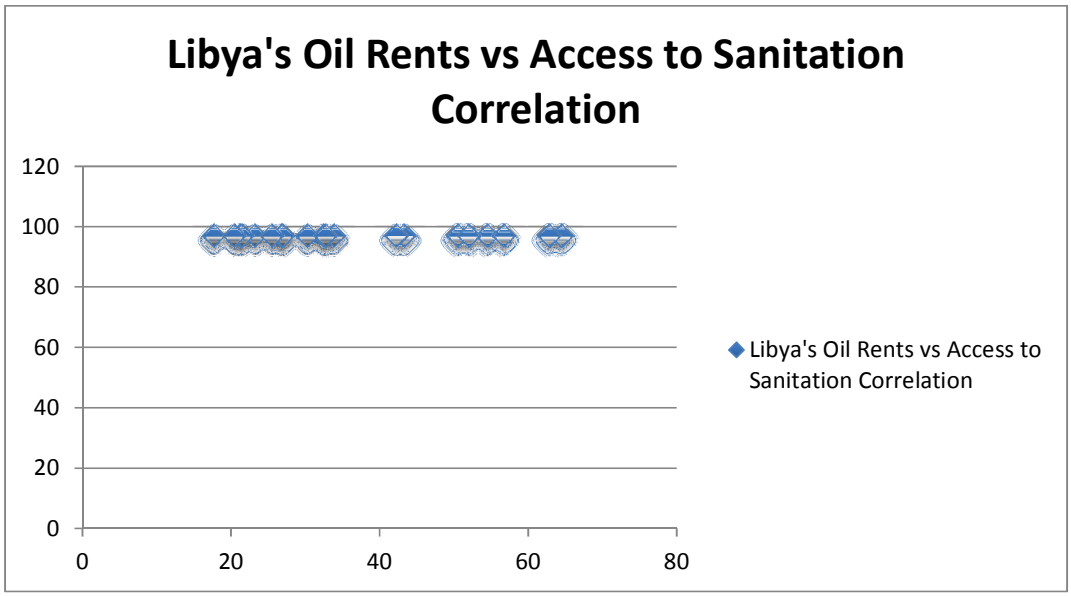
The price shocks of the 1970s which followed in the wake of the Israeli-Arab War of 1973 saw huge oil price increases, which resulted in huge revenues for oil producing countries. The Libyan government sought to use this windfall to initiate an industrial capacity building programme to diversify the Libyan economy from oil. But this strategy was hampered by the oil price deflation of the 1980s as some of the OPEC members were not respecting the production quotas thus flooding the market with oil which dropped the price as there was more supply then demand. The Libyan oil industry would not recover from this period until the 1990s when the Gaddafi regime concluded agreements with the west that saw the opening of the Libyan economy to much needed foreign direct investment and European markets where today, Libya exports 85 percent of its product (Yousef, 2004).

5.2.5 Oil Industry Institutional Reforms in Libya

The institutional reforms that have occurred in the oil industry in Libya have been driven by both internal and external factors that derive from the orientation of Libyan oil exports. Due to the lack of oil industry development knowledge in Libya, the use of multinationals and the developmental capital they bring has always been necessary for the Libyan oil industry. Furthermore, because Libya is a net exporter supplying 85 percent of its oil to the European markets and only about five percent to the United States, access to these markets is important for its oil industry.

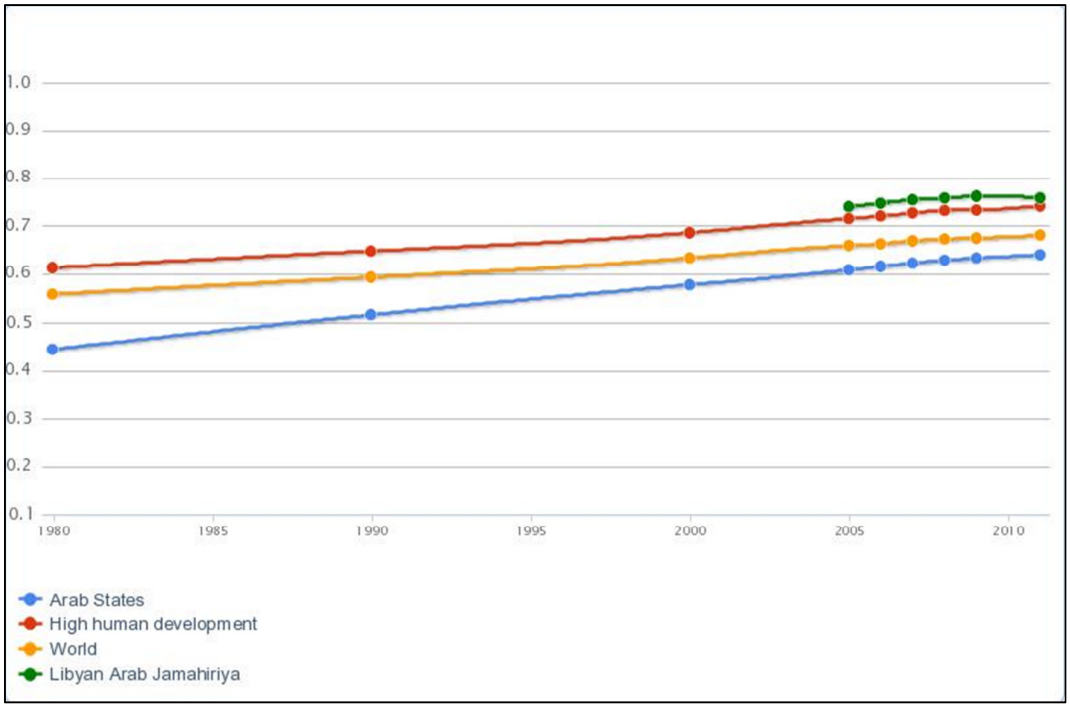
The internal pressures on the Libyans oil industry are minimal due to the public goods that the regime provides to the population. This can be seen from the correlation in figure 9 as well as the human development index presented in figure 10. The Libyan human development index is very high in the context of the African continent, especially when compared to other African oil producing countries such as Nigeria and Angola. Even in the context of Arab States as presented in this data, Libya has a very high human development index compared to all three comparators, the global HDI and the typical high human development threshold.

Figure 9: Libya's oil rents vs access to sanitation correlation



Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

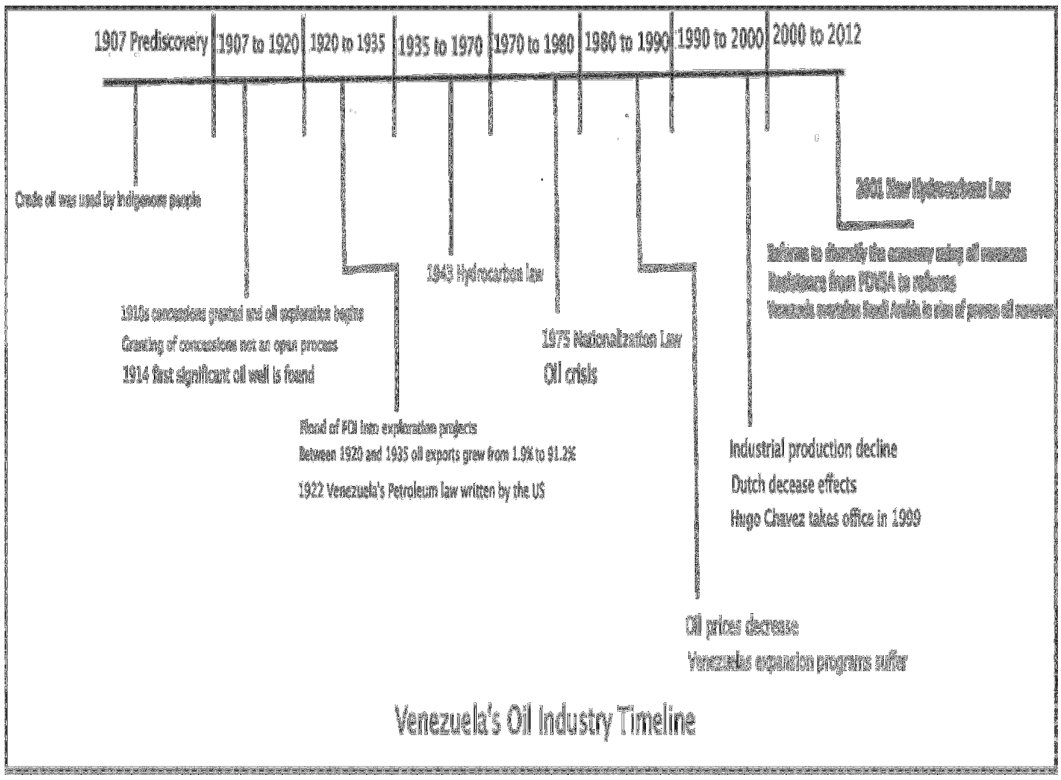
Figure 10: Libya's Human Development Index



Source: (hdrstats.undp.org/en/countries/profiles/LBY.html, 2012)

5.2.6 Venezuela Oil Industry Historical Development

Figure 11: Venezuela's oil industry timeline

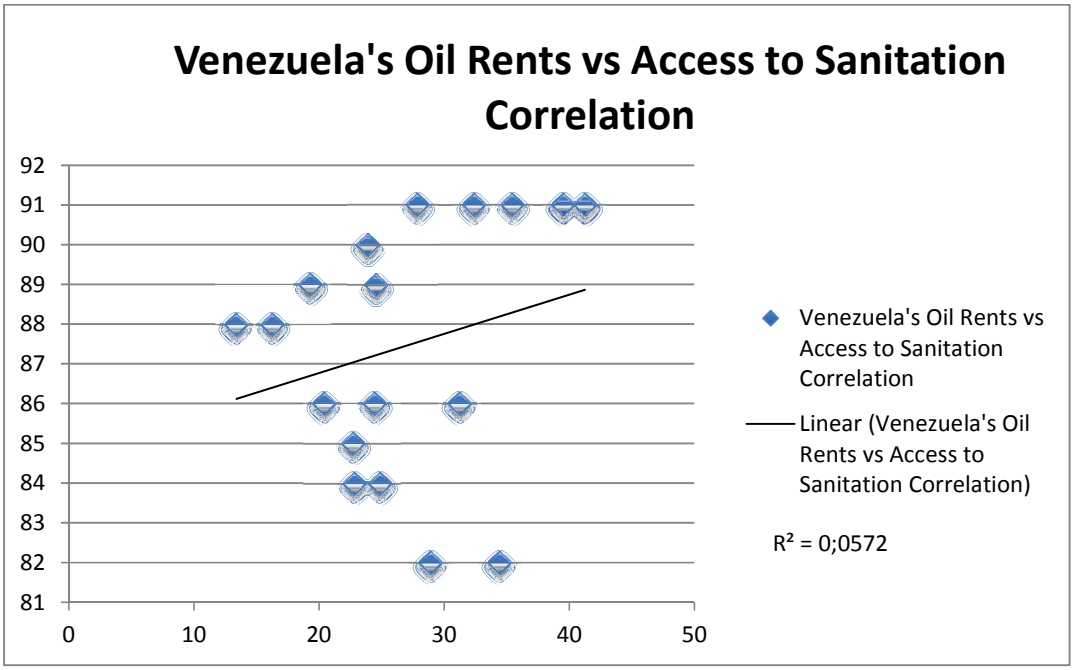


5.2.7 Oil and Gas Institutional Reforms in Venezuela

Figure 11 above presents the timeline for Venezuela's oil industry development dated from the 1900s to 2012. This timeline shows the different changes to industry policies as well as some of the industry events that might have had an impact on some of the decisions taken regarding the development of the industry in terms of policy choices.

Below in figure 12 is the correlation between the levels of oil rents that were being collected by the government compared to the provision of public goods by the government. In this chart, access to sanitation has been set as a dependent variable. This result indicates that although the relationship between the two is positive, there is no correlation between them.

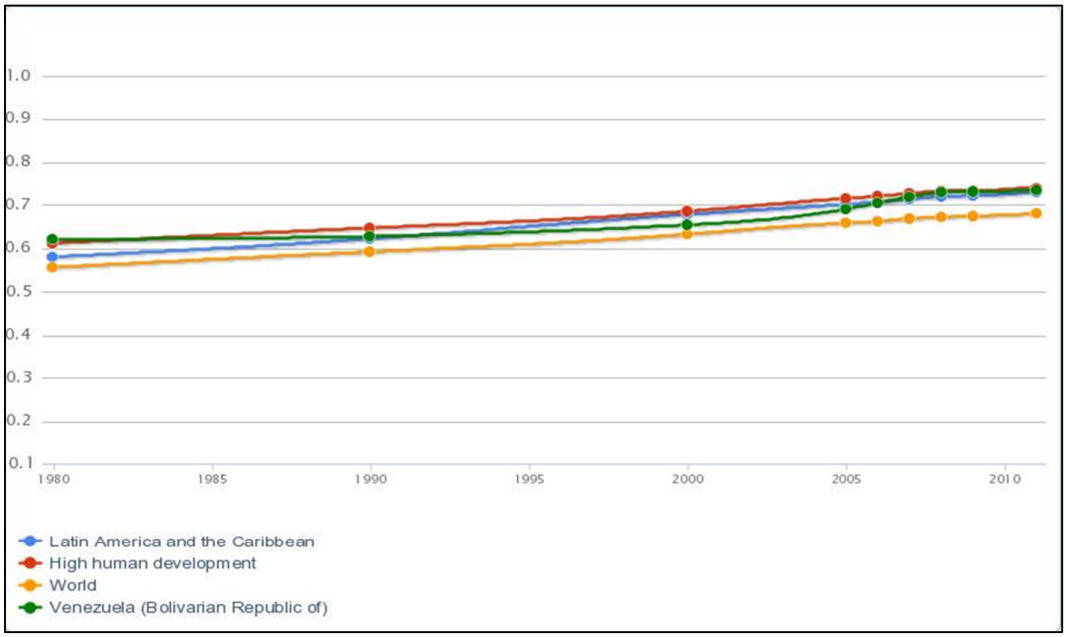
Figure 12: Venezuela's oil rents vs access to sanitation correlation



Source: (http://databank.worldbank.org/data/home.aspx, 2012)

Figure 13 below presents the human development index trend for Venezuela from 1980 in an attempt to gain more understanding of government behavior in terms of the importance they place on providing public goods. This measure will be coupled with the human development index in Chapter 6 for a discussion of how far development efforts have come in Venezuela through the use of oil revenues as is their stated strategy. The data presented below indicates that Venezuela has maintained the HDI above the world average for the past three decades from 1980 and has caught up again with the regional human development index in Latin America and Caribbean.

Figure 13: Venezuela's Human Development Index



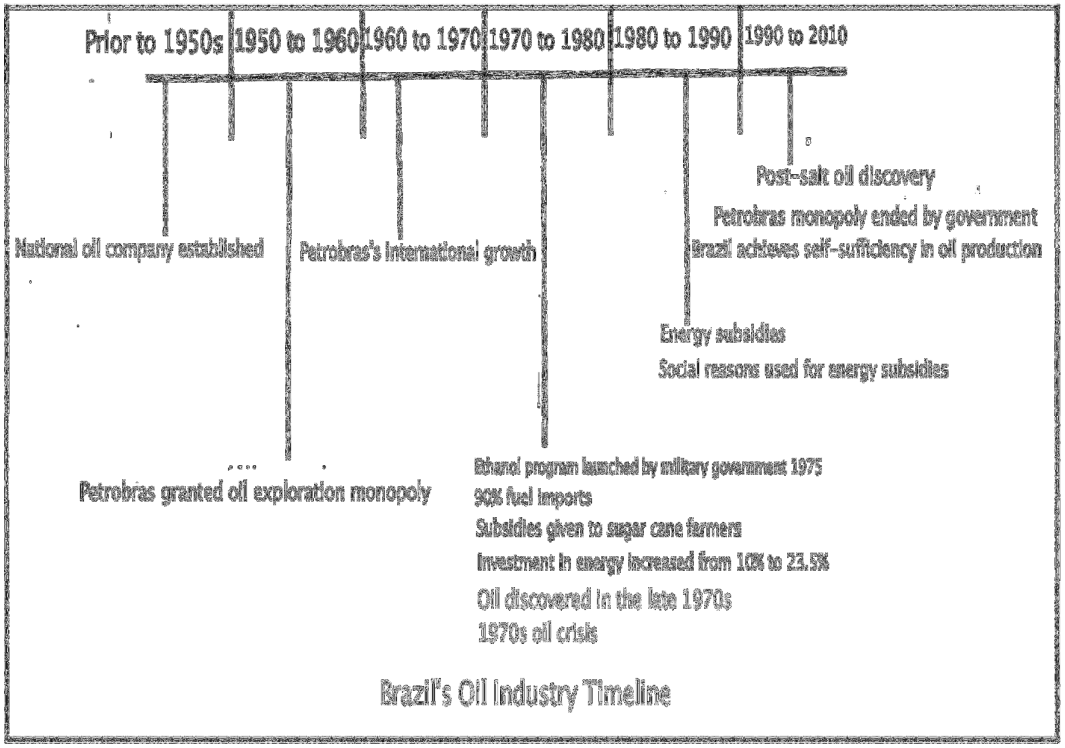
Source: (hdrstats.undp.org/en/countries/profiles/VEN.html, 2012)

5.2.8 Brazilian Oil Industry Development

The Brazilian oil industry has a different DNA which is distinct to the other four economies, its oil industry policies were developed before any discovery of oil fields and this led to the government allowing the national oil company Petrobras autonomy regarding its developmental goals. The company embarked on an international strategy between the 1960s to the 70s where it went through a learning process and when oil was discovered at home in the 1970s, it had access to technology for offshore operations that was unique to a national oil company.

The Brazilian oil industry development timeline presented in figure 14 begins with the establishment of the national oil company prior to the 1950s and it became known as Petrobras in 1953 and was granted an oil exploration monopoly and allowed to function as a private corporation. The oil industry institutions such as the Petrobras monopoly remained unchanged through political leadership change which was different to other oil producing countries.

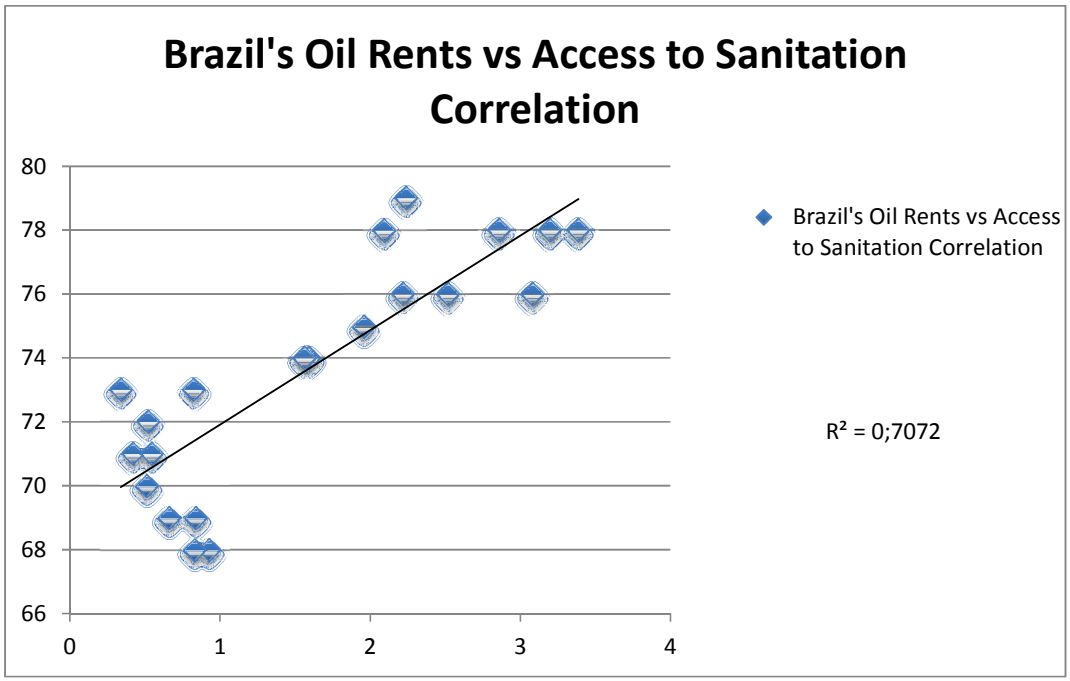
Figure 14: Brazil's oil industry timeline



5.2.9 Oil Institutional Reforms in Brazil

Institutional reforms in the Brazilian oil industry were implemented with a social agenda that aimed to achieve social development through the use of oil revenues and the ultimate goal of all the different governments was to achieve self-sufficiency in the oil industry for Brazil.

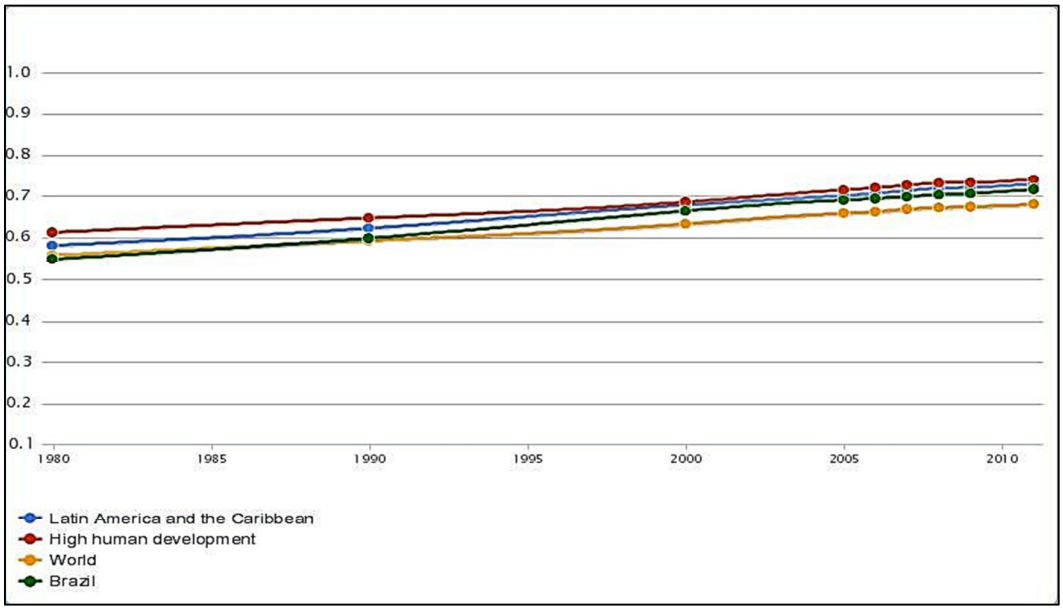
Figure 15: Brazil's oil rents vs access to sanitation correlation



Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

Access to sanitation is one of the measures that have been identified for testing in Chapter 4 in order to measure the level of benefit that accrues to the human development index as this contributes to the health of the population. The correlation shown in figure 15 above indicates the relationship between oil rents and access to sanitation for the population. This presents a strong correlation of R = 0.841 which means that 84 percent of the access to sanitation is explained by the oil rents that the government obtains from the oil industry.

Figure 16: Brazil's Human Development Index



Source: *(hdrstats.undp.org/en/countries/profiles/BRZ.html, 2012)*

The human development index shown in figure 16 above shows the progress that has been made by Brazil where in 1980 it was below the world human development index, and in 20 years has surpassed the caught up with the regional index and surpassed the world index although still below the high human development index, the trend is positive.

The data presented above will be discussed Chapter 6 to develop an understanding of the industry structures as well as policy choices over time that has led to the current performance of these different oil industries in order to answer the first research question whether the application of good policies would result in benefits for the economy. The benefits that have been chosen for this study are those that accrue to the local population in terms of human development.

5.3 Question 2: Size of Oil Proven Reserves

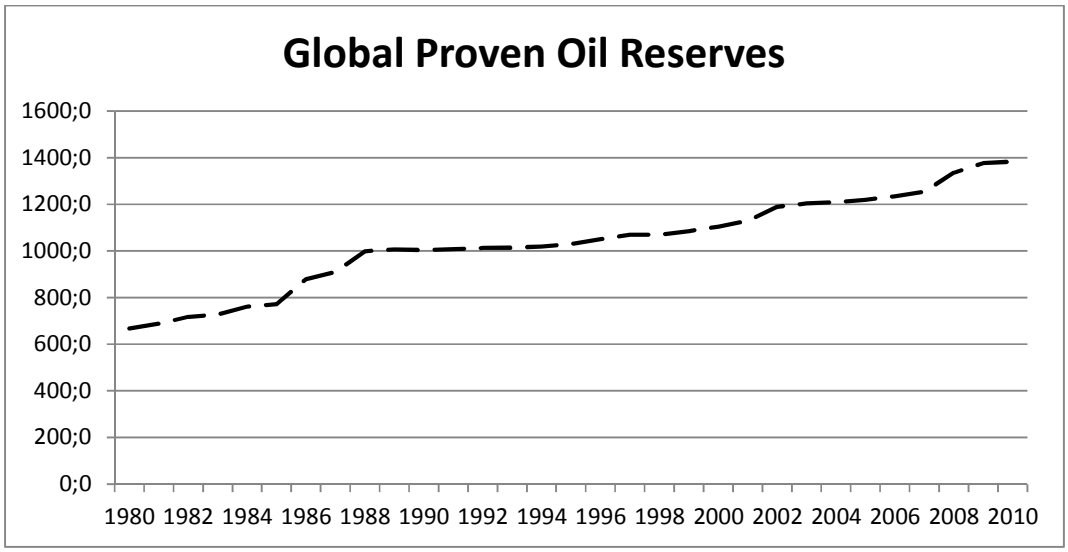
Does the size of the natural resource influence the behavior of government agents in developing economies?

5.3.1 Introduction

The data collected was to study the second question whether the size of the oil reserve has an implication regarding how governments negotiate depending on their specific

incentives and developmental strategies. The data collected was concerned with the increase in the proven oil reserve level compared to the change in the host countries mandatory levels of oil rents; whether these were through royalties or an increase in the percentage of profits the host country obtains from the multinational company.

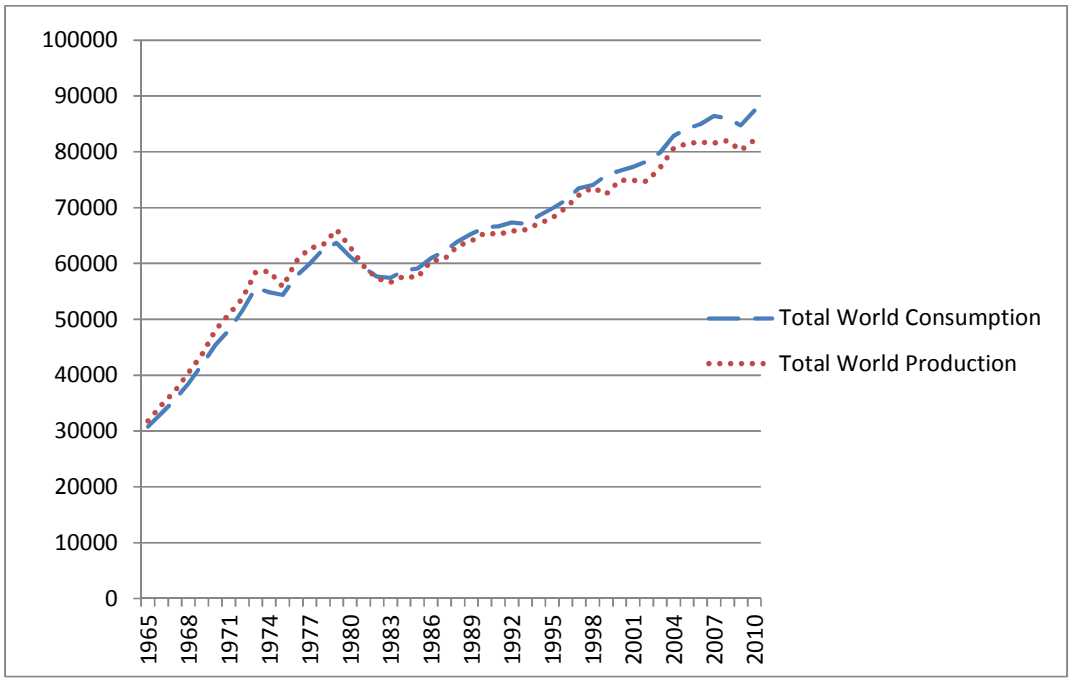
Figure 17: Global Proven Oil Reserves



Source: *(http://www.bp.com/statisticalreview, 2012)*

The global oil reserves have been increasing at a steady pace since the 1980's as shown by figure 7. Fewer oil fields are being found today and this has an implication for competition between IOCs and NOCs where the latter controls more than 94% of global reserves. This affects national security of countries such as the US, which leads the world in oil consumption, followed by China.

Figure 18: Global production vs consumption

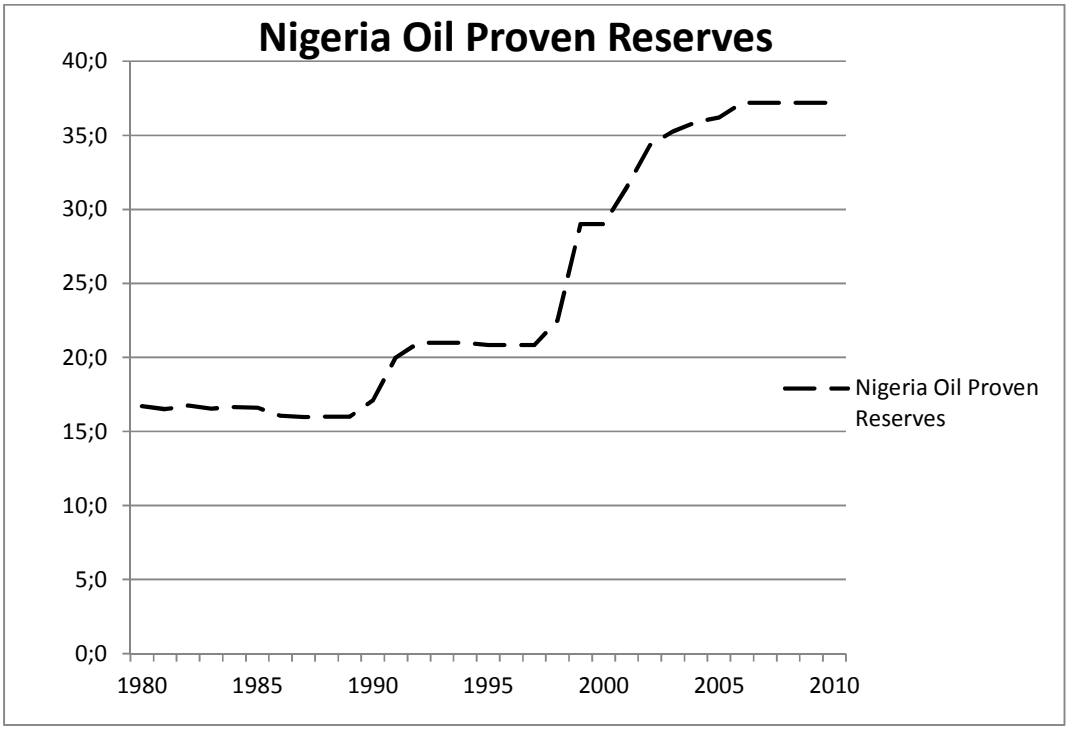


Source: *(http://www.bp.com/statisticalreview, 2012)*

5.3.2 Nigeria

The Nigerian oil industry had a long period of exploration that listed more than four decades without any oil discovery. A number of British companies were involved in the exploration industry during this time with the support of the colonial government as well as the British government which was implementing its international foreign policy on securing oil and gas supply for its own economy. The activity of multinationals in the Nigerian oil industry is historical in nature and after independence the relationship with the new government continued uninterrupted as the new government appreciated the importance of the oil industry for the development of the Nigerian economy.

Figure 19: Nigerian oil proven reserves – billion barrels

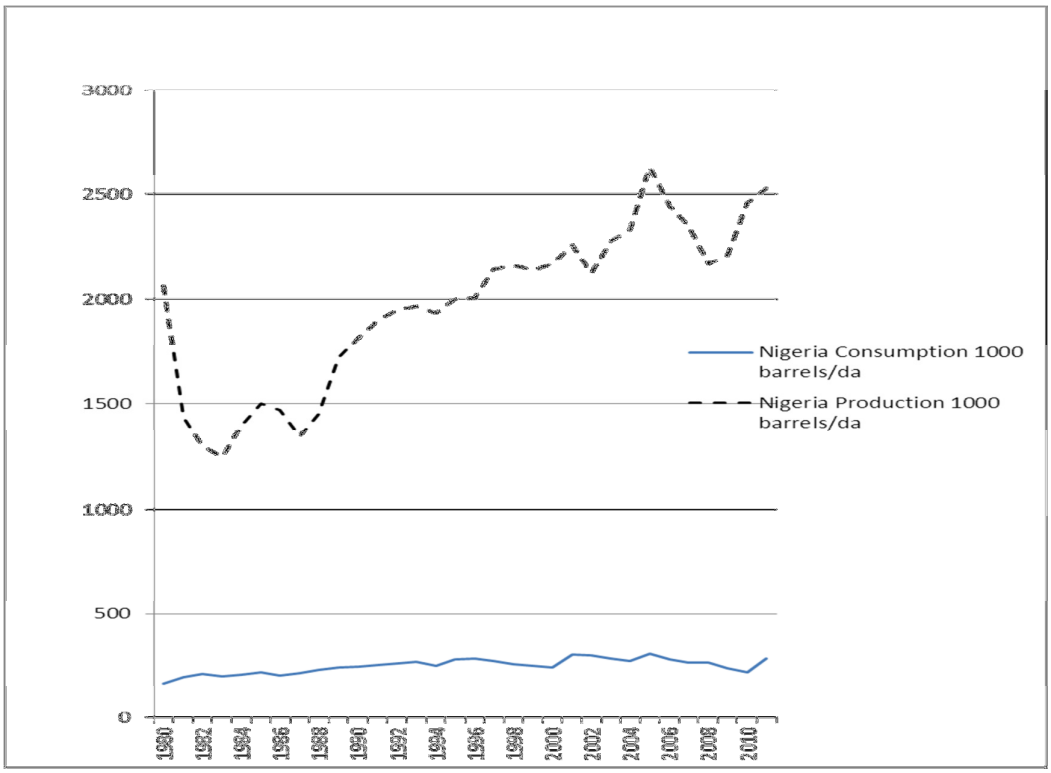


Source: *(http://www.bp.com/statisticalreview, 2012)*

The evidence from the data indicates that once Nigeria was able to resolve its own internal issues regarding the local community in the Niger Delta exploration work could resume into finding more oil resources and this saw an increase of oil reserves between 1990 and 2010. Prior to 1990, the Nigerian oil industry was affected by the political situation in the country as this was a period of military rule and during this time, freedom of speech was suppressed in support of the MNCs operating in the Niger Delta.

Although Nigeria's proven oil reserves have been increasing since the 1990s, they are net importers of refined product as they do not have enough refining capacity to meet the economies consumption. They have a capacity problem in their downstream infrastructure which can be solved by directing investment in the appropriate projects that will support the development of the downstream oil industry.

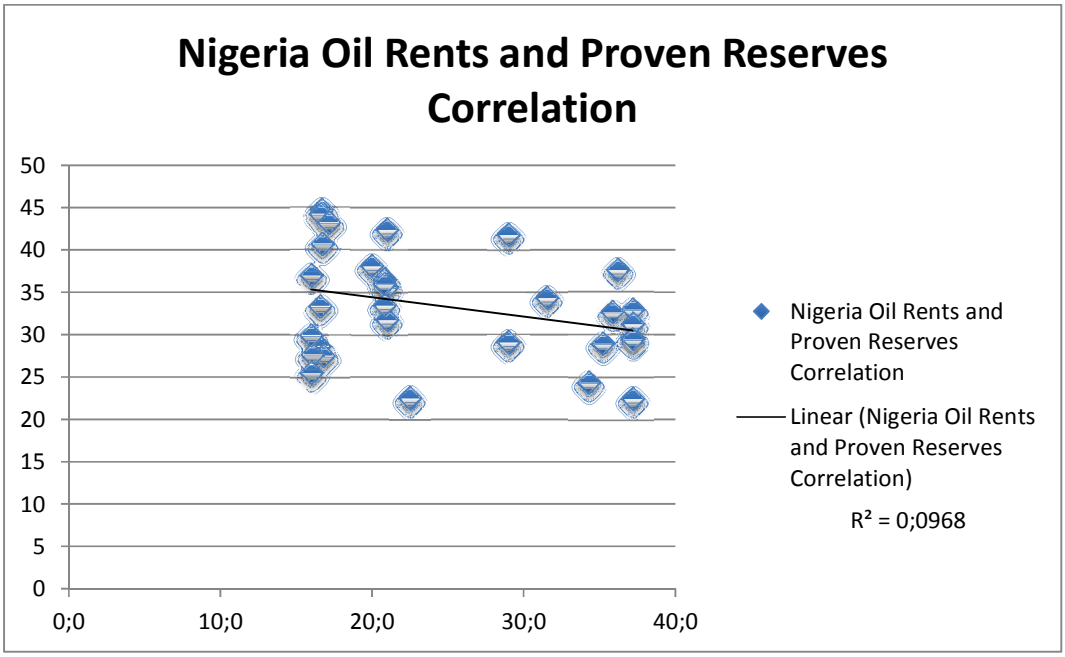
Figure 20: Nigeria's oil production versus consumption



Source: *(http://www.bp.com/statisticalreview, 2012)*

The data presented above in figure 20 indicates that Nigeria is net exporter but due to the refineries that Nigeria has invested in, they remain an importer of petrol fuel as their refineries do not produce enough quantities of this fuel. Nigeria has been unable to build refineries to build the required capacity for petrol supply to meet local demand, despite the award of 22 licenses from 2000 to 2007; these projects have not taken off due to contractual issues between the government and the foreign investors for these refineries.

Figure 21: Nigeria's oil rents vs proven reserves correlation



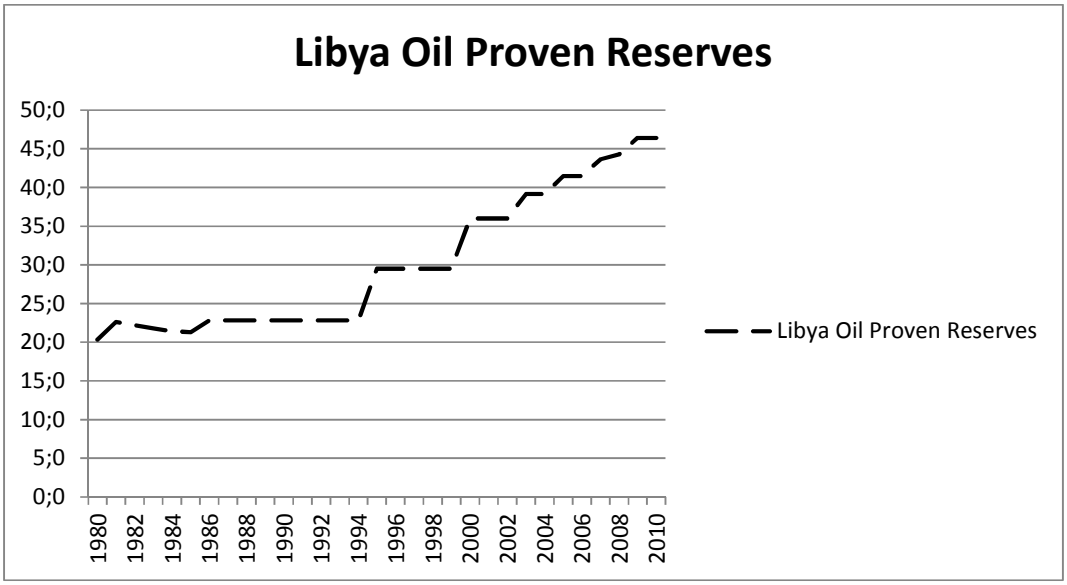
Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

The correlation presented in figure 21 between oil rents and proven reserves for the Nigerian oil industry shows that there is negative relationship between these two variables but no correlation at all which means that they are unrelated.

5.3.3 Libya

Libya's oil reserves remained flat for a decade as they faced sanctions from the United States and the UN due to their links to terrorist groups and this affected their oil industry as there was a reduction in oil production as well as exploration activities in the country due to restrictions the international community placed on the technology that could be imported into Libya thus making it difficult for even the National Oil Company to conduct exploration activities on their own. Figure 22 below shows that the level of proven reserves picked up between 1992 and 1994 and this is when the Gaddafi regime agreed to the US and UN demands for lifting the sanctions. Libya signed its first exploration concession after 1992 and adopted international practices, which saw a renewed interest in the country and investment in refining capacity was part of the new development strategy for the Libyan oil industry.

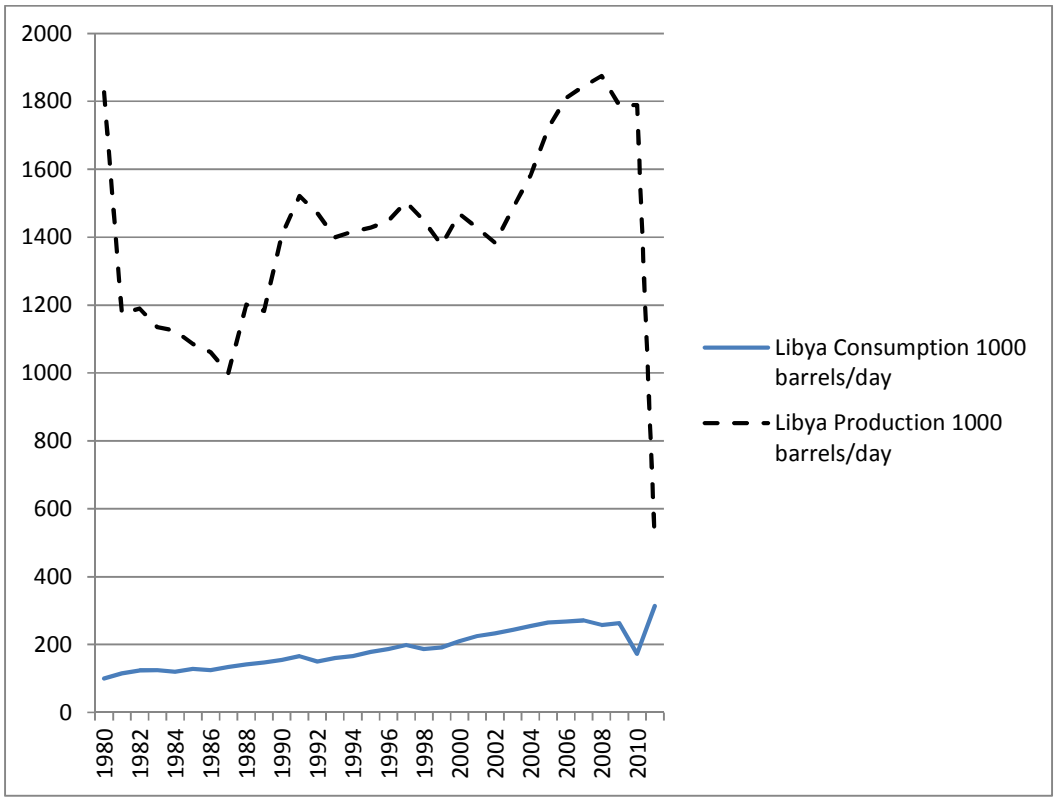
Figure 22: Libya's oil proven reserves - billion barrels



Source: *(http://www.bp.com/statisticalreview, 2012)*

Figure 23 below indicates the balance of the Libyan oil industry in terms of production capacity and consumption of finished product. Since the 1980s the Libya has been a net exporter but there was a reduction in their production during the 1980s as the demand for their product was constrained due to sanctions but these picked up in the 1990s back to pre-sanction period and the huge drop that is evident in 2011 was due to the civil war.

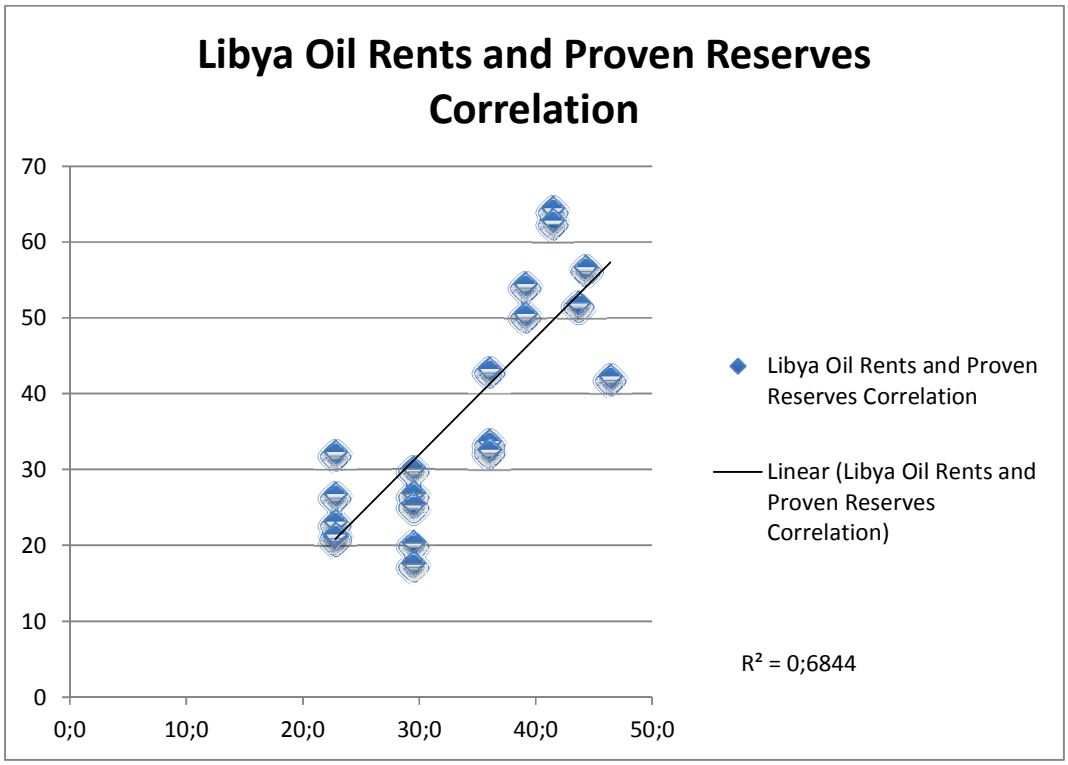
Figure 23: Libya's oil production versus consumption 1000x barrels/day



Source: *(http://www.bp.com/statisticalreview, 2012)*

Figure 24 below presents the correlation between proven reserves and oil rents. This test was designed to understand if there is a link between the size of oil reserves and the size oil rents that governments seek to get from oil extraction operations. The correlation below indicates a strong link between these two variables with a correlation R = 0.827 which means that 83 percent of the change in the oil rents demanded by the government can be explained by the size of the proven oil reserves.

Figure 24: Libya oil rents vs proven reserves correlation

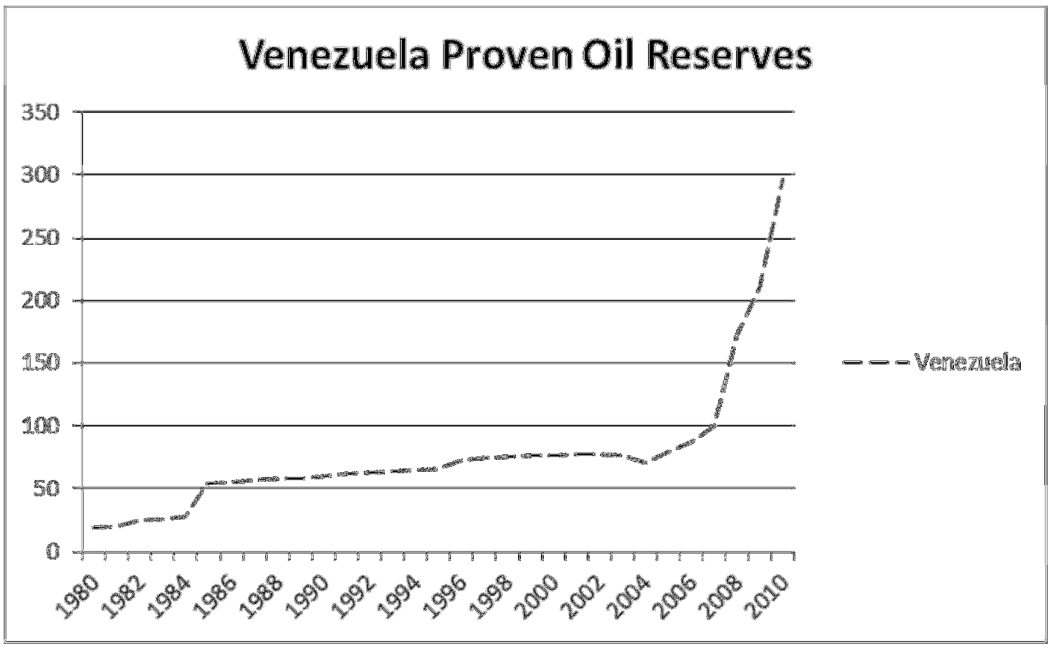


Source: *(http://www.bp.com/statisticalreview, 2012)*

5.3.4 Venezuela

Venezuela's proven oil reserves shown in figure 25 have been increasing rapidly since 2004 after a long period where the reserves had no significant change. This period where there was no development in the upstream oil industry lasted for 24 years and the causes for this stagnation and recent renewal of the industry will be explored in detail in Chapter 6 in order to understand what influenced the changes that resulted in the huge increase in Venezuela's oil proven reserves. Venezuela's proven oil reserves as of 2012 have surpassed Saudi Arabia as the highest proven oil reserves in the world at just under 300 billion barrels of oil.

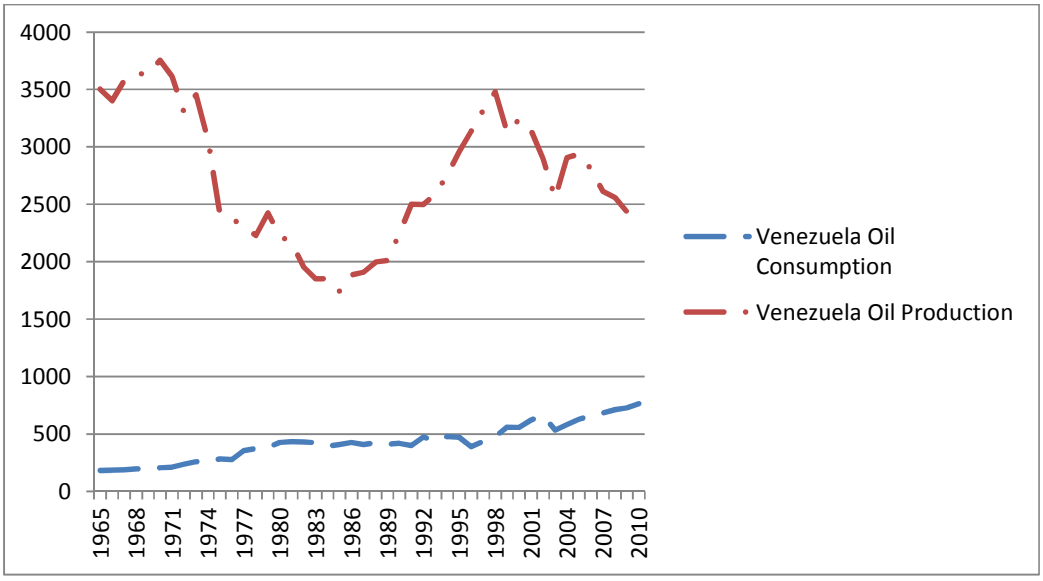
Figure 25: Venezuela's oil proven reserves - billion barrels



Source: *(http://www.bp.com/statisticalreview, 2012)*

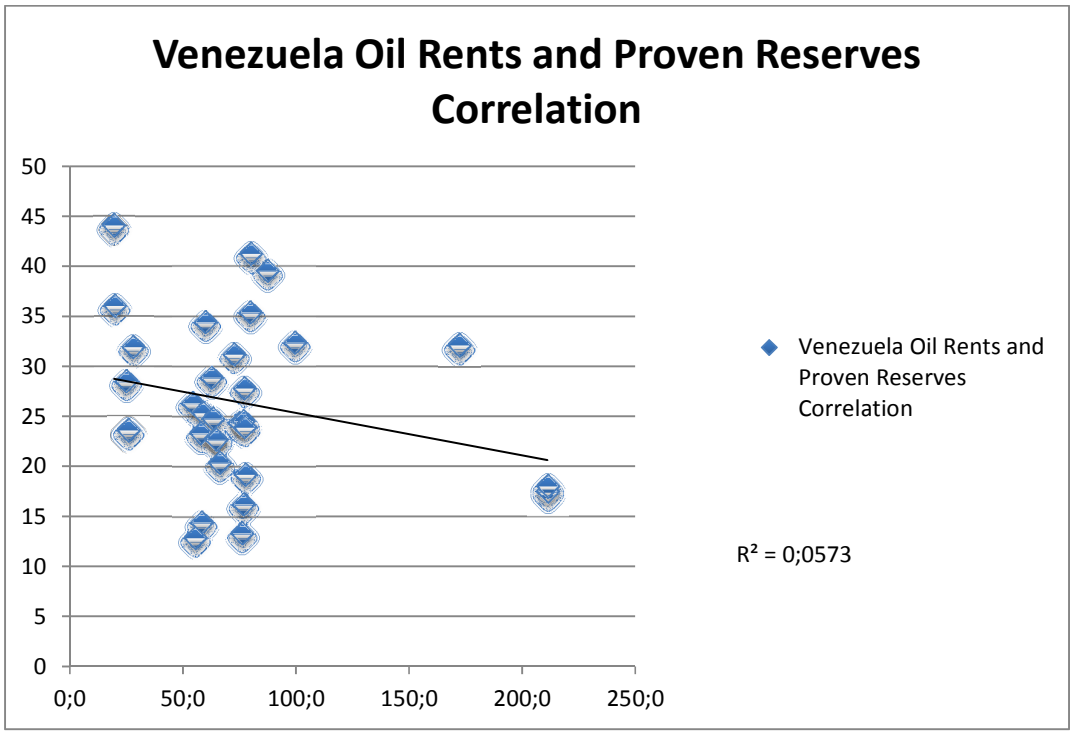
Figure 26 below presents the balance between oil production and consumption for Venezuela's oil industry which indicates that Venezuela has been a net oil exporter since the 1960s.

Figure 26: Venezuela's oil production vs consumption 1000x barrels/day



Source: (http://www.bp.com/statisticalreview, 2012)

Figure 27: Venezuela's oil rents and proven reserves correlation



Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

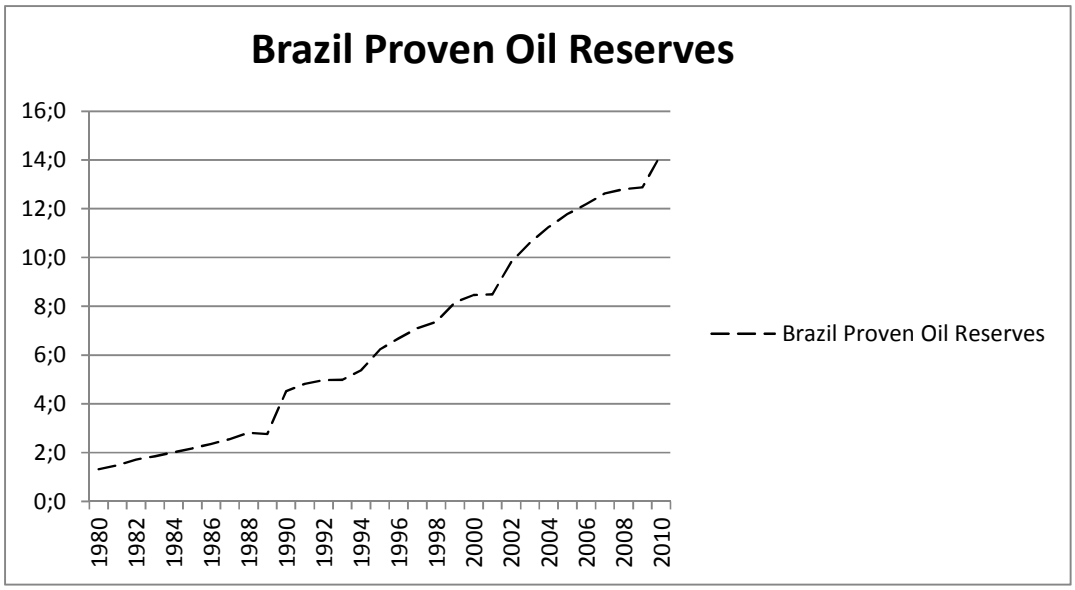
From figure 27 above it can be seen that there is a negative relationship between proven oil reserves and the resource rents the government has been obtaining from the oil industry but the data shows that there is no correlation between these two variables. This data will be explored in section 6 with the proven reserves data as the content analysis data indicates an internal struggle between PDVSA and the government of Hugo Chavez with its socialist goals.

5.3.5 Brazil

Brazil is 16th in the world in terms of their oil proven reserves as of January 2011 according to the CIA Fact book. Figure 28 below presents Brazil's proven oil reserves trend from the 1980s which has been increasing at a steady rate from just below 2 billion barrels of oil to over 14 billion. This is an increase of 700 % in the last 20 years, with the bulk of these reserves located offshore.

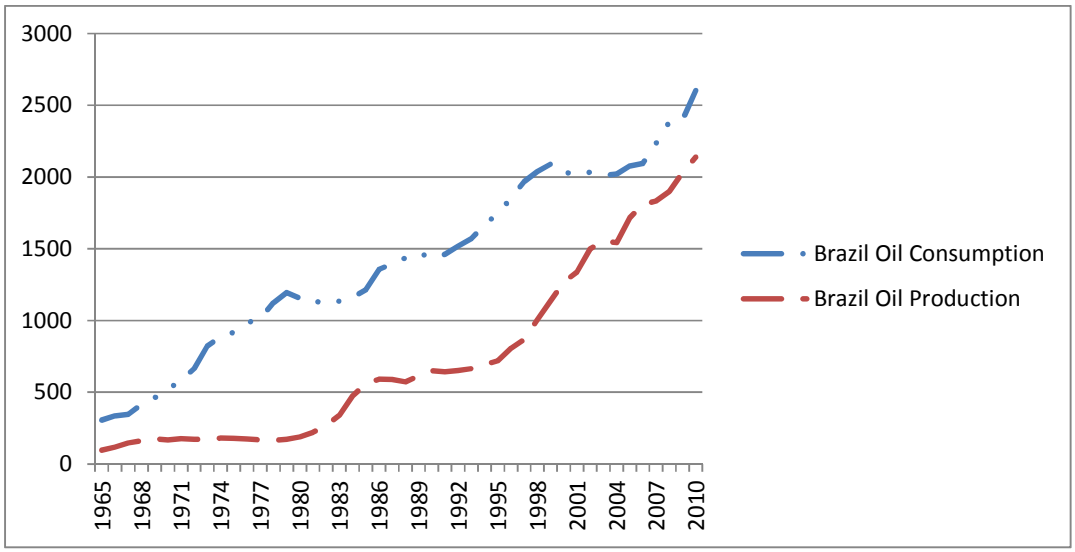
Brazil's proven oil reserves which are low compared to the other three selected oil producing countries but their reserves presented an interesting element to this study as they are located offshore and this involves highly technical operations and the national oil company is a global leader in this technology.

Figure 28: Brazil proven oil reserves - billion barrels



Source: *(http://www.bp.com/statisticalreview, 2012)*

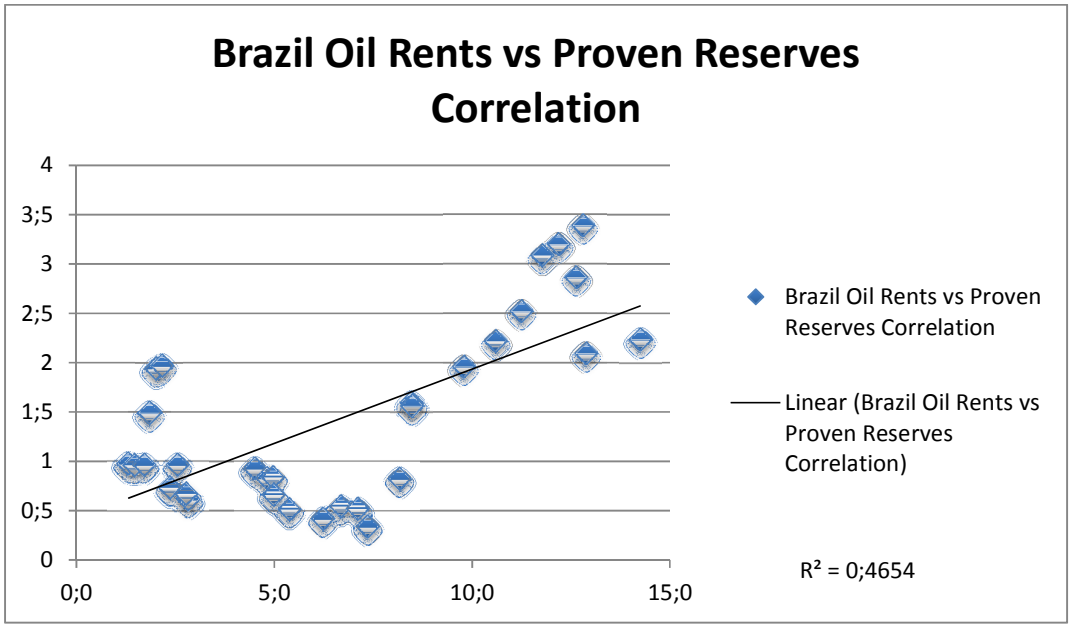
Figure 29: Brazil consumption vs production 1000x barrels/day



Source: (http://www.bp.com/statisticalreview, 2012)

The figure 29 shows a comparison between Brazil's oil production and consumption at the end of 2009. Although Brazil reached self-sufficiency in crude oil production in 2005, they remain net exporters of finished product as they do not have the refinery capacity to produce the finished product required by the domestic market.

Figure 30: Brazil's oil rents vs proven reserves correlation



Source: *(http://databank.worldbank.org/data/home.aspx, 2012)*

Figure 30 above shows the correlation between Brazil's growth in oil rents and the level of proven reserves growth, from a regression of $R^2 = 0.4654$, correlation value of $R = 0.6822$ is obtained. This is a good correlation as 68 percent of the movement in the oil rents are explained by proven reserves.

5.4 Question 3: Drivers of Oil Industry Reforms

What drives the reformation of institutions in the oil and gas industry in developing economies?

5.4.1 Introduction

The question that the data in this section was collected for was to establish if a consistent application of oil industry policies becomes predictable in a long run and if industry players such IOC's and NGOs can predict the direction of reforms and therefore can be better prepared to take advantage of future changes for their own benefits. The instrument that was used to measure the perception of industry players was by evaluating the response of foreign direct investment to oil industry reforms, and whether in the long run FDI became less affected by subsequent reforms. Of particular

interest will be the understanding of industry orientation whether reforms are initiated as a response to internal or external factors, or in some cases both.

Chapter 6 will contrast the different experiences of the four countries selected for this study to understand what strategies they used as response to some of these external factors such as the oil price shocks.

5.4.2 Nigeria

Table 3: Nigerian oil industry reforms timeline

Period	1903 to 1950	1950 to 1970	1970 to 1980	1980 to 1990	1990 to 2000	2000 to 2010
Proven reserves	Oil exploration period	Oil discovery 1956:	16.7 billion barrels	17.1 billion barrels	29 billion barrels	37.2 billion barrels
Industry Reforms	Industry closed to other companies besides British companies	Industry opened to MNCs from other countries Nigerian joins OPEC	Nigeria joins OPEC Oil assets nationalization strategy	Niger Delta Conflict escalates	Niger Delta conflict intensifies; A number of activists are killed	Industry reforms driven by Niger Delta conflict; Industry remains a net importer of petrol
Oil Industry changes	Local community grievances	Nigeria gains independence	Military rule	Continued conflict over oil industry	Change from military rule to democracy	Opened oil industry to small Nigerian business

The reforms in the Nigerian oil industry have been presented above in table 3 and this table shows the change in proven reserves so that content analysis of the reforms can be conducted in the context of oil reserves as well as internal and external development around the oil industry.

The Nigerian oil industry development that lasted for five decades before the first commercial oil field was found saw many changes to the lives of the local population especially the oil producing communities. In 1907 the colonial government drafted an Ordinance without consultation of Native Authorities and the Lagosian Elite. By the 1950's oil development was elevated to a position of national interest which meant that oil exploration activities would take precedence over local people's grievances regarding oil activities on their lands and they would face legal action if they interfered. The colonial government under the direction of the British government put in place a

number of laws to govern the oil industry, one of which made the exploration of oil a British monopoly, which meant that only British companies or British citizens were the only ones allowed to prospect for oil in Nigeria. This monopoly included the exclusion of companies from other countries as well, such as the United States and Netherlands.

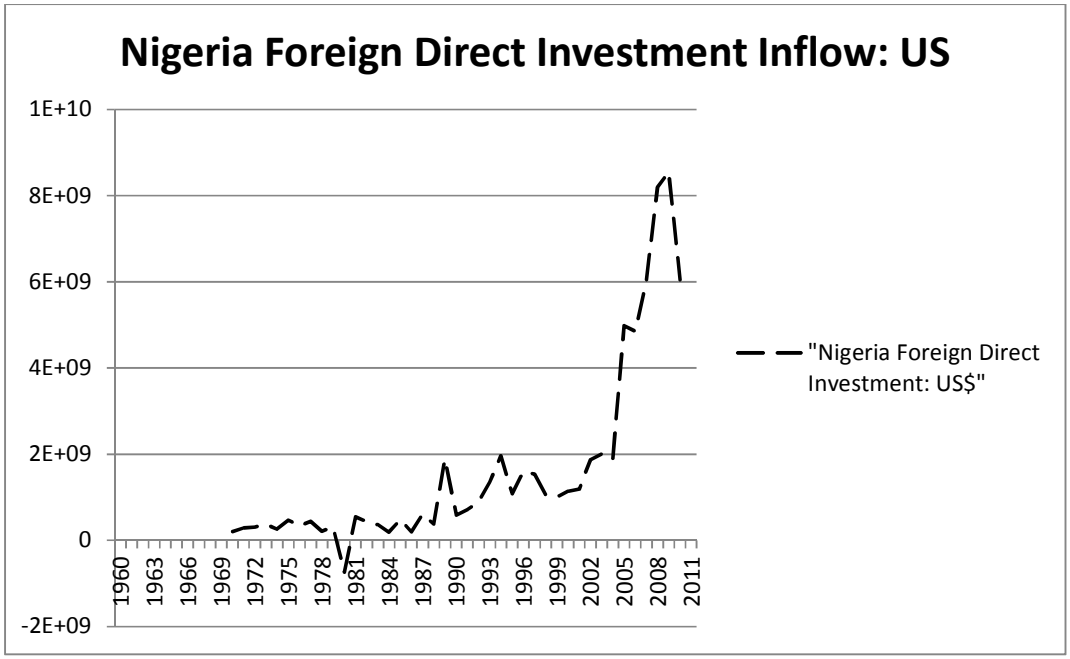
It was in 1949 that a joint venture between the company Shell from Netherlands and a British businessman D'Arcy began oil exploration activities in the 1940s. This joint venture like many before it faced resistance from the local population who were not satisfied with the activities of the joint venture as this destroyed their tribal way of life and land was being used without their permission. The joint venture after a clash with the local community changed tactics and started communicating with the local communities regarding their activities on their land.

After independence a new Petroleum Act was enacted in 1969 which stated that the ownership and control of oil and gas resources in Nigeria are vested in the State of Nigeria, thus further separating local people from the resource wealth being extracted from their properties.
Nigeria only established a national oil company after joining OPEC in 1971 and achieved partially what the governor had envisioned for Nigeria's oil industry, a path towards self-sufficiency through the use of oil revenues. The establishment of a national oil company was an OPEC strategy for its members to become more involved in the control of their own oil industries to reduce the dependency of oil producing countries on the multinational companies.

After Nigeria's return to democratic rule in the 1990s the government took steps to address the situation in the Niger Delta region by offering amnesty to all those who would put down arms and furthermore these individuals who accepted the amnesty would receive a regular income and job training. One of the influential movements in the Niger delta conflict is the Movement to Emancipate the Niger Delta (MEND) and despite the efforts that have been made to end this conflict, there are still armed groups in Nigeria's oil industry who remain dissatisfied and continue to struggle to gain more control of the oil industry for the Niger Delta. In Chapter 7, a framework for understanding the relationship between governments, multinationals and civil society in the development and entrenchment of institutions.

Figure 31 below presents the foreign direct investment which will be explored to understand the effect different industry reforms had on the international perception of Nigeria and if the drivers of these reforms were internal or external.

Figure 31: Nigeria's foreign direct invest inflow



Source: *(http://www.bp.com/statisticalreview, 2012)*

5.4.3 Libya

Before Libya became a country after World War II, the region went through a number of occupations, from the Ottoman Empire to the Italian occupation during World War II. The discovery of oil and the revenues it generated were quickly followed by leadership change which deposed of the UN Emir Indris Sanusi and the oil industry policy reforms that followed are presented below in table 4.

Table 4: Libyan oil industry reforms

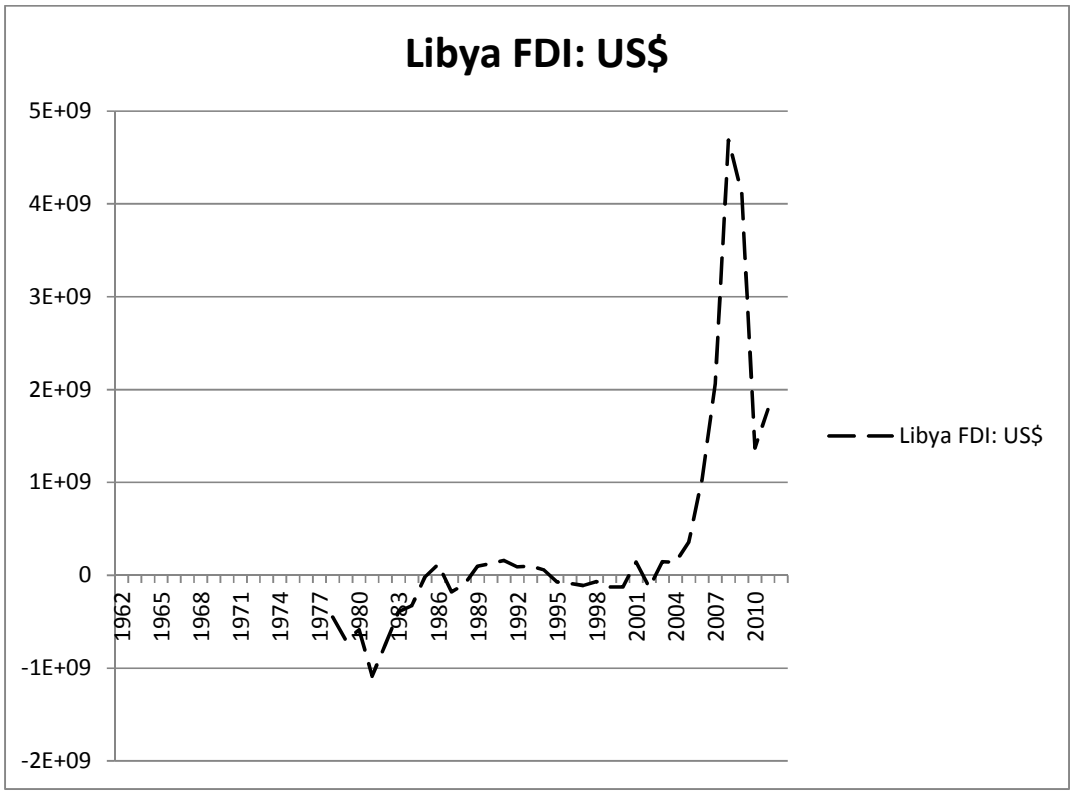
Period	1950 to 1970	1970 to 1980	1980 to 1990	1990 to 2000	2000 to 2010
Proven reserves		20.3 billion barrels	22.8 billion barrels	36 billion barrels	46.4 billion barrels
Industry Reforms	Individual oil prospectors Less tax for independent companies	Nationalization strategy Building industrial capacity using oil revenues Production sharing contracts	Change in PSA agreements to attract MNCs to invest due to US sanctions	Oil exploration leases	Investment in refining capacity

Oil Industry changes	**Opens industry to small companies To support small companies**	**National oil company gains control of the oil industry Initiated economy diversification using oil revenues**	**FDI begins to come into the country as a response to changes in concession agreements**	**FDI flows into the country and more exploration activity, Proven oil reserves increase, Production increases**	**Unrest and production slows down**

The discovery of oil in 1959 gave more power to the king to avoid nation building and the establishment of the institutions that are required for a functioning state. Through the use of oil revenues where the government did not have to collect tax and hold elections, civil society was weakened by a patrimonial political system. The regime change in 1969 when Colonel Muammar al-Gaddafi took control of the country saw the beginning of a socialist state for Libya. The government embarked on an industrial capacity building using oil revenues during the period when oil prices were at historical highs due to the Israeli-Arab War and by the 1980s the government in Libya owned most of the businesses. The industrial expansion programme slowed down when oil prices fell and government spending was no longer sustainable.

Figure 32 below shows the FDI trend in the Libyan economy dating back to the 1970s. The data shows the effect of the Israeli-Arab war had on the FDI environment in Libya as the net FDI flow was negative indicating that funds were being drawn out of the country and only began to recover in the 1980s but the balance net inflows and outflows remained volatile until 2004 when after the lifting of sanctions by both the UN and the United States, FDI began to flow into the country again.

Figure 32: Libya foreign direct investment



Source: *(http://www.bp.com/statisticalreview, 2012)*

5.4.4 Venezuela

Venezuela's oil industry reform timeline is presented below in table 5 and this will be used with the FDI to understand the linkages between oil industry reforms and what influences them, internal or external factors.

Table 5: Venezuela's oil industry reforms timeline

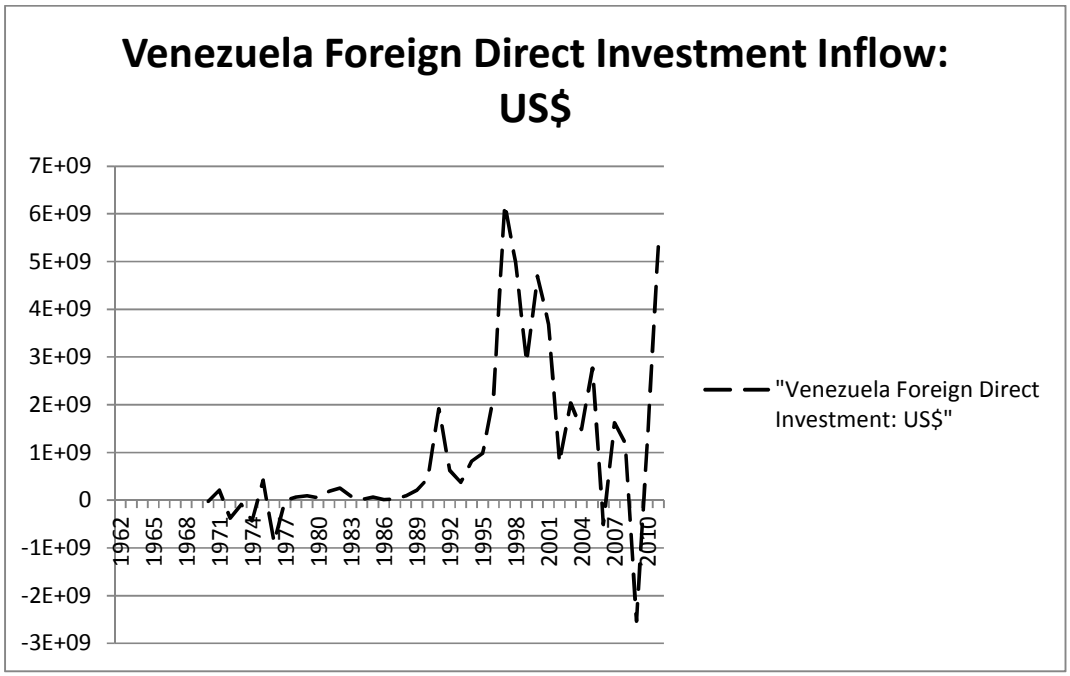
Period	1903 to 1930	1930 to 1970	1970 to 1980	1980 to 1990	1990 to 2000	2000 to 2010	2010 to 2012
Proven reserves	Oil Exploration, oil found in 1914		19.5 billion barrels	60.1 billion barrels	76.8 billion barrels	211.2 billion barrels	296.5 billion barrels
Industry Reforms	1 Oil concessions granted/process not open 2 1922 Petroleum	1 New hydrocarbon law	Nationalization law	1 Oil prices drop 2 Expansion programs suffer	Industrial production slows down	2001 New Hydrocarbon law	

	law written by US						
Industry Changes	**FDI for oil exploration**	**Oil production grows from 1.2% to 91.2%**		**PDVSA operates as a private company, keeping most of the profits**	**Hugo Chavez becomes president: New reforms for oil industry**	**Increase in oil revenues to government Resistance from PDVSA**	**Venezuela surpasses Saudi Arabia in oil reserves**

The development of oil industry institutions in Venezuela such as industry policies and regulatory laws began before the discovery of oil with the granting of concessions to close friends of Venezuela's dictator through a process which was not open and transparent. To this end even the Petroleum Law in Venezuela was written by the United States with the permission of the country's dictator which excluded local peoples participation in the formation of a law designed to regulate their resources. It is no surprise that in 2010, 43 percent of Venezuela's crude oil exports go to the United States with only 20 percent going to both Europe and Asia, whilst the balance is sold to the Caribbean countries.

Foreign direct investment net inflows are presented below in figure 33; this data will be used to understand the relationship between internal and external factors influencing Venezuela's oil industry and economy.

Figure 33: Foreign direct investment inflow



Source: *(http://www.bp.com/statisticalreview, 2012)*

5.4.5 Brazil

Below in table 6 are shown Brazil's oil industry reforms since the beginning of the oil industry in Brazil. The oil industry policy were developed in Brazil prior to the discovery of oil and the development of alternate sources of oil to achieve self-sufficiency were initiated by the military regime to protect the population from oil price shocks of the 1970's.

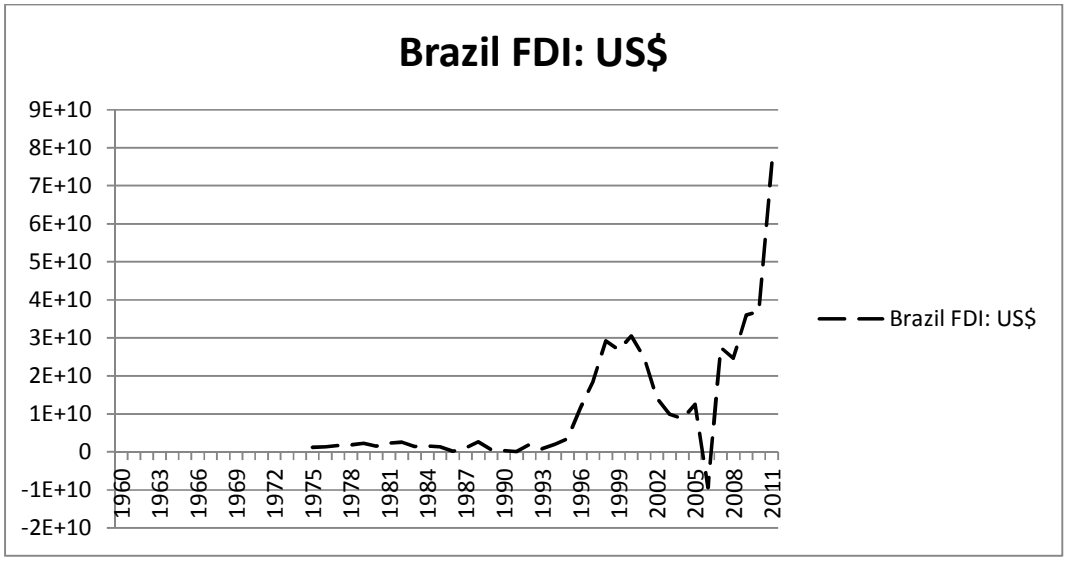
The Brazilian oil industry institutions were initially designed for the purpose of benefiting the population and due to the fact that there were no easy resource rents to be appropriated, both the military regime and democratic governments had to offer incentives to the sugar cane farmers in the form of subsidies to support the development of the ethanol oil industry as a substitute to lacking oil reserves of its own. While when the democratic government took power, similar conditions existed in terms of the size of oil reserves as there was a lot of development that was required and in order to incentivize the national oil company to develop this resource for the country, the government did not interfere with the DNA of Petrobras as it resembled multinational companies in its strategies for oil exploration.

Table 6: Brazil's oil industry reforms

Period	1903 to 1950	1950 to 1970	1970 to 1980	1980 to 1990	1990 to 2000	2000 to 2010
Proven reserves	Brazil did not have oil reserves	Exploration	1.3 billion barrels	4.5 billion barrels	8.5 billion barrels	14.2 billion barrels
Industry Reforms	National oil company established	Petrobras granted oil exploration monopoly	Ethanol program launched Increase in energy investment	Opening up of oil industry is initiated	Petrobras oil exploration monopoly ends	
Oil Industry changes		Petrobras international experience	Oil discovered	International expansion, Latin America; Mexico and Africa	Offshore technological advances	Post-Salt oil discovery

Figure 34 below indicates the trend of foreign direct investment into the country since the 1970s which remained none existent due to the regulations in the Brazilian economy against foreign investment until the 1990s when Brazil went on a growth strategy and recognized the need for foreign capital. Overall over the last 20 years Brazil has been the biggest destination for foreign direct investment between the four countries that are part of this study.

Figure 34: Brazil Foreign direct investment inflow



Source: *(http://www.bp.com/statisticalreview, 2012)*

CHAPTER 6: DISCUSSION AND ANALYSIS

6.1 Introduction

A similar structure based on chapter 5 is followed in this chapter for the discussion of research question results. This section evaluates the findings and discusses the implication this has for oil producing countries in the developing regions, both in Africa and South America.

6.2 Content Analysis

The results obtained from the content analysis of the oil industry development across the four oil producing economies revealed institutional arrangements that varied on different levels. Amongst these was the inception of industry development and the prior existing institutions in the form of oil industry policies, political system and developmental orientation of the government strategies.

The findings of the content analysis will be used to substantiate the results of the correlations conducted in the effort to answer the three research questions set out in Chapter 3.

6.3 First Research Question

Does a stable and consistent application of good oil policies result in long-term benefits for developing economies?

The first research question was formulated to develop an understanding of the relationship between a stable oil industry policies environment and the development of the economy using oil revenues or rents. The research question objective was to understand if the application of good oil industry policies would result in long-term benefits for the economy or not and this question will be answered in three parts, the first part of this is to define in the context of this study what type of institutions qualify as good institutions. Good institutions for this study are those institutions that maximize the use of oil rents to provide public goods; that use the opportunities presented by the oil industry development to provide opportunities for knowledge and skills access to the population that can be used to develop other industries; that promote an inclusive economic and political environment, especially for oil producing communities. In

Chapter 2, the literature establishes that good institutions are one of the factors that influence the performance of resource rich countries and in particular for the study, oil producing countries (Tsui, 2010).

In the effort to develop an understanding of the institutional arrangements in these economies prior to oil discovery, all four economies are explored and analyzed in the following section.

6.3.1 Institutional Arrangement Prior to Oil Discovery

All four countries that were selected for the study have distinct industry structures that appear to be dependent on the institutions that existed before the discovery of oil in these countries, with the exception of Libya. Libya differs from the other three countries, Brazil, Venezuela and Nigeria in that the discovery of oil as outlined in Chapter 5 occurred almost at the same time as the formation of the country by the UN. This presented Libya with an interesting situation, in that the country had no preexisting institutions to facilitate the inclusion of the population in the oil industry's development process.

With the exception of Libya, three of the selected countries had oil industry institutions for an extended period of time before oil discovery in these countries, although that period was shorter in Venezuela as indicated in Chapter 5 section 5.2.6. The first concession was granted in 1908 and six years later in 1914 the first oil field of commercial quantities was discovered. The duration between initial oil exploration and commercial oil discovery was six years for Venezuela, over 50 years for Nigeria, just under 20 years for Brazil and only two years for Libya. The industry development timeline presented in table 2 in section 2.4.indicates that the development

As the historical data presented in Chapter 5 indicates, Nigeria's oil industry was developed during the colonial rule of Nigeria by the British government which as most colonial powers marginalized the local population politically and economically. The development of policies for the oil industry in Nigeria was not inclusive of the local population and did not regard the development of local communities as important as the development of the oil industry was far more important on national level.

This is in contrast with the Libyan experience whose establishment after World War II by the UN was quickly followed by the discovery of oil within two years of the first

exploration concession signed by the government. Due to the rapid development of the oil industry Libya, this young nation had no institutions but despite this lack of institutional framework the new socialist developmental strategy that was introduced by the new Colonel Muammar el-Gaddafi ensured social development of the population was advanced albeit at the expense of economic and political freedom. The Libyan focus on social development of the population through the use of oil revenues is similar to Venezuela's industrial capacity building programs during a similar period of the oil price shocks when there were windfalls for the oil exporting countries which Libya and Venezuela were part of. Although Nigeria benefited from the 1970s windfall this was against a backdrop of marginalized oil producing communities and an intensifying conflict in the oil producing region of the country. Therefore no development occurred for the population.

Furthermore, one of the influences in the development of the oil industry in Brazil was the protection of the local population from external oil price shocks experienced in the 1970s. This was initially through the development of the biofuels sector and changes were made to both consumption regulation and supporting the sugar cane farmers through subsidies as outlined in Chapter 5.

The orientation of institutions in these countries has had an influence on what these governments have invested oil revenues, and in three of these countries, Brazil, Libya and Venezuela the human development index is above the world average as well as comparable to their regional HDI. The only country that is below even the regional HDI despite access to oil revenues is Nigeria.

6.3.2 Institutional Reforms and FDI

The oil industry's development is capital intensive, and historically oil producing countries from the developing world have lacked the capital required to develop their oil industries without the involvement of foreign investors, in particular investors from developed economies. The data in Chapter 5 reveals that there is a connection between FDI and oil industry policies reforms. This can be seen with the response of FDI with all four countries.

In Nigeria, once there was democratic rule and the government began to address the conflict in the Niger Delta by promoting inclusive dialogue with the local communities the FDI started flowing into the country again and a similar response was received by

the Libyan oil industry in the 1990s once sanctions were lifted and they adopted international best practice.

6.3.3 Effectiveness of Institutional Reforms

Institutional reforms implemented by all the four economies in terms of policy changes to align their industries for both external and internal partners has had a number of benefits on different levels. The first level of benefits is the effect these have had on the internal environment, the local communities and the improvement in the human development efforts of these countries and the evidence of this is seen in the drop of the HDI for Venezuela during the period when PDVSA was allowed to operate as a private company with only a small portion of its profits being made available to the government. This meant that the government had reduced funds to spend on human development programs such education and health. This profit share dropped from 71 percent to 36 percent and this put pressure on the government's social programs.

All of this changed when Hugo Chavez came into power and implemented a number of oil industry reforms designed to gain more control of PDVSA and thereby the oil industry. The share of the profits that the government was receiving from PDVSA prior to the Hugo Chavez presidency were reformed with new revenue collection process and budget quotas set for PDVSA to spend on social programs. There was resistance from PDVSA to these new reforms and changes to the law but this gave the government the needed revenues to continue its efforts of social development through oil revenue.

6.4 Second Research Question

Does the size of the natural resource influence the behavior of government agents in developing economies?

The understanding that has been developed through the second question is in two parts, the first is the observation of the different industry structures and the influence this has on the oil rents collected by governments whilst the second observation that is supported by the theory on the resource curse presented in Chapter 2 section 2.2.

6.4.1 First Observation

The results presented in Chapter 5 indicate that the behavior of governments depends on the context that agents operate in. In the case of both Nigeria and Venezuela where there is no correlation between the size of oil reserves and oil rents that governments collect from the oil industry, the lack of correlation can be understood in the context. The Venezuela's government oil rents are a function of the balance of power between the government and PDVSA which controls the oil industry and shares its profits with the government at an agreed rate. From the 1970s to 1992 the profit sharing between the government and PDVSA had always been 29 percent for PDVSA and 71 percent for the government but from 1993 to 2000 this had changed to PDVSA keeping 64 percent of the profits and only leaving 24 percent for the government. This has since changed as a result of President Hugo Chavez's reforms that aim to give the government more control of the oil industry, new reforms have been implemented designed for the government to gain more control of PDVSA and oil profits.

The situation in Nigeria can be explained from a different point of view that the risk that comes with operating in Nigeria's oil industry reduces the bargaining power of the national oil company. The Niger Delta where most of the oil production in Nigeria is based has been a conflict zone from the beginning of the Nigerian oil industry due to the exclusion and marginalization of the local communities.

The good correlation that has been observed between oil rents and proven oil reserves for the Libyan oil industry can be understood as due to the quality of Libyan crude oil, which is sweet oil. Sweet crude oil is much easier to process as it requires less energy and has a higher yield than heavy crude. This is a premium that multinational companies are willing to pay for as they can get higher yields when this crude oil is processed.

Brazil has slightly different industry structure between the government and the national oil company. Instead of sharing profits at an agreed rate as in the case of PDVSA and the government, the Brazilian government has equity share and voting power in Petrobras and gets its oil revenue from dividends and the oil rents are collected by the different oil producing states for their own use.

The size of the oil reserves does not influence the behavior of governments when oil rents are used as a measure. The correlations presented in Chapter 5 for these economies can be explained by industry policies for Brazil, market structure for Libya, local political environment for Nigeria and policy environment for Venezuela.

6.4.2 Second observation

Brazil differs from the other economies in that its oil reserves are very small compared to the other three economies at 14.2 billion barrels whilst the others range between 37.3 to 296.5 billion barrels that is a difference of 162 percent to 1988 percent. It can be argued that the size of this resource creates an incentive for human capital to be diverted to oil activities as these might pay more than the other sectors.

6.5 Third Research Question

What drives the reformation of institutions in the oil and gas industry in developing economies?

The drivers of institutional reform of oil industry policy have been viewed from a perspective that reforms are influenced by either internal or external factors and in some case both factors. How this has been viewed is that governments weigh their options in terms of which factors threaten their strategies, whether this is an economic growth strategy or social development strategy will be developed further by the analysis.

6.5.1 Oil Industry Institutional Reform Drivers

The understanding of the industry reform drivers is developed by conducting a content analysis of the reforms, their timing in conjunction with both internal and external factors to arrive at a viewpoint about the development of these reforms. One of the ways to gain a better understanding of what influenced their initiation is to look at what they were intended to achieve.

Nigeria

Institutional reforms in Nigeria were to encourage investment in oil exploration in order to develop the oil industry. From enacting laws that kept the oil exploration activity a monopoly of the British government to supporting the multinational companies operating in the oil industry by siding with them when conflict issues arose between these companies and the local communities. After gaining independence new laws were enacted that ensured that the local population had no access to the resources on

their lands. By law, the rights to all natural resources in Nigeria vest in the interest of the state. This can be viewed as a response of the government to the conflict in the Niger Delta; this ensures that any future discovery of oil will not be disputed between the government and the land owners, in the case of Nigeria's local communities.

The earlier reforms in the 1950s to the 1990s were always designed to mitigate the conflict between the multinational and the local oil producing communities with continued marginalization of the local communities to the advantage of the multinationals operating in Nigeria.

When democratic rule returned to Nigeria, the government attempted to reach out to the Niger Delta activists by offering amnesty for giving up the armed struggle for the emancipation of the Niger Delta as detailed in Chapter 5. At this stage of the conflict, the demands being made were for full autonomy of the Niger Delta region and more control of the wealth form the oil. Even after these efforts were made, some armed conflict continues still continues in this region. This points to the long-term effects that this conflict has had on the local people and Nigerian oil industry.

Libya

The development of the oil industry in Libya established policies that allowed the inflow of foreign direct investment that assisted with the rapid development of this industry and the type of nationalization that was implemented in Libya combined two methods, either complete nationalization or partnerships with multinational companies.

Venezuela

The oil industry in Venezuela was gradually nationalized over 30 years from the first Hydrocarbons Act in 1943 which culminated with the 1976 nationalization of the industry. Over the years the government had come to an agreement for 50/50 profit sharing which lasted until the creation of the national oil company PDVSA. The oil price decline of the 1980s saw a change in the profit share agreement between the government and PDVSA, where the government was receiving 71 percent of profits, it was now receiving only 36 percent and this could have been the decline in oil prices that would have meant that the national oil company would have required a bigger share of the profits to cover its operational expenses.

The reforms in Venezuela that were implemented by the administration of Hugo Chavez appear to have had an influence on foreign direct investment net flows which were very volatile during this period.

Brazil

In the early parts of the oil industry development, industry reforms in Brazil were driven by internal factors but with the onset of the Israeli-Arab War and the oil price shocks that followed the military regime had to respond to this external factor. During this time Brazil was still a net importer of oil. In the 1980s through the 1990s the reforms that have occurred in this industry have been driven by a combination of both internal and external factors. Recently, the opening of the economy appears to have been driven by the need for foreign direct investment and oil exploration.

The industry reforms in the three economies, Libya, Brazil and Venezuela were initially driven by social development goals whilst Nigeria's oil industry was influenced by the need to develop the industry for Nigeria's independence from British rule.

In Chapter 7 the research problem is revisited and a number or recommendations are presented that are drawn from the discussion of the findings.

CHAPTER 7: CONCLUSION AND FUTURE WORK

7.1 Introduction

The purpose of this chapter is to highlight the main findings and their implications for the development of oil industry institutions and to outline the limitations of the study. Recommendations for future studies are then presented.

7.2 Summary of Findings

The research asked the following questions:

- Does a stable and consistent application of good oil policies result in long-term benefits for developing economies?

- Does the size of the natural resource influence the behavior of government agents in developing economies?

- What drives the reformation of institutions in the oil and gas industry in developing economies?

The main findings in this research were:

- Orientation of policies in these countries has an influence on investment decisions of governments.

- FDI net flows can be explained by oil industry reforms

- The size of the proven oil reserves do not always influence the oil rents that the government can collect from oil extraction activities. This is dependent upon a number of factors such as political environment, market structure, and policy development of the industry.

The countries that were selected for this study presented diverse industry market structures, historical developments, market orientation, but similar growth strategies in terms of capital sources for industry development in the form of FDI.

The content analysis revealed that Latin America as a region has a high human development index as does the Arab States region while Sub-Sahara has a low human development index. Nigeria which is part of the Sub-Sahara is the only economy out of the selected four economies that lagged its region in terms of the average human development index.

Libya, Venezuela and Brazil all have similar commitment to social development and they have similar levels of HDI although their political environments are very different and in the past have had an influence on the oil industry. Brazil is the only economy that has been fairly stable politically over the past ten years and this can be seen from the levels of FDI flowing into the country compared to the other three economies as can be seen in figure 4 section 5.2.1.

7.3 Research Limitations

The collection of the data and the content analysis did not present any major problems besides the availability of data on Libya. Most of the data on Libya is only available from 1990 and this is due to sanctions that were in effect since the 1980s which meant that for a decade a lot of data could not be collected. Due to this limitation, the analysis of the data was restricted to the periods where all the data was available, which means that on some measures such as the human development index the data present in Chapter 5 only starts from 2005.

This study only looked at four countries and therefore nothing can be said about the other countries in Africa and South America as they will have different historical developments and thus different strategies dependent upon their own incentives and contextual factors.

The oil industry presents its own limitation in that it would be difficult to generalize the findings of this study to other types of natural resources, as they might not have the same effect on rent seeking behavior as described in Chapter 2.

7.4 Recommendations for Future Research

The research identified the following areas that may require further investigation:

A similar study of the formation of institutions across different resource sectors with the same economy, which would control for the different historical development of economies.

7.5 Conclusion

The aim of this study was to develop an understanding for the interaction between institutions in the oil industry by looking at the developmental process the industry follows in order to learn if there are opportunities for influencing policy development in the direction that could yield more benefits for all stakeholders, especially the oil producing communities.

The view that has been developed from the findings of the study indicates that the orientation of policy makers in terms of what they chose to focus on, social development or economic growth without human development is bound to leave sections of the population marginalized and this may lead to conflict which would have a negative effect on the oil industry.

Furthermore, it is important for all stakeholders to understand what their bargaining power in relation to the other stakeholder so that the sources of this advantage could be improve upon or substituted.

Lastly the study revealed that the interaction between the formation of institutions and the oil industry is not governed by simple rules but at the same time, it is not irrational as the different correlation between oil rents and the size of the oil reserve could be explained through the use of content analysis that looked at country specific factors.

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