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THE CURSE OF NATURAL RESOURCES: A VULNERABILITY ASSESSMENT FOR LEBANON

by
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AN ABSTRACT OF THE PROJECT OF

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At first glance, natural resources are considered a blessing to the endowed country; however, taking a second look at major oil exporting countries and African OPEC members such as Libya and Nigeria, it can be noted that this blessing has become a curse hindering political and economic development. "Barriers to economic diversification, poor social welfare indicators, poverty, inequality, unemployment, corruption, poor governance, and conflict," (Karl 2004) have become recurring characteristics of oil dependent countries. On the other hand, few yet exceptional countries such as Norway managed to escape the curse. Hence it is of interest to examine the Norwegian management of petroleum resources.

In light of the recent discovery of oil and gas in Lebanon which imports over 95% of energy consumed and ranks among the 50 most corrupt countries in the world (Transparency International 2013), the country is now "faced with the prospect of long term energy self-sufficiency and the development of a new revenue stream for the economy" (Darbouche, El Katiri and Fattouh 2012). The question to be tackled is how can the 'resource curse' not only be avoided in Lebanon but turned into a blessing. This will be done by examining the lessons from failures of resource-rich countries sharing common characteristics with Lebanon (Libya and Nigeria) and understanding the key causes and results of the resource curse in order to avert it. Moreover, after presenting an overview of oil and gas discoveries as well as major milestones and remaining obstacles facing the Lebanese oil and gas sector, policy recommendations and action plans will be derived, from three case studies in order to help Lebanon escape the resource curse. Economic implications of the discoveries will be discussed, and a 'Vulnerability Index' will also be created, based on several components and indices, to assess the degree of Lebanon's susceptibility to the oil curse.

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To My

Beloved Family

CHAPTER I

INTRODUCTION

Juan Pablo Perez Alfonzo, the founder of the Organization of Petroleum Exporting Countries (OPEC), described oil as "the devil's excrement." Oil dependence has been associated with various negative outcomes, both political and economic, ranging from poverty, unemployment, and corruption to political oppression and violent conflict. Experience has revealed that exporting oil does not magically transform poor economies into prosperous ones; the reality is that oil dependent countries are "among the most economically troubled, the most authoritarian, and the most conflict-ridden in the world," (Karl 2004). Over the past few decades, we have seen that where there is oil there is trouble. One of the most infamous and troublesome examples is Nigeria, where the oil sector accounts for 96% of export revenues (EIA 2013), yet 60% of the population lives below the poverty line and violent conflicts have become regular occurrences since 1990. Another fellow African OPEC member is Libya that holds the largest proven oil reserves in Africa (EIA 2013) yet has been a state-dominated, undiversified economy "afflicted by pervasive rent seeking and regulatory deficiencies since 1973," (Vandewalle 2011) with one third of its population living below the poverty line. Statistics are appalling –real per capita incomes in Nigeria and Libya have decreased to their 1960s and 1970s levels respectively. Despite further oil discovery and subsequent revenues, it is as if fifty years of development have not taken place in terms of standards of living in these countries. These two countries and many more suffer from what economists call the 'curse of natural resources' or similarly, the 'paradox of plenty'; a theory which argues that countries endowed with natural resources including

oil, surprisingly have a large portion of their population in poverty, are more prone to conflict, and have a dismal score on Human Development Indicators hence often fail to grow and develop economically, socially and politically (Karl 2007).

As stated earlier, where there is oil there is trouble. The recent oil and gas discovery in Lebanon might add rivalry and complexity to an already troubled country that is particularly vulnerable and highly susceptible to becoming a victim of the resource curse both politically and economically. Consequently the structure of this project will be as follows: First, a theoretical framework which defines the curse of natural resources and explains its causes and effects will be established based on a survey of the existing literature. Second, case studies on African OPEC members Nigeria and Libya will be conducted through a Transmission Mechanism Model based on the crowding out effect, to prove how and why they suffer from the resource curse. Studies have proved that there exists a correlation between natural resources and poor economic development; however, no causality from the former to the latter has been established. Consequently, since the resource curse is neither inclusive nor universal, a case study on the successful Norwegian management of petroleum resources, which enabled the country to overcome the curse by using revenue streams to promote economic growth, will be presented. Next, after discussing the emerging oil and gas sector in Lebanon, parallels and lessons from the three case studies will be derived to help propose policy recommendations and preventative measures or solutions to a problem that seems inevitable in a country that lacks political unity, stability, and transparency like Lebanon. Moreover, a 'vulnerability index' will be created composed of various weighted factors that may contribute to the resource curse. Lebanon's calculated score on this index will expose the degree to which the country is vulnerable to the curse if and when production begins.

CHAPTER II

A THEORETICAL FRAMEWORK: UNDERSTANDING THE RESOURCE CURSE

A. Definition and Explanations

1. Defining the Resource Curse

Prior to the 1980s, economists viewed natural resources as a blessing that contributes to prosperity and economic development in the endowed country. However, experience over the decades has shown that "many resource rich countries appear to have a worse performancein terms of economic development and poverty reduction than countries without such 'blessings'" (Li 2013). The curse of natural resources in simple terms refers to or is defined as "the inverse relationship between high natural resource dependence and economic growth rates" (Karl 2004). The most cited and comprehensive study of this topic was provided by Sachs and Warner (1997) who proved in a large cross country study that countries, where natural resources dominated exports in 1970, witnessed lower growth rates than natural-resource-scarce economies during the subsequent twenty years. Before delving further into what the resource curse is, it is vital to explain what the curse 'is not' and hence it is important to distinguish between two concepts-resource abundance and resource dependence. Abundance refers to the substantial possession of a natural resource and the resource curse hypothesis in no way claims that this possession inevitably harms economic development and impedes growth. In contrast, various historical cases such as that of the United States, Norway, Botswana and Canada, just to name a few, are leading prime examples of successful resource based development. As a side note, it can be said that neither abundance nor dependence on natural resources is a requirement or a guarantee for

growth, development and prosperity in a country. To back up this claim is the example of the Asian Tigers – South Korea, Hong Kong, Taiwan and Singapore, all of which witnessed high and rapid economic growth despite the relative scarcity of natural resources. Another example is Switzerland where financial and manufacturing sectors, and not natural resources, made it one of the wealthiest countries in the world. However; it should be noted that there is no example of economic development based solely on oil exports. Abundance only becomes a curse when it is transformed to dependence which does not refer to domestic oil consumption but is "generally measured by the extent to which oil exports dominate total exports (usually from 60 to 95 percent of total exports) or by the ratio of oil and gas exports to gross domestic product," (Karl 2004), and hence the term 'paradox of plenty' emerged. Thus, not any country that has natural resources is said to suffer from the curse; "rather only states that are highly dependent on a particular resource that is held in great abundance can be categorized as cursed, i.e. oil revenues in oil-exporting states where no other substantial economic sector exists" (Cramsey 2008). Moreover, Sala-i-Martin and Subramanian (2003) found that countries most vulnerable to the resource curse are those that export mainly oil or minerals, called 'point source' natural resources; hence for simplification and relevance purposes our study of natural resources will be confined to oil. Oil dependence is mostly manifested in the Middle East and Africa.

The resource curse, or the oil curse in our case, is also a term used to explain why countries "overwhelmingly dependent on oil revenues suffer from declining per capita incomes, great budget deficits, and weak and undemocratic state institutions" (Cramsey 2008). Although the idea may seem paradoxical, the resource curse hypothesis claims that oil rich countries more than often tend to be corrupt, politically oppressed and poor. Empirically, the definition or existence of the resource curse can be

validated by the fact that between 1965 and 1988 despite the rise in oil exports, OPEC members witnessed a decrease in income per capita by 35% while “lower and middle income developing countries experienced a staggering 105% increase in their per capita GNP” (Gylfason 2002). Another indication of the presence of a resource curse is that in the two decades following the 1970s oil boom, almost all OPEC countries “failed to translate their soaring GDP into corresponding improvements in their people’s welfare” (Karl 1999). Natural resources are said to have an ‘enclave’ nature without substantial linkages to the broader economy and to the welfare of citizens. It is also noteworthy that OPEC countries including Nigeria and Libya spend less than 4% of GDP on education which is a surprising figure taking into consideration the vast oil revenues these countries generate. Oil dependent countries "neglect the development of their human resources by devoting inadequate attention and expenditure to education” (Karl 2004). It is as if high dependence on oil has weakened the demand for knowledge. Petrodollars or easy money from oil (natural capital) and the fact that highly skilled labor required in the oil sector can be imported, eliminated the need to invest in domestic human capital and hence weakened long term sustainable growth prospects. An emphasis on the word ‘sustainable’ is needed here since petrostates “often rely on an unsustainable development trajectory fueled by an exhaustible resource –and the very rents produced by this resource form an implacable barrier to change” (Karl 1999). According to Thomas Friedman in his article titled the ‘First Law of Petropolitics’, the resource curse is best defined in simple terms as:

“The way a dependence on natural resources skews politics, investments, and educational priorities, so that everything revolves around who controls the tap and who gets how much from it –not how to compete, innovate and produce real products for real markets” (Freidman 2013).

In brief, no matter how it is defined, the natural resource curse hypothesis points in three directions. First, it links oil dependence to poor economic growth and development. Second, it associates oil dependence with rent seeking behavior, rentier states and authoritarian regimes such as the Gaddafi regime in Libya and the Saddam Hussein regime in Iraq. Third it correlates oil or resource dependence with violent conflicts and civil war threats.

2. Explaining the Resource Curse

After defining the curse of natural resources as the inverse relationship between resource (or oil) dependence and economic growth and providing some statistics on how it is manifested, numerous explanations for this curse i.e. for the poor economic performance in oil dependent countries will be discussed. These explanations will be divided into exogenous and endogenous factors and will span all economic and political issues tackled or addressed in the literature.

a. Exogenous Causes

We start with the exogenous explanations and begin with what economists call the 'Dutch Disease', "named after the negative effects of the North Sea oil boom on industrial production in the Netherlands" (Karl 2004). The Dutch Disease is a phenomenon whereby an increase in the value of oil exports, caused by a price boom in the oil sector or by the discovery of new oil, causes a real appreciation of the exchange rate of the domestic currency hence crowding out other tradable sectors such as agriculture and manufacturing. Put in simple economic terms, a boom in a country's oil exports means the demand for its oil has increased which in turn implies that demand for domestic currency increases, causing an appreciation. This makes domestic non

oilexports more expensive to foreigners and hence less competitive internationally and thus renders economic diversification extremely difficult and almost impossible in countries heavily dependent on oil. Gylfason (2004) provided empirical evidence from six OPEC countries that "witnessed a decline in their proportion of GDP of non resource exports after the 1973-74 oil boom" (Reimer 2009). Recently, economists have been focusing more on the distortionary growth of the primary sector in general (or the oil sector in particular) that comes at the expense of growth in secondary and more advanced sectors such as manufacturing. Proponents of the Dutch Disease explanation believe that manufacturing exports and not resource exports are the engine of growth hence any crowding out of such exports caused by a resource boom will hinder economic growth.

Second, another macroeconomic explanation for the oil curse is the inherent unstable nature of international primary commodity markets or simply, volatility in oil prices. This volatility creates vulnerability to economic shocks, susceptibility to boom-bust cycles, and uncertainty which in turn increases risks for private investors, decreases foreign investment and trade, affects the "reliability of government revenues and foreign exchange supplies" (Rosser 2006) and consequently impedes growth in the domestic economy. Furthermore, "oil price volatility exerts a strong negative effect on budgetary discipline and the control of public finance as well as on efforts at state planning due to frequent upward or downward adjustments of fiscal expenditures" (Weinthal and Loung 2006). In other words, boom bust cycles in oil prices are extended to fiscal expenditures; "fiscal policy becomes pro-cyclical, implying that sending goes up (and taxes down) in periods of booming oil prices and spending goes down (and taxes up) in periods of oil price busts" (Asfaha 2007 quoted in Meijia and Castel 2012).

b. Endogenous Causes

Now we move to the internal or endogenous causes of the resource curse. To begin with, one would expect the oil sector to generate jobs and reduce unemployment in a country 'blessed' with this resource; however, due to the highly capital intensive nature of this industry, the oil sector creates relatively "few jobs per unit of capital invested, and the skills required by these jobs often do not fit or match the profile of the unemployed" (Karl 2004). While regular sectors in the economy utilize 70% labor and 30% capital, companies in the energy sector require around 95% capital and a mere 5% labor (Ruble2014). Moreover, "the oil sector has a capital intensity that is 33 times that of the manufacturing sector" (Larsen 2006).In Arab oil states for example, "no more than 2 to 3 percent of the labor force is engaged in the production and distribution of the oil wealth, which adds 60 to 80 percent to the GDP" (Beblawi 1990). In Libya, while the hydrocarbon sector "generated around 60% of GDP, 90% of government revenues, and 95% of export earnings" (Meijia and Castel 2012) it generated less than 4 % of employment (Kolster and Meija 2011). Another manifestation of the resource curse on the domestic economy is that resource rich countries "have a tendency to borrow excessively especially if resources fetch a high price on international markets" (Arezki and van der Ploeg 2007). The reason behind this ability to live beyond their means stems from the fact that resources, particularly oil (which can serve as collateral), greatly facilitate international borrowing. Due to the volatile nature of oil prices discussed earlier, a decline in prices or quantity may cause a financial crisis in oil dependent countries. Similarly, many resource rich countries have made the mistake of building a welfare state with direct payments from the government to citizens. Social welfare payments in Saudi Arabia for instance have increased from 14.2 billion riyals in 2010 to 28.4 billion in 2014 (IMF2014). This fosters unemployment and stands in the

way of broader economic development.

It is important to mention that it is neither the existence of oil nor the size of oil revenues that causes the curse but it is the prevalent ‘governance structure’ andhow this revenue is managed or utilized that really matters and determines if oil will be a curse or a blessing. Because Economics and Politics are interrelated fields, we find most of these endogenous causes of the oil curse in political economy. Natural resources generate rents, simply and clearly defined by Adam Smith as a reward for ownership of all natural resources or “unearned income or profits ‘reaped by those who did not sow’” (Karl 2004). Social scientists as well as economists have always distinguished between “earned income and effortless accrued rents” (Beblawi 1990). Rents encourage rent seeking behavior which "refers to wide- spread behavior, in both the public and the private sectors, aimed at capturing oil money through unproductive means" (Karl 2004). Rent seeking in turn creates a ‘rentier state’ defined as a state “that lives from externally generated rents paid by foreign actors rather than from the surplus production of the population. In oil-exporting states, this is measured by the percentage of natural resource rents in total government revenues” (Karl 2004). Beblawi and Luciani described a rentier state as “a state in which at least 40 percent of the total government revenue consists of economic rents” (Mahler 2004). Governments take the easy way out and use rents, royalties or easy oil profits instead of resorting to taxation and investment or borrowing to meet their financial needs or simply fill their coffers. A rentier state is characterized by corruption, red tape and inefficiency hence poor economic growth and development. Corruption lies at the core of the resource curse; for example, "policymakers in oil-exporting countries tend to favor unproductive mega-projects in which payoffs can be more easily hidden and the collection of bribes facilitated, while eschewing productive long-term investments that are more transparent" (Karl

2005).Country specific studies have associated the curse with the domination of a rentier culture that freed resource rich governments from accountability and the need for transparency. Mehlem, Moene and Torvik (2005) provided empirical evidence, through the inclusion of an interaction term in the regression, that oil exports have a positive effect on growth in a country with strong institutions, strong governance, and rule of law but a negative impact on a country's growth rate only if that country is already characterized by bad or weak institutions and rampant corruption before discovery of the resource. They also claim that the reason some countries are 'cursed' while others are not is differences in the quality of institutions. Simply phrased, "more natural resources push aggregate income down, when institutions are grabber friendly, while more resources raise income, when institutions are producer friendly" (Mehlem, Moene and Torvik 2005).Similarly,a study by the Fraser Institute revealed that the difference between 'cursed' and 'not cursed' countries was the level of economic freedom or institutional quality. "On a scale of 0-10, where 10 represents better institutional quality, the paper found a resource curse threshold of about 6.9—the level above which countries escaped the so-called curse" (Vasquez 2011). Countries that managed to overcome the curse were developed OECD countries and countries inflicted by the curse were less developed African and Arab countries.On the other hand, it is also true that oil discovery accompanied by substantial oil exports and large revenue streams may adversely affect institutional quality in a country and hence impede growth, regardless of the nature of institutions prior to discovery. This adverse effect on institutions happens both directly by provoking a race to capture oil rents, and indirectly by "removing incentives to reform, improve infrastructure, or even establish a well functioning tax bureaucracy" (Hartford and Klein 2005). It is important to note thatrent seeking is not only a consequence of weak institutions and oil discoveries, but is also a

‘culture’. Unfortunately, such a culture is especially prevalent in the Middle East and Africa.

Along the same lines, it can be said that oil and democracy do not mix well; a claim that is particularly evident in the Middle East and Africa. Political scientists and researchers found a statistically significant and robust link between oil dependence and authoritarian governments. “All African petrostates or resource dependent countries have authoritarian governments or have experienced a very slow process of political reforms. These include Algeria, Nigeria, Libya, Gabon, Cameroon” (Wantchekon 1999). In oil dependent countries, rulers tend to exploit petrodollars to remain in power "by diverting revenues to themselves and their supporters through subsidies, protection or trade restrictions, the creation of public employment, and overspending" (Karl 2005). Moreover, there exists a strong link between oil dependence and military spending. On average, "the share of annual military expenditures as a percentage of total government expenditures in OPEC countries is three times that of developed countries, and two to ten times that of non-oil-dependent developing countries" (Karl 2005). A leading example of an oil based durable regime is that of Libya where Muammar Al Gaddafi's regime spanned a period of four decades from 1969 to 2011 after which a revolution erupted under the context of a broader "Arab Spring" which put the country on a long and bumpy road to democracy. The Libyan case, particularly the manifestation of the resource curse in Libya, will be fully discussed in the next chapter.

Since the multifaceted political economy of the resource curse is rooted in anecdotal and country specific studies and offers a very wide range of political and institutional explanations behind the curse, it is difficult to pin point exactly how the curse operates. For this reason in the next chapter, we will move away from broad politics to narrower economic dimensions to explain the transmission mechanism and

the channels that transform resource or oil dependence to a growth impeding curse in both Libya and Nigeria.

CHAPTER III

EMPIRICAL MANIFESTATION OF THE OIL CURSE: CASE STUDIES ON LIBYA AND NIGERIA

A. Introducing the Model: The Crowding Out Effect of Oil

Economists regard Libya and Nigeria as text book examples of the resource curse. In this chapter we will illustrate this curse from textbook to real life by providing a 'diagnosis' of the resource curse 'symptoms' in Nigeria and Libya through conducting case studies on the two countries based on a 'transmission mechanism' model developed by ThorvaldorGylfason in 2004. A heavy dependence on natural resources in general and oil in particular influences "some variable or mechanism X which impedes growth. An important challenge for economists is to identify and map these intermediate variables and mechanisms" (Gylfason 2004). The model will highlight five major channels through which oil dependence hinders economic growth and thus becomes a curse. These channels can be illustrated in terms of a 'crowding out' effect whereby a heavy dependence on oil (natural capital) tends to crowd out other forms of capital necessary for growth namely –foreign capital, social capital, human capital, real or physical capital, and financial capital. All these types of capital are positively correlated with economic growth, and since oil dependence, or broadly speaking -natural capital, often crowds out these other forms of capital, we can deduce that oil dependence has a negative impact on growth. Before discussing each channel, an overview of both countries –Libya and Nigeria, will be provided to explain why they are victims of the curse.

1. Overview on Libya

Endowed with the largest proven oil reserves in Africa, large revenues from the energy sector along with a small population give Libya one of the highest levels of GDP per capita in Africa. However, this figure is misleading as "little of this income flows to the lower orders" (KPMG 2012) and oil revenues are pocketed by the government and the political elite. Gaddafi himself "amassed more than $200 billion in cash, gold and investment accounts around the world at a time when Libyans (40% of which live below the poverty line) were struggling for the money they needed for education, health care and basic infrastructure" (Li 2013). Moreover, Gaddafi is a typical example of a leader who used oil profits to remain in power – he spent billions on militarization, energy subsidies, and public sector wages to extend his tenure and silence any form of dissent. Subsidies in Libya amount to 11.5 billion dollars per year, almost 14 % of GDP and are "twice the current spending on education and health combined" (IMF 2013). Moreover, "with gasoline prices among the lowest in the world; expenditures on fuel and energy subsidies alone are equivalent to 11% of GDP" (IMF 2013) which beyond the fiscal cost, also leads tooverconsumption, waste and inefficiency. It should be noted that subsidies are not only a problem in Libya but are prevalent across the entire MENA region and continue to increase after the Arab Spring, contributing to the 30% increase in global fossil fuel subsidies in 2012 (World Energy Outlook 2012).

High income per capita, fiscal surpluses and external account surpluses mistakenly suggest that Libya escaped the resource curse. However, high unemployment, unequal income distribution, poor governance indicators and corruption are all connected to the country's poor management of its oil revenues. The Human Rights Watch described the state in Libya as an "appalling catalogue of human rights abuses" (Li 2013). In 2011, the Libyans revolted against the Gaddafi regime, inspired

by a wave of 'revolt to reform' in the Arab world under the banner of an 'Arab Spring'. The rentier economy of the Gaddafi regime was the main reason behind the Libyan revolution. As described by Mincong Li in the International Journal of Social Science:

> It is because of Libya's unequal distribution of wealth, its lack of transparency, diminishing opportunities for the development of human capital and corruption that led to the unavoidable revolution (Li 2013).

In Libya,"the high degree of dependency on volatile [resource] earnings (60% of GDP and 95% of revenues) makes economic performance vulnerable to oil shocks and complicates macroeconomic management" (IMF 2013). In 2011, during the Libyan Revolution, or civil war to be more accurate, "foreign oil companies evacuated staff and facilities were attacked by the warring parties," (African Economic Outlook 2013) hence production and exports sharply declined during that year and stopped between April and August 2011 (see Figure 1). This led to a 62% contraction in GDP, a 16% increase in average consumer prices, and to deterioration in Libya's fiscal and external accounts (see Figure 2). This distortion and contraction of the Libyan economy following a decline in oil production and exports reflects the country's high dependence on oil revenues.

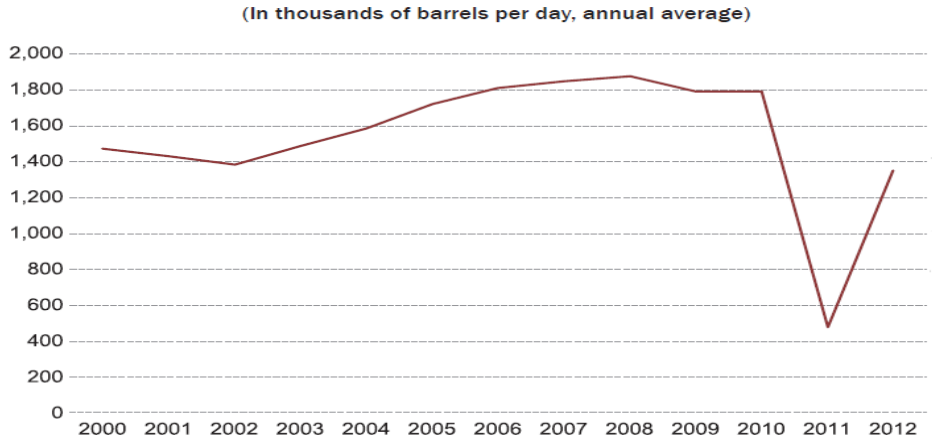

Fig.1. Collapse in Libyan Oil Production
Source: International Monetary Fund 2013.

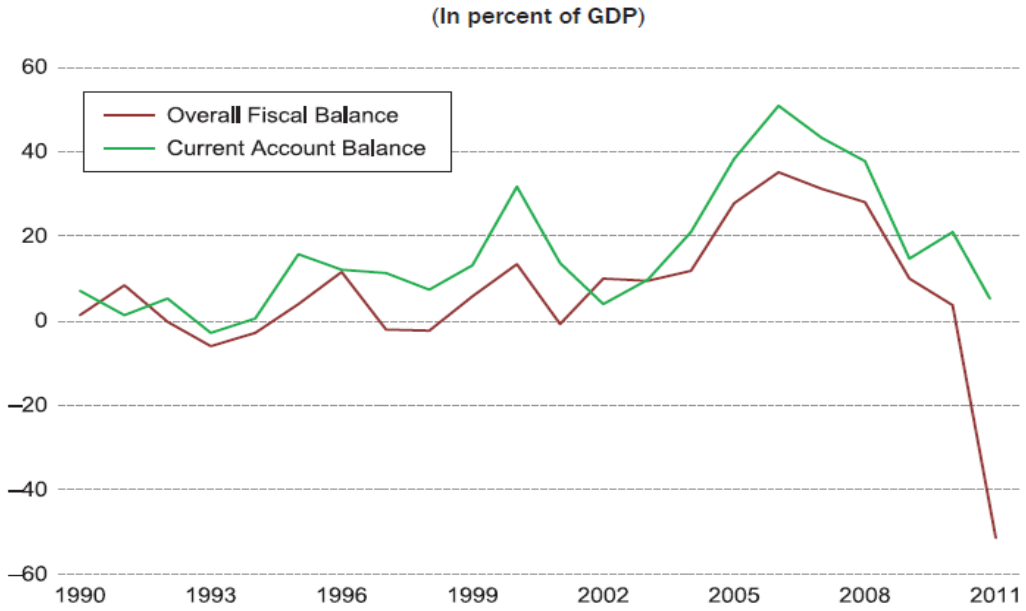

Fig.2. Deterioration in Fiscal and External Account in Libya (2011)
Source: International Monetary Fund 2013.

2. Overview on Nigeria

"The Nigerian oil industry is a colonial construction designed to nourish Western industrial needs and economic development" (Ebohon 2012). The oil industry, similar to most oil rich countries, is mainly dominated by foreign oil companies and the government. "Since ownership of crude oil is vested in the state, taxes and royalties accrue to the Federal Government of Nigeria (FGN) directly. Hence, the FGN is in effect both a stockholder and a stakeholder" (Idemudia 2009). With 60% of its population below the poverty line and an unemployment rate of 24% (African Economic Outlook, 2012), Nigeria's 'oil boom' did not contribute to the country's socioeconomic development andwas transformed into an 'oil doom' as Nigeria was ranked among the 15 poorest nations in the world.Moreover, despite the oil wealth, 70% of Nigeria's population resides in rural areas deprived of basic social facilities like clean tap water and healthcare (NDDC 2004).The Gini coefficient widely used to measure

income inequality rose from 0.43 in 2004 to almost 0.5 today.According to World Bank estimates, “80% of oil revenues accrue to only 1% of the population”. Oil discovery in 1956 and extraction in 1958 shifted the country’s dependence from agriculture to oil. Similar to Libya, Nigeria alsosuffers from corruption, lack of transparency and accountability, rent seeking and violent conflicts. Since the 1960s, regime type altered between military and civilian both of which embezzled billions of dollars of oil revenues,until 1999 when Nigeria was declared a ‘democratic’ country. Conflicts in the oil rich Niger Delta have become recurrent events accompanied by oil bunkering, kidnapping, and violence. These violent conflicts are between the government and the indigenous population who can no longer tolerate foreign oil companies and corrupt officials reaping oil rewards when they themselves have seen no improvement in their standard of living, or between the different ethnic groups or communities each claiming equal rights to the oil extracted from their land. As stated by Mählerin a study of oil-violence in Nigeria:

> Oil has indirectly boosted the risk of violent conflicts through a further distortion of the national economy. Moreover, the transition to democratic rule in 1999 decisively increased the opportunities for violent struggle, in a twofold manner: firstly, through the easing of political repression and, secondly, through the spread of armed youth groups, which have been fostered by corrupt politicians (Mähler 2010).

Sala-i-Martin and Sabramanian (2003) attributed poor long run economic performance in Nigeria not to the Dutch Disease but rather to corruption and waste that, according to the Human Rights Watch 2007, resulted in a $380 billion loss between 1960 and 1999.Other channels, through which the oil curse is manifested in Nigeria, will be examined in detail in the following section.

After providing a general overview on the presence of the oil curse in Libya and Nigeria, we move to explain the transmission mechanism through which the

curseoperates based on the 5 channels discussed earlier.

B. Transmission Mechanism: From Blessing to Curse

1. Channel 1: The Dutch Disease and Foreign Capital

a. Dutch Disease

The first channel takes us back to the Dutch Disease and the volatility of oil prices discussed in the previous chapter. As we said, oil dependence is accompanied by boom-bust cycles. The volatile nature of oil prices leads to a fluctuation in a country's export revenues which in turn triggers exchange rate volatility. Unstable exchange rates generate uncertainty and this can be detrimental "to exports and other trade, including foreign investment" (Gylfason 2004). Take for example an oil boom, as noted earlier this causes an appreciation of the domestic currency which in turn makes domestic goods less competitive internationally. This common consequence or symptom of the 'Dutch Disease' may decrease the level of total exports or "bias the composition of exports away from high tech or high-value-added manufacturing and service exports," (Gylfason 2004) that are important for long term growth. Similarly, based on the same intuition, inward foreign direct investment (FDI) which can be regarded as an export of capital is negatively affected.

Tables 1 and 2 below show the extent to which Libya and Nigeria's total exports are dominated by oil exports and the lack of economic diversification in both countries. The fact that manufactured exports have constituted a mere 3 % of total exports on average in both countries for the past 10 years indicates poor economic performance in both countries, and validates the existence of a resource curse since a decline or stagnation in the manufacturing sector retards economic growth. Furthermore, Figure 3 shows how total non oil export revenues in Libya have remained

extremely low vis a vis a tremendous increase in oil revenues over the past 10 years.

The same observation can be applied to Nigeria.

Table 1.Libya's Oil vs. Manufactured Exports

Year	Total Exports*[1]	Oil Exports*	% of Total Exports	Manufactured Exports*	% of Total Exports
2003	14.65	13.07	89	0.66	5
2004	20.41	18.59	91	0.79	4
2005	31.36	30.4	97	0.84	3
2006	40.26	38.72	96	1.08	3
2007	46.97	45.34	97	1.17	2
2008	62.1	59.89	96	1.62	3
2009	36.95	35.15	95	0.96	3
2010	48.67	46.28	95	1.29	3
2011	18.99	16.92	89	0.71	4
2012	62.22	60.11	97	0.59	1

*Values in Billion USD
[1]Total Exports of Goods
Source: World Trade Organization.

Table 2. Nigeria's Oil vs. Manufactured Exports

Year	Total Exports	Oil Exports	% of Total Exports	Manufactured Exports	% of Total Exports
2003	24.03	23.52	98	0.5	2
2004	28.63	27.21	95	0.44	2
2005	50.47	47.57	94	0.37	1
2006	58.73	54.83	93	0.32	1
2007	66.61	50.55	76	1.21	2
2008	86.27	75.06	87	4.47	5
2009	56.74	45.12	80	1.79	3
2010	84	72.97	87	5.79	7
2011	114.5	100.94	88	3.2	3
2012	116	103.37	89	2.96	3

Values in Billion USD
Source: World Trade Organization.

As shown in Figures 3 and 4, while revenues from oil exports have increased substantially in Libya and Nigeria, non-oil export revenues have remained low and stable for almost a decade in both countries. Thus, oil dependence is evident and the oil sector dominates all other productive sectors in the economy especially the manufacturing and agriculture sectors. The value added by the manufacturing sector as a percent of GDP is a mere 4% in Libya and 3% in Nigeria while oil revenues constitute around 60-70% of GDP in both countries. It is important to mention here that Libya and Nigeria have a pegged and a floating exchange rate system respectively. "The crowding out of other exports by the high value of oil exports is more likely to be true in the case of mature economies close to full employment of labor and with full integration into the world economy" (Karshenas and Hakimian 2005). In the case of Libya and Nigeria, the weakness of the manufacturing and other non oil sectors is not just a result of the Dutch Disease or the crowding out effect by oil exports, but is due to a structural problem in their oil dominated economies.

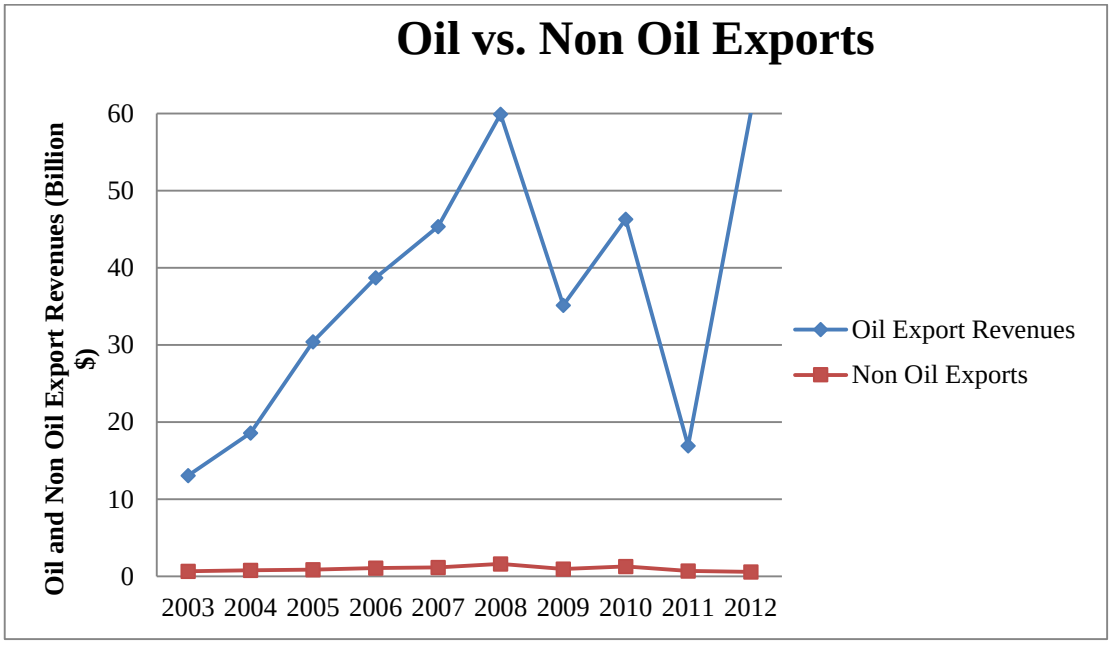

Fig.3. Oil vs. Non Oil Revenues in Libya

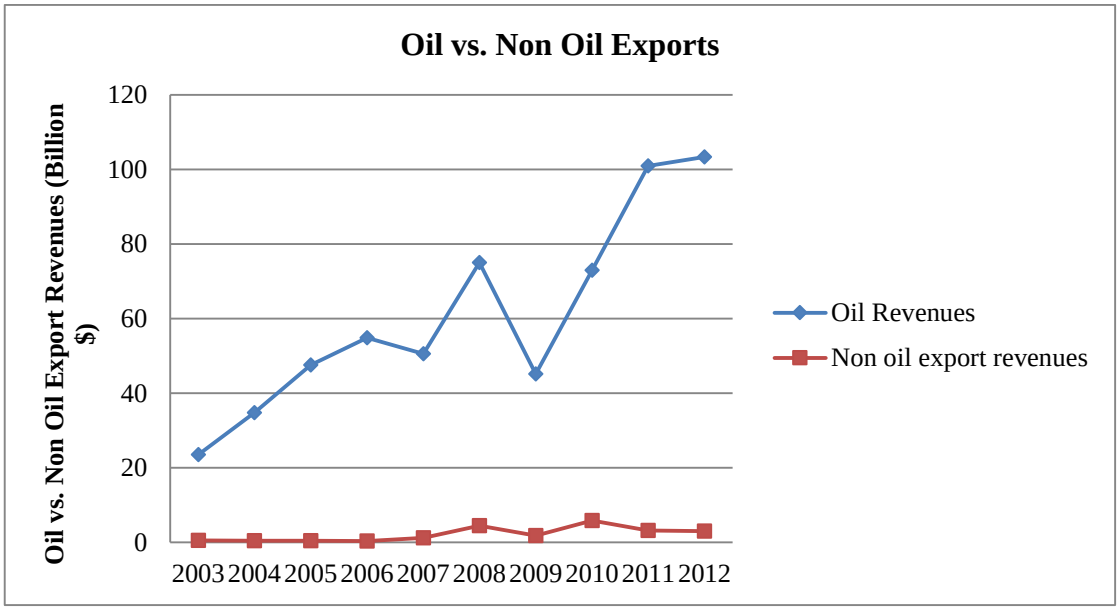

Fig.4. Oil vs. Non Oil Revenues in Nigeria

b. Foreign Capital

Tables 3 and 4 and Figures 5 and 6, provide evidence that foreign direct investment in Libya and Nigeria has not increased over the past ten years despite increases in oil revenues both in absolute terms and as a percentage of GDP. Logically, higher revenues and a growing oil sector should make a country attractive to foreign investors; however, data from both Libya and Nigeria shown in the tables below proves otherwise.Foreign governments and private sector actors were hesitant to invest in Libya's oil sector due to Gaddafi's 'opaque and arbitrary' management of the industry. Libya ranked last (147/148) in terms of 'prevalence of foreign ownership' according to the 2013 Global Competitiveness Report.Even after the revolution, a 2012 draft law on foreign companies proved to be even more restrictive than rules and regulations previously set by Gaddafi. "Foreign ownership limits were set at 49% compared with the 65% rule introduced in 2006 under Gaddafi" (Hall 2013). Such restrictions as well as limited diversification and a hostile business environment discouraged foreign

investment in the country.

Correlation between oil dependence (measured by oil revenues as a percent of GDP) and FDI inflow (also as a percent of GDP) calculated on Eviews (Econometric Views) is -0.44 which reinforces this result. This inability to attract FDI is not only a result of oil dependence. Ill protected property rights, bureaucratic inefficiencies, red tape, corruption, and security concerns all create a hostile business climate which makes foreign or international companies reluctant to invest in these two economies.

Table 3. Oil Exports vs. Foreign Direct Investment (FDI) in Libya

	(1)	(2)		(3)	
Year	**GDP**	**Oil Exports**	**Oil Exports (% GDP)**	**Net FDI inflow**	**FDI (% GDP)**
2003	26.19	13.07	50	0.14	1
2004	33	18.59	56	0.36	1
2005	47.34	30.4	64	1.04	2
2006	54.98	38.72	70	2.06	4
2007	67.69	45.34	67	4.69	7
2008	87.24	59.89	69	4.11	5
2009	63.07	35.15	56	1.37	2
2010	74.8	46.28	62	1.78	2
2011	34.71	16.93*	49	0.089	0.2
2012	81.92	60.11	73	0.67	0.8

Values in Billion USD

Sources: (1) International Monetary Fund. (2) World Trade Organization. (3) World Bank and KPMG

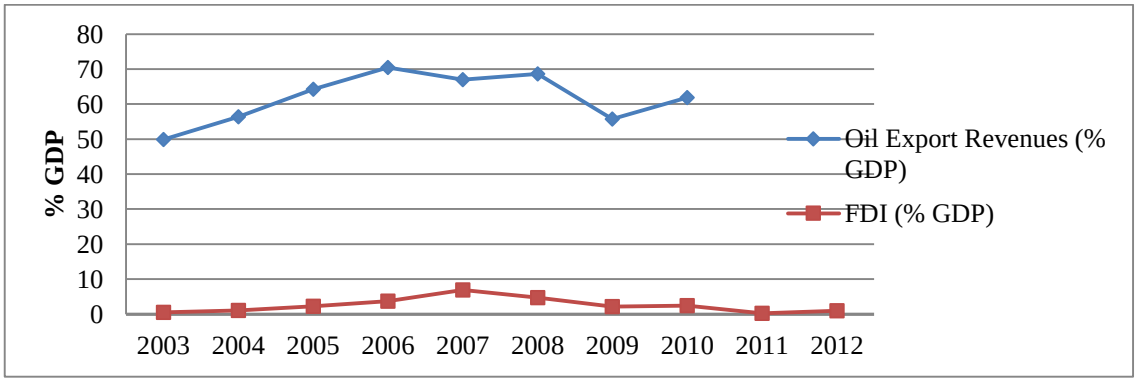

Fig.5. Oil vs. FDI as a percent of GDP in Libya

Table 4.Oil Exports vs. Foreign Direct Investment in Nigeria

	(1)	(2)		(3)
Year	**GDP**	**Oil Exports**	**Oil Exports (% GDP)**	**FDI (% GDP)**
2003	67.66	23.52	35	3
2004	87.85	34.73	40	2
2005	112.25	47.57	42	4
2006	145.43	54.83	38	3
2007	165.92	50.55	30	4
2008	207.12	75.06	36	4
2009	168.59	45.12	27	5
2010	228.64	72.97	32	3
2011	243.99	100.94	41	4
2012	270.21	103.39	38	3

Values in Billion USD

Sources: (1) International Monetary Fund. (2) World Trade Organization. (3) UNCTAD

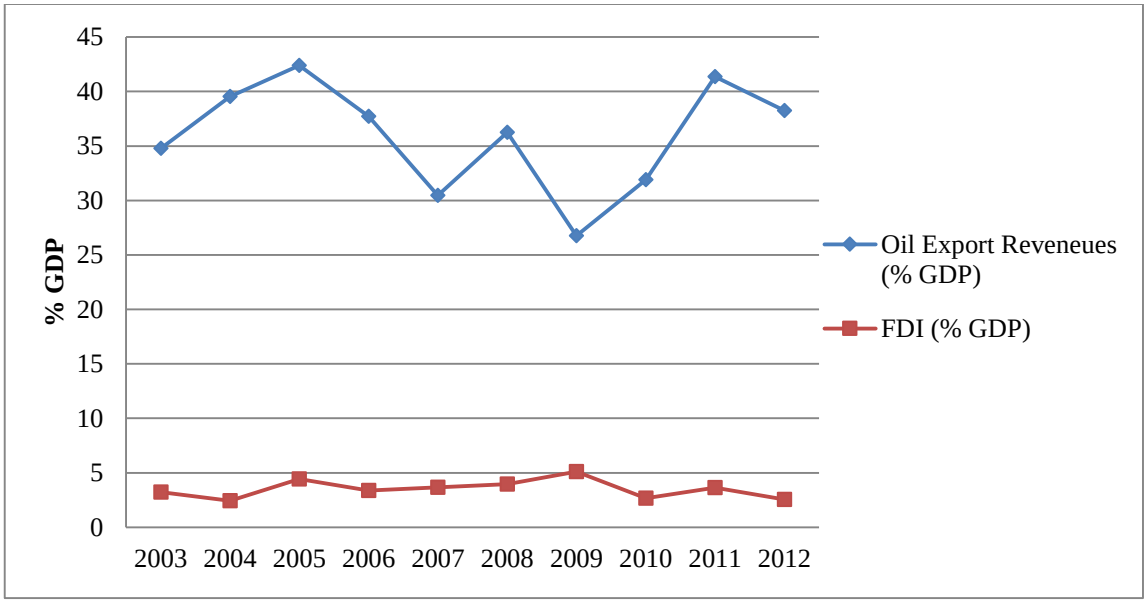

Fig.6. Oil vs. FDI as a percent of GDP in Nigeria

To wrap up the first channel through which oil dependence becomes a curse, we conclude that in both Libya and Nigeria that are heavily dependent on oil, oil exports (termed natural capital by Gylfason) lead to the crowding out of non oil exports

particularly manufactured exports which are a vital component for long term and sustainable growth. As for foreign capital, the low and stagnant level of FDI inflow in both countries despite rising oil revenues indicates that oil dependence is negatively related to foreign capital. Reticence to trade and to foreign investment, oil dependence, and minimal manufacturing levels have harmful consequences on economic growth and development.

2. Channel 2: Rent Seeking, Institutions and Social Capital

The cause and effect relationship between oil dependence and pervasive rent seeking as well as the formation of a rentier state in an oil rich country is an important and widespread explanation of the resource curse, rooted in political economy. Now, from a more economic and less political perspective we will explain the second channel which is the negative influence of oil dependence on 'social' capital. Gylfason (2004) defines social capital as "the infrastructure and institutions of a society." In addition, he provides empirical evidence of a positive correlation between resource dependence, corruption, income inequalities and lack of human rights. Rent seeking leads to the deterioration of social capital. We will first consider and discuss three aspects or proxies of this deterioration of the state of social capital: corruption, political rights and civil liberties, and the level of income inequality. To 'measure' corruption, mainly the level of perceived corruption in the public sector, the Corruption Perception Index will be used. The index rates countries on a scale of zero (highly corrupt) to ten where corruption is almost nonexistent (for example, Norway and Denmark). Political rights and civil liberties are measured on a scale of one (highest score, maximum rights and liberties) to ten.

Currently labeled as 'partly free', Libya was classified a 'Not Free' country for

almost 4 decades under the reign of Muammar Al Gaddafi with a score of 7/10 (10 being the worst) on both political rights and civil liberties. However, after the revolution in 2011 the score improved to 4 on political rights and 5 on civil liberties. This shows that resource dependence has a negative effect on political and civil rights only when accompanied by an authoritarian regime. On the other hand, for over 20 years Libya's score on the Corruption Perception Index (CPI) has been 2 on average which classifies it as one of the most corrupt countries in the world with a rank of 172/175. The purpose behind this is to illustrate that heavy oil dependence combined with an arbitrary and authoritarian regime such as that of Gaddafi creates a country with a corrupt public sector and limited political and civil liberties (see Table 5).

Table 5. Oil Exports and Social Capital in Libya

	Oil Dependence[1] (%)	**CPI**	**Political Rights**	**Civil Liberties**
2003	89	2.1	7	7
2004	91	2.5	7	7
2005	97	2.5	7	7
2006	96	2.7	7	7
2007	97	2.5	7	7
2008	96	2.6	7	7
2009	95	2.5	7	7
2010	95	2.2	7	7
2011	89	2	7	6
2012	97	2.1	4	5
2013	95	1.5	4	5

[1]Oil dependence is measured as the share of oil exports in total exports
Source: Transparency International, Freedom House

This negative effect of natural capital on social capital whereby oil dependence fosters rent seeking and corruption is one important aspect of the resource curse. This is

more likely to occur when a country has weak institutions and where oil revenues are misappropriated by corrupt leaders and officials. There is a consensus in the resource curse literature on the importance of institutions both prior to and after discovery of a resource so it is important to note that "with the discovery of significant oil reserves in 1959, Libya changed abruptly from being dependent on international aid and the rent from U.S. and British air bases to being an oil-rich monarchy" (Britannica 2014). At the time of discovery, Libya's economy was still characterized by underdeveloped and 'immature' institutions and the oil only made matters worse. Instead of contributing to economic and institutional development, oil resulted in rent seeking, corruption and weak institutions.

The most severe and noticeable manifestation of the oil curse in Libya was the effect of oil on institutions and governance. Libya's score on World Bank Governance Indicators illustrates the negative impact of oil dependence and the ensuing rentier mentality (see Table 6). Over the past decade, Libya ranked in the lowest 3rd percentile for 'Voice and Accountability' (neglecting the outlier in 2012 post revolution) which reflects the extent to which citizens are free to select their own government.It also ranked in the lowest 12th percentile for 'Government Effectiveness', and 14th percentile for 'Control for Corruption' which reflects "the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests" (World Bank 2013).The most notable and dismal ranking was the bottom 8th percentile for 'Regulatory Quality' which reflects the government's ability to "formulate and implement sound policies and regulations that promote the private sector" (World Bank 2013).

Table 6.Governance Indicators in Libya

	Voice and Accountability	Government Effectiveness	Rule of Law	Regulatory Quality	Control of Corruption
2002	2.4	12.68	17.7	4.41	18.05
2003	3.85	18.05	25.84	4.41	22.44
2004	2.88	18.54	22.01	6.86	20.98
2005	2.4	13.66	22.01	6.37	19.02
2006	2.4	12.68	16.27	6.37	13.66
2007	2.88	11.17	22.97	15.53	15.05
2008	3.37	11.17	28.37	18.45	19.42
2009	2.84	12.92	20.85	11.96	8.13
2010	2.84	12.92	18.96	9.57	5.24
2011	6.1	7.11	12.68	4.74	5.21
2012	21.33	5.26	12.8	2.87	2.39
Average	**3**	**12**	**20**	**8**	**14**

Figures in percentile rank among all countries
Source: World Bank Governance Indicators.

In Nigeria, the oil curse manifests itself in ways similar to the Libyan case. The low score on the Corruption Perception Index also reflects a culture of rent seeking and lack of transparency (see Table 7). On the other hand, a 4/7 score on Political Rights and Civil Liberties is due to the fact that Nigeria is a 'democracy', but this score is misleading and the state of social capital and institutions is better reflected in the World Bank's governance indicators. Table 8 shows the adverse effect of oil dependence on institutions and governance. Nigeria ranks in the lowest 5th percentile for 'Political Stability and Absence of Violence', lowest 15th percentile for'Government Effectiveness', the lowest 10th percentile for 'Rule of Law' and 'Control for Corruption' and the bottom 20th percentile for 'Regulatory Quality'.

Table 7. Oil Exports and Social Capital in Nigeria

	Oil Dependence (%)	CPI	Political Rights	Civil Liberties
2003	98	1.4	4	4
2004	95	1.6	4	4
2005	94	1.9	4	4
2006	93	2.2	4	4
2007	76	2.2	4	4
2008	87	2.7	5	4
2009	80	2.5	5	4
2010	87	2.4	4	4
2011	88	2.4	4	4
2012	89	2.7	4	5
2013	95	2.5	4	5

Source: Transparency International, Freedom House

Table 8. Governance Indicators in Nigeria

	Voice and Accountability	Political Stability and Absence of Violence	Government Effectiveness	Rule of Law	Regulatory Quality	Control of Corruption
2002	27.4	7.21	11.71	4.31	11.76	1.46
2003	28.37	5.77	15.61	5.74	10.29	4.39
2004	25.48	4.81	14.63	6.7	8.33	6.34
2005	24.52	6.25	20	8.13	23.53	11.71
2006	29.81	2.88	17.07	13.4	19.12	10.73
2007	25.96	3.85	16.02	13.88	19.42	14.08
2008	27.4	5.26	15.53	14.42	22.33	21.36
2009	24.64	4.27	9.57	12.32	25.36	17.22
2010	27.01	3.3	10.53	12.32	26.32	15.24
2011	27.23	3.3	13.74	10.8	27.49	10.9
2012	27.49	3.32	15.79	10.43	25.36	11
Average	**27**	**5**	**15**	**10**	**20**	**10**

Figures in percentile rank among all countries
Source: World Bank Governance Indicators.

These figures in Libya and Nigeria portray the culture of rent seeking, the poor governance and bad institutions, and the erosion of social capital, all of which arise from heavy dependence on oil revenues. Hence the negative correlation between natural

capital (oil) and social capital can be established in both countries.

3. Channel 3: Education, Unemployment and Human Capital

Resource rich countries tend to "underestimate the long run value of education" (Gylfason 2004). Oil dependent countries in particular seem to have fewer incentives to invest in education and accumulate human capital because they rely on the huge revenue streams generated from the resource and because the oil sector does not require or promote the development of human capital.Moreover as stated earlier, some resource rich countries tend to create a welfare state and the non wage income citizens receive in such a state demotivates them from pursuing aneducation.In addition, "natural-resource-based industries do not require high levels of human capital compared to the manufacturing sector" (Manning 2004) which is virtually nonexistent and has been crowded out in heavily oil dependent countries as seen in channel one. It is important here to define human capital as the "skills andknowledge of workers, often derived from education and training, which contribute to productivity" (Ehrenberg 1994 quoted in Manning 2004).

The Libyan case is quite intriguing. Education statistics are high with a literacy rate of 89.5%, a "100% primary gross enrollment rate, 110% secondary gross enrollment rate, and 55% tertiary gross enrollment rate" (World Bank 2013) yet outcomes are paradoxically low and there is a mismatch between education and productivity in Libya. The 2013-2014 Global Competitiveness Report showed that despite these high numbers, the quality of the educational system in Libya is one of the lowest in the world with a score of 1.9/7 and a bottom rank of 148/148. This is due to low staff qualifications and training (143/148), and a lack of facilities and internet access (145/148). "Public expenditure on education tends to be supply-led and of

mediocre quality, and thus fails to promote efficiency, equality, and growth, in contrast to private expenditure on education, which is generally demand-determined and likely to be of a higher quality and more conducive to growth" (Gylfason 2004).Consequently, Libyans are unprepared and unqualified for the labor market especially that most jobs are in the energy sector and require a high degree of skills and qualifications. "As long as there is no demand from the local market […] people cannot exploit their education which has a negative result on the level of human capital" (Reimer 2009). This creates a structural problem and a rather complex situation in the Libyan labor market described by the European Training Foundation (ETF):

"First, increasing unemployment levels amongst Libyan nationals co-exist with growing numbers of foreign workers […] Expatriate workers represent 20% of the labor force while the unemployment rate of Libyan nationals is around 30% (see Figure 7). Libyan workers tend to lack skills and competences and are unwilling to compete with foreign workers, a situation related to their socio-cultural values and attitudes" (ETF 2014).

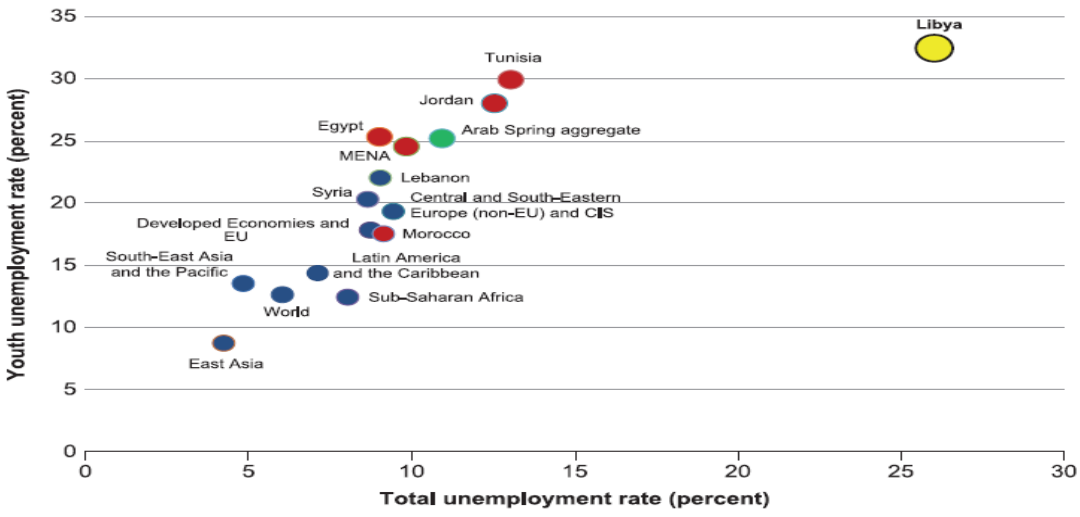

Fig.7. Unemployment in Libya (2010)
Source: International Monetary Fund 2013.

Another problem in the Libyan labor market is the dominance and inefficiency of the public sector. According to the World Bank, the public sector in Libya employs up to 70% of the workforce and this is "one of the highest levels of public sector employment in the world" (ETF 2014). This results in a major imbalance between the public sector and the almost nonexistent private sector that is imperative for economic growth and receives a meager 2% of all investments. Hence, high enrollment levels in primary, secondary and tertiary education are misleading figures that do not reflect the true state of education and human capital in Libya. High oil revenues were not channeled towards improving the quality of education in Libya which has been one of the lowest in the world for several decades. Moreover, the high level of employment in the inefficient and corrupt Libyan public sector is a waste of public expenditure and in no way contributes to productivity and to the enhancement of the level of human capital in the country.

The quality of education and the level of human capital in Nigeria are quite similar to that of Libya. However, enrollment statistics in Nigeria are low reflecting that both quantity and quality of education and training are low. According to the 2013-2014 Global Competitiveness Report and the Human Development Report, Nigeria has a 61% literacy rate, a57% enrollment in primary education, 44 % gross enrollment in secondary education, and a meager 10% enrollment in tertiary education.As for the quality of education, Nigeria scored 3/7. Despite its oil wealth, Nigeria is also classified as a 'low human development' country with an HDI (human development index) of 0.4 for the past 10 years. As for the unemployment rate, it was last reported at 24% in 2011 despite the country's rising oil exports.

As a result, it is obvious that oil (natural capital) has not enhanced the quality of education in both countries, has not created sufficient and productive job

opportunities apart from the corrupt and wasteful public sector, and has led to the crowding out of human capital.

As stated by Gylfason (2004):

> High natural resource intensity seems capable of reducing economic growth significantly, not only through the Dutch disease, rent seeking, and overconfidence that tends to reduce the quality of economic policy and structure, but also by weakening public and private incentives to accumulate human capital (Gylfason 2004).

Consequently, oil dependence has diverted attention and revenues away from educational quality and human capital accumulationwhich are crucial for the productive capacity and economic development in a country. Hence, it can be considered a curse in both Libya and Nigeria. However, this result cannot be generalized to all resource dependent countries. In Botswana for example, government expenditure on education as a percent of GDP is among the highest in the world.

4. Channel 4: Business Environment, Investment, and Physical Capital

The supply of physical or 'real' capital is necessary to start a business, and a healthy business environment is crucial for economic growth and development.The lack of transparency and inefficient bureaucracy present in most oil dependent countries discourages investment hence their non oil sectors are usually underdeveloped, as their development is contingent on foreign or domestic private sector investment. Foreign investment, or lack thereof was discussed earlier in channel one.As for the private sector,it has been historically stifled by various problems. In Libya these problems include "limited sources of financing to SMEs, the inconsistent application of property rights, and the focus of most of the economy's resources on the oil sector" (Meijia and Castel 2012). Moreover, a number of business constraints illustrated in Table 9 discouraged private sector investment and development and hence stood in the way of

economic diversification which is vital for growth.

Table 9. Top 10 Problematic Factors for Doing Business in Libya

1	Inefficient government bureaucracy
2	Inadequate supply of infrastructure
3	Inadequate educated workforce
4	Corruption
5	Policy instability
6	Access to financing
7	Poor work ethic in national labor force
8	Restrictive labor regulations
9	Foreign currency regulations
10	Government Instability

Source: Global Competitiveness Report 2013-2014

Figure 8 presents these constraints by percent of responses of surveyed individuals. The main constraints are inefficient government bureaucracy, inadequate supply of infrastructure (144/148), a poorly educated workforce and corruption, all of which are linked to the country's heavy dependence on the energy sector and oil revenues in particular. Consequently, Libya scored last among 189 countries on the 'ease of doing business' indicator for several years including 2012 and 2013 (World Bank 2013). This resource dependence and subsequent culture of rent seeking and corruption created a hostile business environment which diverted both foreign and domestic investments.

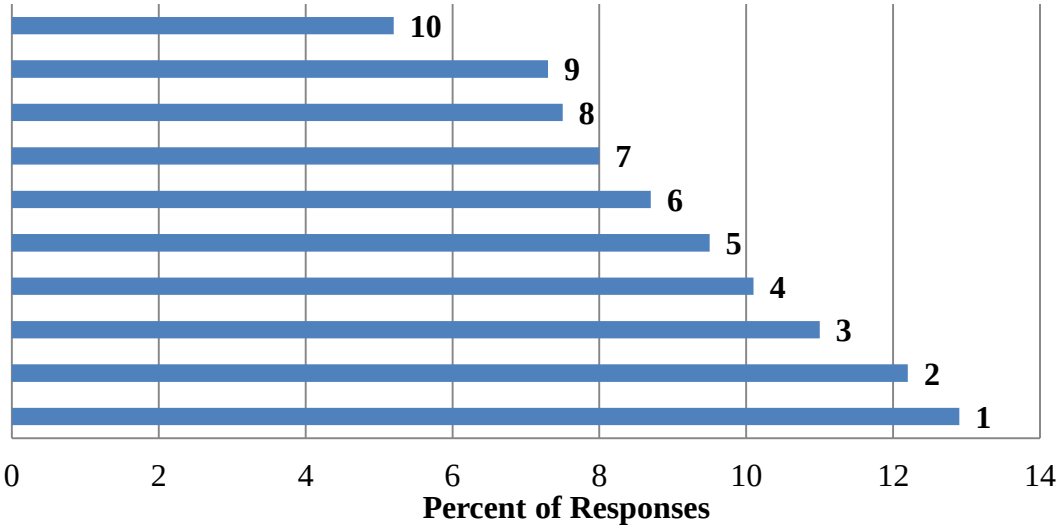

Fig.8. Business Constraints in Libya
Source: Global Competitiveness Report 2013-2014.

Similarly, the most problematic factors for doing business in Nigeria are inadequate supply of infrastructure, corruption, and access to financing (see Table 10 and Figure 9). However, Nigeria performed better than Libya on the 'ease of doing business indicator' with a rank of 138/189 in 2012 and 147/189 in 2013. Similar to the Libyan case, these business constraints are also correlated to resource dependence that fosters corruption and channels funds away from productive business investments.

Table 10. Top 10 Problematic Factors for Doing Business in Nigeria

1	Inadequate supply of infrastructure
2	Corruption
3	Access to financing
4	Policy Instability
5	Inefficient government bureaucracy
6	Inadequately educated workforce
7	Poor work ethic in national labor force
8	Crime and theft
9	Tax Regulations
10	Inflation

Source: Global Competitiveness Report 2013-2014

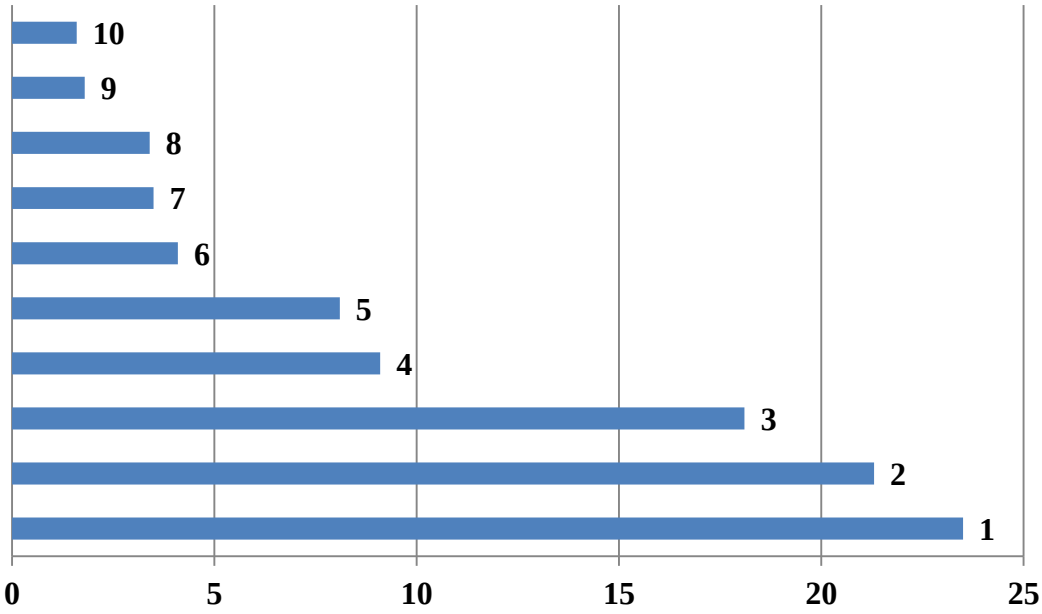

Fig.9. Business Constraints in Nigeria

Gross fixed investment rate defined as "total business spending on fixed assets such as factories, machinery and equipment […] which provides the basis for production" (CIA World Factbook 2013) was a mere 3.7% of GDP in 2012 in Libya with the lowest rank among all studied countries (152/152), and 18% of GDP in Nigeria. Compared to the generated oil revenues in both countries, these figures are surprisingly low. Gross capital formation (previously called gross domestic investment) in Nigeriahas been very low- around8% of GDPon average for the past 10 years (compared to 39% in Botswana, a fellow African resource rich country) and has not witnessed any considerable increase despite increasing oil revenues (see Table 11).

Since the top 10 business constraints in Libya and Nigeria are directly related to or are a result of oil dependence, it can be said that natural capital (oil) crowds out investment and productive or physical capital. Gylfason (2004) also proved that an increase in the share of natural capital reduces the investment rate and since investments

and physical capital promote economic growth it can be said that Libya and Nigeria's are 'cursed' by their resources.

Table 11. Oil Dependence and Gross Capital Formation in Nigeria

	Oil Dependence	Gross Capital Formation(%GDP)
2003	98	9
2004	95	7
2005	94	5
2006	93	8
2007	76	9
2008	87	8
2009	80	12
2010	87	11
2011	88	10
2012	89	8
2013	95	8

Oil Dependence is measured as the share of oil exports in total exports
Source: World Bank 2013.

5. Channel 5: Financial Capital

Another important aspect of the resource curse is the lack of financial development and the financial remoteness present in most oil dependent countries, particularly those in the Middle East and Africa. This explains the challenges faced by the private sector and hence the lack of economic diversification in these countries. Among the very few studies on financial deepening and development in oil rich economies, Beck (2011)"found evidence of a resource curse in financialsector development […] and discovered that while banks in resource-rich countries are more liquid, bettercapitalized, and more profitable, they give fewer loans to firms" (Arezki and Nabli 2012). Figures 10 and 11 support this finding, and show that bank credit to the private sector remained significantly low and firms face credit constraints despite

rising oil revenues.Moreover, the financial system in both countries is "dominated by ineffective public banks" (Arezki and Nabli 2012).

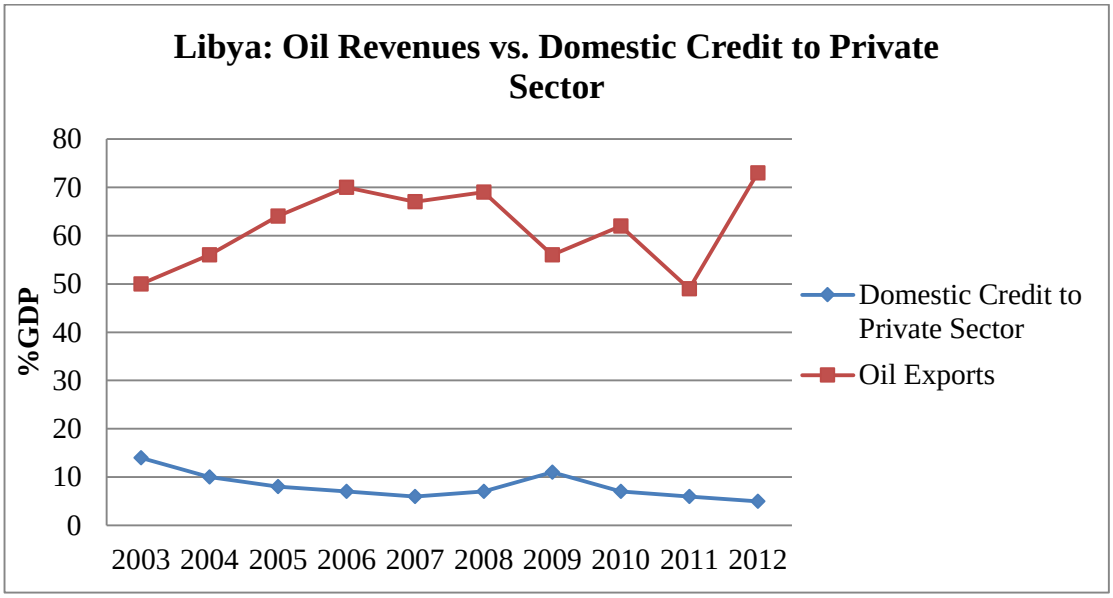

Fig. 10. Financial Sector Development: Oil Revenues vs. Domestic Credit to Private Sector in Libya
Source: World Bank 2013.

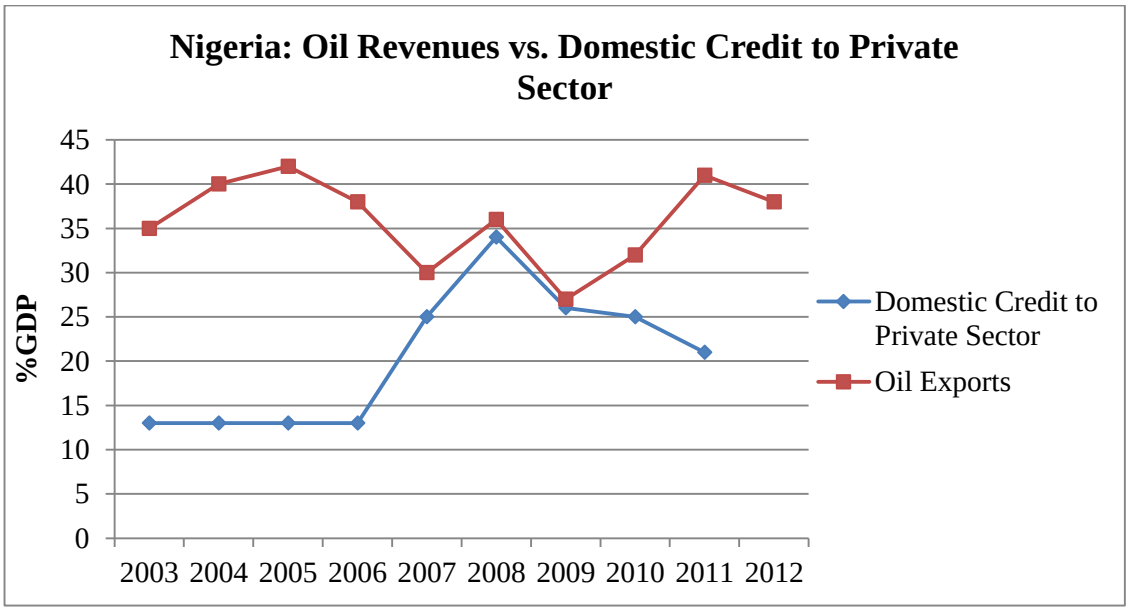

Fig.11. Financial Sector Development: Oil Revenues vs. Domestic Credit to Private Sector in Nigeria
Source: World Bank 2013.

Domestic credit to the private sector relative to GDP was chosen since it is considered an important proxy for 'financial depth' in a country and has received considerable attention in the empirical literature. According to the World Bank Global Financial Development Report, this "private credit excludes credit issued to governments, government agencies, and public enterprises. It also excludes credit issued by central banks" (World Bank 2013).It should be noted that "private credit to GDP in high-income countries is 103 percent- more than 4 times the average ratio in low-income countries" (World Bank 2013)while in Libya and Nigeria it has been on average 8% and 20% respectively for the past 10 years (see Table 12).We will extend our measure of financial depth to equally importantNon Bank Financial Institutions (NBFI). Available data shows that 'non bank financial institutions' assets to GDP' was 4% in 2004 in Libya and 2% in Nigeria.

Table 12. Domestic Credit to the Private Sector (%GDP) in Libya and Nigeria

	Libya	**Nigeria**
2003	14	13
2004	10	13
2005	8	13
2006	7	13
2007	6	25
2008	7	34
2009	11	26
2010	7	25
2011	6	21
2012	n/a	n/a
2013	n/a	n/a
average	**8**	**20**

Source: World Bank 2013.

Financial depth and development are strongly related to poverty alleviation, inequality reduction and long term economic growth "by broadening access to finance

to the poor and vulnerable groups, facilitating risk management by reducing vulnerability to shocks, and increasing investment and productivity" (World Bank 2013). Hence, this underdevelopment in the financial sector and minimal presence of a private sector in both countries are obstacles to economic diversification and growth, and manifestations of the oil curse.

Furthermore, we will look at the Financial Freedom Index (0-100) which measures "the efficiency of the banking system and the extent of government intervention in the financial system" (Heritage Foundation 2013). A higher score or percentile reflects more efficient financial institutions. Libya was in the bottom 10th percentile and Nigeria in the lowest 30th percentile for the past 10 years. This shows that despite their oil wealth and the rising revenues from oil exports, the two countries did not witness development in their financial sector mainly due to government intervention. Hence it can be said that there is a correlation between natural capital (or oil) and the crowding out of financial capital.

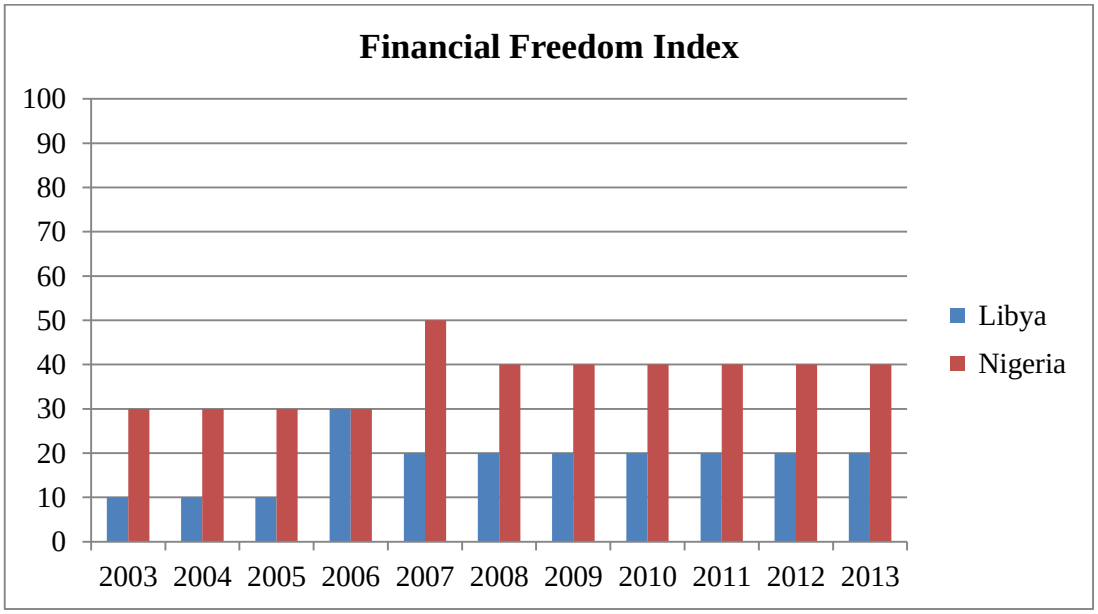

Fig.12. Financial Freedom Index in Libya and Nigeria
Source: The Global Economy, 2013

To sum up, the manifestation or the different aspects of the oil curse in Libya and Nigeria were presented through the above five channels. Hence it can be said that the prominent and dominant oil sector in Libya and Nigeria, despite the huge revenue streams it generates, failed to increase the levels of foreign, social, human, productive, and financial capital. Furthermore, as the above five channelshave shown, dependence on natural capital might have led to the crowding out of these other forms of capital that are crucial for development and economic growth over the long run.

CHAPTER IV

ESCAPING THE RESOURCE CURSE: THE CASE OF NORWAY

A. Introduction

The curse of natural resources is not a universal phenomenon that occurs in all resource rich countries. After illustrating the manifestation of the oil curse in Libya and Nigeria, this chapter will provide an analysis of the Norwegian success story and how Norway managed to escape the curse. With the onset oil production in 1971, Norway witnessed a hike in oil exports accompanied byremarkable growth rates that persist to this day. Simultaneously, and unlike other resource rich countries, natural resources did not affect or displace the manufacturing sector in Norway, which is essential for productivity growth and economic development. Moreover, proper Norwegian management ofpetroleum resourcesand strong institutionsinhibited rent seeking and corruption that are usually rampant in oil rich countries. This chapter will highlight the main aspects of the Norwegian economy and policymaking that contributed to the 'escape'.

B. Overview of Norway's Oil and Gas Sector

We begin with a brief overview of the oil and gas sector in Norway. Norway is "Europe's largest oil producer, the world's second largest natural gas exporter after Russia, and the seventh largest exporter of oil (see Figure 13)" (EIA 2012).Around 90% of its oil exports go to OECD European countries. According to the Norwegian Petroleum Directorate 2013, "the petroleum constitutes 22% of GDP, 29% of total investments, 30% of government revenues, and 50% of export revenues" (Holden

2012). Moreover, "using a real interest rate of 4%, the net present value of the future cash flow from the petroleum sector is about 480 billion Euros" (Holden 2012) and 88% of it accrues to the government. These facts and figures may suggest that Norway is resource dependent and hence vulnerable to the resource curse. For this reason, it is of interest to explain why and how the country managed to overcome the curse.

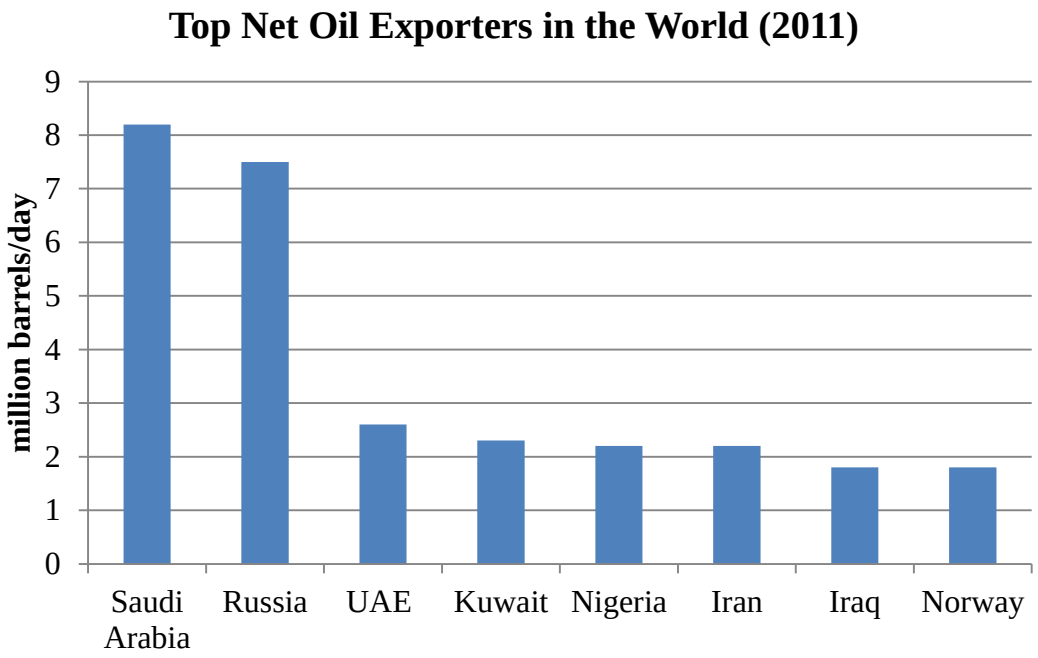

Fig.13. World's Top Oil Exporters
Source: Energy Information Administration (EIA) 2012.

C. Overcoming the Dutch Disease

As shown by Figures 14 and 15, oil and gas exports did not lead to the crowding out of manufacturing exports. Historically, the share of manufacturing exports has fluctuated between 25 and 30 percent of total exports and 10-13% of GDP since 1980, and did not witness a notable decline with the discovery and rising exports of oil and gas. The manufacturing sector is still productive and "delivering export receipts

from a diverse export base" (Larsen 2006). Hence we can say that Norway does not suffer from significant and prolonged Dutch Disease symptoms like other resource rich countries. Moreover, total oil and gas production increased by more than 200% from around 60 million sm3 o.e (standard cubic meters) in 1984 to 230 million sm3o.e today (Norwegian MoF 2014). On the other hand, the share of oil and gas exports increased around 25%, from 16 to 20% of GDP over the last three decades. Thus, despite a substantial increase in the volume of oil and gas exports, Norway is not becoming more dependent on these resources. Empirically, Bjornland and Thorsud (2013) used a Bayesian Dynamic Factor Model to prove that Norway is not a victim of the Dutch Disease. It is noteworthy that the oil and gas sector is not dominating total exports or GDP, and is not displacing other economic activities that are vital for economic growth and development.

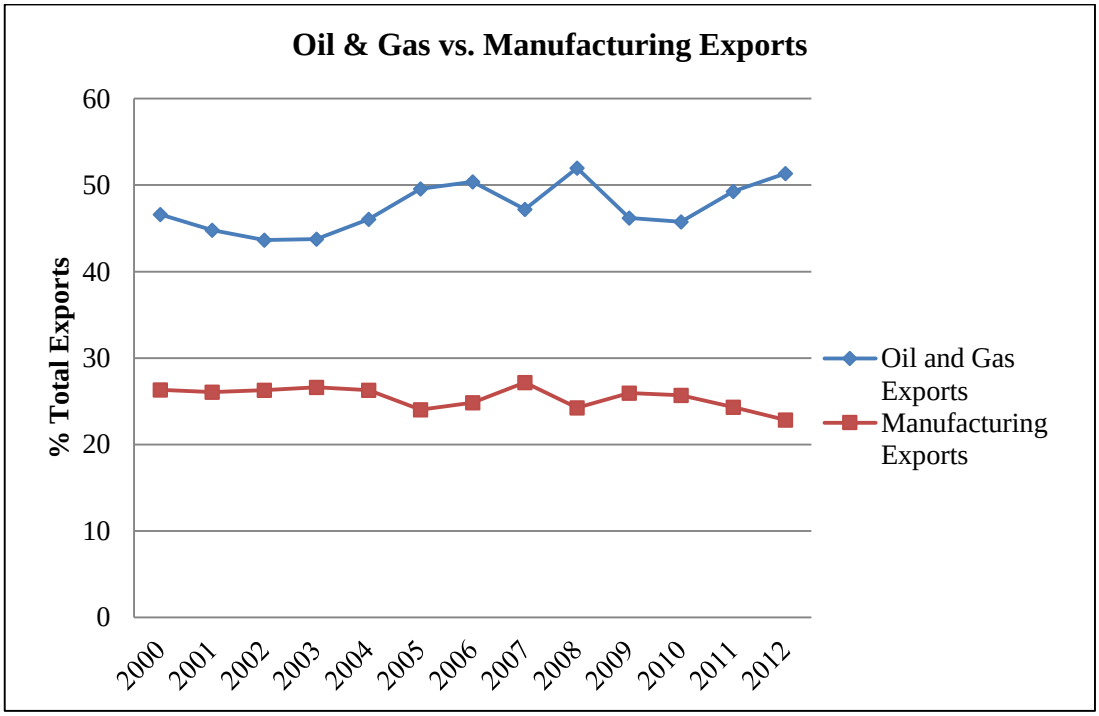

Fig.14. Oil and Gas vs. Manufacturing Exports (% total exports) in Norway
Source: Statistics Norway, National Accounts 2013.

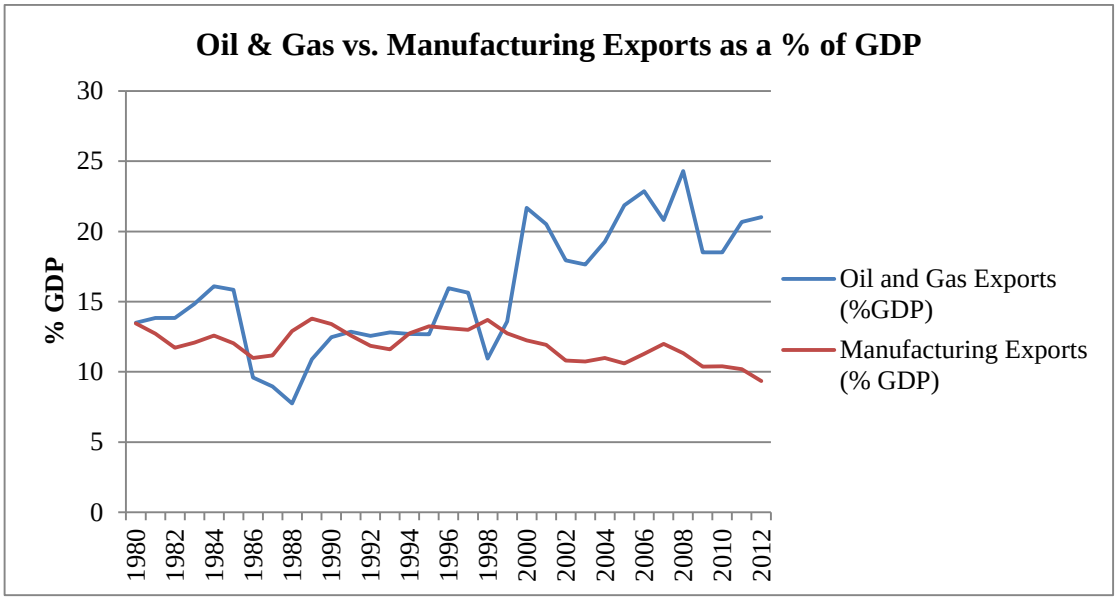

Fig.15. Oil and Gas vs. Manufacturing Exports (% GDP) in Norway
Source: Statistics Norway, National Accounts 2013.

D. Governance and Transparency: The Antidote for Rent Seeking

The rent seeking culture which is present in most resource rich countries is replaced by a 'social contract'and a solid institutional framework in Norway. This is mainly due to the fact that Norway was already a true democracy since 1905 and had a well functioning efficient bureaucracy prior to oil and gas discovery. The discoveries did not alter or distort the Norwegian government, economy or 'culture'. To this day, more than thirty decades later, illegal misappropriation of resource revenues is minimal and almost nonexistent "due to the transparency of a small country, a strong well functioning legal and judiciary system, media scrutiny, and strong social norms" (Larsen 2006).According to the 2013-2014 Global Competitiveness Report, Norway ranks 4th among 148 countries on 'public trust in politicians', 5th on 'judicial independence', and 7th on the efficiency of the legal system. These indicators reflect the remarkable institutional quality in the country.

In Norway, there is a 'legal' albeit uncommon way to access revenue streams

from natural resources especially oil and gas. Since the Norwegian government may resort to oil assets to pay public sector employees, the latter may try to obtain some of the oil wealth by exerting pressure on the government to increase their wages. This could happen if negotiations were between individual public employees and employers; however, this 'principal agent' problem is evaded since "wage negotiations go through a collective and transparent forum, results of which are reported daily in the media" (Larsen 2006). This strong centralized wage formation system makes the Norwegian labor force one of the most equally paid in the industrialized world. Consequently, there is no motive for people or groups to engage in corrupt rent seeking activities in Norway. Moreover, Norway ranked 5th among 180 countries on the Corruption Perception Index and first among 187 countries on the Human Development Index. As for political rights and civil liberties, Norway has scored 1/10 (1 being the best) on both indicators since 1973 (Freedom House 2014). Table 13 below provides further evidence of Norway's remarkable governance and strong transparent institutions, which contrast Libya, Lebanon and Nigeria's dismal indicators.

Table 13. Norway Governance Indicators

	Control of Corruption	**Government Effectiveness**	**Regulatory Quality**	**Rule of Law**	**Voice and Accountability**
2002	97	95	86	97	98
2003	97	95	88	98	97
2004	95	97	91	100	99
2005	97	96	91	99	98
2006	97	98	86	99	99
2007	94	99	87	99	100
2008	94	97	90	100	100
2009	95	97	92	98	100
2010	97	98	93	99	100
2011	98	97	94	98	100
2012	99	98	92	100	100

Source: World Bank Governance Indicators, 2013.

E. Successful Management of Resource Revenues: 10 Oil Commandments, the Pension Fund, and a Fiscal Rule

Since it is clear that oil and gas revenues do not go into state coffers or the pockets of the political elite, it is important to discuss how these receipts are managedbut before that, the channels through which the Norwegian government receives these revenues will be presented.First and foremost, the main source of resource revenues comes from taxation – the Norwegian government imposes a 78% tax on the profits of oil companies (including the regular 28% profit tax on all firms). Although the tax rate is high, the Norwegian petroleum sector attracts domestic and foreign investors due to the tax system's transparency and credibility.Second, since the government owns the land from which oil is extracted, it naturally receives royalties and area fees. Third,the government owns two thirds of Statoil (which was previously state owned but privatized in 2001) and hence obtains anequivalent share of the company's dividends. Moreover, the government fully and directly owns the SDFI (State's Direct Financial Interest) which has passive ownership in all active oil projects in the country.

To avert the resource curse, precautionary measures and proper policy making began in Norway in the 1970s. In June 1972, 10 '*Oil Commandments'* were formulated and unanimously adopted. In brief, the commandments stressed the following points: National supervision, oil independence, industrial development, protection of nature and the environment, collaboration between domestic and foreign companies,creation of an integrated oil community, and foreign policy adjustments. In 1983, a government commission suggested that "production should be undertaken at a moderate pace to ensure that resource wealth was saved for the future" (Holden 2012), and the idea of a 'buffer fund' came to light. In 1990, the *Petroleum Fund*(called the Pension Fund in 2006) was created to which net government petroleum revenues (or net cash flows from

the petroleum sector) were channeled and which could only be resorted to in the case of an ordinarynon oil budget deficit. The revenues in the Pension Fund were, or are to be invested in a diversified portfolio of foreign assets, "50-70% in equities, 30-50% in fixed income, and 0-5% in real estate" (Holden 2012). The reason oil wealth is invested abroad and not domestically, is that Norwegian companies already have "access to national and international capital markets, so profitable investments have sufficient funding" (Holden 2012). Also, if this money were to be invested in Norway, the country would fall victim to the Dutch Disease as domestic demand increases, increasing the price level, thus making tradables less competitive.Norges Bank, the Central Bank of Norway, is the fund's 'operational manager', the Ministry of Finance is the 'formal owner'; "it defines the benchmark asset allocation, and monitors and evaluates the operational management" (Holden 2012) and the Norwegian parliament is the ultimate owner on behalf of the government. The fund's main attribute is the regular reporting and supervision, and the complete transparency attached to its operation and management. In 2001, a **'***fiscal rule'*or a 'usage rule' was introduced that specified how much of the revenues should be spent (in case of a budget deficit)and how much should be saved. The rule dictated that the amount of oil revenues withdrawn or exploited "should be equal to the annual expected real return from the Pension Fund (estimated at 4%)" (Holden 2012).This expenditure limitation strategy of fiscal discretion means that the Fund would increase when additional oil revenues are generated but would never decrease even when revenues are withdrawn. These measures insulate the non oil economy and protect the Norwegian economy from the detrimentalspending effect or frenzy and from other aspects of the resource curse. As explained by Holden (2012):

> The Pension Fund and the fiscal rule would ensure that the large, volatile and temporary net cash flow from the petroleum sector is transferred to a stable supplement to the government budget.

According to the Norwegian Ministry of Finance's projections until the year 2060, the real return from the Pension Fund can cover a non-oil structural (not actual) budget deficit of around 6-7% of GDP over the coming decades.

F. Contribution to the Norwegian Economy: The Solidarity Alternative

As illustrated by the case studies on Libya and Nigeria, in countries inflicted with the resource curse, oil wealth rarely contributes to the development and strength of theeconomy and oil dependence crowds out other sectors and forms of capital. Norway on the other hand does not fit into this picture. Since 1993, the Norwegian government has adopted an economic policy called the 'Solidarity Alternative' to safeguard the prosperity and competitiveness of the non oil economy "and to help smooth income and employment during and after the period of maximum oil exports" (IMF 1999).First, Norway resorted to price subsidies and transfers to sustain certain non oil domestic industries such as manufacturing and prevent the dominance of the petroleum sector over other productive sectors. Second, unlike other oil rich countries, Norway did not neglect human capital but invested heavily in education which earned it a top 10 ranking on enrollment rates and quality of education according to the Global Competitiveness Report. Third, "labor market reforms were implemented […] and wage control and income coordination programs were followed in nationwide negotiations"(Larsen 2006).

To sum up, with the sudden discovery of oil and gas in 1969 and the subsequent increase in production and exports, which make it the second largest natural gas exporter and the seventh largest oil exporter in the world today, Norway may seem highly vulnerable to the resource curse. However, four decades have shown that Norway managed to escape the curse due to astute policymaking and successful

management of resource revenues.Proper governance, strong institutions, a transparent and accountable bureaucracy, public ownership, and a diverse export base not dominated by oil were the main reasons why Norway overcame rent seeking, corruption, conflict, and the Dutch Disease, which are the major contributors to the resource curse. The Norwegian success story is best explained by this extract from Larsen (2006):

> A strong public sector, perceived as just, efficient, and efficacious, ensured wide support for keeping the converted natural wealth in foreign assets instead of bringing it home in an attempt to increase consumption. This laid out a social contract between citizens and government, and the success of increasing standards of living ensured its acceptance and popularity" (Larsen 2006).

With top ranking on the Human Development Index, World Governance Indicators, and the Global Competitiveness Report, and a massive oil wealth residing in aPension Fund that can cover more than 50 years of structural budget deficits, oil in Norway is far from being a curse, it is actually a blessing.

G. Norway's Oil for Development Program

It is important to note that in 2005 Norway launched an 'Oil for Development' (OfD) program aimed at helping developing countries with exploitable resource discoveriesin their efforts to manage these resources and subsequent revenues in a way that fosters economic growth, promotes welfare and is environmentally sustainable, (Ofd 2012).In Lebanon,the Norwegian government has been providing technical assistance regarding the Lebanese nascent petroleum sector since 2007, and the Norwegian Oil for Development program helped the government complete the formulation of the Petroleum Law, establish the necessary legal framework, and prepare for licensing rounds, all of which will be thoroughly discussed in the next chapter.

CHAPTER V

THE CASE OF LEBANON: A VULNERABILITY ASSESSMENT

A. Overview of Oil and Gas Discoveries

The Mediterranean Levant Basin, which encompasses Syria, Lebanon, Palestine, Israel and offshore Cyprus, can be labeled today as an 'exploration hotspot' with oil and gas discoveries that could alter the region's energy picture. Driven by an increase in global oil demand, a rise in international oil prices and technological advancements in offshore drilling and surveying, this area has witnessed a remarkable surge of international interest especially in the past 5 years. Moreover, the region's strategic location (particularly close to EU markets), makes it an important and attractive market with large potential for oil and gas trade. According to recent estimates by the US Geological Survey (USGS) in its 'Assessment of Undiscovered Oil and Gas Resources of the Eastern Mediterranean Levant Basin Province', the Levant Basin is "estimated to contain 122 trillion cubic feet of recoverable natural gas and 1.7 billion barrels of recoverable oil" (Salamey 2013). If these estimates are accurate, this would indicate that this region has more oil reserves than Algeria (1.5 billion barrels according to BP) and similar gas reserves as Iraq (127 trillion cubic feet) (Dudley 2013) implying that the eastern Mediterranean region is certainly a game changer. It should be noted here that these estimates are different from 'economically-recoverable' oil and gas since some reserves may turn out to be too costly or hard to extract. Despite this fact, the region still promises huge potential. These oil estimates would increase the region's proved oil reserves by 60% "meeting the region's oil demand for the next 20 years considering current consumption levels" (Bemo 2014). As for natural gas, "the

estimated 122 tcf represents six folds the region's current proved reserves" (Bemo 2014).

In Lebanon, 2012 3D seismic surveys conducted by British firm Spectrum, revealed 25-35 trillion cubic feet (tcf) of natural gas and a 2011 report by BeicipFranlab estimated 440-675 million barrels of oil (Salamey 2013). In 2013, Former Energy Minister GebranBassil had projected that drilling could start by 2015 and production by 2017; however, experts deem this timetable to be far too ambitious and consider 2020 a more realistic target, that is without taking foreign, regional and political obstacles into consideration.

B. The Lebanese Oil and Gas Sector: Major Milestones and Obstacles

1. Major Milestones

Although neighboring countries have made substantial progress, Lebanon still lags behind in tapping the estimated reserves. The table below shows a timeline of Lebanon's slow progress and major milestones.

The development of a strong and effective Lebanese oil and gas sector, that will help Lebanon overcome the resource curse, is contingent upon 2 major factors: first, an institutional and legal framework for exploration, and second (following the licensing process) good governance, accountability and transparency of information (Marcel 2013).As shown by Table 14, over the past few years, the Lebanese government has made a slow yet substantial effort in establishing an adequate institutional and legal infrastructure necessary for investment in the sector.The ratification of the Petroleum Law in 2010 enabled the government to formulate petroleum policies, "grant rights and authorize the Minister of Energy to sign Exploration Petroleum Agreements (EPA) with successful bidder" (Salamey 2013).

Table 14.Timeline of Lebanon's Major Milestones

1947-1975	7 onshore wells drilled. Exploration licenses cancelled due to 1975 civil war
2000-2002	2D seismic offshore surveys by UK's Spectrum[1]
2006	Norwegian Petroleum Geo-Services performed 1st 3D survey offshore Lebanon[2]
Jan 2007	Oil for Development Cooperation Program with Norway launched[3]
Jan 2007	Agreement on the delimitation of the Exclusive Economic Zone signed with Cyprus[3]
Oct 2007	Petroleum Policy approved by government
2007-2008	2D & 3D seismic surveys by Norway's PGS[1]
Aug 2010	Offshore Petroleum Resources Law 132 (OPRL) ratified by parliament[3]
Nov 2010	Data Room established at MEW
July 2011	BeicipFranlab resource base assessment report published[3]
Jan 2012	Council of Ministers ratified OPRL [2]
May 2012	Strategic Environmental Assessment Launched
Nov 2012	Petroleum Administration (PA) established
Feb-April 2013	1st offshore licensing round Pre Qualification Results[4]
May 2013	Official Opening of Lebanon's 1st Licensing Round[2]
May 2013-April 2014	Bidding Process for offshore oil and gas exploration & production[4]
May 2014-June 2014	Bid Evaluation[4]
June 2014	Award[4]

Source: [1]Marcel 2013, [2]Bank Bemo 2014, [3]Gulf Intelligence 2012 [4]Petroleum Administration 2014.

A six-member Petroleum Administration, the sector's regulatory body responsible for "licensing and monitoring operations" (Marcel 2013) was finally established in 2012 after the country's various sectarian political groups sought control over the nomination of the PA's members. This "culminated in a sectarian power sharing formula where membership was distributed along sectarian affiliation" (Salamey 2013). These six members portray the mosaic of the different Lebanese sects.

The oil and gas auction was postponed three times due to political obstacles. According to the Petroleum Administration, since May 2013 prequalified companies have been engaged in a bidding process for exploration and production blocks, which is

expected to end in April 2014. Evaluation of bids will then be completed by June and awards granted thereafter. Exploration and production contracts or licenses will be offered up to 10 and 30 years respectively.

So far, the 'competitive bidding' approach adopted by the Lebanese government and adapted from the Norwegian model is better and more transparent than alternative methods used in other developing countries such as "direct negotiations or awarding contracts on a first-come first-serve basis" (Nakhle2013). The 'hybrid model' adopted in Lebanon is based on the companies' experiences, technical competencies, work programs and on the profit sharing agreement. Eligibility criteria upon which companies were assessed include the following: operating companies are required to have total assets of 10 billion dollars and operate at least one petroleum development project in water deeper than 500m. Of the 16 applicants, 12 companies were qualified and can bid for the ten offshore blocks, including US Exxon Mobil, Norwegian Statoil, French Total, and Japanese Inpex just to name a few. As for non operators, they are obliged to have assets of 500 million dollars. Of the 38 applicants, 34 were qualified including Canadian Suncor, Lebanese CC Energy Limited, Russian Lukoil and Novatek, and UAE's Mubadala Petroleum (PA 2014). To avoid domestic disputes, since each sectarian political group in Lebanon is more or less affiliated to a certain foreign country, a consortium of three companies from different countries is a requirement for granting an EPA (exploration petroleum agreement).

2. Obstacles

The resource curse literature discussed in chapter two links the presence of oil and gas resources to a higher probability of inter and intra-national conflict. This facet of the oil curse can certainly be applied to the Lebanese case. Home to half a million

Palestinian refugees, over a million Syrian refugees, and a fragmented sectarian society composed of over 18 sects, Lebanon is particularly vulnerable to political conflict and foreign meddling. If the appointment of the six PA members created such political disputes and competition, the future inflow of hydrocarbon revenues is expected to exacerbate the existing domestic sectarian and political tension as politicians fight over ownership and revenue distribution. A possible solution to this problem is the formation of a National Oil Company (NOC) and a Sovereign Wealth Fund (SWF) like the successful Norwegian Pension Fund discussed in chapter four. Article 6 of the Offshore Petroleum Resources Law states that the "Council of Ministers may establish a National Oil Company when necessary and after promising commercial opportunities have been verified." Article 3 of OPRL stipulates that part of the proceeds from petroleum activities or rights will be placed in a sovereign investment fund for future generations. "The total government take will be composed of area fees (350$/km^2 in the first year and 400$/km^2 in the second), royalties (4% rate for natural gas and 5-12% for crude oil production), pre-tax petroleum profit share according to a Profit Sharing Contract, and taxes (around 24% for foreign companies)" (Bemo 2014). Exactly how much of these proceeds will actually be placed in the fund and how much will flow into the treasury and politician's pockets is a question to be answered once revenues start flowing.

Another major obstacle is the fact that Lebanon "does not have a settled maritime boundary with any of its neighbors: Israel, Cyprus, Turkish Northern Cyprus, and Syria" (Salamey 2013) because Lebanon is the only country in the Levant Basin that "has ratified United Nations Convention on the Law of the Sea (UNCLOS), although these rules are considered binding on all states" (Salamey 2013). According to the 2013 Fraser Institute Global Petroleum survey, Lebanon was the 37th riskiest country globally and the 9th riskiest in the MENA region on the 'Geopolitical Risk

Index' which "assesses the political and security risks that could threaten the physical safety of personnel or present risks to an investor's facilities" (Bemo 2014). Predictably, Syria and Libya ranked in the bottom. Turkey's opposition to the 2007 agreement between Lebanon and Cyprus, a disputed area of 879 km^2 (blocks 8 and 9) said to be rich in natural gas between Lebanon and Israel, and "Syrian objections against the Lebanese interpretation of the northern maritime border" not only jeopardize future oil and gas extraction, but may lead to regional volatility and security threats.

As for cross-border conflicts, Lebanon, Syria and Israel have already been fighting over offshore boundaries, border delimitations and rights to water and fertile lands for decades. Adding oil and gas to the mix will not only rekindle these fires but ignite new ones. In the absence of proper security arrangements on both sides of the Lebanese border, oil and gas discoveries and potential revenues could become a catalyst for armed conflict.

3. Optimism Remains

Looking at the glass half full, the fact that 54 giant international companies from various countries applied to the prequalification round indicates that despite the many risks and regional volatility discussed above, the Lebanese oil and gas sector is still attractive and promising. The IOCs come from several countries including the United States, Russia, France, Japan, Norway, and Spain just to name a few. Noteworthy is the Total-Lukoil (French-Russian) exploration agreement which appears to be "an international strategy of cooperation for the purpose of collective interest" (Salamey 2013) and could contribute to stability and domestic reconciliation in Lebanon. Oil and gas in Lebanon could turn out to be a blessing after all. An unstable and conflict prone environment acts against the favor of both international companies

investing huge amounts in exploration and production, and domestic collective interest hence it is also likely that the presence of oil and gas would mitigate political tension and foster cooperation under a common agenda instead of conflict.

C. Contributions to the Economy

Even though the "recent discoveries of oil and gas reserves in the Eastern Mediterranean Sea and the Bekaa valley […] are not expected to lead to a domestic fuel supply in the very near future" (Ruble 2011), eventual revenue streams from the oil and gas sector will alter the state of the Lebanese economy. First and foremost, the government will accrue revenues from collecting area fees, royalties, taxes and profit sharing contracts discussed earlier. In addition to offsetting imported energy expenses of $1 bn per year, such oil and gas revenues could be used to reduce the country's huge public debt (around 140% of GDP). In other words, there is a high probability that "the bulk of oil and gas wealth will flow to the Lebanese Treasury" (Sassine 2012) as former Prime Minister NajibMikati declared in 2012 that certain revenues will be directed towards reducing the Lebanese public debt to 60% of GDP. However, as discussed earlier, the dependence of governments on resource revenues could lead to an adverse destabilizing effect on the budget due to the volatile nature of international oil and gas prices. On the other hand, the Lebanese Offshore Petroleum Resources Law has proposed the establishment of a sovereign fund, based on the Norwegian Model, to which net proceeds will be channeled. A Sovereign Wealth Fund will cushion the economy from potential price shocks or stabilize the government budget, fight inflation by absorbing excess liquidity, and "diversify the investment of government revenues" (Bemo 2014) thus ensuring a balance between short term gains and long term benefits (especially for future generations).

Our previous discussion linked natural capital to human capital –a major factor contributing to economic growth. The case studies on Libya and Nigeria revealed that despite their oil wealth, the oil sector in both countries did not create sufficient and productive job opportunities and hence did not promote economic growth. In Lebanon, the PA's E&P agreement requires Lebanese employees to constitute 80% of the total workforce. Moreover, article 67 of OPRL stipulates that:

> Right holders and subcontractors shall give priority to Lebanese persons in the award of contracts for construction of a Facility and the supply of material, goods and services related to Petroleum Activities […] and shall employ qualified personnel of Lebanese nationality whenever available. Right Holders shall also organize and fund the training of Lebanese personnel associated with Petroleum Activities (OPRL 2011).

Whether these mandates for the workforce quota are beneficial or not will depend on the level of domestic expertise and the efforts of academic and technical institutions in developing local skills. Furthermore, since foreign experts are needed especially at the early stages of exploration and production, the developing oil and gas sector "will have spillover effects on a number of industries creating employment opportunities in real estate services, hotels and accommodation, insurance services, rental and leasing, financial services and others" (Bemo 2014).

The region's promising estimates especially those for natural gas, open rewarding export options for Lebanon yet challenging for a country which currently imports over 95% of its energy needs. "Natural gas can be exported via pipelines, converted to LNG or CNG, or generated to exportable electricity" (Bemo 2014). Focusing on the pipeline option, Lebanon is already part of the 1,200 km Arab Gas Pipeline network so a feasible option for exporting natural gas would be via this trans-regional pipeline, which facilitates the export of Lebanese natural gas to Europe through Turkey.

After presenting the possible contributions of the oil and gas sector to the Lebanese economy, we will examine the most important element that could make or break this sector –governance.

D. Governance Prospects of Lebanon's Petroleum Sector

The performance of the Lebanese public sector so far is far from encouraging hence its ability to develop and maintain a healthy transparent oil and gas sector is highly questionable. As demonstrated by the case studies on Libya and Nigeria, the presence of a resource curse is linked to if not triggered by poor governance, weak institutions, and pervasive corruption. As stated earlier, strong governance, accountability, and transparency are key requirements both prior to and after the discovery of extractive resources.

World Bank Governance Indicators expose "an area of weakness in the state's capacity, which may undermine the formal structure for governing the petroleum sector" (Marcel 2013). Table 15 below shows that although Lebanon has had much better governance indicators than Libya and Nigeria for the past ten years, it still suffers from some major setbacks. 'Political stability and Absence of Violence' indicator put Lebanon at the bottom 3rd percentile globally in 2007 and the bottom 6th percentile in 2012. Lebanon also ranks poorly in terms of 'Control of Corruption' and 'Voice and Accountability' ranking in the bottom 20th and 30th percentile respectively. On the 'Rule of Law' indicator, Lebanon ranks in the bottom 27th percentile since "the sectarian political system and the powerful role of foreign patrons limit the public accountability of elected officials" (Heritage 2014). Moreover, Lebanon's score on Transparency International's Corruption Perception Index is 28/100 as political corruption and bureaucratic red tape are prevalent and anti corruption laws are loosely

and barely enforced. These scores and low rankings expose "public concerns regarding the risk of capture of the state by political elites" (Marcel 2013). As for 'Regulatory Quality' and 'Government Effectiveness' which reflect the government's ability to devise and execute sound policies, Lebanon ranks in the mid-range percentile globally. Hence it is obvious that the major threats to Lebanon's nascent petroleum sector are political instability, corruption, lack of transparency, and exercising public power for private gain which can be quite substantial when oil revenues start flowing.

Table 15. Governance Indicators in Lebanon

	Voice and Accountability	**Political Stability**	**Government Effectiveness**	**Rule of Law**	**Regulatory Quality**	**Control of Corruption**
2002	26.44	29.33	45.85	46.89	40.69	42.44
2003	31.73	28.85	49.27	42.11	49.02	34.63
2004	35.58	22.6	47.32	45.45	50.98	29.76
2005	39.42	17.31	48.29	43.54	50	38.54
2006	33.65	5.29	44.39	31.58	48.04	17.56
2007	33.17	3.37	44.66	27.27	46.6	19.9
2008	34.13	4.78	41.26	29.81	46.6	19.9
2009	35.07	8.06	38.76	29.86	52.63	22.49
2010	35.07	5.66	44.98	30.33	53.59	20.48
2011	34.27	5.66	45.97	30.52	52.13	19.43
2012	34.6	6.16	43.06	27.49	47.37	21.53
Average	**34**	**12**	**45**	**35**	**49**	**26**

Figures in percentile rank
Source: World Bank Governance Indicators.

This critical flaw in the Lebanese governance system can be resolved by the engagement of civil society in monitoring the oil and gas sector, and demanding "public disclosure of financial and operational data and holding decision makers to account" (Marcel 2013). To ensure financial transparency in the petroleum sector, Lebanon should implement "international standards established by the Extractive Industries

Transparency initiative (EITI) and the United Nations Convention against Corruption (UNCAC)" (Sassine 2012). The EITI obliges governments to publish revenues generated from the sale of oil and gas, making it hard for politicians to divert these revenues into their pockets. In 2008, Lebanon ratified the UNCAC which required the establishment of an anti corruption committee which recently culminated in the formation of a "package on governance containing a draft access to information law, a proposal for the creation of a Corruption Commission, and improved regulation of illicit wealth -which was recently submitted to Parliament" (Salamey2013). The ratification of these legislations will enhance the transparency and accountability vital for the development of Lebanon's petroleum sector.

E. Attractiveness of Lebanon's Oil and Gas Sector: A Survey of Indices

The World Bank classified Lebanon among the seven most vulnerable countries in the MENA region alongside Egypt, Jordan, and Libya. A glimpse of Lebanon's deteriorating macro fundamentals (see Table 16 below), especially after the crisis in neighboring Syria, reflects the country's economic vulnerability which diminishes the attractiveness of investing in the new petroleum sector.

Table 16. Macro Fundamentals in Lebanon (2013)

Unemployment	13%
Inflation	3.2%
GDP Growth Rate	1.5%
Gross Public Debt	$63.46 bn
Domestic Public Debt	$37.3 bn
Foreign Public Debt	$26.1 bn
Debt to GDP	146%
Fiscal Deficit to GDP	11%

Source: World Bank, World Economic Outlook Database 2013.

Lebanon's current score on the 'Economic Freedom' index is 59.4 (/100) which is close to yet below the world average of 60.3, and the regional average of 61.5, (Heritage Foundation/Wall Street Journal 2014). Table 17 and Figure 16 below show Lebanon's score on the individual sub indices. The most dismal of these is unsurprisingly the 'Freedom from Corruption' index and the 'Property Rights' Index. However, the scores on 'Business Freedom', 'Investment Freedom' and 'Financial Freedom' portray a brighter picture. The interest of the 54 international oil companies in Lebanon's promising oil and gas sector reinforces this result.

Table 17. Lebanon 2014 Index of Economic Freedom and Sub-indices

Overall Score	**Freedom From Corruption**	**Fiscal Freedom**	**Business Freedom**	**Investment Freedom**	**Financial Freedom**	**Property Rights**
59.4	24.5	90.9	55.6	60	60	20

Source: The Heritage Foundation & Wall Street Journal 2014.

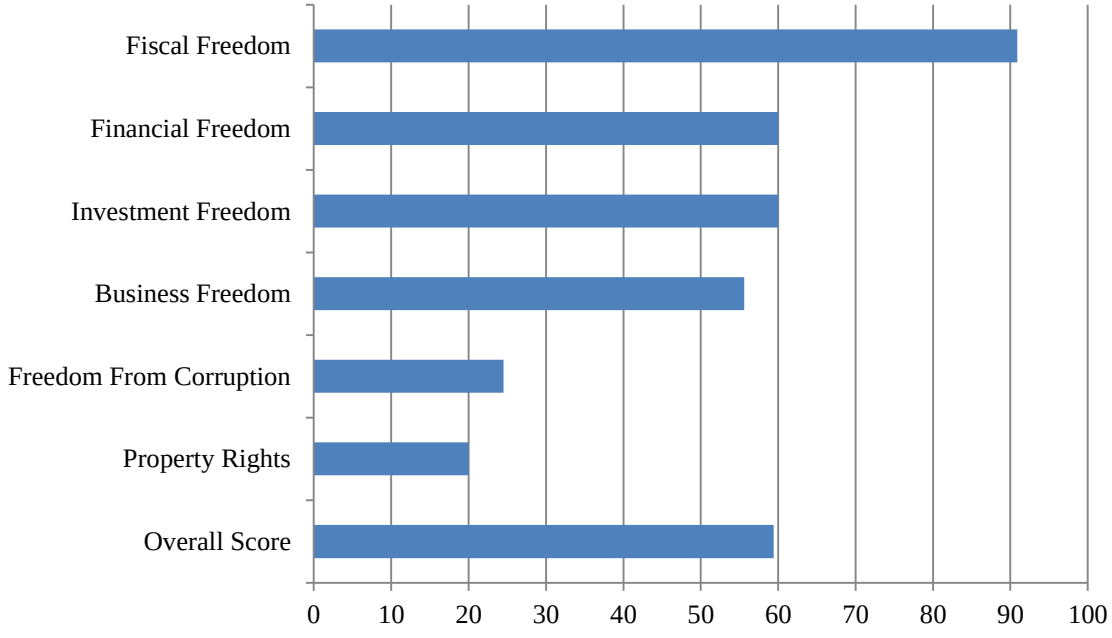

Fig.16. Lebanon 2014 Index of Economic Freedom and Sub-indices

Among these indices, the '*Investment Freedom Index'* is the main indicator of how attractive investment is in Lebanon in general and in the Lebanese oil and gas sector in particular. Figure 17 below shows that after declining to 30/100 from 2005 to 2009 due to domestic political instability, Lebanon's score increased to 60 today. Figure 18 shows Lebanon's good ranking among Arab countries, comparable to Kuwait's and Djibouti's scores and better than Qatar's and UAE's. Libya's score is remarkably low in the bottom 5th percentile globally. Nigeria's score was included for comparison and is a mediocre 40/100.

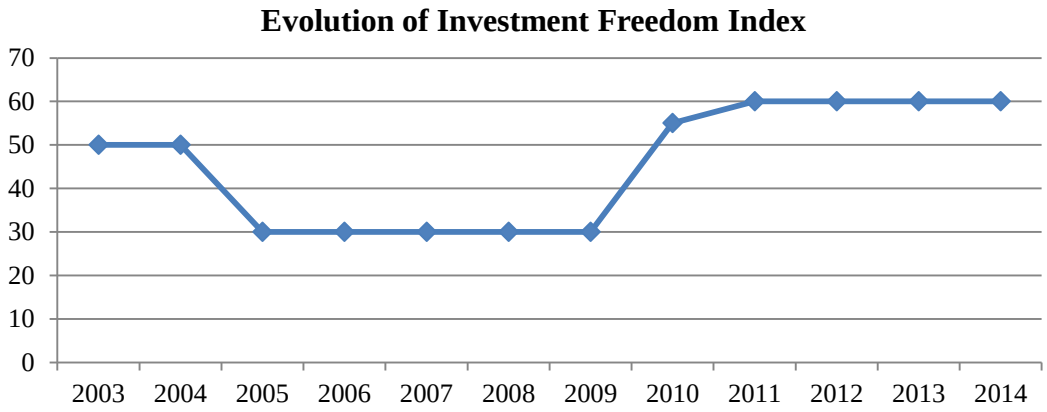

Fig.17. Evolution of Investment Freedom Index in Lebanon

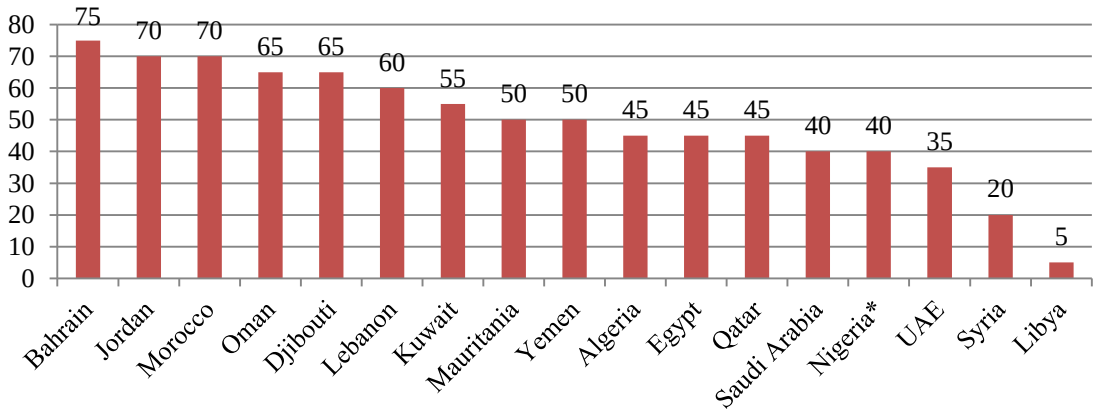

Fig.18. Arab Countries' Investment Freedom Index (2014)
Source: The Heritage Foundation/Wall Street Journal and Bank Byblos 2014.

Next, we move from the broad investment environment to investment in the oil and gas sector in particular. Table 18 below ranks MENA countries according to the presence of barriers to investment in oil and gas exploration and production activities, from lowest to highest barriers. A higher score reflects more barriers to investment and a lower rank. Lebanon ranked 88th among the157 studied countries and 10th among the 17 MENA countries (Byblos 2014). Figure 19 shows the countries' scores on the *'Policy Perception Index'*which captures perceptions regarding the level of investment barriers influencing investment decisions in the hydrocarbons sector, as well as the effectiveness of energy policies. A higher score indicates a more dismal perception. Naturally, the figure shows same rankings as Table 19 since policy perception is a vital element behind investment decisions.

Table 18. Barriers to Investment in Oil and Gas E&P (2013)

Country	**Score**	**MENA Rank**	**Global Rank**
Qatar	24.16	1	18
UAE	26.49	2	25
Oman	27.84	3	31
Bahrain	34.51	4	44
Jordan	34.60	5	45
Morocco	36.18	6	51
Kuwait	39.56	7	60
Mauritania	48.55	8	77
Tunisia	49.35	9	78
Lebanon	**52.22**	**10**	**88**
Egypt	62.62	11	117
Yemen	64.42	12	120
Algeria	71.04	13	126
Syria	78.53	14	143
Libya	79.98	15	145
Iraq	82.88	16	149
Iran	97.17	17	155

Source: Fraser Institute and Bank Byblos 2014.

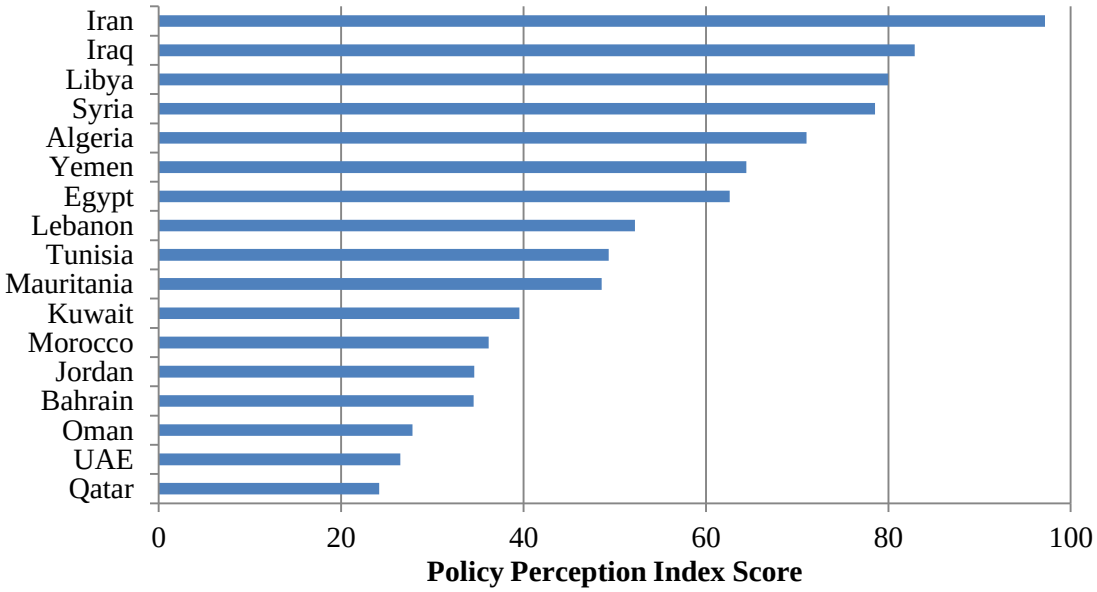

Fig.19. Barriers to Investment: Policy Perception Index Scores
Source: Fraser Institute and Bank Byblos 2014.

Another indicative index is the '*Commercial Environment Index'* "that accounts for taxation regimes, quality of infrastructure, trade barriers and labor availability and skills" (Bemo 2014) as well as "government requirements on royalties, production shares, and licensing fees" (Byblos 2014). Lebanon also ranks 10th among the 17 MENA countries and 82nd globally. The amendments to the tax on exploration and production proposed by the Petroleum Administration may improve these scores and offer more incentives for international companies to invest in the oil and gas sector. The 2013 Global Petroleum Survey showed that the scarcity of qualified labor is the most problematic factor deterring investment in the sector, followed by trade barriers, weak infrastructure quality, taxation system, and finally royalties and fees. Lebanon had the same ranking on the '*Regulatory Climate Index'*as the majority of respondents considered the lack of transparency in the legal system the main drawback to investment. On the other hand, Lebanon ranked 3rd on the *'Environmental Regulation Index'* mainly due to the launching of the Strategic Environmental Assessment (SEA) in

2012. The SEA serves as a "guide to the government and the Petroleum Administration on the potential environmental impacts of extraction, ranging from air pollution to more catastrophic scenarios such as spillage" (Bemo 2014). In this area, Lebanon outperforms its contenders Cyprus and Israel. Since Lebanon has enough pollution to deal with, the fact that precautionary measures and environmental assessments are being conducted prior to extraction and production should mitigate the 'environmental' aspect of the resource curse.

These indices along with governance indicators and the economic freedom index will be used to construct a 'Vulnerability Index' for Lebanon that will allow us to quantify the extent to which Lebanon is at risk of becoming a victim to the resource curse.

F. Vulnerability Index

The 'resource curse' hypothesis stems from two major fields of study: politics and economics; hence, when assessing exactly how vulnerable Lebanon is to this curse, it is important to take both aspects into consideration. To quantify this risk, a 'Vulnerability Index' will be created based on three main themes: governance, economic freedom, and the current state/attractiveness of the nascent oil and gas sector.

Five Governance Indicators will be used as a proxy to the political or institutional aspect of the resource curse and these are: the Control of Corruption Index, Voice and Accountability Index, Political Stability and Absence of Violence Index, Government Effectiveness Index, and Regulatory Quality Index.

The Control of Corruption Index reflects the degree "to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests" (World Bank 2014). Since most

countries that suffer from the resource curse are characterized by public sector corruption, this sub index is a significant component in the Vulnerability Index. Voice and Accountability Index reflects "the extent to which citizens are capable of selecting their government, as well as freedom of expression and association" (World Bank 2014). The ability of citizens to hold their government accountable of its actions is crucial once oil and gas revenues start flowing. Political Stability and Absence of Violence is an important requirement both prior to and after oil and gas discoveries and the score on this index captures Lebanon's existing political instability and lack of national security. Government Effectiveness reflects the "quality of public services and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government" (World Bank 2014). Regulatory Quality captures the government's ability to devise and execute sound policies and regulations that endorse sector development. This is crucial to the development of a strong oil and gas sector. Together, these components reflect the main dimensions of governance.

The Economic Freedom index will be used to represent the economic aspect of the curse. Lebanon's score on the Economic Freedom Index is 59.4 which is below the world and regional average. The result of politicians' lack of accountability and the presence of bureaucratic red tape is that "Lebanon, the oldest free-market economy in the Arab world, ranks so low in the region and has slipped into the 'mostly un-free' category" (Maloy 2013). However, this overall score can be regarded as 'overly pessimistic' and a proof is the interest of 54 international oil companies' in investing in Lebanon. Moreover, Lebanon's scores on the Fiscal Freedom, Business Freedom, Investment Freedom, and Financial Freedom sub-indices are relatively good especially when compared to other MENA countries. These sub-indices were discussed in detail in

the previous section.

Four indices that describe the current state and prospects of Lebanon's oil and gas sector will be used and they are: the Policy Perception Index, Commercial Environment Index, Environmental Regulation Index, and the Geopolitical Risk Index. These indices and Lebanon's score on each one were also discussed in the previous section.

The Vulnerability Index is a simple average of the ten components and is on a scale of 0 to100 where a higher score indicates more vulnerability or a higher probability of becoming a victim of the resource curse when extraction and production commences and revenues start flowing. The ten individual components or sub-indices of the Vulnerability Index are assigned equal weighs (10% each) due to their overall importance in determining whether Lebanon is susceptible to the curse, or capable of overcoming it. Table 19 below shows the most recent scores on the individual components of the Index[1] as well as the overall score on the 'Vulnerability Index'.

Table 19. Vulnerability Index Components and Overall Score

		Score
1.	Corruption Perception Index	72
2.	Voice and Accountability	66
3.	Political Stability and Absence of Violence	94
4.	Government Effectiveness	55
5.	Regulatory Quality	51
6.	Economic Freedom Index	41
7.	Policy Perception Index	53
8.	Environmental Regulation Index	24
9.	Commercial Environment Index	42
10.	Geopolitical Risk Index	65
	VULNERABILITY INDEX	**56**

Source: World Bank 2013, Heritage Foundation 2014 and Fraser Institute 2014.

[1] Scores on Governance Indicators and Economic Freedom have been inverted such that a higher number represents a worse score, and all scores are rounded to the nearest ones.

Vulnerability Index=56.3 hence it can be said that *Lebanon is 56% vulnerable to the resource curse*. Corruption, lack of transparency and accountability, political instability and geopolitical risk overshadow the less dismal score on economic freedom and make Lebanon particularly vulnerable to the resource curse. The question of whether oil and gas will be a blessing or a curse to Lebanon will be answered with time, mainly when production begins and revenues start flowing to the treasury.

CHAPTER VI

CONCLUSION

This study provided a comprehensive framework for understanding the 'Resource Curse Hypothesis' and examined country specific empirical evidence on the presence of the curse in oil dependent countries. The theoretical framework presented spanned the various definitions of the resource curse and highlighted the endogenous and exogenousexplanations behind it. While most literature on this topic focuses on one particular aspect of the curse, this study tackled the different channels through which the resource curse is manifested.

Case studies on Libya and Nigeria were conducted to illustrate the transmission mechanism behind the oil curse. A heavy dependence on natural resources in general and oil in particular influences "some variable or mechanism X which impedes growth. An important challenge for economists is to identify and map these intermediate variables and mechanisms" (Gylfason 2004). Five major channels through which oil dependence hinders economic growth and thus becomes a curse were highlighted. These channels were illustrated in terms of a 'crowding out' effect whereby a heavy dependence on oil (natural capital) tends to crowd out other forms of capital necessary for growth namely –foreign capital, social capital, human capital, real or physical capital, and financial capital. All these types of capital are positively correlated with economic growth, and since oil dependence, or broadly speaking -natural capital, often crowds out these other forms of capital, we can deduce that oil dependence has a negative impact on growth. Empirical results from Libya and Nigeria confirmed that natural capital has indeed resulted in the crowding out of foreign, social, human,

physical, and financial capital and hence impeded real sustainable economic growth.

Since the resource curse is neither inclusive nor universal, a case study on the successful Norwegian management of petroleum resources, which enabled the country to overcome the curse by using revenue streams to promote economic growth, was presented. In brief, the Norwegian success story revolves around these main elements: overcoming the Dutch Disease by maintaining a healthy manufacturing sector and a diverse export base, governance, transparency and accountability -antidotes for rent seeking, and proper management of resource revenues through 10 Oil Commandments, a Pension Fund, a Fiscal Rule, and the Solidarity Alternative.

Finally, in light of recent oil and gas discoveries in the Mediterranean Levant Basin in general and Lebanon in particular, a vulnerability assessment was conducted to quantify the extent to which Lebanon is vulnerable to the resource curse. Our findings indicate that the development of a strong and effective Lebanese oil and gas sector, that will help Lebanon overcome the resource curse, is contingent upon 2 major factors: first, an institutional and legal framework for exploration, and second (following the licensing process) good governance, accountability and transparency of information (Marcel 2013).After presenting an overview of oil and gas discoveries, major milestones and obstacles pertaining to the nascent Lebanese oil and gas sector were highlighted and future contributions to the Lebanese economy were discussed. Future oil and gas revenues could decrease Lebanon's debt of US$63 billion (more than 140% of GDP) and offset $1bn per year in imported energy expenses; however, major challenges remain including regional volatility, unresolved demarcation o f maritime boundaries with Israel, political and sectarian disputes, and "deficient regulatory and audit agencies"(Salamey 2013).

Based on governance indicators and a number of indices related to the oil and

gas sector, a Vulnerability Index made up of 10 components was created and results revealed that Lebanon is 56% at risk of becoming a victim to the curse, once extraction and production commence and resource revenues start flowing to the treasury.

The performance of the Lebanese public sector so far is far from encouraging hence its ability to develop and maintain a healthy transparent oil and gas sector is highly questionable. As demonstrated by the case studies on Libya and Nigeria, the presence of a resource curse is linked to if not triggered by poor governance, weak institutions, and pervasive corruption. The Norwegian case reveals that strong governance, accountability, and transparency are key requirements both prior to and after the discovery of extractive resources.

However, looking at the glass half full, the fact that 54 giant international companies from various countries applied to the prequalification round indicates that despite the many risks and regional volatility, the Lebanese oil and gas sector is still attractive and promising. An unstable and conflict prone environment acts against the favor of both international companies investing huge amounts in exploration and production, and domestic collective interest hence it is also likely that the presence of oil and gas would mitigate political tension and foster cooperation under a common agenda instead of conflict.

BIBLIOGRAPHY

Arezki, R. and Nabli, M.K. 2012. "Natural Resources, Volatility, and Inclusive Growth: Perspectives from the Middle East and North Africa." Economic Research Forum: Working Paper Series, 1-19.

Arezki, R. and Van der Ploeg, F. 2007. "Can the Natural Resource Curse be Turned into a Blessing: The Role of Trade Policies and Institutions". IMF Working Paper WP/07/55.

Asfaha, S. 2007. "National Revenue Funds: Their Efficacy for Fiscal Stability and Intergenerational Equity." Munich Personal RePEc Archive, International Institute for Sustainable Development.

Bank Byblos.2014. "Lebanon this Week". Bank Byblos Economic Research and Analysis Department, 341.

Beblawi, H. (1990). The Rentier State in the Arab World.*Arab Studies Quarterly*9(4): 383-398.

BEMO. 2014."Hydrocarbons in Lebanon". *BEMO Industry Report*, 1.

Bravo-Ortega, C. and de Gregorio, J. 2007. "The Relative Richness of the Poor? Natural Resources, Human Capital, and Economic Growth".In D. Lederman, W. F. Maloney (Eds.).*Natural Resources: Neither Curse nor Destiny*. Latin American Development Forum Series, 71-99.

Charap, J. 2013. "Libya: Selected Issues". International Monetary Fund Country Report No.13/151.

Cramsey, M. 2008. "Challenging the Curse: Creating a New Framework for Understanding the Resource Curse".International Politics of Oil.

Darbouche, H., El Katirir, L. andFattouh, B. 2012. "East Mediterranean Gas: What Kind of a Game Changer". Oxford Institute for Energy Studies.

Dudley, D. 2013. "Oil and Gas: Beirut's Blessing or Curse?" Middle East Business Intelligence.

EIA.. 2013. "Libya and Nigeria Country Analysis".Energy Information Agency.

ETF.2014. "Libya". European Training Foundation.

Freedom House. 2013. Political Rights and Civil Liberties Indices.

Gylfason, T. (2001).“Natural resources, education, and economic development,” *European Economic Review* 45: 847–859.

Gylfason, T. 2004. “Natural Resources and Economic Growth: From Dependence to Diversification.” Centre for Economic Policy Research, Discussion Paper No. 4804.

Gylfason, T., Herbertson, T.T. and Zoega, G. (1999), “A mixed blessing: natural resources and economic growth.” *Macroeconomic Dynamics* 3: 204-225.

Hall, C. (2013). “Lawyers Warn over Libya’s Draft Law on Foreign Companies.” *The Financial Times*.

Hartford, T. and Klein, M. 2005. “Aid and the Resource Curse”. The World Bank Group, Private Sector Development Vice Presidency, Note #291, Washington DC.

Holden, Steinar. 2013. “Avoiding the Resource Curse: The Case of Norway”. Centre of Equality, Social Organization, and Performance (ESOP), University of Oslo.

Idemudia, U. (2009). “The Quest for the Effective Use of Natural Resource Revenue in Africa: Beyond Transparency and the Need for Compatible Cultural Democracy in Nigeria.” *Africa Today* 56 (2).Indiana University Press.

IMF.2013. “World Economic Outlook Database”. International Monetary Fund.

Karl, T.L. (1999). “The Perils of the Petro-State: Reflections on the Paradox of Plenty”. *Journal of International Affairs* 50(1).

Karl, T.L. 2004. *Oil-Led Development: Social, Political, and Economic Consequences*. Stanford University, Encyclopedia of Energy, Volume 4.

Karl, T.L. 2005. “Understanding the Resource Curse. Covering Oil: A Reporter’s Guide to Energy and Development”. Open Society Institute.

Kolster, J. and Mejia, P.X. 2012.“Libya: Post War Challenges and Opportunities,” *The Oxford Companion to the Economics of Africa*.Oxford University Press.

KPMG.2013. Libya: Country Profile.

Larsen, E.R. (2006). “Escaping the resource curse and Dutch disease? When andwhy Norway caught up with and forged ahead of its neighbors.”*The AmericanJournal of Economics and Sociology*65(3): 605-64.

Lay, J. and Mahmoud, T.O. 2004. “Bananas, Oil and Development: Examining the Resource Curse and its Transmission Channels by Resource Type”. Kiel Institute for World Economics, Working Paper No.1218.

Li, M. (2013).“Corruption, Transparency and the Resource Curse”.*International Journal of Social Science and Humanity* 3(6).

Mähler, A. 2010. “Nigeria: A Prime Example of the Resource Curse? Revisiting the Oil-Violence Link in the Niger Delta”.German Institute of Global and Local Area Studies.Working Paper No. 120.

Maloy, T.K. (2013). “Lebanon ranks low on world and regional economic freedom.” *The Daily Star.*

Manning, A. (2004). "Human Capital as a Transmission Mechanism of the Resource Curse."*The Park Place Economist*12.

Mansoorian, A. (1991). “Resource Discoveries and ‘Excessive’ External Borrowing.”*Economic Journal* 101: 1497-1509.

Mehlum, H., Moene, K. and Torvik, R. (2005).“Institutions and the Resource Curse”.*Economic Journal* 116: 1-20.

Meijia, P.X. and Castel, V. 2012. “Could Oil Shine Like Diamonds? How Botswana Avoided the Resource Curse and its Implications for a New Libya.” African Development Bank.

Nakhle, C. (2013). “Keep Lebanon Oil and Gas Bids Transparent.”*The Daily Star*.

Reimer, P.J. 2009. “Iran and the Natural Resource Curse: Oil, Gas and Economic Development.” University of Amsterdam Department of Political Science.

Robinson, J., Torvik, J. R. and Verdier,T.2003. “The Political Economy of the Resource Curse.” Center for Economic and Policy Research, Discussion Paper No. 3422.

Røed Larsen, E. (2006). “Escaping the Resource Curse and the Dutch Disease? When and Why Norway Caught Up with and Forged Ahead of Its Neighbors”.*American Journal of Economics and Sociology* 65(3): 605-640.

Ross, M. (1999).“The Political Economy of the Resource Curse”.*World Politics* 51: 297-332.

Ross, M. (2001). “Does Oil Hinder Democracy?” *World Politics* 53: 324-360

Rosser, A. 2006. “The Political Economy of the Resource Curse: A Literature Survey”. Institute of Development Studies, Working Paper No. 268.

Ruble, I. and Khodr, H. (2011). “Euro Mashreq Energy Market Integration: Challenges and Payoffs for Lebanon, Jordan, and Syria”.

S. I. E. (2012). “Nigeria: State, Oil and Malignant Underdevelopment”. *Western Journal of Black Studies*36(3): 201-219.

Sachs, J. and Warner, A. 1995."Natural resource abundance and economic growth." Harvard Institute for International Development, Development Discussion Paper No. 517a

Sala-i-Martin, X. and Subramanian, A. (2003). "Addressing the Natural Resource Curse: An Illustration from Nigeria".*Journal of African Economies* 22(4): 570-615.

Salamey, I. (2013). "Mitigating the Resource Curse for Extractive Industry: The Case of Lebanon".*Ogel11*(3).

Sassine, G. (2012). "Lebanon Can Avoid the Resource Curse." *The Daily Star.*

The Heritage Foundation.(2014). "Index of Economic Freedom".*Wall Street Journal.*

TI.2014. Corruption Perception Index. Transparency International.

UNCTAD.2014. "Foreign Direct Investment Database". United Nations Conference on Trade and Development.

UNDP.(2014). "Human Development Indicators".United Nations Development Program

Valerie, M. (2013)."Prospects for good governance in Lebanon's nascent petroleum sector".*Energy Strategy Reviews*: 122-124.

Vasquez, I. (2011). "Advice to a Free Libya on Turning the Resource Curse into a Blessing".Cato Institute.

Wantchekon, L. 1999. "Why do Resource Dependent Countries have Authoritarian Governments?" Yale University.

Weinthal, E. and Luong, P.J. (2006). "Combating the Resource Curse: An Alternative Solution to Managing Mineral Wealth," Perspectives on Politics, vol.4, no.1, pp. 37

World Bank.2013. World Development Indicators. Washington, D.C.