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THE ROLE OF OIL IN ECONOMIC DEVELOPMENT

THE CASE OF LIBYA (1970 - 2010)

BY

ALI HASSAN ELWERFELLI

A thesis submitted to Plymouth University
in partial fulfilment of the degree of

DOCTOR OF PHILOSOPHY

Graduate School of Management
Faculty of Business
Plymouth University
ENGLAND

June 2016
Dedication

This thesis is dedicated to:

Almighty Allah

To my father’s soul, for his wonderful upbringing and love

To my beloved mother - for her endless love, support, encouragement and prayers

A very special dedication to my supervisors, Dr James Benhin and Prof Paul Bishop
Acknowledgement

First and foremost, I would like to thank Allah the most compassionate and the most merciful for helping me to complete this thesis. I have to thank my mother, my sisters, brothers, nieces, and nephew, for giving me strength to reach my aim and complete my study with success.

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Author’s declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award.

Work submitted for this research degree at the Plymouth University has not formed part of any other degree either at Plymouth University or at another establishment.

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THE ROLE OF OIL IN ECONOMIC DEVELOPMENT:
The Case of Libya (1970 - 2010)
Ali Hassan Elwerfelli

Abstract

The objectives of this thesis are to: (1) examine if the resource curse exists in the context of Libya; (2) assess the role of institutions in avoiding or minimising the resource curse, and; (3) evaluate institutional and economic reforms required, and the best options to diversify the economy from oil, hence avoid the resource curse in Libya. To achieve these, three approaches are applied, (i) a three country comparative analysis; (ii) Libya country-level time-series analysis, and; (iii) institutional descriptive analysis. This thesis uses time-series data and annual datasets covering 1970-2010. Johansen’s co-integration is used to establish the long-run equilibrium relationship among the variables in the models. The Johansen co-integration test, based on the Trace and Maximum Eigenvalue statistics, is applied. In the first approach, the three case studies included in the study are Nigeria, Norway and UAE, with outcomes suggesting that Norway managed to avoid the Dutch disease, the UAE show no major signs of the resource curse, Norway and the UAE have largely managed to overcome Dutch disease, while Nigeria suffers a management curse. The first model suggests that Libya may experience a resource curse, but this may not be as a result of an appreciation of the real exchange rate. A 1% increase in the oil price will cause the Libyan exchange rate to increase (depreciate) by 1.41%. The country could potentially suffer from Dutch disease, but no evidence can be brought by the first model alone. In an attempt to reinforce the first analysis, the second model examined the sectoral impacts of the Dutch disease. Three relations are estimated; tradable sectors (manufacturing and agricultural), and non-tradable sectors (construction and services). These were all found to have been affected by oil revenue. This
therefore confirms the existence of *Dutch disease* in Libya. The descriptive statistics analysis is used alongside five governance indicators: political stability, government effectiveness, and regulatory quality, rule of law and control of corruption. It is concluded that the quality of institutions in Libya affects economic growth negatively. The study holds several implications for policy-makers.

**Keyword:** Co-integration, Resource curse, Dutch disease, Libya, Real exchange rate, Institutional quality.
Contents
Abstract .................................................................................................................................................. 5

Chapter 1   Introduction ....................................................................................................................... 11
1.1 Research background ...................................................................................................................... 11
1.2 Research context ............................................................................................................................. 13
1.3 Objectives of the study .................................................................................................................... 16
1.4 Research questions .......................................................................................................................... 16
1.5 Research contributions .................................................................................................................... 17
1.6 Layout of the Thesis ......................................................................................................................... 18

Chapter 2  Review of Theoretical and Empirical Literature on Natural Resource Curse............. 22
2.1 Introduction ........................................................................................................................................ 82
  2.2.1 Main theories and determinants of economic growth ................................................................. 84
  2.2.2 Main theories and determinants of economic development ....................................................... 91
  2.2.3 The role of oil in development .................................................................................................... 94
2.3 The resource curse phenomenon .................................................................................................... 94
  2.3.1 Meaning of “resource curse” .................................................................................................... 94
  2.3.2 Resource curse: Theoretical evidence ....................................................................................... 95
  2.3.3 Resource curse: Empirical evidence .......................................................................................... 97
2.4 Dutch disease and the Resource curse ............................................................................................ 102
2.5 Commodity Price Volatility and Resource Curse ............................................................................ 104
2.6 Rentier state and the Resource curse ............................................................................................... 109
2.7 Institutional quality and resource curse ........................................................................................... 111
Chapter 3: Oil, a blessing or curse - A comparative assessment of Nigeria, Norway and the United Arab Emirates (UAE)

3.1 Nigeria – The Classic Case of a Resource Curse

3.2 Norway – The Case of a ‘Resource Blessing’

3.4 The UAE – A case of a successful development via oil

Chapter 4 Oil and the economic structure of Libya

4.2 Libyan Economy Development - Before and during Oil Discovery

4.3 Recent Libyan Economic Development (After the 2011 uprising)

4.3 An Overview of the Libyan Economy

4.3.1 Agriculture

4.3.2 Manufacturing

4.3.3 Construction and Services

4.3.4 Exchange Rate policy

Chapter 5 Methodology

5.2 Dutch Disease: Theoretical Framework

5.2.1 Model explanation: Spending effect and resource movement effect
5.3 Empirical Model Specification .................................................................................. 134

5.4 Definition of variables and data sources ................................................................. 138

5.5 Method of Analysis .................................................................................................. 141

5.5.1 Unit Root Tests for Stationarity: Augmented Dickey-Fuller (ADF) - Phillip-Perron (PP) .................................................................................................................. 141

5.5.2 Co-integration Tests ............................................................................................. 143

5.5.3 Vector Error Correction Model (VECM) ................................................................ 144

5.6 Summary ................................................................................................................... 145

Chapter 6 Assessment of the Dutch Disease in Libya: A co-integration analysis ........... 147

6.1 Introduction ................................................................................................................. 147

6.2 Dutch Disease: Real Exchange Rate Analysis ......................................................... 149

6.2.1 Unit Root Test of Stationarity .............................................................................. 150

6.2.3 Vector Error Correction Model (VECM) – Short Run Dynamics ......................... 154

6.3 Dutch Disease: Sectorial Analysis ............................................................................ 163

6.3.1 Unit root tests ........................................................................................................ 165

6.3.3 Vector Error Correction Model (VECM) – Short Run Dynamics ......................... 169

6.3.3 Discussion of the Sectorial Analysis ...................................................................... 170

6.3.3.1 Dutch Disease and the Manufacturing Sector .................................................. 172

6.3.3.2 Dutch Disease and the Agriculture Sector ....................................................... 175

6.3.3.3 Dutch Disease and the Non-tradable Sector ..................................................... 177

Chapter 7 Institutional quality and the resource curse in Libya ..................................... 182

7.1 Introduction ................................................................................................................. 187

7.2 The Governance Indicators ...................................................................................... 189
Chapter 1  Introduction

1.1 Research Background

Three key concepts have been used to describe the experiences of resource-rich countries ‘resource curse’, also known as ‘paradox of plenty’ and the ‘Dutch disease’. An abundance of literature has emerged on the so-called ‘resource curse’ pointing to the contradictory effects of natural resource abundance on economic development (Boyce and Emery, 2011; Bulte et al. 2005, Freeman, 2009, Goodman and Worth, 2008, Lederman and Maloney, 2008, Neumayer, 2004, Ross, 1999, and Sachs and Warner, 2001). Related to this concept is the ‘paradox of plenty’ which refers to the paradox that countries and regions with an abundance of natural resources (specifically point-source non-renewable resources like minerals and fuels) tend to experience less economic growth and worse development outcomes than countries with fewer natural resources (Al Sabah, 2014). One of the channels by which this occurs has been identified as the ‘Dutch disease’ a term first coined by The Economist (1977) following the discovery of natural gas deposits in Dutch territorial waters, driving up the value of the Dutch currency and, in turn, undermining the international competitiveness of Dutch manufacturing (Gasmi and Laourari, 2016).

The Dutch disease has since been applied generically to the relationship between resource specialisation, high exchange rates, and slower growth, notably in manufacturing (Beine et al. 2012, and Krugman, 1987). Oil wealth creates major opportunities, especially in developing countries. The government plays an important role in managing these windfalls. How should the proceeds be spent and used? Which investments will address the country's development needs? The decisions made on such issues can have a long-lasting impact and can affect the well-being of today's as well as future generations in a society. Many resource-rich countries seem to suffer from natural resource curse; only a few do not. Moreover, countries that are
rich in resources may suffer from Dutch disease, an economic illness that involves factor movement, excess demand, and loss of positive externalities. The result of the disease is that the traded goods sector, which is exposed to foreign competition abroad or domestically, shrinks or disappears. Stevens (2003) conducted a survey of the literature on Dutch disease and found that there are only a few exceptions to the curse and the disease, none of which are fully understood. Many authors (Auty, 2001a, Gylfason, 2001a, Sachs and Warner, 2001, Stevens, 2003, and Torvik, 2002) have also pointed toward rent seeking and corruption as core elements behind the curse. In a nutshell, the resource curse or paradox of plenty could be explained by the Dutch disease and/or poor political and economic institutions (Mehlum et al. 2006, Robinson et al. 2006, and Kolstad, 2007).

It is often argued that there is an association between high hydrocarbon resources and poor performance leading to the resource curse. As a result, a significant body of literature has grown, seeking to explain the relationship between resource abundance and economic performance (Stevens et al., 2015). A key question in this regard is how a country like Libya can avoid the resource curse and turn its resource abundance into a blessing. This question is also relevant for a large number of countries. In addition to the possible adverse impact on growth, resource riches can be a major contributor to corruption and social unrest. In a number of countries, oil and gas are associated with causing and financing civil war (Satpayev and Umbetaliyeva, 2015) with its attendant social and economic costs (Collier, 1998). Therefore, several oil-rich countries are still facing challenges arising mainly from three characteristics of oil revenue:

- Oil revenue is more volatile than revenue from other export commodities because of international market conditions.
- Oil revenue is a foreign exchange inflow, and its use can have large effects on macroeconomic stability and economic structure, and
Oil is an exhaustible resource with a finite revenues stream. Resource booms often become a curse rather than a blessing. In many cases they hamper economic and political development. On average, resource-rich economies have lower growth, worse institutions and more conflict than resource-poor economies. Literature on the resource curse shows that resource wealth may inhibit economic growth (Frankel, 2010). In particular, the curse applies to point sources like oil (Boschini et al. 2007). Other studies, such as Mehlum et al. (2006) have established that fundamentals such as institutional quality are important conditioning factors for the resource curse.

Oil revenues in Libya became part of a larger, diversified, and productive economy. This led to distortions and other ills associated with hydrocarbon booms. However, such impacts remained tempered by the boom's contribution to overall development. Where oil represented the exclusive income of local government revenue, its impact on state-building, growth and development was more powerful (Vandewalle, 1998).

Thus, empirically, being rich in natural resources is associated with being poor in material wealth – the ‘paradox of plenty’. The literature on this has not reached a consensus on the nature of causes and symptoms, and Stevens (2003) shows the different aspects of Dutch disease, as laid out in Corden and Neary (1982), Corden (1984), Gylfason, et al. (1999), and Torvik (2001). Bjørnland (1998) and Brunstad and Dyrstad (1997) are recent Norwegian contributors to the topic of Dutch disease.

1.2 Research Context

The current situation in Libya of internal political and armed conflict, due to what has been referred to as the called "Arab Spring” has driven the country to the edge of collapse. This has resulted in the disruption of oil production and exports, and exacerbated by the steep decline in global oil prices, all of which have driven the Libyan economy into recession since
2013. A series of strikes and security breaches at oil sites have significantly disrupted activities in the domestic hydrocarbon sector (Schnitt, 2015; Cordesman, 2016). Furthermore, internal conflict has put enormous stress on the government budget and the external stance. It would have been interesting to incorporate this into the scope of this study, however, this event is too recent to be able to collect and analyse reliable and high quality data. Credible data is available during 1970 to 2010, and is therefore the timeframe which this study will focus on.

Large oil wealth had supported decent living standards for Libya's population. Libya was ranked ahead of several other oil-producing countries in terms of per capita GDP, adjusted for differences in purchasing power parity (PPP) to GDP, reflecting a swing in oil revenues. The per capita GDP in PPP was around US$9,269 on average during 1990-2000 reaching US$9,965 in 2004. In a relatively short space of time, Libya turned into a rapidly developing country with accumulated gross international reserves (CIB, 2005). Despite frozen wages, living standards have been supported through an extensive social safety net with the provision of free housing, education and health care, subsidized food and utility prices and sizeable energy subsidies (El Katir and Fattouh, 2015).

It is worth considering exactly which investments address the country's developmental needs. The decisions made on such issues can have a long-lasting impact and can affect the wellbeing of today's and future generations in a society. The windfall to the government of Libya has been substantial, and the country faces the challenging task of reducing its dependence on short-lived and potentially volatile oil revenue. It is vital to the country's economic future that any further government manages this revenue in a way which allows the diversification of the economy in order to ensure a steady increase in the living standards of the Libyan population.
The first challenge for the Libyan economy is the lack of diversification. State-owned firms had continued to dominate the Libyan economy, particularly the upstream oil and gas sector; high public sector wages impede diversification of the economy, drain public resources, and resulted in high unemployment at 15%, with unofficial statistics suggesting a rate as high as 30%. This is largely a problem for the younger generation (LCB, 2010), as many unemployed Libyans hold university degrees. The oil and gas industry became the most valuable industry in Libya. In 2001, some 36% of Libya's GDP was from the oil and gas sector. Oil and gas revenue represented some 68% of total government revenue, and the oil and gas industry's share of total exports was over 95% (IMF, 2005). This presents both an opportunity and a challenge.

The Libyan government’s spending outstripped their gain in revenues. It is difficult to reverse sharp influxes of government spending when the boom period ends and the economy starts to decline, and can often lead to large, undesired fiscal deficits. The risk of this unintentional consequence of government spending can be diversified to more manageable levels through increased investment in non-oil resources (Ejoh et al., 2016) which is now the key challenge which Libya has been presented with. The volatility of oil revenues has spilled over to the non-oil GDP, which has resulted in underachieving growth (World Bank, 1995) and reflects both insufficient private investment and low productivity of capital-importing efficiency. Growth in productivity is a prerequisite for faster growth and increased investment, as well as for a competitive diversification away from a reliance of oil export revenues.

Libya continues to present a challenging investment climate. The government has repeatedly expressed interest in receiving greater foreign investment, but there continues to be serious obstacles to realizing that goal. Given this background, the purpose of the present thesis is to examine, through a realistic framework, and using a good-practice testing techniques, whether natural resource, particularly oil and gas is a blessing or curse to the Libya economy,
through different channels. To achieve this, three approaches are used, firstly, a three country comparative analysis, secondly, Libya country-level time-series analysis (Dutch disease), and, thirdly, institutional analysis. The last two approaches examine if indeed there is a resource curse in Libya, and whether this can be explained by the Dutch disease and/or institutional quality. Recommendations are then made, moving forward, as to how such a problem can be avoided for a long term sustainable development in the country.

1.3 Objectives of the Study

This thesis attempts to address three key objectives:

- Examine the existence of the Dutch disease in the resource curse phenomenon in the context of Libya;
- Assess the role of institutions in the resource curse phenomenon in Libya; therefore identify and evaluate specific economic, social and other reforms required to avoid or mitigate the problem of the resource curse;
- Recommend possible ways of diversifying the economy from oil which could help avoid or alleviate the problem of natural resource curse.

Most studies have focused on the role or impact of policy on economic development, but in countries such as Libya the quality of institutions is very important, and it is therefore important to establish exactly what reforms are needed in this area to enhance the opportunities for the promotion of sustainable development via oil.

1.4 Research Questions

To achieve its objectives, this thesis attempts to answer several research questions regarding whether (and how) natural resources (particularly oil revenue) affect economic development and hence whether a blessing or curse in Libya as a developing country. Furthermore, to determine the ways of reversing the risks of the “paradox of plenty” (or the “resource curse”)

16
and enhancing the opportunities for the promotion of development, and avoiding the phenomenon in Libya.

The situation in the country during the study period raises several important issues: (a) has the country experienced the ‘paradox of plenty’ or the ‘resource curse, and could this be explained by the Dutch disease and/or poor institutional quality? (b) If it has, how will the problem be reversed? If it has not, how could it be avoided? (c) What are the best options regarding the diversification of the Libyan economy? How should resource revenues be managed? Answers to these burning questions are the main focus of this study.

1.5 Research Contributions

This study contributes to the empirical literature containing various theories on economic growth and development, including factors such as: oil price, exchange rate, institutional quality, and whether natural resources are a blessing or a curse to developing countries. This study uses different approaches to examine whether or not the resource curse and Dutch disease, exists in the context of Libya. The study divides the first model into two models. The first model suggests that Libya may experience the negative effects of the resource curse, but this may not be explained by one model alone (real exchange rate appreciation). Therefore, to confirm the existence of Dutch disease, and to reinforce the first model, the second model examines the impacts of the Dutch disease in three sectors; tradable sectors (manufacturing and agricultural), and non-tradable sector (construction and services). Through using these two models as analytical tools, this study is able to ascertain, with strong evidence whether or not the Dutch disease phenomenon exists in Libya. The second examines and assesses the role of institutional quality, which can be another channel leading to the resource curse. The evaluation of the institutional quality is conducted through the use of descriptive statistics analysis. Due to the data limitations on institutional quality and the scope of this study
consisting of just a single country, the second analysis will use a different approach from other studies that have used cross-country testing, such as Mehlum et al. (2006), Sachs and Warner (1997), Ades and Di Tella (1997, 1999), Knack and Keefer (1995), Acemoglu et al. (2001), Cabrales and Hauk, (2010), Magnus et al. (2013), and Lehne, et al. (2014). The purpose of this study is to examine the influence of natural resources on Libya’s economic development from 1970 – 2010. In this sense, this study contributes to the literature in the developing world through several channels. While an accurate explanation for this particular type of resource curse is not available, the potential costs are well documented (Vandewalle, 1998). In contrast, a range of countries (including Norway) appear to have avoided these problems through prudent and transparent management practices. So Libya would be another case that would add to the literature of resource-curse explanation by examining and analysing its economy through the testing of the variables used in this study.

This thesis may prove to be a unique contribution to investigations into how natural resources themselves impact on economic development. However, the current research does not use multiple countries in the way that previous studies have; its primary focus is on one country, so as to give greater depth and more reliable outcomes. The study has used three approaches, for without reference to this, one cannot completely explain the resource curse. It is hoped that this will fulfil any lack of understanding on the subject of the resource curse phenomenon.

The use of an extensive data set in this thesis, which covers from 1970 to 2010, will shed light on the role of oil revenues on the economic growth and development of resource-rich countries (especially developing countries), and complement previous studies on the resource curse. Furthermore, this thesis contributes to literature on this subject by providing an overview of Libya’s economy over the last forty years. The focus on the economic development of Libya is also a significant issue that is related to natural resources.
dependency (oil and gas). This work establishes how oil revenues could promote economic development and thus enhance sustainable economic growth in Libya.

Libya is a particularly suitable case to examine the resource curse. In fact, Libya has a unique structure (its regime, for example), has a limited population with plenty of oil and gas, has a strategic location, and has had the same government policies for forty years. Within this long period, Libya has had unstable relations with other countries, which has also influenced its economy. Hence Libya is a fine example of a country containing the various criteria to be found in other oil-rich countries, and therefore makes an excellent case study for this thesis.

These advantages to a single-nation approach are believed to hold the key to providing valuable recommendations on how governments can manage and promote sustainable development, allowing them to build strong economies by turning the resource curse into a resource blessing, particularly developing countries. It could well be that a single-country study will provide insight into fundamental economic solutions, since it provides a unifying focus by allowing one to draw on different aspects in the literature. As such a study is attentive to the temporal and cross-sectional variations within one of many countries (Culpepper, 2005). Moreover, this study will be useful especially in Libyan context, given the lack of enough existing studies on Libyan context. The outcomes of this study could also be useful for other oil-rich developing countries aiming to achieve long-term sustainable economic development.

1.6 Layout of the Thesis

In order to achieve the objectives of the thesis, this study is comprised of seven chapters. Chapter 2 investigates whether oil is a blessing or a curse through a comparative study of three countries: Nigeria, UAE, and Norway. Three different cases of the effects of oil wealth on development are examined in this section. This serves to emphasise key variables that may
or may not lead to the resource curse phenomenon. Nigeria is viewed as a classic example of the negative effects of oil on social and economic development. Norway is observed as a successful case of escaping the potential “curse” through transformation of oil reserves into an economic blessing. The United Arab Emirates is treated as the most impressive case of oil-led development despite experiencing enormous social and economic difficulties.

Chapter Three discusses the resource curse in the context of Libya as a case study and gives an overview of the role oil revenues has played in the economic structure of Libya before and after the oil era. Chapter Four critically reviews the theoretical and empirical literature on the natural resource curse, including the main theories and determinants of economic growth and development. Furthermore, this chapter provides an explanation of the meaning and concept of the ‘resource curse’ and the ‘Dutch disease’ phenomenon by reviewing relevant and current studies of the natural resource curse process in developing countries.

Chapter Five presents the research methodology of this study. It provides the theoretical framework of the Dutch disease model, which is underpinned by Corden and Neary (1982). For estimation purposes, annual data from 1970-2010 is used in this study to examine the behavioural equations of the model. Model specification and data sources were also included in this chapter. Additionally, method of analysis utilises the Augmented Dickey-Fuller and the Phillips-Perron tests to test for stationarity and the order of integration of the time-series data. The Johansen test is then applied to each model to examine the long-run equilibrium relationship between the variables. Chapter six presents an analytical discussion of the Dutch disease in Libya: A co-integration analysis. Firstly, the discussion focusses on the real exchange rate model, followed by a sectoral analysis of the Dutch disease, and then finally conclusions of all outcomes from both models.
Chapter Seven concentrates on institutional quality and looks at overcoming the obstacles Libya has faced. It also considers what reforms are needed in this area to enhance the opportunities for the promotion of sustainable development, and considers how Libya can transform an economic windfall from a curse to a blessing through economic diversification beyond dependence on a single resource. Chapter eight, the conclusions of the thesis are presented, together with recommendations for the Libyan government and suggestions for further studies.
Chapter 2: Oil, a blessing or curse - A comparative assessment of Nigeria, Norway and the United Arab Emirates (UAE)

2.1 Introduction

Oil discoveries, and the subsequent booms in the economy, have brought unprecedented income to many previously poor countries. In this chapter, an assessment and a comparative analysis is conducted on three countries, Nigeria, Norway, and the United Arab Emirates (UAE), regarding the effects of oil windfalls, how these petroleum exporters have utilised their oil revenue, and the consequences of their respective government policies. In other words, the extent to which key policy environments, such as institutional and political aspects identified in Chapter 2, may have influenced different outcomes resulting from oil-abundance in the respective three countries. This chapter concludes that much of the potential benefit of the windfalls has dissipated, and explains why some oil producing countries may have a weaker, less diversified, and more dependent economy, despite the significant additional revenue generated from the exportation of oil.

The three countries were selected and used due to their differing effects of oil wealth on their economic development, and all these countries are rich in natural resources, particular oil and gas and from different regions. This will help broaden the scope of the potential effects that oil wealth can have on a country, and further emphasise key variables that may or may not lead to the resource curse phenomenon. Nigeria is used as a classical example of negative effects of oil on social and economic development. Norway is an example of a successful case of escaping the potential “curse” and utilising oil reserves into an economic “blessing”. The UAE provides as an impressive case of oil-led development yet experiencing enormous social and economic difficulties.
Each case study is structured as follows: a brief presentation of the history of oil discovery and the subsequent transformations, as well as a provision of basic economic and social data such as growth, unemployment, and poverty rates. The ratio of the oil sector’s revenue to GDP and total exports compared to other industry sectors are seen as the key determinants of whether a country is over-dependant on oil revenue or not, whilst the diverse structure of the economy is viewed as being an indicator of positive developmental performance and vice versa. In each case study, the major causes and factors of either negative or positive impact of oil on economic development is analysed.

2.2 Nigeria – The Classic Case of a Resource Curse

Nigeria is the largest oil producer in Africa and the sixth largest exporter in the world. Yet, Nigeria is unanimously presented in the literature as the classical exemplifier of the resource curse. The paradox is evident just by looking at some statistics. The country produces 2.4 million barrels of crude oil daily, but according to the UN’s 2007 Human Development Index (HDI) Nigeria is amongst some of the poorest nations in the world and is ranked 158th out of 177 countries assessed in the index (Ogwumike and Ogunleye 2008). According to the Oil & Gas Journal (OGJ, 2015), Nigeria holds the tenth largest proven oil reserves in the world, with the second largest reserves in Africa after Libya. The country's proven oil reserve as of 2015 stood at 37.14 billion barrels (OPEC, 2015).

Before the oil boom era, the government was very dependent on agricultural produce until the early 1970’s. Nigeria was one of the key exporters of multiple agricultural products, such as groundnut, cotton, cocoa, palm oil, timber, hides, and skins, which are used in most manufacturing industries domestically and internationally. Nigeria’s agricultural industry used to employ over 70% of the population (Ertel and Ugochukwu, 2008), and was the world’s largest palm oil exporter (Pind, 2011).
The agriculture industry in Nigeria’s current economy has effectively been replaced by the oil industry in terms of revenue. Despite the significant revenue of oil, the structural development has been poor and has even worsened the administrative position in Nigeria due to the level of corruption and oil policy implementation. The oil wealth was not invested to support the agriculture sector, which has led to neglect and has therefore attracted factors of production away from agriculture and manufacturing, leading to a manifestation of the Dutch disease phenomenon. In general, before the oil-boom, the economy was characterised by the predominance of subsistence and commercial activities, such as: a narrow disarticulated production base, with ill-adapted technology; lopsided development due to the bias of public policies; openness and excessive dependence on external factor inputs; continuous siphoning of surpluses from the economy; and weak institutional capabilities.

The discovery of oil in 1956 and its subsequent exploitation transformed Nigeria’s political economy radically over half a century (Omeje, 2006). During the first decade since its discovery, oil did not play a significant role in the economy, as it only amounted to less than 10% of GDP. Yet agriculture, as the key productive sector of the Nigerian economy since the 1970s, was gradually crowded out by the growing oil sector, and the development of non-oil sectors was almost non-existent. In recently years, oil has provided approximately 80% of the government revenue and 95% of export earnings (Douglas et al., 2003).

Human Development indicators are quite low in Nigeria with the average HDI value being as low as 0.515 in 2014 (Table 2.1) resulting in the country being ranked at 152 out of 188 countries. Between 2005 and 2014 Nigeria’s HDI value increased by about 10% from 0.467 to 0.514 and over 1980 and 2014, life expectancy increased by 7.2 years, mean years of schooling increased by 0.7 (2005 – 2014), and expected years of schooling increased by 2.3 years. Nigeria’s HDI value has putting the country in the low human development group, which can be evidence of the serious a negative effect of oil wealth over Nigeria's economy,
and therefore oil wealth brought a curse to the country (HDR, 2015). This has been caused through lack of promotion of a higher standard living, education, income, and quality of life. Hence, the natural resources in Nigeria could be deemed as more of a curse than a blessing.

Table 2.1 Nigeria Selected Human Development indicators

<table>
<thead>
<tr>
<th>Year</th>
<th>Life expectancy at birth</th>
<th>Expected years of schooling</th>
<th>Mean years of schooling</th>
<th>GNI per capita (2011 PPP$)</th>
<th>HDI value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>45.6</td>
<td>6.7</td>
<td>2,833</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1885</td>
<td>46.4</td>
<td>8.6</td>
<td>2,451</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>46.1</td>
<td>6.7</td>
<td>2,743</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>45.1</td>
<td>7.2</td>
<td>2,529</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>46.6</td>
<td>8.0</td>
<td>2,378</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>48.7</td>
<td>9.0</td>
<td>3,606</td>
<td>0.467</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>51.3</td>
<td>9.0</td>
<td>4,825</td>
<td>0.493</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>51.7</td>
<td>9.0</td>
<td>4,926</td>
<td>0.499</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>52.1</td>
<td>9.0</td>
<td>5,018</td>
<td>0.505</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>52.4</td>
<td>9.0</td>
<td>5,166</td>
<td>0.510</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>52.8</td>
<td>9.0</td>
<td>5,341</td>
<td>0.514</td>
<td></td>
</tr>
</tbody>
</table>

Source: HDR (2013)

The agricultural sector, which was once productive, is now unable to produce enough food for its domestic market, making the country reliant on food imports. The social infrastructure of the country is in disarray (Hjort, 2006), and poverty levels are dire. According to UN data 36% of Nigerians lived under the poverty line in 1970. In contrast, in 2007 around 70% of citizens lived on less than $1 a day, and 92% lived on less than $2 a day. (Ogwumike and Ogunleye, 2008). The proportion of the population living below the poverty line increased significantly between 1980 and 2004. According to The National Bureau of Statistics, 69% of Nigerians were living in absolute poverty in 2010 (Table 2.2). Nigeria has the largest economy in Africa but it is affected by its limited infrastructure, particularly its transport and energy infrastructure, which imposes serious limitations on the country's economic growth potential. Significant challenges, such as power shortages, are evident in the electricity sector and this has negatively impacted industrial growth (UNDP, 2015). Therefore, economic growth in Nigeria is constrained by inadequate infrastructure, electricity, incentives, policies
that promote private sector development, and poor access to quality education. Approximately a quarter of the adult population lacks formal education (UNDP, 2015; and AfDB, 2015).

Table 2.2: Relative Poverty in Nigeria (1980-2010)

<table>
<thead>
<tr>
<th>Year</th>
<th>Poverty Incidence (%)</th>
<th>Estimated Population (Million)</th>
<th>Population in poverty (Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>27.2</td>
<td>65</td>
<td>17.1</td>
</tr>
<tr>
<td>1985</td>
<td>46.3</td>
<td>75</td>
<td>34.7</td>
</tr>
<tr>
<td>1992</td>
<td>42.7</td>
<td>91.5</td>
<td>39.2</td>
</tr>
<tr>
<td>1996</td>
<td>65.6</td>
<td>102.3</td>
<td>67.1</td>
</tr>
<tr>
<td>2004</td>
<td>54.4</td>
<td>126.3</td>
<td>68.7</td>
</tr>
<tr>
<td>2010</td>
<td>69.0</td>
<td>163</td>
<td>112.47</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Year</th>
<th>Absolute Poor (%)</th>
<th>Relative Poor (%)</th>
<th>US Dollar Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>54.7</td>
<td>54.4</td>
<td>51.6</td>
</tr>
<tr>
<td>2010</td>
<td>60.9</td>
<td>69.0</td>
<td>61.2</td>
</tr>
</tbody>
</table>


In addition, unemployment in Nigeria has become one of the most critical problems the country is facing. According to statistics from the NBS (2012) and IMF (2014), Nigeria’s overall unemployment rate consisted of 23.9% of the total labour force in 2011, indicating a sharp increase from 14.9% in 2008 as shown in Table 3.3. When disaggregated by sector, 17.1% of unemployment is in urban areas and 25.6% is in rural areas. The labour force in 2011 consisted of 67,256,090 people, of that 51,181,884 were employed and 16,074,205 were unemployed (NCB, 2011; and NSB, 2012).

Table 2.3 Nigerian Unemployment Rates (2005 - 2011)

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment rate (%)</td>
<td>13.1</td>
<td>13.6</td>
<td>12.6</td>
<td>14.8</td>
<td>13.4</td>
<td>11.9</td>
<td>12.3</td>
<td>12.7</td>
<td>14.9</td>
<td>19.7</td>
<td>21.1</td>
<td>23.9</td>
</tr>
</tbody>
</table>

Source: NBS (2012) and IMF (2014)
However, given the country’s enormous resources, it is puzzling that such a huge portion of the populace lives in poverty. This vast incidence of poverty in the midst of significant wealth has been linked to the endemic corruption in the country, as it involves the stealing of resources that would have otherwise been invested in providing wealth-creating infrastructure for the country’s citizens (Mustapha and Masih, 2016).

It has been observed that Nigeria is the most corrupt country in the world, as it ranked 177 from 191 countries with a score of just -1.27 out of 2.5 in 2014 (World Bank, 2014). Figure 2.1 shows, that Nigeria's average control of corruption index was -1.13 with a minimum of -1.33 in 2002 and maximum of -0.81 in 2008. Corruption in Nigeria seemed to be everywhere. The health and medical services are considered to be the least corrupt of the government institutions, but even they are considered to be very corrupt by 41% of Nigerians (TI, 2015). Therefore, corruption is one of the factors responsible for negative effects on the economy, and the existence of the resource curse phenomenon.

Nigeria is faced with the issue of corruption and social justice ranging through bribery, poor wages, nepotism, discrimination, poverty, poor political leadership, and poor education. Furthermore, the fundamental rights of citizens mentioned in the Nigerian constitution, do not
contain provisions that would ensure social justice (Esiemokhai, 2010). For example, democracy can only thrive where social justice is guaranteed in the constitution of a state. Also, the rule of law strengthens democracy and social justice, which is non-existent in Nigeria, and therefore this, could be a sign of resource curse in the country. One of the absurd facts for an oil rich country is that less than half of the population have access to electricity, and those that do have it can only use it for just a few hours a day (Ochogwu, 2005). In addition, vast oil reserves led Nigeria through constant periods of political instability, civil conflicts, corruption and environmental degradation (Osuoka, 2007).

Furthermore, as shows in (figure 2.2), the windfall of oil revenues into the federal budget raised expectations and led to excessive government spending based on unrealistic revenue projections, in particular in the 1970s and 1980s. This made inflation increased significantly, slowing down economic growth, and preventing development of the non-oil sector.

![Figure 2.2 Nigeria Inflation: percent change in CPI-1970-2014](source: World Bank (2014))

As large amounts of public finances were channelled into private income, there followed a huge increase in private consumption. The pattern of that consumption was to prioritise imported goods, while locally manufactured products were treated as inferior which in turn
lowered demand. Therefore, a low demand for domestic products meant that manufacturers reduced their demand for labour which led to a rapid fall in domestic manufacturing (Ogwumike and Ogunleye, 2008). Oil revenues in the long-run had negative effects on agriculture and manufacturing growth, which is sufficient evidence of the presence of Dutch disease within Nigeria. The booming oil sector crowded out the previously productive agricultural sector and suppressed the development of non–oil industries (Ertel and Ugochkovu, 2008). The oil boom created difficulties for both agriculture and manufacturing by producing an overvalued exchange rate; this, in turn, made Nigerian agricultural and manufacturing exports less competitive on international markets, resulting in a reduced demand for those products. Also, Nigerian elites were politically and ideologically opposed to trade liberalisation, and the combination of overvalued exchange rates and trade restrictions kept growth in the manufacturing and agricultural sectors low (Bevan et al., 1999). Exports from these sectors were further hampered by unfavourable domestic pricing policies and strong domestic demand. The Nigerian government could have devalued the currency to support these sectors, but it chose not to do so. The government could have provided further benefits to the non-oil export sector, and simultaneously prevented significant rises in inflation, by liberalising its restrictions on trade. In addition, the governments made low investments (see Appendix 1), if at all, in the development of infrastructure, non–oil sectors, and education (Espinoza, 2012; MGI, 2015).

The major factors responsible for the explosion of the country’s debt were the oil boom and inappropriate public finance planning of the revenue generated from oil exports. From the early 1980’s, when foreign exchange earnings plummeted as a result of the collapse of prices in the international oil market, Nigeria began to experience debt problems due to inappropriate public finance planning (Babatunde, 2013). External loans began to be acquired randomly without any form of due diligence. The debt crisis, which is the combination of
accumulated debt, had imposed several burdens on the Nigerian economy (Udoka and Ogege, 2012).

Nigeria’s public debts pushed its debt profile extremely high, and it has relied on that public debt to finance its development projects over the last two decades. The debt burden has clearly been a constraining factor on rapid economic recovery growth and development, with the debt increasing at an alarming rate. Instead of allocating resources to crucial development projects, the burden of high public debt has caused the channelling of funds into debt servicing (Iyoha, 1999; Amakon, 2003). The mismanaged international oil price boom and bust cycles has led Nigeria into enormous foreign borrowing. Before the oil boom, Nigeria’s national debt was very low. Between 1970 and 2004, the nation’s external debt alone increased from US$836 million to US$38 billion Ogwumike and Ogunleye, 2008). Nigeria’s total national debt at the end of 2011 stood at $41.9 billion USD, which is equivalent to 21.9% of GDP (AEO, 2012). Nigeria debt distress is considered to be of relatively low risk internationally (OECD, 2012) however the debt burden is still relatively high.

Not only were a large percentage of oil revenues being channelled into debt servicing, enormous sums of money were extracted from Nigeria’s national treasury with no indication of where the money went. Some analysts estimate that over US$217.7 billion could have been stolen from the treasury since the beginning of oil exportation in the country (Sandbakken, 2006; AU, 2013).

Funds are stolen from the state through corruption, tax evasion, and illegal transfer of profits by multinationals. According to the Global Financial Integrity (2014), estimates of more than US$157 billion had left the country illicitly within the last decade. This high loss of revenue prevents Nigeria from being able to meet its economic development goals.
Rent-seeking became the most “prominent activity” in Nigeria (Ogwumike and Ogunleye, 2008). Consequently, regional and ethnic competitions for control over oil revenues transformed the country’s political system into some sort of institutional patronage (Jensen and Wantchekon, 2004). For years the country was governed by military regimes, which frequently changed through military coups. But the military officers themselves were vulnerable to ethnic antagonism, leading to a countercoup and the ensuing civil wars. The military intervened with a coup in 1966. The turbulent military interventions of 1966 yielded nearly a decade of rule by General Yakubu Gowon. He sought to address problems of national unity, and presided over the early years of the petroleum boom (Ikpe, 2000). Increased evidence of corruption amid the oil windfall prompted further intervention by the military force. General Murtala replaced Gowon in July 1975, promising rapid movement of Nigeria towards transition to civilian rule, greater economic probity, and administrative reform. Six months later, Murtala was killed in a failed coup attempt and was replaced by the second in command, Olusegun, who continued the regime’s programs. Apart from overseeing the transition to civilian rule, the Murtala-Obasanjo government advanced an ambitious program of state-led industrialisation and expansive social provisions, in addition to overseeing the transition to civilian rule (Lewis, 2006).

There were a succession of military regimes promising a return to democracy between 1966 and 1976, but political reform was deferred until 1979 when civilians regained power from General Olusegun. The regime’s ability to govern quickly diminished due to massive corruption, mismanagement, political chicanery, and epidemic violence, which undermined the legitimacy of the democratic system in the eyes of the public. Once again, the armed forces stepped in with promises of remedial action. Despite their reformist pretensions, military regimes have proven no more capable than the civilians at resolving central challenges of state building and development. After four years, General Buhari terminated the
civilian interregnum in 1983 on the grounds that his regime would mitigate corruption. Buhari’s regime instigated a new era of military dominance that proved more corrosive to the country’s capabilities, economic development, and social stability than the previous military leaders.

The tenures of Buhari (1983–85), Ibrahim Babangida (1985-1993), and Sani Abacha (1993-1998) traced a downward spiral of repression, economic devastation, arbitrary rule, and the erosion of such central institutions as the military, the central bureaucracy, major services, and infrastructure (Ukiwo, 2003), and evidence of prodigious corruption. The worst thing about the ruler Babangida was abrogation of the democratic transition in June 1993, when it annulled the results of a presidential election that was widely regarded with hope to return to civilian control (Lewis, 1994). The ensuing crisis provoked widespread uncertainty, ethno-regional antipathy, and further economic decline, inducing Babangida to depart and establishment of a Civilian Caretaker Committee. This was scrapped in a matter of weeks by the defence minister, General Abacha. Abacha, with none of the skills or experience of his predecessor, behaved in an even more dictatorial manner than his predecessors. He contrived a political transition that would perpetuate his rule as a civilian president, and controlled the state security to jail or murder political opponents. During Abacha’s rule, the lack of fiscal discipline and rampant corruption left the economy in the doldrums. It is estimated that Abacha amassed a fortune of around US$6 billion during four and a half years, which were largely diverted from state owned enterprises and projects or embezzled from the public treasury. This magnitude of plunder led to the accelerated decline of the education and health systems, public services, and utilities, and therefore had a large negative impact on economy.

Furthermore, the accumulated depredations of preceding rulers manifested in a depleted treasury, a huge debt overhang, dilapidated public institutions, endemic corruption, and simmering social hostility, while communal violence has exploded in a myriad of conflicts
across the country (Lewis, 1996). A large political class shows little capacity to address the country’s urgent economic and social challenges. The country therefore underwent constant political instability and conflicts, which undoubtedly was the most unfavourable context to transform oil revenues into some form of development. In addition, the policies of the government were not sufficiently favourable and consistent in promoting the development of agriculture and the non-oil industry sectors (Ertel and Ugochukwu, 2008).

The role of several factors which undermined the translation of Nigeria’s oil wealth into development is undeniable. They are: widespread corruption; a lack of transparency and accountability; social unrest; conflict; disregard for due process and the rule of law, the weakening of institutions; and inequality in the distribution of wealth. Hence, this led the country to not benefit from its wealth. All of these are part of the problems enhancing the resource curse in Nigeria (Ogwumike and Ogunleye, 2008). There is an urgent need for increased transparency and accountability in the management of Nigeria’s oil revenues (Hjort, 2006).

Nigeria has a very weak legal regime, with conceptual representation of property to create value being absent from the legal framework. Economic development by classical theories theorises that it was based on aggregated factors of production capital, land, and other natural resources, such as labour or human capital. If these classical factors of economic development were enough, it may be asked why this has not led to development in places like Nigeria that have an abundance of resources. The explanation is that development will not occur unless legal analysis is taken into account. This is the core notion of development law (Agbakoba, 2005).

Legal frameworks and regulatory institutions are absolutely vital to ensuring a well-developed economy. The key constraints to Nigerian development include poor security,
extremely weak commercial judicial systems, a generally weak legal system, impunity, corruption, and an unviable regulatory framework (Akinpelu, 2012). These may be described as economic constraints and there is no economic policy which could remove these constraints. It is, however, development law that can help remove constraints of the absence of mortgage systems in Nigeria through repeal of the Land Use Act 1978, and construction of a new law on property (Mabogunje, 2010). Although macroeconomic policies are unquestionably important, there is a growing consensus that the quality of business regulation, and the legal institutions that enforce it, are a major determinant of development (Agbakoba, 2005; Akinpelu, 2012).

According to Ologunla et al. (2014), analysis of their results concluded that the institutions of Nigeria are not strong enough to manage revenue from oil exports extensively enough to have a positive impact on the economy. There is a negative effect of oil dependence in Nigeria on economic growth, which calls for strong institutional quality to turn the resource curse of the country into a blessing. Other countries that have abundant natural resources, such as Botswana and Norway (which is discussed later), have escaped the resource curse due to their strong institutions (Larsen, 2006). Therefore, for developing countries in general, good governance, accountability, high government effectiveness, good regulation, and anti-corruption policies tend to link natural resources with high economic growth.

Until recently the political economy of Nigeria was a capitalist authoritarian regime, with political leaders not being accountable to citizens via competitive elections, suppressed freedom of expression, any criticism of the regime being severely punishable, and an atmosphere where “secrecy in the affairs of state is routine” (Alan, 2000). It is evident that oil in itself is not the curse, rather the unstable political system, weak institutions, inappropriate management of oil revenues, mismanagement of the rest of economy, and corruption, are the curse in the case of Nigeria (Ochogwu, 2005).
In summary, as an oil exporter, Nigeria has pursued a resource based growth strategy since independence but has been unable to achieve sustainable economic growth. Although current growth rates average 7%, it can be conclude that oil dependency has been the basis of economic growth in Nigeria since the 1960s. Between 1970 and 2000, growth rates were very volatile in much the same way as oil prices. Also, oil dependency has caused the Nigerian economy to become stagnant, due to Nigeria’s inability to diversify its economy. Furthermore, the nation’s institutions are very important to its development, and therefore the quality of institutions play a role to enhance the level of economic growth in the country. Also there is significant correlation between the level of corruption in Nigeria and the country’s ability to develop its economy positively. Finally, to address the issue of oil dependence, Nigeria could focus on diversification and industrialisation to promote economic growth.

2.3 Norway – The Case of a ‘Resource Blessing’

Norway is the fifth largest oil exporter in the world, with a daily production capacity of 2.4 million barrels, which is the same output as Nigeria (Hundley, 2007). Norway is an example of a country which generally avoided the resource curse and Dutch disease, and is often seen by other oil-rich countries as an example worthy to be emulated. Oil was discovered in 1969 and it has managed to successfully steer away from the resource-curse by minimizing rent-seeking and corruption. Norway's production grew to one of the highest in the world. However, sudden oil revenue inflows did not affect the basic economic structure of Norway and did not unsettle the industries formed before the oil era. Moreover, Norway utilised its oil revenue to invest in long term economic growth (Larsen, 2004; Spreng et al., 2012).

The country had a large raw material based export industry, with investment predominantly deriving from foreign capital. But from this starting point, Norway proved able to combine
economic growth and social development, even when the economy was exposed to the sudden emergence of two new energy sources; firstly hydropower, and then oil. The exploration and utilisation of these sources would, to some extent, become enclaves in the Norwegian economic structure. But despite this and other elements of foreign dependency, Norway did manage to secure additional development blocks related to water power and oil.

Since the 1970s the Norwegian economy has become even more internationally oriented than before, especially since oil is a global commodity. Norway heads the HDI, which measures the well-being of people around the world. Norway is ranked 1st out of 188 countries with regard to HDI. As shown in Table 3.4, Norway’s HDI value has increased from 0.811 in 1980 to 0.944 in 2014, an average annual increase of about 0.45%. Norway differs from Nigeria significantly in these metrics, and therefore implies that a country with well managed oil wealth will have positive effects on these metrics, and lead to higher performance.

Table 2.4 Norway Human Development Index indicators

<table>
<thead>
<tr>
<th>Year</th>
<th>Life expectancy at birth</th>
<th>Expected years of schooling</th>
<th>Mean years of schooling</th>
<th>GNI per capita (2011 PPP$)</th>
<th>HDI value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>75.6</td>
<td>13.1</td>
<td>10.3</td>
<td>34,076</td>
<td>0.811</td>
</tr>
<tr>
<td>1985</td>
<td>75.9</td>
<td>13.2</td>
<td>10.9</td>
<td>40,052</td>
<td>0.828</td>
</tr>
<tr>
<td>1990</td>
<td>76.5</td>
<td>14.0</td>
<td>11.5</td>
<td>42,152</td>
<td>0.849</td>
</tr>
<tr>
<td>1995</td>
<td>77.7</td>
<td>15.6</td>
<td>11.8</td>
<td>50,017</td>
<td>0.883</td>
</tr>
<tr>
<td>2000</td>
<td>78.7</td>
<td>17.5</td>
<td>12.0</td>
<td>57,853</td>
<td>0.917</td>
</tr>
<tr>
<td>2005</td>
<td>79.9</td>
<td>17.5</td>
<td>12.3</td>
<td>64,151</td>
<td>0.931</td>
</tr>
<tr>
<td>2010</td>
<td>81.0</td>
<td>17.5</td>
<td>12.6</td>
<td>63,578</td>
<td>0.940</td>
</tr>
<tr>
<td>2011</td>
<td>81.1</td>
<td>17.6</td>
<td>12.6</td>
<td>63,327</td>
<td>0.941</td>
</tr>
<tr>
<td>2012</td>
<td>81.3</td>
<td>17.5</td>
<td>12.6</td>
<td>64,926</td>
<td>0.942</td>
</tr>
<tr>
<td>2013</td>
<td>81.4</td>
<td>17.5</td>
<td>12.6</td>
<td>64,283</td>
<td>0.942</td>
</tr>
<tr>
<td>2014</td>
<td>81.6</td>
<td>17.5</td>
<td>12.6</td>
<td>64,992</td>
<td>0.944</td>
</tr>
</tbody>
</table>

Source: HDR (2013)

Norway’s example also demonstrates the wisdom of the “leaving the oil underground” argument. Keen to avoid the Dutch disease and job losses in other industries, the authorities were reluctant to move forward too quickly and they kept offering direct support to the non-oil sectors. Licensing activity from 1969 to 1978 was relatively restrictive, and an abundant
hydroelectric power supply meant that energy needs were less dependent on the new oil discoveries (Larsen, 2004). It was considered important to strike the right balance between the developing oil industry and the other domestic industries, putting in place expert institutions, policies, and human capital to deal with the new windfall revenue. At the same time, spending increased through subsidies on agriculture and industry.

Norway is a rich country in respect to per capita income, which was US$66,141 in 2013 (World Bank, 2015). The population is 5.137 million (World Bank, 2014), with unemployment being very low and stable between 2.3 - 4.7 % since 2003, and is expected to remain low in 2014 - 2015. It is estimated that 1 out of every 9 jobs in Norway are linked to the oil industry, and there is no person living under the poverty line (Hundley, 2007); in addition Norway is a net external creditor and international aid donor (Economist, 2008).

Norway is a small open economy, which is rich in resources including oil, gas, hydropower, and minerals. Its other significant industries are shipbuilding, paper products, electronics, timber, textiles, and fishing. Currently, the oil sector constitutes a quarter of GDP and one third of total government income (Walther, 2008). Its GDP amounted to US$499.8 billion in 2014, with an annual growth which averaged at 3.5%. The ratio of oil and gas to total exports accounts for just 21%, with exports exceeding imports and there are extensive social welfare programmes. Norway has the largest oil reserves in Western Europe, with 5.497 billion barrels of proven crude oil reserves as of 2015 (OPEC, 2015).

However, weak economic performance of most oil rich countries indicate that natural resources are often more of a curse than a blessing for these countries. The resource curse examines the negative effects of large quantities of natural resources on economic growth from an economic and political perspective. As previously discussed in Chapter 2, the appreciation of the real domestic exchange rate, known as the Dutch disease, was explained as the main reason for poor economic performance of oil rich countries. But then other
causes, such as long lasting ineffective institutions, corruption, and rent seeking, are considered to be caused by other major political reasons. These political features are the corner-stone of the resource curse. However, natural resources are not always a curse, and they can be a blessing and lead to high economic growth and efficient economic performance for countries with strong institutions such as Norway (Larsen, 2006).

The management of the petroleum resources reflects the view among Norwegian decision makers that the resources belong to the nation, and that the development of the industry should benefit society as a whole including future generations. This ambition was challenging for several reasons. The oil revenues are temporary, as they are based on a non-renewable natural resource. Furthermore, they are highly volatile, due to fluctuations in the oil price and uncertainty in the size of the resources. Thus, extraction should be undertaken at a moderate pace to ensure that wealth generated from these resources is saved for the future. Therefore, the policies for the management and spending of the petroleum wealth have assumed more importance, with the establishment of the Petroleum Pension Fund in 1990 and the adoption of the fiscal rule in 2001. The fiscal rule was that the spending of oil revenues should be equal to the expected real return from the Pension Fund. Therefore, this rule would enable the government to run with a permanent non-oil budget deficit, allowing for higher public spending and/or lower taxes than would have been possible without the oil revenues (Holden, 2013 Aslanli, 2015). Norway experienced almost one and a half decades, from 1972 to 1986, of high inflation. As shown in Figure 2.3, inflation increase from 5.7% in 1985 to 7.2% and 8.7% in 1986 and 1987 respectively.
The Pension Fund and the fiscal rule was to ensure that the large, volatile, and temporary net cash flow from the petroleum sector is transferred to a stable supplement to the government budget. Thus, the oil revenues allow higher public spending and/or lower taxes than would otherwise have been possible for the entire future.

Norway, as a successful oil rich country, shows that efficient institutions can turn natural resource into blessing, whilst Nigeria’s experiences are a clear example of the resource curse. Unlike any other country that has discovered oil wealth, Norway had a modern welfare state in place before oil became a key source of wealth for the country. The welfare state became one of the institutions that secured a broad distribution of the benefits from oil production. Norway has a small population and already had a functioning representative democracy with strong institutions when it discovered oil. Such as, rule of law is play a crucial role for economic development, and therefore can be help to turn the natural resource curse into a blessing. The Norwegian judicial system enjoys high levels of public trust and has a long-standing reputation of independence, competence and integrity (FER, 2014). Furthermore, the
judicial system is among Norway’s least corrupt institutions (GCB, 2013). Therefore, Norway with a strong rule of law has a better quality of life, and well-being. Also, Norway is politically stable, with strong property rights protection and an effective legal system.

Its political leaders are accountable to the public and are largely free from corruption. Norway is generally viewed as a non-corrupt country, as shown in Figure 2.4. In 2014 it was ranked as the third least corrupt country in the world out of 191 countries (World Bank, 2014). It is one of the few resource-rich countries that have managed to escape the resource curse, using its oil and gas to achieve high standards of living for all its citizens rather than for the benefit of elites.

Norway already has strong institutions when it discovered oil. This gave Norway a unique starting point, and with all this in place it has managed to distribute its oil wealth to its citizens. Norway taxes both its oil earnings and its citizens heavily. Norway has been able to counteract the resource curse and the ‘grabbing’ or rent seeking activities that are usually associated with the curse. According to Mehlum et al. (2006), institutional quality has been able to counteract the negative effects of the resource curse. In addition, Larsen (2005; 2006) argued that good institutions are one of the main reasons for the escape from the curse. Most
empirical analyses found that Norway has escaped the resource curse (Gylfason, 2000; Gylfason and Zoega, 2001; Mehlum, et al., 2002; Stevens, 2003; and Bornhorst et al., 2008). Mehlum, et al. (2012) carried out a study on mineral rent and social development in Norway and they maintained that natural resources in Norway kept the economy growing because oil discovery stimulated productive forces rather than grabber activities. Oil revenues are invested abroad through a Sovereign Wealth Fund, which is managed by the central bank of Norway and is managed in a highly transparent manner.

Nevertheless, managing the fund in a profitable, responsible, and transparent way is an important task for generations to come. It invests exclusively abroad to promote exchange rate stability, and to shield the Norwegian economy from the effects of oil-price fluctuations (Norges Bank, 2015). Its pension fund is Europe's largest, and lags behind only that of the United Arab Emirates amongst those managed by governments (Alhassan, 2012).

Through investing in the name of future generations, the state has been able to absorb 80% of the resource rent (Gylfason, 2006), which is the difference between the cost of extracting and producing the oil and the price at which it can be sold. The Government Pension Fund collects the net cash flow from petroleum activities and the return on its investments, which is then used to finance the government’s fiscal deficit. The Norwegian government has successfully avoided the resource curse by taking a long-term view regarding its management of their natural resource wealth and sharing this wealth with its citizens.

Norway has avoided the resource curse for several reasons. For example, Norway had a history of natural resource management that included integrating natural resource-based industries with the rest of the economy through various linkages. Furthermore, Norway's institutions were developed to handle shocks to the economy that are endemic to resource productions, such as large changes in terms of trade. Also, the separation of rents based on
natural resource extraction from the spending of these rents has gradually led to the establishment of a buffer fund that helps to create a more stable economic environment. Also, diversification is more relevant for explaining the Norwegian escape from the resource curse due to a reduction in the dominance of the oil sector, as it has been an important goal for the government.

2.4 The UAE – A Case of a Successful Development via Oil

The United Arab Emirates is the second-largest oil producer in the Middle East, exporting the equivalent of 3.5% of the total global oil production (Smith, 2008). Oil was discovered in 1958, when the seven separate emirates had the same under-developed economies that depended mainly on subsistence agriculture, nomadic animal husbandry, the extraction and trade of pearls, fishing, and seafaring. The period before the discovery of oil, therefore, reflected the country’s limited natural resources, and resulted in a simple subsistence economy.

The era of economic development in the UAE began after oil discovery. Since then, the UAE’s phenomenal growth has depended largely on the discovery and exploitation of oil. The oil and gas sectors are well managed and the latest technology is continuously harnessed to increase production efficiency, and contributed to promote the country’s economy (Shihab, 2001; Abed and Hellyer, 2001; Waseem, 2015).

In 2015 proven oil reserves in the UAE were 98.8 billion barrels, the third largest oil reserves in the world after Saudi Arabia and Iraq. Also, The UAE holds the fourth largest reserves of natural gas in the world. The UAE possesses, therefore, huge reserves of oil and gas, capable of sustaining long-term economic growth. Today, the UAE is a major international tourist and business centre as well as one of the most modern, stable, and safe countries in the world (Z.U, 2013; Abdeen, 2014).
Since its independence in 1971, the UAE has enjoyed political stability. Existing political structures appear to reflect the tribal society of the UAE. The distribution of large oil revenues in the form of social and economic infrastructure, high salaries, a high standard of social services, such as health and education, has raised the standard of living for UAE citizens and considerably reduced the likelihood of internal political and social unrest. Political and social stability has gone hand in hand with liberal trade policies and has paved the way for investment, domestically and internationally in the industrial sector. In addition, corruption is a low risk for companies in the UAE as it is the least corrupt country in the Arab world (TI, 2014). The UAE offers a business-friendly environment, with an effective and efficient public administration. The UAE is ranked 30th out of 191 countries for their control on corruption (World Bank, 2015). This is one important factor in avoiding the resource curse. Figure 3.5 shows the UAE’s control of corruption score from 1996 to 2014. It’s mean score was 0.89 points, with a minimum of -0.09 points in 1996 and maximum of 1.29 points in 2013 (World Bank, 2015).

![Figure 2.5 UAE Control of corruption](image)

The Human Development Index (HDI) value for UAE in 2014 is 0.835, which places the UAE in the high human development category and is ranked 41st out of 188 countries. From 1990 to 2014, the UAE HDI value increased from 0.726 to 0.835, an increase of 15.1% or an average annual increase of about 0.59%, as shown in Table 3.5. It can be observed that the UAE has made progress in each of the HDI indicators. Between 1980 and 2014, the UAE’s life expectancy at birth increased by 9.4 years, mean years of schooling increased by 5.9 years, and expected years of schooling increased by 4.7 years. The GNI per capita significantly decrease, by about 42% between 1990 and 2014. There are many factors accounting for this decline, such as inflation, the level of oil production and a rapidly increasing population (Ismail, 2010). The UAE's ranking was remarkable given the decline in gross national income. This is probably because of the country's significant performance in health and education. Now the UAE is a hub of business and culture, and it has therefore used its wealth very well to promote its economy.

Table 2.5 UAE Human Development Index indicators

<table>
<thead>
<tr>
<th>Year</th>
<th>Life expectancy at birth</th>
<th>Expected years of schooling</th>
<th>Mean years of schooling</th>
<th>GNI per capita (2011 PPP$)</th>
<th>HDI value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>67.6</td>
<td>8.6</td>
<td>3.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>69.8</td>
<td>9.8</td>
<td>4.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>71.5</td>
<td>10.6</td>
<td>5.6</td>
<td>104,901</td>
<td>0.726</td>
</tr>
<tr>
<td>1995</td>
<td>72.9</td>
<td>11.2</td>
<td>7.1</td>
<td>105,505</td>
<td>0.763</td>
</tr>
<tr>
<td>2000</td>
<td>74.2</td>
<td>11.9</td>
<td>8.3</td>
<td>109,644</td>
<td>0.797</td>
</tr>
<tr>
<td>2005</td>
<td>75.4</td>
<td>12.7</td>
<td>9.0</td>
<td>103,840</td>
<td>0.822</td>
</tr>
<tr>
<td>2010</td>
<td>76.3</td>
<td>13.3</td>
<td>9.5</td>
<td>56,624</td>
<td>0.828</td>
</tr>
<tr>
<td>2011</td>
<td>76.5</td>
<td>13.3</td>
<td>9.5</td>
<td>56,208</td>
<td>0.829</td>
</tr>
<tr>
<td>2012</td>
<td>76.6</td>
<td>13.3</td>
<td>9.5</td>
<td>57,078</td>
<td>0.831</td>
</tr>
<tr>
<td>2013</td>
<td>76.8</td>
<td>13.3</td>
<td>9.5</td>
<td>59,124</td>
<td>0.833</td>
</tr>
<tr>
<td>2014</td>
<td>77.0</td>
<td>13.3</td>
<td>9.5</td>
<td>60,868</td>
<td>0.835</td>
</tr>
</tbody>
</table>

Source: HDR (2015)

Nevertheless, the UAE's per capita GDP is on par with those of leading nations at nearly US$25,000. The UAE has approximately 10% of the world's total known oil reserves. However, the UAE is no longer overly reliant on oil and gas revenues. Today, the oil sector
contributes to 30% of the country's GDP (Grant et al., 2007). The country experiences an average growth of 5% (see Appendix 9). The majority of the revenues derived from oil are invested by the government into the infrastructure and non-oil sector development projects (see Appendix 12, 13). It seems that the UAE neutralises the resource curse and Dutch disease by pegging its currency to the dollar and investing heavily in modern infrastructure and education (Arezki and van der Ploeg, 2007; Ashby, 2008). Several strategies and policies adopted by the UAE have enabled the country to succeed in the process of development via oil. A few of these are discussed below.

Substantial amounts from oil revenue windfalls were invested by the government of the UAE into infrastructure improvements, such as airports, seaports, and roads (Kumar, 2008). Heavy investments into physical infrastructure hold promise of even more dynamic economic and business prospects. The government of the UAE takes advantage of the strategic location of the country with 15 seaports, through which goods and raw materials are exported and imported. Furthermore, these ports are used for the redistribution of goods and materials from and to countries in the MENA region and those of the Indian subcontinent (Grant et al., 2007).

The UAE is considered to have stable economic growth in the Middle East and is not directly threatened by any global crises at the moment. The UAE’s currency, the AED (dirham), is pegged to the USD. This helps stabilise the currency but it also implies that a fall in the USD would erode the purchasing power in relation to the imported goods that the country is so dependent on (Alami, 2013).

The government of the UAE are very aware of this problem and are trying to tackle it with initiatives, such as freezing prices on water, electricity, and everyday consumer goods. As shown in Figure 3.6, inflation rate has been under control since 2009, especially when
compared to 2007 and 2008 (World Bank, 2015). The control of inflation rate is indispensable in securing its labour force, ensuring that workers still find it economically favourable to live and work in the UAE. The UAE has become an important financial centre due to its significant financial and services industries. It has emerged as the most important economy in the region, as the country has an ambition to emerge as the financial and service sector leader in the Middle East.

The UAE's government has reduced its dependency on oil exports by diversifying the economy, creating booming businesses, encouraging tourism, and the developing of construction sectors. Although the UAE remains somewhat oil dependent, it is the least vulnerable to oil price or export volume declines amongst the Gulf countries. Therefore, the UAE economy appears the most diversified in the Gulf countries (Hvidt, 2013).

It is estimated by some economists that over the last three decades the UAE has invested around US$7 billion in its industrial development and establishing over 1,000 factories (National Encyclopaedia, 2008). The dominant industries are petrochemicals, other chemicals, hydrocarbons, and plastics due to the country’s oil supplies.
Over the last decade, the non-oil sector experienced a 9% annual growth. That is the direct consequence of the UAE’s government’s commitment to the economic diversification away from oil dependence policies (World Bank, 2003). In addition to the above listed industries, the other sectors developed include fertilisers, cement, tourism, trade and manufacturing, real estate, construction, and financial services (Grant et al., 2007). Whilst oil production makes up 25% of its GDP, the ratio of new non–oil industries to GDP has increased significantly over the last decades (see Appendix 9 and 13).

A World Bank (2003) report indicates that the UAE achieved significant progress in economic development due to its commitment to trade and openness, including the introduction of free trade zones and economic diversification policies. In addition, the government of UAE favours foreign direct investment and has also encouraged companies to invest in manufacturing by offering low interest rate loans through the Emirates Industrial Bank (Kumar, 2008).

The government prioritises the establishment of the knowledge economy, and that is intended to become the “backbone” of the UAE economy. Education and innovation are expected to play a major role in increasing productivity and competitiveness. There are a number of successful innovation based initiatives which adds to the growth of the country’s economy and creates employment. Recently, Dubai Internet City succeeded in attracting high profile technology companies, such as Microsoft, Oracle, and Hewlett–Packard (Grant et al., 2007). Development led and supported by the government’s economic policy reforms and streamlined foreign investment regulations are contributing to an exemplary growth of the UAE economy (Kumar, 2008).

In contrast, the employment pattern in the UAE does not reflect the structure of output. The oil sector employs only 1.6% of the UAE labour force, reflecting the capital-intensive nature
of the industry. The unemployment rate in the UAE is approximately 0.5%, which means that the UAE economy is effectively at full employment. This has been attributed to the cluster of public services, transportation, communications, financial markets, and service-based industries in the cities.

It is clear from the above that political leaders of the UAE prioritise economic diversification away from oil generally. Furthermore, the political environment is stable, proactive, and progressive for furthering economic growth and innovations (Grant et al., 2007). Despite the fact that, the current government is not democratic, and that political turmoil is present in the region, the UAE are politically stable and at low risk as they are focused on economic development as their prime political objective (Kumar, 2008).

There are still enormous social and economic gaps within the UAE. Firstly, the regional inequalities in terms of development among the seven Emirates of the UAE; 50% of total manufacturing is concentrated in Abu Dubai, and when combined with Dubai and Sharjar the output reaches 93% of all industrial production (Encyclopaedia of Nations, 2000). Abu Dubai also represents 80% of total non-oil trade in the country (Grant et al., 2007).

The other four Emirates have little oil, accounting for only 6.9% of GDP. They are heavily dependent on subsidies from the UAE central government (UN Report, 2000) (see Appendix 12). Although the UAE is politically stable, the potential for tension and conflict is there if the gap of wealth among the Emirates is not addressed (Constantine, 2007). Social policies issues lead to inequality. While many basic social services are provided to expatriates at reduced rates, UAE citizens get salaries roughly double of those of expatriates in similar jobs and have access to numerous subsidies, grants, loans, and free services which are unavailable to expatriate workers. High levels of immigration have resulted in migrant workers comprising of more than three quarters of the population. The UAE has reaped benefits from
foreign skilled and unskilled workers who initiated its economic development in the early 1970s, and subsequently have come to sustain it. Thus, a small indigenous population, a large migrant population, and immense wealth generated by oil are the dominant socio-economic features of the UAE.

2.5 Summary

This section discussed Nigeria, Norway, and the UAE regarding the effects of abundant natural resources on their economies. In both the political and economic realm, the main indicators of success or failure have been discussed. Furthermore, the economic natural resource curse, and subsequently the political natural resource curse were discussed. This chapter then gave a brief assessment of likely outcomes in the three case studies.

The policies of Norway and UAE were successful in moving the economy from its full dependence on a single sector, the oil sector, to depending on multiple sectors and resources, while Nigeria failed to diversify its economy away from oil dependency. As seen in Norway, the oil discovery led the country to be one of the most developed countries. In contrast, Nigeria, which started its oil boom in 1970, has instead become highly dependent on oil revenues.

Using the corruption index as a measure of institutional quality, Norway’s score is 2.23 and it ranks third of 191 countries evaluated in 2014, the UAE’s score was 1.23 and, ranks 30th out of 191 countries. By contrast, Nigeria’s score is -1.27, which positions Nigeria as 177th. This indicates a very high level of corruption risk, due to lack of overall transparency, having no anti-corruption plan in place for the military, and significant opaque off-budget expenditure. Norway has avoided the resource curse, while Nigeria has experienced a classic case. Nigeria’s outcome has been attributed to policy choices (Pinto, 1987).
Nigeria, a major oil exporter in Africa with a history of fifty years of oil exportation, and is still experiencing the resource curse. Almost 90% of its GDP total exports are oil. The country is dependent on food imports, the non-oil industries are almost non-existent and the vast majority of the population lives under poverty line. The causes for that lie in excessive unproductive government spending and mismanagement of boom and bust cycles with unrealistic financial projections, consequent borrowing abroad and then debt servicing, low demand in domestically produced goods, and lack of governmental investment in infrastructure and non-oil sector. Oil production and exports operate in a constantly unstable political system with weak institutions, along with widespread corruption, absence of accountability, and transparency in managing oil revenues. These negative and detrimental effects prevail over developmental prospects in Nigeria.

Norway utilises its oil revenue influxes into long term and sustained development; the economy is diverse with oil contributing to approximately 25% of GDP and approximately 33% of total exports. Growth rates are steady and rather high, its citizens enjoy one of the highest living standards in the world, and there is no person living under poverty line. The reasons Norway managed to reverse negativities and turned oil into an economic and social blessing are found in generally sound economic policies, focused on stabilising inflation, creating employment, building vast financial reserves abroad in the form of Sovereign Funds so as to shield the economy from oil price fluctuations. The mature democracy and stable political system, with good institutions, accountability, and transparency in managing oil wealth, are of paramount importance in turning oil reserves of Norway into a blessing for the country.

Currently, the UAE is undergoing a remarkable process of development through oil revenues. Although oil is the foundation of the UAE economy, just a third of GDP is derived from oil. Economic growth is high, and the government invests highly in infrastructure and non-oil
sector development projects. There is a continuous government commitment to economic diversification, open and free trade, favourable conditions for foreign investment, as well as prioritisation of education, innovation, and creation of a knowledge economy. The other factors adding to UAE’s success story is that the political system, whilst not democratic, is stable. The government establishes development as the prime political objective and is the key and active actor in the process of development via oil. Yet, in spite of all positive developments, the UAE is still to address the challenges, of inequalities based on territory, nationality, and gender. Having looked at the three case studies, the following chapters will focus on the case of Libya, and the lessons that could be learned to achieve a more sustainable path of development via oil. First, an examination of the Dutch disease in the country is conducted. Then, an assessment of institutions in the resource curse phenomenon is provided, and finally recommendations to make oil more of a blessing than a curse for the country are suggested.
Chapter 3  Oil and the Economic Structure of Libya

3.1 Introduction

Libya is a developing Arab state which is the fourth largest African country and the 17th largest in the world, situated in the North of the continent on the coast of the Mediterranean. It shares its borders with Egypt in the east, the Republic of Sudan in the southeast, Chad and Niger in the south, Algeria in the west, and Tunisia in the northwest (see Appendix 14). The country has a land area of 1,757,000 sq. km (678,400 sq. mi) with Tripoli, Libya’s largest city, as its capital (IBP, 2013; and Falola et al., 2012). The geopolitical location of Libya is on the crossroads of three continents, Africa, Europe, and Asia. Its location is particularly strategic as it links Eastern and Western Africa, and Southern Europe with the rest of Africa. In 2105 the population was 6 million people, the majority of whom live within close proximity of the coast where most of the agricultural activity takes place. Less than 5% of Libya’s territory is arable (Library of Congress, 2005; and FAO, 2010), as the rest of the land is predominantly part of the Sahara Desert. Before oil was discovered in 1958, Libya was an underdeveloped country relying on fishing, nomadic livestock herding, and was heavily dependent on foreign aid.

According to Libya’s Human Development Index (HDI) value for 2014 is 0.724, as shown in Table 3.1, which places the country in the high human development category at a ranking of 94 out of 188 countries. Libya’s HDI rating improved slightly between 2005 and 2010. From 1980 to 2014 Libya’s HDI value increased from 0.636 to 0.724, an increase of 13.9% over a 34 year period. Libya has demonstrated improvement in most of the HDI indicators, during this time. Life expectancy at birth increased by 7.4 years, mean years of schooling increased by 5.1 years; and expected years of schooling increased by 1.5. However, Gross National Income (GNI) per capita decreased by about 60.9%.
Table 3.1 Libya’s Human Development Index 1980-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Life expectancy at birth</th>
<th>Expected years of schooling</th>
<th>Mean years of schooling</th>
<th>GNI per capita (2011 PPP$)</th>
<th>HDI value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>64.2</td>
<td>12.5</td>
<td>2.2</td>
<td>38,091</td>
<td>0.636</td>
</tr>
<tr>
<td>1985</td>
<td>66.6</td>
<td>13.1</td>
<td>3.2</td>
<td>26,005</td>
<td>0.657</td>
</tr>
<tr>
<td>1990</td>
<td>68.5</td>
<td>14.0</td>
<td>3.8</td>
<td>21,554</td>
<td>0.679</td>
</tr>
<tr>
<td>1995</td>
<td>69.9</td>
<td>14.9</td>
<td>4.7</td>
<td>20,864</td>
<td>0.707</td>
</tr>
<tr>
<td>2000</td>
<td>70.5</td>
<td>15.8</td>
<td>5.6</td>
<td>20,391</td>
<td>0.731</td>
</tr>
<tr>
<td>2005</td>
<td>71.4</td>
<td>15.5</td>
<td>6.4</td>
<td>24,064</td>
<td>0.751</td>
</tr>
<tr>
<td>2010</td>
<td>71.6</td>
<td>14.0</td>
<td>7.3</td>
<td>29,677</td>
<td>0.756</td>
</tr>
<tr>
<td>2011</td>
<td>71.6</td>
<td>14.0</td>
<td>7.3</td>
<td>11,377</td>
<td>0.711</td>
</tr>
<tr>
<td>2012</td>
<td>71.6</td>
<td>14.0</td>
<td>7.3</td>
<td>23,069</td>
<td>0.745</td>
</tr>
<tr>
<td>2013</td>
<td>71.6</td>
<td>14.0</td>
<td>7.3</td>
<td>19,792</td>
<td>0.738</td>
</tr>
<tr>
<td>2014</td>
<td>71.6</td>
<td>14.0</td>
<td>7.3</td>
<td>14,911</td>
<td>0.724</td>
</tr>
</tbody>
</table>

Source: UNDP (2015)

Libya became a fully-fledged exporting country in 1962, and by 1969, became one of the ten biggest oil exporters in the world with a daily output of 3.3 million barrels (United World, 2006). At the end of 2014 Libya had proven oil reserves of 48 billion barrels with a production capacity of 1.4m barrels per day. Libya the largest amount of proven crude oil reserves in Africa, accounting for 38% for the continent’s total (see Figure 3.1), and the ninth-largest amount globally (OGJ, 2014; OPEC, 2015; and World Bank, 2014). However, according to the National Oil Corporation (NOC) (2008), Libya remains highly unexplored, and it has an excellent potential for more oil discoveries. In addition, despite years of oil production, only approximately 25% of Libya’s area is covered by agreements with oil companies (Appendix 15). Therefore, revenue from the oil and gas sector has become and still is a mainstay key contributor to the Libyan economy.
Figure 3.2 indicates the trend in Libyan oil production from 1970 to 2010. Libya’s peak oil production was 3.3 million barrel in 1970. This declined to 1.5 million barrels between 1970 and 1974 due to government production restrictions, before rising again to 2.1 million barrel in 1979. During the 1980’s Libyan oil production averaged approximately 1.2 million barrel a day, rising to approximately 1.4 million barrels a day in the 1990’s (NOC, 2010; and OPEC, 2010). During 2004, Libyan oil production was estimated at nearly 1.6 million barrels a day, domestic consumption was 237,000 barrels net exports were 1.34 million barrels (OPEC, 2010). Libya was looking for foreign companies to increase the country’s oil production capacity. This resulted in the daily production increasing from 2 million barrels in 2010 to 3 million barrels by 2015 (NOC, 2010). Libya is considered as a highly attractive oil exploration location due to its low cost of oil extraction. This wealth of natural resources brings in plenty of foreign currency to the country, although this has not promoted the economic development of the country.
In 1969, after a change of regime, Libya experienced growing governmental intervention in the economy, underwent nationalisation of industries, and a socialist state was established. During the 1970s and 1980s, the new regime invested heavily in the development of its infrastructure by building roads, schools, hospitals, and agricultural and industrial projects. The country has been heavily dependent on the oil sector since the 1960s and has experienced a considerable increase in oil revenue as a result of increased oil prices, particularly after 2000. However, Libya, like many oil-rich developing countries, has suffered from widespread corruption, including weak institutions, which has resulted in the misuse of oil revenues and poor economic performance.

The purpose of this chapter is to discuss the historical economic structure in Libya before and during oil era, and to evaluate the role of oil in Libya’s economic performance between 1970 and 2010. The remainder of this chapter is structured as follows: Section 4.2, Libyan Economy Development before and during oil discovery, presents two different periods of Libyan economy. The first period is before the discovery of oil in 1958, and the second period is after the discovery from 1958 to 2011; Section 4.3, Recent Libyan Economic Developments, discusses the economic development of Libya since the political uprising.
which occurred in 2011; Section 4.4, An Overview of the Libyan Economy, discusses the agriculture, manufacturing sectors and tradable sectors, (construction and services), including the exchange rate policy in Libya; finally, Section 4.5 provides a summary of the whole chapter.

3.2 Libyan Economy Development - Before and during Oil Discovery

The trend of economic development in Libya can be divided into two different eras; the period before the discovery of oil, and the period after the discovery of oil in 1959. Before the discovery of oil in 1959 and the commencement of its commercial production in 1961, the economy had the same idiosyncrasies of other developing countries. Libya used to be one of poorest countries in the world. In 1950, the annual income per capita was approximately $40 (Segal, 1974). Libya's economy was extremely poor, which was mainly based on agriculture and foreign aid from various organisations and countries (World Bank, 1960). The nations which provided the most foreign aid were the U.S. and the UK, and in return permissions were granted for the use of military bases in Libya (Vandewalle and Vandewalle, 1998). Additional aid from the UN and other organisations helped the country to survive and overcome the economically challenging years. Both foreign aid and the agricultural sector contributed to approximately 26% of GDP each, as shown in Table 3.2 (Alfitouri, 2004).

The national economy generally suffered from dire underdevelopment in the early 1950s. This was exhibited by a low per capita income and the fact that the majority of the population were living at, or below, a level of subsistence. The spread of disease and low standards of education were the direct causes of that poverty (IMF, 2000). Industrial development was scarce, with only some light industries of insignificant value, such as textiles, tobacco, and clothing, or mineral resources. The majority of the population were concentrated on the coast and engaged in agriculture and animal husbandry. The rest were involved in textiles and
handicraft industries, which were extremely limited and devoted primarily to consumer goods such as olive oil refining, fish canning, and leather tanning (Higgins & Royer, 1967).

Table 3.2 Libyan GDP at constant factor costs, in US$ million (1958)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Value (in millions)</th>
<th>Share in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>38.08</td>
<td>26.1</td>
</tr>
<tr>
<td>Petroleum, Mining and Quarrying</td>
<td>10.08</td>
<td>6.9</td>
</tr>
<tr>
<td>Manufacturing &amp; Repairing</td>
<td>16.80</td>
<td>11.9</td>
</tr>
<tr>
<td>Construction</td>
<td>5.04</td>
<td>3.4</td>
</tr>
<tr>
<td>Electricity, Gas &amp; Water</td>
<td>2.24</td>
<td>1.5</td>
</tr>
<tr>
<td>Transport &amp; Communicating</td>
<td>8.12</td>
<td>5.6</td>
</tr>
<tr>
<td>wholesale &amp; retail sale</td>
<td>20.44</td>
<td>14</td>
</tr>
<tr>
<td>Banking &amp; Insurance</td>
<td>26.60</td>
<td>18.2</td>
</tr>
<tr>
<td>Public Administrative Services</td>
<td>18.76</td>
<td>12.8</td>
</tr>
<tr>
<td>Total</td>
<td>146.16</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Ministry of Planning (1972)

The colonial Italians seized control of the coastal cities throughout the majority of the 1940s and 1960s during which Italian expatriates controlled the relatively few enterprises in Libya. In contrast to the neighbouring countries, Tunisia and Algeria, the colonial economy in Libya did not create clear domestic financial, commercial, capitalist, or agricultural firms that had a close economic relationship with the colonial powers. Libya's economy was suffering from a huge budget deficit and was based on the limited productivity of its agricultural sector (Higgins and Royer, 1967).

The discovery of oil in the late 1950s, and its subsequent exploitation and exportation at the beginning of the 1960s, brought remarkable changes in the Libyan economy. After 1959 the need for direct foreign subsidies declined as international oil companies began to invest in Libya. This progression of Libya’s economic environment resulted in the country becoming an aid donor to many poorer countries, as opposed to being a recipient of financial aid before the discovery of oil. For example, Libya provided grants, loans, guarantees, and technical assistance to other developing nations which totalled US$164.9m between 1980 and 1984, and US$158m between 1995 and 1999.
The Libyan economy changed from a primitive agricultural economy to one based on oil. The wealth generated from the oil industry prevented Libya being an example of a poor and underdeveloped country, and transformed it into an example of unbalanced development.

Libya’s monarchy government at that time utilised the oil revenues as an engine for the country’s economic growth. They advocated a capitalist philosophy that limited the role of the government and encouraged the private sector to develop both itself and the economy (Ghanem, 1985). Due to the small size of the domestic private sector, the majority of development projects were carried out by foreign private sector businesses (Alfourjani, 2005). Unfortunately, very little is known about this period mainly due to the lack of literature. Towards the end of the 1960s, the oil sector developed rapidly and become the predominant economic sector.

During this period, investment in the oil industry brought surplus funds to the country's economy in general. The Libyan economic system was predominantly capitalistic. The existence of private ownership coexisted with minimum government interference, and therefore public ownership was limited to sectors that required large scale investment. Therefore, the government initiated a number of measures to encourage competition and the establishment of private businesses. Import and export laws were also established which stipulated that the importation of competitive foreign goods required possession of a licence (Alfaitori, 2003). Since the discovery of oil, the country’s budget shifted from deficit to a surplus (Abusnina and Shameya, 1997). Oil revenue became the main contributor to the economy. The government provided loans to Libyan businessmen to build local industries, in order to help implement the country's development plans by providing technical and economic services to both the public and private sectors. Moreover, the increasing expenditure on other sectors was due to the oil revenue, providing the foreign currency to support the country’s liabilities for the imports of commodities, services, and exchanges.
addition, the expenditure on public and private consumption, such as education, health, construction, and agriculture, resulted in an improvement in the standard of living for the Libyan people (Masoud, 2013).

In 1969, the new revolutionary government transitioned the economy from being capitalist-oriented to a socialist-oriented economy (Abdossalam, 1985). During the first few years of the revolution, there was a continuation of the previous economic policies and the private sector flourished even more than it had done before the revolution (Ghanem, 1985). Government intervention in the economy was increased and the government started to expand the public sector and reduce the private sector.

The structure of state ownership of businesses, which started in the early 1970's, started to gain momentum in the mid-1970's and reached its peak in the 1980's when most of the businesses became owned or controlled by the State. The State started to dominate all manufacturing activities, foreign and domestic retail trade, and banking and insurance services. Therefore, in line with this trend, the government embarked on several measures to accelerate the pace of transformation and initiated policies of self-reliance, particularly in regards to the self-sufficiency of food production. Ghanem (1987) puts forward that socialism in the third world meant different things to different countries. In Libya this was intended to mean the expanding of the public sector and shrinking of the private sector. However, these changes in the early 1970s were intended to transition the economy from being market-based towards a more socialist economy (Fayad, 2000).

In 1972 private sector investment had risen to LD7.8m (Allan, 2014). In the mid-1970s the government advocated a socialist philosophy which increased public sector spending and cut back on investment in the private sector (Ghanem, 1985). In the new economic system, private ownership was severely restricted. It was argued that unrestricted ownership would
lead to exploitation through wages, rent, and profit that would give rise to income disparity and inequality (Green Book, 1978). People were not allowed to own more than the house in which they lived and rental payments for property was outlawed (Meliha, 1996). However, small ventures could be carried out as long as they involved self-employment or family undertaking. As a result, the private sector’s ability to promote economic development in Libya became restricted instead of being encouraged due to this restriction on private ownership. This was one of the obstacles in diversifying the economy, and therefore was a first step towards resource curse.

The rapid development and exploitation of the Libyan economy after the beginning of the oil era had a profound impact on Libyan society in general. None of Libya’s pre-existing economic sectors had adequate production or visible resources which could have been expected to raise the standard of living or correct the foreign trade imbalances. By 1962, however, the situation had changed dramatically, and since then profound structural changes had taken place in economic, political, and social aspects (Allan, 2014).

Following a period of relative political isolation, in the late 1980s and 1990s the Libyan government started to move towards a more open and liberal regime. Whilst the Libyan economy has been characterised by its central control, some private companies had emerged and started to trade in Libya in the 1990’s. This was mainly due to the crises the Libyan economy had faced in the late 1980s and early 1990s, as economic conditions and standards of living worsened due to decreases in world oil prices. The country’s institutions, often created as a direct response to international economic forces during oil booms, appeared inflexible and undifferentiated to deal with fiscal crises that threatened previous distributive policies. Libya’s economic crises and economic reform threatened to become profound political crises, and as a result rulers tended to avoid or circumscribe them (AfDB, 2011).
In response to these crises the State introduced a series of liberalisation measures, which included a significant role for the private sector. Before 2011, private sector development in Libya was decidedly mixed. Small-scale individual and family-owned enterprises in tourism, private shops, real estate, and restaurants grew significantly, although growth in the informal sector went unrecorded.

Libya’s economy remained dangerously imbalanced. In 2003 51% of the formal workforce was employed in the public sector even though it contributed to only 9% of Libya’s GDP, whilst the oil sector contributed to more than 60% of GDP (GPCL, 2006). Bank lending in Libya could not support entrepreneurial growth. Banks had liquidity, but few incentives to lend and had limited capability to assess customer credit (CBL, 2009).

Uncertain and temporary steps were taken by the regime to liberalise the banking sector by introducing foreign capital and expertise. France’s BNP Paribas and Jordan’s Arab Bank acquired stakes in Libyan banks, but other than that little foreign expertise or capital was imported. Small enterprises remained unsupported by government. State intervention in the economy was pervasive but primitive, it dominated all manufacturing, agriculture; foreign and domestic retail trade, banking, insurance, as well as other major services. State owned trading companies were in charge of all industrial, manufacturing and agricultural imports. By 1987 an estimated 73% of all Libyans were employed by the government. The creation of state supermarkets extended state control down to the retail level. As a result, this led the government avoiding the creation of good quality, modern institutions for economic development management.

Oil revenues produced the rentier economy problem in Libya. Low and inconsistent regulation, over centralisation of economic power in the hands of the regime, lack of diversification, high inefficiencies, and extensive patronage, resulted in the manifestation of
the resource curse phenomenon. These negative developments were heightened even further by an insistence that the institutions of a modern state were inappropriate to enhance economic development via oil (Melhum et al., 2006; and Sach and Warnner, 1997).

3.3 Recent Libyan Economic Development (After the 2011 uprising)

Libya’s economy was previously known for favourable growth rates driven by its oil and gas industry (Sabillon, 2005). This growth was seriously dampened by the 2011 civil war, which resulted in contraction of the economy by 41.8% compared to a growth of 2.9% in 2010 (see Table. 3.3). As oil production rates recovered, oil exports increased by 20.1% in 2012 and 9.5% in 2013. Despite the oil sector’s recovery, its output is yet to return to the levels before the uprising. The country’s budget and current account balance stood at 13.6% and 15.8% of the GDP respectively. This could be due to the heavy dependence on oil revenue, and therefore evidence of the resource curse.

Table 3.3 Macroeconomic Indicators

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth</td>
<td>2.9</td>
<td>-41.8</td>
<td>20.1</td>
<td>9.5</td>
</tr>
<tr>
<td>Real GDP per capita growth</td>
<td>1.4</td>
<td>-42.8</td>
<td>19.4</td>
<td>8.9</td>
</tr>
<tr>
<td>CPI inflation</td>
<td>2.5</td>
<td>11.4</td>
<td>6</td>
<td>5.1</td>
</tr>
<tr>
<td>Budget balance % GDP</td>
<td>8.7</td>
<td>-17.1</td>
<td>13.6</td>
<td>12.2</td>
</tr>
<tr>
<td>Current account % GDP</td>
<td>11.4</td>
<td>-6</td>
<td>15.8</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Source: AfDB, (2012)

In 2014 the budget deficit exceeded 49% of GDP, whilst the current account deficit exceeded 23% of GDP. The fiscal and current account deficits were expected to amount to 29.6% and 17.5% of GDP respectively in 2015. This is due to estimated revenue losses of US$10 billion in 2015, approximately 20% of GDP (LBC, 2014; OECD, 2015; and UNDP, 2015). Foreign trade also suffered, with imports being damaged by the blocked access to its foreign assets. This reflected in a cut of the country’s current account balance from a surplus of 21% of GDP...
in 2010 to 4.5% in 2011 (LBC, 2013; and Omer, 2012). Industrial production in Libya decreased 50% as infrastructure and production facilities were destroyed. Banking activity was disrupted for most of the year during 2011. Foreign workers employed in most industries left the country. The economic infrastructure was degraded significantly and economic uncertainty remains very high. The country was facing challenges to develop and diversify the economy beforehand, but these challenges deepened further following the outbreak of the Libyan conflict in 2011. The economy was disrupted by the shutdown in oil production and exports, as well as by the decline in oil prices. In addition, during the crisis foreign oil companies evacuated their staff and facilities were attacked by various armed forces. As a result, production and exports came to a complete standstill between April and August 2011.

In 2014, Libya marked a year of increased oil field shutdowns, economic decline, disintegration of central authority, and the rising power of regional and religious militias across the country. Armed groups that have increasingly aligned themselves with the country’s political parties or factions maintained control over the key oil production sites for the majority of 2014. High unemployment rates especially effected the youth of society, with estimates indicating unemployment rates of around 30%. The unemployment rate average across all age groups was approximately 18% between 2005 and 2010, reaching an all-time high of 20% (Tawfik and Abuhadra, 2014; LCB, 2013; and AfDB, 2012). A weak social protection system and the absence of social dialogue, with high proliferation of armed militias and heavy weaponry in the country, has contributed to the spread of arms throughout the region as a direct result of the NATO intervention being the cause of the current instability (Shah, 2011; and Germanos, 2014).

The dominance of oil in the Libyan economy became painfully evident after the uprising in 2011. The ensuing civil war disrupted production facilities and pipelines, causing a dramatic fall in oil production, which resulted in the total collapse of the economy. The real GDP
dropped by 60% and, because of the dependency of the rest of the economy on the oil sector, non-oil real GDP also declined by 52%. In the space of one year, nominal GDP was more than halved from US$75 billion in 2010 to US$35 billion in 2011.

The economy began to recover in 2012 as oil production recovered much faster than had been expected, reaching a near pre-uprising level of 1.4 million barrel per day (see Appendix 15). Overall real GDP significantly increased by over 100% in 2012 (Figure 3.3), whilst the country’s budget and current account balances stood at 13.8% and 25.5% of GDP respectively (see appendix 16). It is clear from this evidence that as long as oil production and prices remain at their current levels, the Libyan economy has the potential to experience growth.

![Figure 3.3 Libya GDP in constant prices (1980-2014)](image)

Source: EIA (2014)

However, with oil production and exports having been significantly decreased, the growth rate of the economy became negative in 2013. According to the IMF (2014) and the World Bank (2014), real GDP fell by 5-6% during the year. The main reason that prevented a greater decrease, like that in 2011, was that the government maintained its expenditure using international reserves held in the Central Bank of Libya, which at the end of 2012 stood at $120 billion, and the foreign assets of the Libyan Investment Authority (LIA). This financing
of the government’s expenditure was not possible in 2011 because of the UN-imposed freeze on Libyan foreign assets.

In summary, the oil sector remains, the key driver for Libyan economic development. This plentiful supply of money was utilised to fund government expenditure and transform the Libyan economy from an aid recipient to an aid donor. Moreover, it transformed the Libyan economy from one with capital scarcity to one with capital abundance (Khader, 1987). High oil revenues and a small population placed Libya in the top five countries for GDP per capita in Africa with $14,000 GDP per capita (Lieberman, 2011; AfDB, 2011), and allowed the Libyan state to provide an extensive level of social security, particularly in the fields of housing and education. Compared to its neighbours, Libya has enjoyed a low level of both absolute and relative poverty.

However, as part of its socialist model of economic development, the Libyan government has weakened the private sector and confined it to mainly small-scale businesses. While this policy has damaged the Libyan economy significantly, it has also allowed the accumulation of wealth by a small number of the population.

In addition, the country generally records large fiscal and current account surpluses, has very little debt, and has a large stock of foreign exchange reserves. However, the country also has many structural shortcomings, most of them due to poor policy making. Moreover, since 2011 the Libyan economy has seemed to have retracted, with paralysis in the oil sector depriving the state of significant revenues which could have been utilised for the required economic development.
3.4 An Overview of the Libyan Economy

3.4.1 Agriculture

During 1967 the Libyan economy became dominated by the oil sector, and appeared to be one of the least diversified oil-producing economies in the world. However, the Libyan economy is still developing and has been undergoing reorganisation over the last few years, with the Libyan government attempting to move towards a market-based economy and to open its doors to foreign investment in an attempt to encourage foreign capital investment from foreign banks (CBL, 2007). Libya witnessed growing levels of government intervention in the economy after it was established as a socialist country in the early 1970s, which caused a serious decline in economic activity.

Libya was traditionally an agricultural country, although farming was restricted primarily to the coastal regions. Before 1958, agriculture was the country’s main source of revenue. It provided the raw material for most of the country’s manufacturing, exports, and trade departments, and contributed to over 26% of Libya’s GDP (Metz, 1987). The history of Libya’s agricultural development has been strongly inversely correlated to the development of its oil industry. The main evidence of the resource curse that resource-rich countries is that resource booms can lead to a decline in economic activity in other sectors, particularly those that are export-oriented, leaving them unable to maintain growth in the post boom era; this can be seen in the agricultural sector in Libya.

Natural and environmental conditions limited Libya’s agricultural production potential. For the most part, agricultural resources were limited to two comparatively narrow stretches along the Mediterranean Sea, and a few desert oases (CBL, 2002). Agricultural expansion was severely limited by climatic conditions and there was little export potential that could finance the required imported commodities that the country required but could not produce.
The country struggles with desertification and very limited fresh water resources, as less than 2% of the country’s surface area receives enough rainfall for agriculture to be sustainable. Less than 10% of the total surface area of Libya is suitable for agriculture (UNCT, 2013). With the discovery of oil and its increasing production and exports, in combination with favourable world market prices since the 1960s, the size of the agricultural sector declined rapidly to less than 5% of GDP in 2003, as shown in Table 3.4 (IMF, 2005).

Table 3.4 Libya sectoral distribution (1999 – 2003)

<table>
<thead>
<tr>
<th>Sector</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, fishing*, and forestry</td>
<td>10.3</td>
<td>8.1</td>
<td>7.5</td>
<td>5.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Oil production</td>
<td>28.4</td>
<td>39.8</td>
<td>39.2</td>
<td>52.8</td>
<td>61.2</td>
</tr>
<tr>
<td>Public education, health, and other services</td>
<td>19.8</td>
<td>17.2</td>
<td>17.8</td>
<td>13.0</td>
<td>11.4</td>
</tr>
<tr>
<td>Other sectors**</td>
<td>41.4</td>
<td>34.9</td>
<td>35.3</td>
<td>28.8</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Source: IMF, (2005) * Fisheries sub-sector contribution in the agricultural GDP is estimated at around 9%; ** The sum of mining, manufacturing, electricity, gas, water, construction, trade, hotels, restaurants, transportation, communication, storage, financing, insurance, business services, and housing.

Gradually the country became wealthy but with an economy which was less diversified, heavily based on oil exportation, and totally state controlled. With increasing oil revenues, the share of non-oil related decreased significantly over time. This means that there is strong negative influence from the growth of the oil sectors on other sectors, which satisfies one of the conditions to justify the existence of the resource curse phenomenon in Libya.

Before the 1960’s the aggregate sector, comprising of agriculture, fishing, and forestry, was the leading employer out of all of the economic sectors. It employed approximately 239,000 individuals, comprising of approximately 17% of Libya’s total labour force. In subsequent years, however, the sector’s employment had dramatically declined to reach about 101,000 individuals by 2002, decreasing to about 5% of the total labour force. On the other hand, employment in the other sectors, especially those of trade, hotel and restaurants, and public
administration and services, had increased noticeably. This could be due the effects of the increase in oil revenue, sequentially resulting in the shrinking of the agricultural sector and causing its labour shift across industries. According to the theory and literature discussed in Chapter 1 and 2, this shows characteristics of the presence of the Dutch disease phenomenon.

The increase of oil revenue has resulted in the decline of agriculture’s overall share of national income. Agriculture contributed to 9% of GDP in 1962, but by 1978 this figure been significantly reduced to 2%. Even more striking than the downward trend in agriculture's share of GDP was the rise in food imports. In 1977 the value of food imports was more than 37 times that of what it had been in 1958. Therefore, revenue generated from the rising oil wealth between 1960 and 1979 was spent on imported food products. Despite an increase of major subsidies to the agricultural sector, the production of the agricultural sector had declined along with its share of Libya’s GDP and workforce (LBC, 2005).

Agriculture was the cornerstone of the 1981-1985 development plans. The development plan set the tone for the decade with wariness toward total dependency upon oil revenues. Emphasising economic activity, the plan allocated 17% of investment to agriculture and 22% to industry. The Libyan economy achieved a high growth rate during the 1970s which peaked at 9.2% of the GDP (IMF, 2000). Unfortunately, the decision to move away from a reliance on oil came too late, which had to be abandoned due to cash-flow problems as a result of oil price reductions and sequentially led to the scaling back of the development projects. Therefore, a decrease in oil prices was one of the most important reasons behind development plans’ failure. Eventually, the plans were largely suspended and restrictions were placed on imports. As a result of the negative effects of oil discovery, which lead to decline in the agricultural sector, it can be seen as the resource curse phenomenon in the case of Libya since 1980’s. The amount spent on agriculture during this period between 1981 and 1985 was approximately 230 million LD (CBL, 1999). In addition, between 1981 and 1985 the
National Libyan Agricultural Bank provided agricultural sector credit totalling almost 10,000 loans, averaging nearly 1,500 LD each (CBL, 2005). This could be due to the fact that nearly 20% of the labour force in 1984 remained in the agricultural sector. At the same time, the average index of food production per capita indicated a 6% decline from the levels during the 1970s. Through the 1980s, approximately 70% of Libya's food requirements were imported. Furthermore, the arable land started to become used for leisure as opposed to farming. Unfortunately, in the wake of oil discovery, the attention on the agricultural sector was gradually and myopically shifted to the oil sector; Employment opportunities became bleak and the traditional agricultural exports trended towards a gradual decline. The deteriorating state of agriculture in Libya called for diversification of the economy. This evidence suggests that Libya has suffered, and still suffers, from some of the symptoms that are commonly ascribed to the resource curse. This therefore implies that Libyan policy makers should make every urgent effort to encourage diversification of its resources in order to alleviate the negative effects.

3.4.2 Manufacturing
Libyan manufacturing industries developed significantly during the 1960s and 1970s, but fell far behind the oil sector with regards to generated revenue in the 1980s. The manufacturing workforce was relatively small, with many factories employing fewer than 100 people. The majority of the factories manufactured processed food, cement, and textiles, with the processing of foodstuffs being a high priority. Before 1980, the government concentrated on developing oil-related industries. Major manufacturing projects during the 1980s included textile complexes, a new oil refinery, two petrochemical plants, a fertilizer factory, and an iron, steel, aluminium, and electrical cable plant (IEA, 2007; and MoP, 2010).

Profitability from manufacturing over this period was impressive. However, because expenditure under the development budget was highly dependent on oil revenues, actual
expenditures often failed to reach planned levels. The government's drive to build a manufacturing industry with high capacity in the 1980s has been hampered by declining revenues, and many projects were running behind schedule. Natural resource wealth is not always a blessing. When a country such as Libya is highly dependent on oil, the benefits from wealth creation could transform into a curse.

As a result, manufacturing production levels remained short of domestic demand, making Libya very dependent on imports (Library of Congress, 1987). Furthermore, alongside the negative impacts from the growth of the oil sector, manufacturing was also adversely affected by the UN embargo. This limited available funds, denied foreign investments, and severely restricted the transfer of technology. Manufacturing companies suffered from a shortage of spare parts and poor maintenance, which lowered their production. Several projects for expanding domestic refining were delayed. When UN sanctions were suspended in 1999, foreign oil companies showed a keen interest in investing in the exploration and production of oil in Libya (Bahgat, 2006; and Matar and Thabit, 2003).

The negative growth in productivity has persisted in manufacturing since the mid-1990s, and has also been observed in agriculture and services, the main driver of non-oil GDP growth. Weak productivity performance reflects the inefficiencies of the state-driven model of economic growth, but also the impact of sanctions and isolation from the international economy. The manufacturing processes were limited due to the non-availability of raw materials, the absence of a skilled labour force, local market narrowness, and the inability to process the product. Although, it can provide materials for the local market use as opposed to exportation, such as cement and construction material. However, the economy was not able to provide the necessary investments to change market stagnation into progression (MP, 1990).

Employment in manufacturing, where jobs in state-owned enterprises are the most vulnerable during the transition to the private market, represents only 12% of total employment in Libya.
The manufacturing output in the Libyan economy is growing independently of the increase in exports. This may indicate that this sector engages primarily in the production of import substitutes, for which there is a ready demand. Yahia and Metwaly (2007) indicate that the manufacturing output in the Libyan economy does not seem to have responded to changes in oil exports, which indicates weak linkages between the two. It may also indicate that the expansion in oil exports is not fully exploited by stimulating manufacturing output. In other words, the Libyan economy may be having difficulties in trying to maximise the rate of growth of the manufacturing sector. Hence, manufacturing growth slowed down and the labour force shifted to the services sector, which are characteristics of the Dutch disease.

Perhaps one basic problem is that of market limitations (Metwally, 1979). It is not surprising, therefore, that most of the increase in oil revenue finds its way to investment overseas due to the imports of goods and services and the amount of reserves from oil, of which only a small fraction are reinvested back into the economy to increase its capacity. The growth in the manufacturing sector has been in the opposite direction to that of oil exports over the last four decades (Yahia, 2007).

The manufacturing sector had a precipitous decline in Libya, even though there were expectations of better development outcomes following the country’s discovery of natural resource wealth. But unfortunately, Libya has tended to have lower rates of economic stability and economic development. According to the literature, the resource curse manifests when oil has a negative impact on the rate of economic growth. One of the main reasons for this negative effect in Libya could be due to the presence of the Dutch disease. However, these effects can be minimised if the country has the absorptive capacity to transform resource revenue into more tangible investments, such as increased investment in the non-oil sectors and expansion of the manufacturing sector. To accomplish this, institutional quality must be reformed and diversify the economy away from the oil dependence.
3.4.3 Construction and Services

The construction sector has played a prominent role in economic development, as one would expect in a country largely devoid of infrastructure before the mid-1960s (MoP, 2001; IBP, 2013). The construction industry foundations were due to foreign oil companies’ investments during the 1960s, but since 1969 it has grown in accordance with the government construction projects (MoP, 2001).

Oil discovery had a positive influence on the sectors, (construction and services), in contrast with the agriculture and manufacturing sector, in alignment with the theory of Dutch disease. Khosh Akhlagh and Mousavi (2006) confirmed that with increasing oil revenues, the tradable sector, particularly agriculture and manufacturing, are weakened, and the services of the non-tradable sector are strengthened. It can be observed that the Libyan service sector grew rather rapidly as a result of demand increase, and huge financial investments were made into building roads, schools, and hotels. Therefore, the oil exports in Libya positively affect the non-tradable sector.

In 1975, the government began to reorganise the construction industry to make it more efficient. At that time there were about 2,000 contractors, many of them working for small proprietorships or partnerships. The minister of Housing was given the authority to merge contracting firms into a smaller number of larger firms capable of carrying out large construction projects. Firms with capital in excess of 30,000 LD were converted into corporations, and the majority of the shares were sold to the public or the government (MoP, 2001; CBL, 2005). Previously, the government had set up several state-owned construction companies to build factories and to carry out civil engineering projects. The high number of government-sponsored construction projects of the 1970s created a booming industry. Therefore, by the end of the decade, Libya had become the world's leading per capita consumer of cement. This was a significant economic achievement, particularly because the
1978 housing law had effectively eliminated private residential construction. In 1986, the construction industry contributed approximately 11% to GDP (MoP, 2001).

The construction industry, however, was damaged more than any other sector by the severe cutback in the number of workers in Libya in the mid-1980s, as the construction sector was highly dependent on foreign workers in particular, with the demand for labour increasing in the sector. Despite labour shifts to the non-tradable sector from other sectors, the level of national labour (in alignment with the theory of Dutch disease) was insufficient to cover the shortage of labour required in the sector.

As a result, between mid-1983 and mid-1984 the number of construction workers dropped from 371,000 to 197,000, mainly because of the departure of foreign workers (MoP, 2009; IBP, 2013). Nonetheless, construction remained the number one employer during 1984. The cutbacks in development spending, as a result of dependence on oil, together with the foreign worker exodus led to a decline in overall construction. Although, there was an increase in demand in the non-tradable sector, wages were not high overall, because of government policies in Libya. This implies that oil revenue might have small, positive effects on non-tradable sectors.

Due to its undiversified state, the economy has been heavily relying on oil revenue, which has made it unstable and subject to the effects of rising and falling oil prices. It can be observed so far that the main challenge for Libya is to promote the growth of the non-oil sector and to diversify its economy away from oil dependence. Therefore, the government must take account of risk and uncertainty when selecting projects and formulating plans to promote development.

Moreover, services from a growing economic sector accounted for about 40% of the GDP in 1994 (Otman and Karlberg, 2007). Given the suspension of the UN air embargo against Libya in 1999, the expected growth in tourism in the first decade of the 21st century strengthened
the role of the tourism sector in the Libyan economy. Tourism in Libya could be a good contribution to GDP, as Libya features some of the most beautiful beaches in the world, as well as extraordinary ancient Greek and Roman ruins, all of which could be good for the country’s efforts to diversify its economy, and therefore take a step towards avoiding the resource curse. In fact, the tourism industry in Libya is relatively recent and is in need of development. Moreover, during the last few years, Libya has witnessed increasing development in the service sector in terms of the number and size of the companies. This has especially affected the tourism and hotel industries.

However, Libya’s political isolation prevented the development of a significant tourism trade. The lifting of UN sanctions in 1999, which had previously severed international air links from Libya with the rest of the world, led to an increase in the number of tourists and resulted in a government commitment to develop tourism services. In the early 2000s, new hotels opened in large cities, together with potential tourist centres; Libya had opened its doors to tourism, and there had been a successful start to its tourism programs, which had given satisfactory results and recommendations. Unfortunately all of this has been on hold since 2011; hence, political instability has affected the entire economy - which is why it is difficult to predict the future of the economy in light of the situation.

3.4.4 Exchange Rate Policy

As mentioned earlier in this chapter, the key feature of Libyan life has been the dominance of the state in all aspects of economic life. Dependency on oil revenues is certain to remain a key feature of the economy. On the whole, the Libyan government controls the financial system, which encompasses banking, insurance, and investment activities. Regarding exchange rate policy, the Libyan Central bank is tasked with a wide range of responsibilities and powers. The Central Bank of Libya (CBL) is 100% state owned, represents the monetary authority in Libya, and enjoys the status of an autonomous corporate body (Alafi and Bruijn,
2010; and Rajab, 2012). The law establishing the CBL stipulates that the objectives of the Central Bank shall be to maintain monetary stability in Libya, and to promote the sustained growth of the economy in accordance with the general economic policy of the state.

The following summarises the evolution of the exchange rate policy implemented by the CBL since its inception until now. In early 1952 the national currency had been issued for the first time, at which time it was under the name of the Libyan Pound, until 1970. Its value was equal to the £1 GBP or US$2.8 (CBL, 2007). By 1967, the GBP was devalued by about 14.3% so that it equalled US$2.4 but the Libyan Dinar wasn't devalued, despite the fact that the Libya Dinar was still pegged to the GBP. In 1971 the value of the Libyan Dinar had been increased after the USD was devalued against the SDR by about 7.9% due to the United States announcing that it would no longer back the USD with gold. In February 1973, the USD was devaluated for the second time by 10% (IMF, 2005; CBL, 2007). This led to an appreciation of the LD against the USD by about 11%, which resulted in the exchange rate US$1 LD to US$3.3776. In February 1973, the LD was pegged to the USD at a fixed exchange rate of US$1 to US$0.29679 LD. As a result of this pegging, the value of the LD against other currencies varied, as the USD varied against those currencies (CBL, 2005).

In 1982, the LD maintained its value against the USD and the other major foreign currencies because of the relative availability of foreign currency and the large increase in reserves caused by the soaring oil prices and an increase in proceeds from oil exports, as well as the lack of administrative or quantitative restrictions on foreign currency trading, whether to individuals, the public or private institutions, at least until 1986 (IMF, 2005; LBC, 2007).

The new exchange rate, known as the "declared special exchange rate", was used beside the official exchange rate after the elimination of what was known then as the "commercial price", which was approved and used for certain purposes since 1994 until the beginning of 1999. Between 1999 and the end of 2001, the CBL implemented a programme that enabled
commercial banks to sell foreign currency for personal and business purposes without any restrictions, and in accordance with the prices set by the CBL, but fees are levied on outward foreign exchange transfers (IMF, 2000).

Since then, the exchange rate policy intended to narrow the spread between the official and the special rates through depreciations of the former and appreciation of the latter.

In 1999 to 2001, a dual exchange rate system was in place, with an “official” exchange rate pegged to the SDR, and a “special” exchange rate pegged to the U.S. dollar. Following the gradual appreciation of the special exchange rate while simultaneously depreciating the official exchange rate, in 2002 the authorities unified the exchange rate and adopted a conventional fixed peg to the SDR at a rate of LD 1= SDR 0.608. In June 2003, the exchange rate was devalued by 15 percent to LD 1 = SDR 0.5175 (CBL, 2005; IMF, 2006). The Libyan Dinar has been pegged to the IMF’s SDR, a basket of currencies consisting of USD, EUR, JPY and GBP. The peg is Libyan Dinar 2.80 / 1 SDR, allowing maximum margins of +/- 7.5% around the peg rate. The Libyan Dinar has been generally stable within a range of Libyan Dinar 1.22 - 1.42 / 1 SDR. Furthermore, being pegged to the SDR reflects being pegged to the movements in the U.S. dollar/Euro rate, and the exchange rate of the Libyan dinar depreciated by a cumulative 4% against the US dollar in 2004–05 (IMF, 2006). However, as a result of being pegged to the SDR in 2002, the currency has dramatically increased, but in considering the black market, the declared special exchange rate is accompanied from time to time with devaluation in terms of the official exchange rate. The Libyan Dinar has been generally stable within a range of Libyan Dinar 1.22 - 1.42/1 SDR. Pegging of the exchange rate reduces the exchange rate risk that any foreign direct investment in Libya may be exposed to, as the value of the Libyan Dinar is held relatively stable (CBL, 2000), and allows greater flexibility in stabilizing the value of the dinar as world economic conditions change.
The above mentioned changes were introduced in accordance to the provisions of the banking law, which authorised the CBL to revise the exchange rate of the LD according to the economic and monetary developments. This was to enable it to prevent the negative effects of such developments on the national economy. The main reasons behind this programme, according to the Central Bank of Libya, were:

(i) To rationalise the use of foreign currency, enabling access to foreign currency for various personal purposes through a legal mechanism.

(ii) To raise the value of the Libyan Dinar against the foreign currencies in the black market, and to support the purchasing power of the LD.

(iii) To lower the prices of goods provided and funded by the parallel market and to maintain their stability, and to eliminate the parallel market for foreign currency.

(iv) To protect the value of Libyan currency against the volatility oil prices, and keep it in balance with other currencies.

The central bank uses its considerable foreign exchange reserves to ensure exchange rate stability versus the USD. Regarding the appreciation of the exchange rate, which was pegged to the SDR in 2002, it has no effect on exchange currency movements in Libya. The government therefore has control over the currency through the Central Bank, and uses a different policy to protect its currency and keep it balanced against other currencies (Abothaoya, 2001). Hence, there is no significant effect on the economy due to appreciation or depreciation of exchange rates, because the government still remains the dominant force by controlling the macroeconomic policies.

Recently deteriorating situations, due to the political instability in Libya and the absence of a stable government, have meant that there is no clear strategy or fiscal policy. The ministries of finance of all successive governments since 2011 have not had the capacity, resources or the political and economic vision required to develop a fiscal policy for the volatile economy.
From mid-2013, militias began to interfere in oil production to coerce Libya’s then unitary government into making financial concessions. Since the country only has oil and gas to provide the essential foreign currency it needs to pay for vital imports, the seriousness of the collapse in oil and gas production is critical (Joffe, 2015). As a result of oil dependency there has been civil war – which is evidence that the resource curse has been highly detrimental to the country.

The bleak financial outlook that these figures imply is compounded by an accompanying governmental crisis, given that the country has two conflicting parliaments, one of which is in Tripoli and the other (the House of Representatives) is in Tobruk. Each has its own armed forces which are currently at war with one another in a vain attempt to establish the authority of its parent government over what remains of the Libyan state. One reason for this is that both sides depend on the Central Bank to pay their respective militia coalitions, on which the parliaments depend (BBC, 2015). This has greatly demised the country and its citizens’ circumstances; development projects are stopped, health care, education, and institutions have been neglected, and so on.

In historical terms, this has led to the LD being overvalued in international terms. Since the early 1970s and until fairly recently, all businesses in the country were state controlled. They essentially operated without the requirement of making profits in a conventional sense, and existed predominantly to supply a range of goods and services to the Libyan people at controlled prices.

In these circumstances this overvaluation of the Libyan Dinar did not have a major impact on Libya’s general economic situation, and there were no significant external demand factors which could cause wild market fluctuations in the value of the Libyan Dinar. This intervention by government policy helped to keep the Libyan currency balanced and therefore
had no effect on the economy through its appreciation or depreciation via oil price volatility. However, the CBL uses its considerable foreign exchange reserves to ensure exchange rate stability, and Libya is reforming its state-dominated banking sector, that was built to support government development priorities. Furthermore, commercial banks are allowed to sell foreign currencies at the official rate for transactions related to imports of essential goods or medical treatment abroad, but fees are levied on outward foreign exchange transfers. The Libyan Dinar’s peg to the Special Drawing Right (SDR) continues to serve Libya well. While the LD appears to be moderately overvalued, this is likely to be partly transitory in view of the projected decline in the external current account surplus. Furthermore, in March 2013, the IMF warned Libyan authorities that the pegged Libyan Dinar is only sustainable if monetary and fiscal policies support this regime.

The financial sector needs to be stepped up by the Central Bank of Libya, which in turn has the challenge of restructuring the financial system. In this respect, the Central bank of Libya needs to increase the number of supervisory and regulatory measures to ensure a stabilised macroeconomic environment over the medium term. The restructuring of the financial sector can further aid increased foreign direct investment in Libya. Hence, it can help the country mitigate the effects of the oil curse on its economy.

3.5 Summary

This chapter reviewed the economic structure in Libya. The first part provided information of the country and it was observed that Libya had a strategic location in the north of the continent, on the coast of the Mediterranean, with a population of 6 million people. Libya has been heavily dependent on its oil sector since the 1960s, and has suffered from poor economic performances.
The second part presented the Libyan economy before and after the oil era between 1951 and 1959. Libya was a very poor country before the discovery of oil, and was predominantly dependent on agriculture, animal husbandry, fishing, and foreign aid. Since the discovery of oil, the inflow of foreign capital increased significantly and the Libyan economic climate changed. Oil revenue became the main resource for the country, and is now highly controlled by the government. This chapter presented the structure of the Libyan economy, including agriculture, manufacturing, construction, services, and also the exchange rate policy. Throughout this chapter, it can be observed that Libya experienced volatility in growth. Moreover, the Libyan economy was virtually undiversified and entirely dominated by the hydrocarbon sector, which generated close to 70% of the country’s GDP, more than 90% of government revenues, and 95% of export earnings.

Hence, Libya’s economy is still overly and entirely dependent on oil exports. Between 2004 and 2010, the Libyan government started to introduce economic reforms, but it faced a complex and complicated task, involving diversification away from oil and the introduction of a free market economy. Libya saw solid growth rates and economic reforms that were ongoing. However, this growth did not translate into sufficient job creation, and the jobs that were created were often low productivity posts that did not provide a realistic option for the increasing number of educated young people entering the labour force. In many ways, these deficiencies were related to the ineffective labour market and the limited availability of decent work.

The causes for this may be due to too little time since the reforms had started, resulting in imperfect conditions for private investment being maintained. In addition, there are many interdependent structural challenges to be addressed, including: high unemployment; low levels of private sector development; weak public and corporate governance; an overstuffed public sector; limited competition; and pervasive corruption. From this view it can be
concluded that oil revenue has a negative impact on the Libyan economy, with oil wealth thereby representing a curse instead of blessing.

Since 2011, economic development has fallen, with enormous stress on the government budget. Reflecting these adverse developments, the government ran a significant budget deficit of over 45% of its GDP in 2013 - 2015. In the short term this created immediate challenges for the country, where they were required to manage fiscal spending pressures without compromising the need for rapid restoration and improvements in basic services and infrastructure. A longer-term goal was to help develop the framework and institutions for a more diversified market-based economy, broadening the economic base beyond the oil and gas sector. This includes creating a more vibrant and competitive economy with a level playing field for the private sector to create sustainable jobs and wealth. It also includes transforming the management of oil revenues to ensure they are used in the best interests of the country and to the benefit of all citizens equally. However, perhaps one of the most problematic issues in Libya resulting from resource abundance and the poor management of resource wealth is institutional weakening. This is important, given the literature’s emphasis on institutional quality, in explaining the natural resource curse.
Chapter 4 Review of Theoretical and Empirical Literature on Natural Resource Curse

4.1 Introduction

A counterintuitive relationship developed between natural resources, its abundance and economic development during the late 20th century (Auty, 2001). Developing countries with abundant natural resources were underperforming compared to those poor in natural resources (Ranis, 1991, Lal and Myint, 1998, Sachs & Warner, 1995, 1997, and Auty, 2001). Specifically, the per capita incomes of resource poor countries were increasing two to three times more than those of resource abundant countries. The growth rate has widened significantly since 1970s. The apparent paradox between natural resource abundance and economic growth and development has led to increasing research into what has been termed the resource curse phenomenon. This chapter provides an explanation of the meaning and concept of the ‘resource curse’ and the ‘Dutch disease’. The rest of the chapter is to identify the role and the effect of the natural resource in economic growth and development. Finally, the relationship between institutional quality and the resource curse has been presented.

4.2 Economic growth, economic development and the role of oil

Over the last decades, the issue of economic growth has attracted increasing attention in the both theoretical and empirical research. Yet the process underlying economic performance and growth are poorly understood (Easterly, 2002), something which can be partially attributed to the lack of a unifying economic theory.

Despite the lack of a unifying theory, there are several theories which have attempted to explain the role of the factors determining economic performance and growth. Three mainstream strands can be distinguished: The Keynesian theory which identifies several lines of development sharing the view, that the economic system does not necessarily lead to full
employment, and that the different components of demand may affect the rate of growth of the economy (Commendatore et al., 2003).

The neoclassical, formalised by Solow (1956) and Swan (1956), emphasising the importance of capital accumulation. The more recent theory of endogenous growth, pioneered by Romer (1990), and Lucas (1988), draws attention to human capital, and innovation capacity. In a growth context, Keynesian economics also emphasise the primacy of investment spending by firms in determining capital accumulation and the rate of technical progress (Palley, 1996, 1997). Expansion of productive capacity through income growth can raise exports, and increased profitability of exports can induce increased saving and thereby capital emplacement, which gives rise to high economic growth.

Furthermore, important insights on the issues of economic growth have been provided by the New Economic Geography (NEG) which pays due respect to the spatial characteristics of development (Andrea et al., 2012). In addition, other explanations have highlighted the significant role non-economic (in the conventional sense) factors play in economic performance. These developments gave rise to a discussion that distinguishes between proximate and fundamental sources of growth (Rodrik 2003, Snowdon 2002, Acemoglu et al., 2005). The former refers to issues such as capital accumulation, labour and technology while the latter refers to institutions, political systems, socio-cultural factors, demography and geography.

Theoretical developments have been accompanied by a growing number of empirical studies. Initially, research focused on the issue of economic convergence/divergence, since this could provide a test of validity between the two main growth theories (i.e. the neoclassical and the endogenous growth theory). Eventually, focus shifted to factors determining economic growth. Seminal studies in this field have been mainly conducted by Barro (1991) as well as
Kormendi and Meguire (1985) and Grier and Tullock (1989). These empirical studies have been facilitated by the development of larger and richer databases and more advanced statistical and econometric techniques (mainly cross-sectional and panel-data), which enabled the identification of determinants of economic growth with higher precision.

4.2.1 Main Theories and Determinants of Economic Growth

In very simple terms, economic growth takes place when a country produces and consumes more goods and services, which are of the right kind, benefit the people of a country, and improves their quality of life (Pettinger, 2015). Economic growth is usually measured as the percentage change in real GDP and is a necessary condition for economic development to take place (Sexton, 2015). However, there is no guarantee that economic growth will ultimately lead to economic development.

4.2.1.1 Theoretical perspectives

The neoclassical economic growth theory was first introduced by Ramsey (1928) but it was Solow (1956) and Swan (1956) who put forth its most popular model. Assuming exogenous technological change, constant returns to scale, substitutability between capital and labour and, diminishing marginal productivity of capital, the neoclassical growth models made three important claims: first, an increase in the capital-to-labour ratio is the key source of economic growth. Second, economies will eventually reach a state at which no new increase in capital will create economic growth, unless there are technological improvements to enable production with fewer resources. Third, the level of output in steady-state equilibrium is determined by the savings rate and by population growth. Given its historical context, the model developed by Solow had the ability to coincide with the Keynesian assertion that saving is a fixed proportion of income, which is determined exogenously.
In contrast to the neoclassical perspective, the endogenous economic growth theories, pioneered by Romer (1990) and Lucas (1988), indicate that the introduction of new accumulated factors, such as knowledge and innovation, will induce self-sustained economic growth, leading to divergent growth patterns. The crucial property of these models is constant or increasing returns to capital, caused by the endogenous character of production technology. Work within this framework highlighted three significant sources of growth: new knowledge (Romer, 1990, and Grossman and Helpman 1993), innovation (Aghion and Howitt, 1990) and public infrastructure (Barro 1990). From a different perspective, another recent strand of economic analysis known as the New Economic Geography (NEG) asserts that economic growth tends to be an unbalance process favouring the initially advantaged economies (Krugman 1991 and Fujita et al. 1999). The development of a formalised system of explanations that predominantly focus on the compound effects of imperfect competition, non-zero transportation costs, and increasing returns to scale has enabled these aforementioned studies to put forward a resounding argument that economic activity and growth gravitate towards urban areas which have a greater local demand.

Due to the increasing effects of positive externalities and the interdependent linkages between firms and scaled economies, this process of agglomerated economic growth is deemed to be self-reinforcing. Even though increases in centrifugal effects and the dispersion of activities can be influenced by negative externalities, transport costs, and intensification of competition, it is improbably that the effects of these forces will lead to a balanced pattern of growth. Therefore, the implementation of a strong economic policy is required to alleviate these inequalities of wealth and investment distribution. The demographic location of economic activity, as a result of agglomeration and specialisation of investment at a regional scale, is a greater concern to the NEG, as opposed to economic growth from a national perspective.
However, growth outcomes can be inferred from its models. From a macro perspective, other theoretical approaches have emphasised the significant role non-economic factors play on economic performance. Thus, new institutional economics has underlined the substantial role of institutions (Matthews, 1986, North, 1990, and Shirley 2005), economic sociology stressed the importance of socio-cultural factors (Granovetter 1985, and Knack and Keefer, 1997), political science concentrate its explanation on political determinants (Lipset 1959, and Brunetti 1997) and others have shed some light on the role played by geography (Gallup et al., 1999) and demography (Brander and Dowrick 1994, Kalemli-Ozcan 2002).

4.2.1.2 Determinants of economic growth

A wide range of studies have investigated the factors underlying economic growth. Using differing conceptual and methodological frameworks, they have placed emphasis on a different set of explanatory parameters and offered various insights to the sources of economic growth.

Investment is the most fundamental determinant of economic growth, as identified by both the neoclassical and endogenous growth theories. Nevertheless, in the neoclassical model, investment has an effect on the interim period while endogenous growth models argued for more permanent effects. According to endogenous growth theory, permanent effects on the rate of economic growth are caused by permanent changes in variable which are susceptible to influence from government policy. The important relationship between investment and economic growth led to a large amount of empirical studies. (see Kormendi and Meguire, 1985, De Long and Summers, 1991, Levine and Renelt, 1992, Barro and Sala-I-Martin, 1995, Sala-I-Martin, 1997, Bond et al., 2001, and Montiel, 2011). However, the findings are still not conclusive.
Foreign Direct Investment (FDI) has recently played a critical role in international economic activity and it is a main source of technology transfer and economic growth. This major role is emphasised in some models of endogenous growth theories. The empirical literature examining the effect of FDI on growth has provided more or less consistent findings confirming a significantly positive link between the two (Lensink and Morrissey, 2006, and Massoud 2008).

Human capital is the primary source of growth in some endogenous growth models as well as one of the key extensions of the neoclassical model. Since the term human capital relates principally to workers’ skills, through education and training, most studies have measured the quality of human capital using proxies related to education (such as school-enrolment rates). A large number of studies have found evidence suggesting that educated population is a key determinant of economic growth (Sala-i- Marín, 1995, Hanushek and Kimko, 2000, Arvanitidis, 2009, and IIASA, 2011). Nevertheless, there have been scholars who have questioned these findings and consequently, the importance of human capital as a substantial determinant of economic growth (Levine, and Renelt 1992, Schutt 2003, Kumar 2007, and Petrakos et al., 2007).

The increasing use of technology that facilitates the development of modern processes and products has resulted in innovation and research and development activities playing a major role economic progression, increasing productivity and growth. This role has been highlighted by various endogenous growth models and the strong relation between innovations, R&D and economic growth by many studies (Fagerberg, 1987, Lichtenberg, 1992, Ulku 2004, OECD, 2007, and BIS, 2011).

Economic policies and macroeconomic conditions have also drawn much attention as determinants of economic performance (Easterly and Rebelo, 1993, Fischer, 1993, and Barro
Economic policies can influence several aspects of an economy through investment in human capital and infrastructure, improvement of political and legal institutions and so on. Macroeconomic conditions are regarded as necessary but not sufficient conditions for economic growth (Fischer, 1993). In general, a stable macroeconomic environment may favour growth, especially, through a reduction of uncertainty, whereas macroeconomic instability, which is embedded with higher risks and uncertainties, may have a negative impact on growth through its effects on productivity and investment. Montiel (2011) has noted that such investment helps to increase the stock of nation’s wealth (productive capital) and the necessary technology transfer, which drives growth through increased productivity. Private investment is therefore commonly referred to as the engine of growth and sustained development. Several empirical studies have also shown that for sustained development by the private sector is very important. Other such as Haroon and Nasr (2011) have shown that private investment helps to create jobs and benefit the economy as a whole.

Another potentially significant determinant of economic growth performance is openness to trade, which enables the exploitation of comparative advantage, increasing exposure to economies of scale and competition, exploitation of technology, and diffusion of knowledge. There are robust theoretical grounds to suggest that there is a strong positive correlation between the two, and a large number of studies have concluded that this is the case (Dollar, 1992, Sachs and Warner, 1995, Edwards, 1998, and Dollar and Kraay, 2002). However, there are several scholars who have questioned the robustness of these findings, especially on methodological and measurement grounds (Levine and Renelt, 1992, Rodriguez and Rodrik, 1999, Vamvakidis, 2002, Moki, 2012, and Matiti, 2013).

Economists tend to emphasis the impact of economic variables but political and social factors can also be very important determinants of growth. Among the social factors, the ethnic
characteristic of a society such as language, religion, and race have only been used in a few studies. Easterly and Levine (1997) used the index of linguistic fragmentation of Taylor and Hudson (1970) as measures of ethnic diversity in order to explain Africa’s growth strategy. They test the hypothesis that African nations’ unusually high ethnic fragmentation explains a significant part of their poor economic performance. They suggest is an indication that ethnic division has played a significant role in Africa’s growth tragedy. Moreover, ethnic diversity and religion could also be a major explanation of low investment, political instability and poor economic performance. Mauro (1995) also demonstrated the empirical association between ethnic fragmentation and high corruption, negatively affecting growth via low investment.

Key factors underlying policy decisions revolve around polarisation and some form of social conflict. Polarisation can cause issues for determining the provision of public goods and establish positive incentives for growth-impeding policies. As a result, ethnic diversity, or an increase in ethnic diversity, can magnify these issues caused by polarisation, such as financial repression and overvalued exchange rates, which create high rents for those with power at the expense of society as a whole (Easterly and Levine, 1997). Even though, the critical role institutions play in determining economic performance has long been acknowledged (Lewis, 1955, Ayres, 1962, and Bruinshoofd 2016), it is only recently that such factors have been examined empirically in a more formal way (Acemoglu et al. 2002, Rodrik et al. 2004, and Arvanitidis et al. 2009). Rodrik (2000) highlights five key institutions: property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management, which not only exert direct effect on economic growth but also affect other determinants of growth such as physical and human capital, investment, technical changes and the economic growth processes. Consequently,
Easterly (2001) contended that none of the traditional factors would have any impact on economic performance without a stable and dependable institutional environment.

The interest between political factors and economic performance was raised by Lipset (1959), generating many studies in this area, which conclude that the political environment plays an important role in economic growth (Kormendi and Meguire, 1985, Scully, 1988, Brunetti, 1997, Lensink, 2001, and Teles and Pereira, 2011). These studies commonly measure the political environment using variables such as the level of democracy and political stability. At its most form, political stability would reduce uncertainty, encouraging investment and finally advancing economic growth. The level of democracy is also linked with economic growth, nevertheless, the relation is much more complex since democracy may both delay and enhance economic growth, depending on the various channels (Arif et al., 2012, Chetwynd et al., 2003, and Alesina et al., 1996), and it depends on the political regime.

Aside from political factors, numerous social-cultural factors may also affect growth (Huntington, 1996, Granato et al., 1996, Barro and McCleary, 2003, Ager and Bruckner, 2013). Trust is an important determinant; in economics, it plays a critical role in motivating and encouraging innovation, accumulating physical capital and exhibiting richer human resources, all of which are conductive to economic growth (Knack and Keefer, 1997).

Although the important role of geography on economic growth has long been recognised, it is only recently that has been an increasing interest in these factors, which led to them to be formalised and included into models (Gallup et al., 1999). There are several studies that have used many variables, such as average temperatures and rainfall, proportion of land close to coast, and soil quality (for example, Hall and Jones, 1998; Easterly and Levine, 2003; and Rodrik et al., 2004). These natural resources, such as the climate, topography, and oil wealth have a direct influence on economic growth affecting productivity, economic structure, and

However, other studies such as Easterly and Levine (2003) and Rodrik et al. (2004) have found no effect of geography on growth after controlling for institutions. Despite the increasing importance of many demographic aspects in influencing economic growth, these remain unexplored to date. For instance, the population density and, population growth seem to play the major role in economic growth (Kelley and Schmidt, 1995, Barro, 1997, Bloom and Williamson, 1998, and Turner, 2009). Population density, for example, could be positively linked with economic growth as a result of increased specialization, knowledge diffusion. Therefore, high population growth, in turn, could have a negative impact on economic growth affecting the investment and saving behaviour and quality of human capital. However, these findings are not conclusive since there have been no strong evidence for a correlation between economic growth and demographic trends.

The negative link between natural resources abundance and growth in recent decades certainly poses a conceptual puzzle (Sachs and Warner, 1995, and Torres et al., 2013). However, natural resources increase wealth and purchasing power over imports, thus, natural resource abundance may be expected to raise economic investment and growth rates. Many oil-rich countries have aimed to use their oil revenues to finance diversified investments in industrial development.

4.2.2 Main Theories and Determinants of Economic Development

Economic development illustrates economic problems in developing and undeveloped countries (Szirmai, 2005). The main reason for the growing popularity of economics of development as a separate branch of economic theory is the increasing tendency on the part
of the newly independent countries of Asia and Africa to resort to developmental planning as a means to eliminate their age old poverty and raise living standards.

4.2.2. 1. The concept of economic development

Economic development is a process whereby an economy's real national income, as well as per capita income, increases over a long period of time. Higher per capita income implies better access to housing, education, health services, sanitation, population growth and improvements in skills and other institutional changes. In addition to higher incomes, provide more jobs, and more attention to cultural and human values, and national self-esteem (Baldwin, 1966, Jain and Malhotra, 2009, Todaro and Smith, 2011, and Biciunaite, 2014). The process suggests the influence of certain forces which function over a long period and which embody changes in dynamic elements. It consists of changes in resource supplies, technology, demographic composition, capital formation, skills and efficiency, and institutional and organisational framework. Furthermore, it implies particular changes in the size and composition of the population, the level of income distribution, the structure of demand for goods, living standards, as well as the pattern of social relationships and religious dogmas, ideas and institutions (Somashekar, 2003).

In brief, economic development is a process consisting of a long chain of inter-related changes in essential factors of supply and in the structure of demand, leading to an increase in the net national product of a country in the long run (Kariuki, 2014). The economic development term is generally used in many other equivalent terms such as economic growth, economic well-being, social justice and economic progress. Per se, it is not easy to give any accurate and clear definition of economic development. Economic development, as it is now generally understood, comprises the development of agriculture, industry, trade, power resources, etc. “A continuous process which has to be extended over a long period of time so
as to break the vicious circle of poverty and lead a country to a stage of self-sustaining growth or to self-generating economy” (Mathur, 2001, p. 5). However, the economic development is a process rather than the end result which results in a rise in real national income.

It therefore indicates a process of fundamental and sustained change in the socio-economic environment. Improvement in key sectors is the part of the process of development which could be referred to as economic development. Broadly speaking, economic development has been defined in different ways and as such it is difficult to locate any single definition which may be regarded entirely satisfactory (Somashekar, 2003). Economic development is, therefore, not only economic growth, but growth plus changes in the social, cultural and institutional environment. This definition encompasses economic and non-economic aspects of development.

In conclusion, economic development is a broader concept concerned with human development. It deals with issues such as employment, education, health and environmental sustainability. It therefore requires more than just the production of additional goods and services. Development reflects social and economic progress and requires economic growth. Growth is a vital and necessary condition for development, but it is not a sufficient condition as it cannot guarantee development. Therefore, Economic Growth is a narrower concept than economic development (Sen, 2001).

The fruits of economic progress must also lead to an improvement in the living standards of the majority of people. For the purposes of this study, “economic growth” and “economic development” will be used interchangeably as the former is an essential element of the latter.
4.2.3 The Role of Oil in Development

The role of natural resource, such as oil, in development is rather ambivalent; it can be positive and enhance development, but could also have detrimentally negative effects. About a century ago, oil discoveries promoted the development of industry and infrastructure in several countries such as Norway, which is now an economic power, and based their initial development on oil extractions and exports. Yet a century later, the negative effects of oil prevailed over the developmental efforts of its exporters. Conventional wisdom would suggest that the revenue from oil inflows ought to be diverted into projects of development promotion. In reality, the opposite processes were in progress among the majority of oil exporters. As Dietche and Stevens (2008) point out, almost all recent oil rich countries failed to enter the transformation “from being developing to becoming emerging markets” (p.57).

In recent years, oil-producing countries performed 1.7 % worse in terms of economic growth (Stainsby, 2007) than their non-oil counterparts. Even more controversially, oil exporters tend to experience other negative consequences of development via oil, such as barriers to economic diversification, poor social welfare performance, and high levels of poverty, inequality and unemployment (Karl, 2007). Several explanations have been provided for this adverse effect on oil on these countries. Among this are the ‘resource curse’ phenomenon and its relation with the Dutch disease and institutional quality.

4.3 The Resource Curse Phenomenon

4.3.1 Meaning of “Resource Curse”

The term ‘resource curse’ was first used in the formal economics literature by Auty (1993) to describe how countries rich in natural resources were unable to use that wealth to boost their economies and how, counter-intuitively, these countries had lower economic growth than

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1 Emerging countries are growing rapidly and becoming more important on the world economic stage, while developing nations have low levels of living and productivity, high population growth, underdeveloped industry and a reliance on agriculture and exports for economic sustainability.
countries without an abundance of natural resources. The concept was later the subject of extensive research including the studies carried out by Sachs and Warner (1995) who found the existence of a negative association between natural resources and growth.

The phrase “paradox of plenty” was first coined by Karl (1997). Subsequent research has developed a substantial amount of literature stating that resource-rich countries are more likely to have lower economic growth rates than that of resource-poor countries. The most appropriate term to use to depict the level of economic development in the majority of resource-rich countries is the ‘resource curse’ phenomena. Early academic research held the view that countries which were fortunate to have perceived abundant resources, especially oil, could base their development on that resource. Furthermore, it went on to suggest that oil reserves would promptly lead a country towards sustained development. However, some empirical evidence in the last decades indicates the very opposite (Sachs and Warner, 1997).

The resource curse has interested many researchers and created substantial academic studies, because of its profound impact on a country’s economic development. Natural resource wealth has been found to affect a country’s economy in a wide range of forms. In particular, it appears that such wealth lowers economic growth, leads to an increased risk of conflict, civil war and non-democratic tendencies, and gives rise to heightened social divisions, weakening the institutional capacity whilst increasing poverty, inequality and corruption (Havro and Santiso, 2008).

**4.3.2 Resource Curse: Theoretical Evidence**

The growing literature on the resource curse (Karl, 1997, Easterly, 2002, Torvik, 2009, and Stevens, 2015) has established important causal claims linking resource abundance and dependence to corruption, authoritarianism, economic decline and violent conflict.
The argument that the most economically troubled, authoritarian, and conflict-ridden countries in the world are oil-dependent counties is commonly articulated in research (Karl and Gray, 2003). The notion that resource abundance provides strong financial incentives for armed conflict, which leads to negative effects on political and economic institutions, creating further causes of indirect violence are premises of the resource curse (Ross, 2003). The theoretical literature on the resource curse consists of several mechanisms that may explain why more leads to less in the sense that the general equilibrium impact of more natural resources may actually be lower income.

The first explanations of the resource curse were based on the structuralist theses of the 1950s, focusing on the decline in the terms of exchange between primary and manufactured products (Prebisch, 1950), the volatility of primary product prices, or the limited linkages between the natural-resource sector and the rest of the economy. However, none of these explanations were unequivocally confirmed by empirical tests (Moran, 1983, Behrman, 1987, Cuddington, 1992, Lutz, 1994, Dawe, 1996, and Fosu, 1996).

Further theoretical models explaining this include studies by Van Wijnbergen (1984), Krugman (1987), Sachs and Warner (1995), Gylfason et al. (1999), Torvik (2001), and Matsen and Torvik (2005). Van Wijnbergen (1984) developed the first model showing how oil may be reducing aggregate income through a learning-by-doing mechanism. When a country discovers oil, its population wants to spend some of this on consumption of non-traded goods. Demand for these increases, pulling resources out of the traded sectors, and decreasing production here. The decreased traded sector in turn means less learning by doing, and lower productivity growth than would otherwise be the case. This effect may be sufficiently strong to outweigh the initial increase in income that the oil discovery generated.
A second set of theses stressed the negative effect of rent-seeking activities related to natural resource abundance (Torvik, 2002, and Robinson et al. 2006). Such rent seeking activities tend to be more popular among firms working in countries that have low quality institutions since such an environment is less likely to draw entrepreneurs into productive activity than are good institutions (Lane and Tornell, 1996, Tornell and Lane, 1999, and Mehlum et al. 2006). In other words, having good institutions could cure the resource curse.

The consensus in the rent-seeking literature is that new income possibilities may lead to increased rent seeking, reducing the increase in net income for society (Tornell and Lane, 1999). The greater the number of agents who are in the pursuit of rent seeking, the greater the decrease in total net income for society. By reviewing the literature on the resource curse and rent seeking, it is apparent that there are alternative reasons as to why the extent of rent dissipation may exceed, resulting in a counterintuitive scenario where an increase in natural resources could reduce the amount of net income for society as a whole. As Lay and Omar (2004) point out, the political economy of oil is multifaceted and as a result the current literature provides us with many explanations for the resource curse. There is now a growing consensus on the importance of institutions in explaining the resource curse. Mehlum et al. (2006) conclude that better institutions can help a country avoid the resource curse, but they also admit that natural resources can affect institutional quality, which benefits growth. Isham et al. (2005) and Sala-i-Martin & Subramanian (2008) suggested that the natural-resource abundance penalises growth only indirectly through institutional quality, especially in the case of geographically concentrated resources such as oil.

4.3.3 Resource Curse: Empirical Evidence

Sachs and Warner (1997a) studied a sample of 95 developing countries such as Malaysia, Thailand, Ghana and Venezuela. They found a clear negative relationship between natural resource-based exports (agriculture, minerals and fuels) and growth in the period 1970-1990.
Only two countries from the list of resource-abundant countries – Malaysia and Mauritius - sustained 2% per annum growth during 1970-1980 (Steven, 2003). Countries which started the period with a high value of the resource-based exports to GDP tended to experience slower growth during the following twenty years.

As natural capital expands the production possibilities of an economy, natural resources should be utilised to promote economic development. Wealthy industrialised nations, such as Australia, Canada, the Scandinavian counties, and the US, were able develop their wealth due to the pivotal role natural resources played in the growth of their economy (Stevens, 2003). Because of this, it may seem reasonable to assume that a country with significant natural resource wealth should also benefit from strong economic growth and performance. However, many developing nations perceive their resource endowment as an ambiguous blessing.

During the last 40 years a significant body of empirical evidence has developed which supports the notion that there is a clear negative correlation between economic growth and resource abundance in developing nations (Steven, 2003). Natural resources themselves are not inherently detrimental to economic development as evidenced by basic economic theory, common sense and historically-based counter examples. Rather, resource abundance often causes distortions or certain tendencies in an economy and these distortions then undermine economic performance (Ross, 1999).

Sachs and Warner (1995) have produced the most persuasive recent empirical evidence connecting economic growth and relative abundance of natural resources. Other authors, such as Feenstra et al. (1997), Gylfason et al. (1999), and Gylfason, (2001), have also come to similar conclusions. The main finding of Sachs and Warner (1995) is the robust negative relationship between economic growth and natural resources, using cross-section regressions.
Gylfason et al. (1999) also found that a one standard deviation increment in natural resource exports to GDP would imply a lower rate of growth of around 1% per year. They postulated that the natural resources sector would both create and require less human capital than other productive sectors. With the primary sector inducing an appreciated currency it makes it difficult for a skill-intensive sector to develop. At the end of the process, they remain strongly convinced that resource abundance does have some innately damaging effects on economic performance.

Resource-abundant countries tend to run into trouble, but for different reasons. It is noted that, the negative relationship between natural resources and economic growth is not a deterministic one: resource-abundant countries have a tendency to develop a predatory or factional state and when they do so, they are likely to fall victim to the curse (Auty and Gelb, 2001). Common sense and economic theory argued that large revenues from natural resources should generate wealth. Yet much evidence suggests the opposite and those countries suffer from resource curse.

In their study, Sachs and Warner (1995) also evaluated a number of hypotheses on the negative effect of resources on growth, including rent seeking and corruption, the pricing of tradable and non-tradable goods, and shifts in labour demand from learning by doing sectors. They found limited evidence of natural resources affecting growth through bureaucratic quality. The evidence was strong for protectionism, as in most economies, natural resource abundance affects negatively the manufacturing sector, which leads to a protectionist response (Rhode et al., 2011).

In the first of several follow-up studies, Sachs and Warner (1997) tested the determinants of growth, with cross-country data using 77 countries from 1965 to 1990, employing revised sets of independent variables including the ratio of natural resource exports to GDP,
institutions and the interaction between trade and income. They found that natural resources have a negative impact on economic growth and attributed this result to what is now well known in the development literature as the ‘Dutch disease’ – a concept we shall cover in the next section - as well as higher incentives for rent seeking. Furthermore, they also found that weak institutions, poor economic policies and a lack of openness to international markets in particular, all do slow economic growth. In another follow-up study, Sachs and Warner (2001) tested for omitted variable bias and explored the reasons for the presence of a natural resource curse. They used cross-country data for over 90 countries from 1970 to 1989; natural resources were measured as exports of primary products as a percentage of GDP. Other independent variables included income per capita, trade policy, geographic variables and whether a country was integrated into the global economy. They also showed how trade openness encourages incomes convergence and how, therefore, there is a negative interaction term between initial income and trade openness in a multivariate growth equation. Overall, they found that natural resources had a negative and significant effect on growth over this period, which is more attributable to the Dutch disease.

In this context, the conditions for improved technology, infrastructure development and the emergence of manufacturing industries are rather unfavourable and limited and therefore economic growth is retarded. Stainsby (2007) also points out that the causes of the curse are a decline in the competitiveness of other economic sectors due to an appreciation of the real exchange rate, along with the volatility of revenues from the natural resource sector, as well as possible government mismanagement and political corruption. These are characteristics of the Dutch disease which will be explored in section 4.4.

These concerns are heightened when a number of countries are about to receive or receiving large oil and mineral revenues, and are therefore vulnerable. Those financing such projects are also concerned that negative impacts will threaten the viability of the projects themselves.
Despite compelling evidence of the presence of the resource curse phenomenon, the literature also asserts that some countries have managed to avoid it and instead received a “blessing” with Norway being a classical case. Recent studies have attempted to examine why some of these countries, including Norway, have succeeded where others have failed (Steven, 2003).

Whilst seeking to understand how the resource curse works, one also ought to prioritise the modelling of the linkages between oil dependence and institutional structure (Bulte et al., 2005, and Robinson et al., 2006). Provocatively enough and contrary to the mainstream literature on the issue, Brunnschweiler and Bulte (2008) conclude in their study that natural resources reserves positively affect growth and institutional quality. Thus, in these cases, the resource curse simply does not exist.

Mehlum et al. (2006) and Bulte and Damania, (2008) claimed that countries with institutions that are able to protect against civil conflict are, therefore, less likely to be impacted by the natural resource curse. Furthermore, Botswana has effectively avoided the resource curse by promoting property rights and political checks and balances (Acemoglu et al. 2003) whilst on the other hand countries like Sierra Leone with high resource extraction and weak institutions have lower economic growth.

Other studies such as Lederman and Maloney (2008), have examined the effects of more direct measures of natural resources, for example disregarding the negative impact of geographically-concentrated resources, found with export shares. Furthermore, Stijns (2006) found no correlation of fuel and mineral reserves on growth during 1970-1989, while Davis (1995) indicated that countries with a high share of minerals in exports and GDP performed relatively well in the same period. In fact, the mining shares of GDP belong to the set of variables positively linked with growth across the several regressions in Sala-i-Martin et al (2004). Brunnschweiler (2008) and Brunnschweiler and Bulte (2008) show that export
dependence affect the growth, and found a positive impact of per capita subsoil wealth on growth, but van der Ploeg and Poelhekke (2010), claim this impact is not significant after dealing with several statistical issues. Wright and Czelusta (2004) also distinguish between export dependence and endowments, outlining different cases indicate that mineral extraction is knowledge-based and high tech, and arguing that there is no curse.

There is more evidence indirectly supporting the argument that the existence of a resource curse via oil causes many negative effects on a country’s economic and social development. Nonetheless, it is important to emphasise that oil can be not just a curse, it can be a blessing too. As research conducted by Lay and Omar (2004) shows, not all oil-rich countries are bound to suffer from the resource curse. In fact, there are a number of countries which have promoted and sustained their development on the basis of their natural resources, as shall be seen in the case studies Chapter three.

**4.4 Dutch Disease and the Resource Curse**

Dutch disease was named after the experience of the Netherlands in the 1960s when major gas finds brought a short-lived boom that created problems in other economic sectors (Stanford, 2012, Cross, 2013, Bature, 2013, and Demissie, 2014). The economic concept of Dutch disease refers to the potential negative effects natural-resource windfalls and accompanying appreciations of exchange rates can have on the rest of the economy (Brahmbhatt et al. 2010).

Dutch disease manifests when labour and capital migrate from other sectors to the booming sector, causing real exchange rates to rise as a result of the booming economy. This presents a scenario where all other sectors of a country’s economy suffer due to the rapid growth in income from natural resources, which in turn creates higher costs and a reduction in competitiveness for domestically produced and services in previously effective productive...
sectors (Karl, 2007). This happens because increased revenues from natural resource exports tend to increase the value of the exporting nation’s currency. That makes the country’s other exports, such as agricultural products and manufactured goods, more expensive and therefore less competitive in world markets. The economy thus becomes over reliant on the natural resources that it is exporting and this can be particularly damaging, if for any reason, there is a drop in world prices for those natural resources (Steven and Dietch, 2008).

As Barrett (2003) points out, under the Dutch disease scenario, prices and salaries suddenly inflate, making the currency of a country stronger, but at the same time, this causes obstacles for domestic production to compete with imports. Similarly, Stevens and Dietche (2008) state that overvalued real exchange rates undermine international competitiveness.

Particularly when coupled with high prices, the high demand for commodities leads to a crowding-out effect on other economic sectors; for example, increased wages of exchange rate appreciation. Consequently, costs increase at a greater rate for companies in non-oil resource sectors relative to oil resource sectors. Due to high profitability and volatility, dependence on exporting a particular commodity, such as oil, can negatively affect the economy as a whole. Therefore, in the short term, natural resources are considered to be relatively inelastic, whilst contributing to a large proportion of GDP. Oil price volatility can therefore greatly impact the overall economy, putting significant pressure on government budgets and slowing economic growth. However, a sufficient and appropriate fiscal policy can mitigate the negative effects of rapid and volatile appreciation that tends to dominate economies with increasing exports of natural resources. Therefore, fiscal policy could have a key role to play to smooth out the business cycle and reduce output volatility.

Furthermore, the political economic consequences are similarly affected by discoveries of natural resources, as a number of studies have shown the important role of institutional
quality as an underlying factor which has contributed to successful policy implementation. The existence of weak and unreliable institutions, together with increased opportunity for corruption, leads to diminished involvement in productive activities.

Simultaneously, the absence of fiscal controls, problems in transparency and accountability, increases and controlled rents, and a dependency on patronage politics all contribute to ineffective and inefficient governance and high levels of corruption. Additionally, social tensions and conflicts tend to be aggravated by the political economy dynamics if resource wealth. These different dimensions of effects on the economy are interrelated, and therefore the probability of the manifestation of Dutch disease increases. All factors which lead to the specialisation of the production and exportation of oil-based resources contribute to creating a Dutch disease scenario, thereby affecting the economy as a whole negatively. Even though it is axiomatic in general economic theory that investment and development in industrial sectors stimulates economic growth, oil is somewhat of an anomaly which does not follow the norm (Brunnschweiler and Bulte, 2008). In essence, the success of any economic and social development model is mainly determined by the smooth growth of manufacturing industry. Industrialization and growth of manufacturing sector increase demand for medium skilled workforce.

4.5 Commodity Price Volatility and Resource Curse

Due to international price deflation and volatility, an economy overly dependent on oil is destined to face frequent economic shocks and go through boom-bust cycles. That means that a country’s budgetary discipline and control of public finance undergo the constant challenge as well as on efforts at state planning. In addition, volatility negatively affects prospective investments, income distribution and poverty levels (World Bank, 2004).
The prices of oil and gas are highly volatile and do not necessarily follow normal business cycles. Thus, this variability leads to an economic cost that is borne by the government as well as the private sector; it makes planning very difficult for governments whose revenues are highly dependent on natural resources (Radon, 2005).

An increase in commodities prices such as oil and gas can enhance economic growth in exporting countries; nevertheless, this positive effect is often outweighed by the volatility of these prices, which has a negative effect on growth (Leong and Mohaddes, 2011).

Mohaddes (2011) studied more than 100 countries over 40 years period, and he concluded that commodity volatility price means the benefits of increasing prices are rarely invested in physical capital such as machinery and infrastructure, or human capital such as education or training. The result is that economic growth is actually lower when countries gain access to natural resources, particularly those that specialise in the export of just a few primary products. It is observed that the impact is indirect via price volatility. Instead of the presence of resources themselves lowering growth, it is the economic volatility they produce that reduces investment, which eventually slows down growth (Cavalcanti et al., 2015).

Mohaddes (2011) concludes that breaking this cycle requires improvements in economic policy, better management of resource income volatility through sovereign wealth funds, a suitable exchange rate regime and diversifying the country’s exports. Blattman et al. (2007) examined the growth performance during the historical period (1870-1939) of more than 30 countries and observed countries that specialise in commodities with substantial price volatility have more volatility in their terms of trade, enjoy less foreign direct investment, and experience lower growth rates than countries that specialise in commodities with more stable prices. Moreover, countries in the periphery with volatile commodity prices and undiversified economies fall behind in economic development.
Volatility is more harmful for low-income states than for high-income ones, partly because their financial markets are less sophisticated and hence less able to help investors hedge against risks (Ross, 2004). This volatility has therefore hit poor countries particularly hard especially as commodity prices have been more volatile over the last decade; they doubled between 2007 and 2008 before plummeting at the onset of the global stagnation.

This volatility has worsened since 1970, and oil prices are twice as volatile as those of other commodities. This means that oil-rich economies are more likely to be exposed to frequent economic shocks, and that they are particularly susceptible to sharp to boom-bust cycles. This oil price volatility has a strong negative impact on budgetary discipline and the control of public finances, as well as state planning. Both Auty (1998) and Mikesell (1997) offer revenue volatility as a possible explanation for the resource curse. The basic argument is that oil, gas and mineral revenues are very volatile, especially driven by violent fluctuations in prices over relatively short periods of time. There is certainly plenty of empirical support for the existence of such volatility. For example, Mikesell (1997) found that between 1972 and 1992, regions with high primary export shares experienced terms of trade volatility two to three times greater than industrial countries in the same period. Potentially, this volatility could cause a variety of problems, such as fluctuating revenue profiles making it very difficult to pursue a prudent fiscal policy. There is also concern that windfall revenues from fluctuating export prices would be consumed rather than invested (Sachs and Warner, 1998, and Behrman, 1987).

Furthermore, substantial oil revenue windfalls are experienced by many countries, but they are able to support their long-term economic and societal development via safeguarding resource revenues; this can be achieved through establishing a Sovereign Wealth Fund (SWF). Therefore, it is reasonable to expect countries that are fully incorporated into world capital markets which experience oil revenue windfalls to have knowledge and/or experience in how
to respond to such oil price volatility, although may not be the case for countries with limitations on external borrowing or insufficient capital. Oil rich countries should consider a broader investment approach to their economy to promote development, and not purely focus on SWF (Collier et al. 2010, and van der Ploeg and Venables, 2011). Countries, especially with good institutions use these resources for growth and development, but there are also countries that suffer from poor growth despite large resource abundance (Sachs and Warner, 1997, Mehlum et al. 2006, Boschini et al. 2007, van der Ploeg, 2011). For these oil developing countries, with political and institutional failures, it is a challenge to turn this wealth into productive growth-enhancing human capital. Furthermore the challenge facing these rich countries is the high volatility of oil prices given their effects on growth and development. These countries typically have a poor financial system, unrestricted capital flows, and obstacles on international trade (Blattman et al. 2007, van der Ploeg and Poelhekke, 2009, and Aghion et al. 2009).

The permanent income hypothesis states that changes in consumers’ consumption patterns are predominantly determined by changes in permanent income, as opposed to changes in temporary income (Friedman, 1957). If this hypothesis is applied to the case of resource-rich countries it would be expected that windfall gains would be saved and invested into the domestic economy. However, Sachs and Warner (1997) concluded that there was insufficient evidence to suggest that resource rich countries have higher savings rates than that of non-resource rich countries. To further this contradiction, Gylfason et al. (1999) claim that the level of domestic investment is negatively correlated to dependence on primary product exports; and Sachs and Warner (1995) were unable to establish a strong relationship between per capita income growth and trade volatility. However, in the absence of effective stabilising measures, it is intuitively attractive to imagine that fluctuating revenues would create problems for government fiscal policy and macro-economic management.
When commodity prices are high and economies are growing rapidly, resource-rich governments have usually found it difficult to resist political pressures to increase public expenditures. Yet when prices drop, bust cycles usually compel governments to trim their budgets. In the 1980s, for example, a number of oil-rich countries had to dramatically cut their public expenditures, causing a significant reduction in the provision of public goods. Informed by the lessons from previous boom episodes, most resource-rich countries showed greater fiscal restraint during the latest boom cycle and managed to accumulate significant windfall reserves in order to smooth government spending over time. The World Bank, (2007) estimates that the average general government fiscal surplus in oil exporting countries increased from 0.6 percent in 2000 to 7.7 percent in 2007. Public expenditures in resource-dependent countries increased at a slower pace than during the previous boom and government expenditures as a share of GDP declined by five percent.

The most important lesson emerging from the downturn is that whilst the creation of a national resource fund may help in maintaining macroeconomic stability and achieving a fair distribution of natural resource wealth across generations, these funds are no substitute for genuine economic diversification. As dependence on few commodity exports increases, the economy faces negative impacts from higher volatility (Sala-i-Martin and Subramanian, 2008). Natural resource supply is relatively inelastic in the short run (Hausmann and Rigobon, 2003). In commodity-exporting developing countries, volatility in the terms of trade has historically kept investors away. High incomes from the commodities sector also tend to go hand in hand with lower levels of overall investment, which again has a negative impact on growth. The low investment levels can be a consequence of higher economic volatility, which increase the uncertainty of returns or lower saving rates due to high inequality. In addition, investment will suffer from the detrimental effects that resource wealth can have on institutional quality.
To summarise, some of the least developed economies are put under increasing pressure from high commodity prices, increasing the potential damage form the resource curse. Oil, natural gas, and other similar commodities are notoriously volatile, which has to potential to cause economic drawbacks for countries which are dependent on exports of natural resources. This, in turn, exacerbates the business cycle, as public spending and capital flow fluctuation mimics the booms and busts of this cycle. Price volatility is harmful to the economy on the whole as investment levels are reduced when they’re required the most, and overspending or over-borrowing during boom periods may amplify this issue.

In the absence of stabilising mechanisms, to cushion against endogenous shocks, resource-rich countries are prone suffer from a weak and undiversified economy. Therefore, there is strong argument that making cautious revenue projections, maintaining capital reserves beyond what is expected to be required, and minimising outstanding public debt are aspects of governmental policy which can be implemented to cushion these economic shocks and to gain additional fiscal flexibility. Therefore, policymakers could implement these institutional mechanisms to assist in the management of oil booms so that these negative social externalities are reduced and better controlled.

4.6 Rentier State and the Resource Curse

The concepts of the “rentier state” has been frequently used to describe the nature of the political institutions in natural resource-rich countries. It is a theory that refers to the nature of the state in economies that principally rely on rents from natural resources. This concept has been mainly applied to the Arab world and refers to Mahdavi (1970) who studied the problems of the Iranian economy in the 1960s.

The state plays a dominant role in such an economy, as a huge share of oil rents usually accrues to the government, which distributes the resource rents in a manner that perpetuates
its hold on power. The allocation of resource rents may thus be guided by purely political motives, and is therefore not required to tax citizens who in turn may not feel the need to criticise or control government action (Ross, 2001). Furthermore, larger degree of autonomy of the government tends to weaken the state and the lack of transparency may lead to corruption and plunder.

In general, this may reveal a tendency for over-exhaustion of resources. In most cases, resource rent did not transfer it directly, but rather through subsidies, trade restrictions or granting public sector employment. The state direct implicated in economic activities, which leads to major economic distortions and more welfare costs (Auty and Gelb, 2001). In a rentier economy, only a small number of the population is engaged in productive activities, while most part of the population is hence involved in distributing and consuming rents. Moreover, resources are allocated to gain access to resource rents as well as to policy induced rents. Individual interest in rent-seeking rather than wealth creating activities, and efficiency in the economy suffer.

In particular cases, such as ethnic conflicts, the political competition for resource rents may lead to civil war as resource rents provide the financial capacity to maintain military forces. This paradox has brought about some very real human consequences. Its array of negative effects leads to the obstruction of human development and enhances escalating social tensions in some of the world’s poorest countries.

Following the high commodity prices seen in the early 2000’s, more countries benefitted from the price increase and were dependent on the amount of natural resource exports. The financial crisis and the resulting fall in commodity prices illustrated the vulnerability of these countries’ resource dependence. However, the challenge is not primarily low commodity prices. The institutional quality in resource-rich countries, are weak and not strong enough to
avoid the resource curse. Good institutions are required to benefit from resource revenues, and thus lead to sustainable development (Havro & Santiso, 2010).

4.7 Institutional Quality and Resource Curse

4.7.1 Institutions: Meaning and Types

Ross (2003), Sala-i-Martin and Subramanian (2008), and Woolcock et al. (2001) have illuminated the economic analysis of the resource curse with their social and political insights, revealing that an influx of natural resource revenue can influence formal and informal institutions, and lead to either sustainable development or the resource curse, or somewhere in between. This basic view of the impact of natural resource revenue on institutions is illustrated in Figure 4.1. This figure forms the basis for a more detailed understanding of the relationship between natural resource revenue and institutions.

According to North (1994) institutions are defined as the humanly devised constraints which structure human interaction. They are made up of formal constraints, informal constraints, and their enforcement characteristics. Together they define the incentive structure of societies and economies, especially. Greif (2006) claimed that institutions might be defined as a set of social factors, rules, beliefs, values, and organisations that jointly stimulate regularity in individual and social behaviour. Similarly Aoki (2000) concluded that it is as a system of shared beliefs about the equilibrium of a game which is played frequently. Therefore, good institutions will be those that stimulate activities with a high social return. On the other hand, deficient institutions are those that stimulate socially useless or unproductive behaviours.

Institutions in general can be either informal, such as customs and traditions, or formal, such as laws and regulation, all of which produce the “rules of the game” (North, 1991). It is these rules of the game that provide the incentives within a nation and determine how different
economic actors interact and, hence, how economic inputs are used (Sobel, 2008, and North, 1991). Formal and informal political institutions determine both the obstacles and motivations faced by key players in a given society. Due to the endogenous feature of political institutions and strategic allocation of the powers they provide, properly selected institutions could help the development of plausible mechanisms capable of reducing risks of opportunistic behaviour of political and economic players.

Figure 4.1: A basic view of the impact of natural resource revenue on institutions.
Source: Drysdale (2007)

Therefore, it has been proven that economic institutions, like regulatory, property rights institutions, institutions for macroeconomic stability, institutions for conflict management, etc., are the major source of economic growth across countries. These economic institutions have a critical impact on investments in human capital, industrial production, and technology. In addition, economic institutions are important for resource distribution, hence it has a crucial role in economic development and growth. However, in fact that economic institutions are endogenous reflect a continuous conflict of interests among various groups
and individuals over the choice of economic institutions and the distribution of resources. Acemoglu et al. (2005) defined institutions as a combination of two interrelated concepts: Economic institutions and political institutions.

Economic institutions - They include factors governing the structure of incentives in society as incentives of economic actors to invest and distribute resources. For example, the structure of property rights set out contract types for business offered in contract law.

Political institutions - They include institutions allocating legal political power across different groups. They are related to the characteristics of the government. They also determine the design and the quality of economic institutions. It results from de facto political power and legal political power. The interactions between these two notions govern institutional growth and development, but also can reverse causal effects of the economy on institutions. As emphasised by Acemoglu et al. (2005), political institutions and the distribution of political power materialise by the distribution of resources. They govern the design of economic institutions, which in turn determine the level of development and the dynamics of the distribution of resources. For example, in a very unequal society, prejudiced groups can engage in activities (exit, protest, revolt, military coup) that will change political and economic institutions.

Hence, when assessing the impact of institutions on growth, the initial difficulty is to disentangle the causal and reverse causal relationships between these two variables. A second problem is that many unobserved variables can simultaneously affect institutions and growth, leading to spurious correlations. In fact, the system exhibits persistence. Political institutions are durable and changes in institutions translate into economic performance with a certain lag.
Other problems will provide some theoretical considerations, as well as empirical evidence based on several studies, that the quality of institutions in a wider sense is relevant for growth and development to increase national welfare. This is not only relevant at the political level, but at the administrative level as well. Therefore, whether or not this is achieved is dependent on the institutional quality, is even more relevant, and can be seen as crucial for future growth.

The institutional literature on the resource curse can be divided into three themes: rent-seeking and corruption, resource-related conflict and natural resource revenue waste. These themes are not absolutes as not all countries face the same challenges in managing their natural resource wealth. The way in which a state responds to each of these challenges, and how successful it is in managing each challenge, will determine whether they are closer to establishing a climate for sustainable development or being resource cursed.

There is a large volume of literature linking rent-seeking, corruption and natural resources (Mehlum et al. 2002, Acemoglu & Robinson, 2005, and World Bank, 2003). Tornell and Lane (1999) established that resource-rich economies are more subject to rent-seeking and corruption than resource-poor economies. Rent-seeking can be viewed as a normal legitimate human reaction based on self-interest. It is when an individual or a group searches for ways in which they might benefit by manipulating the institutional environment to their own advantage, as opposed to participating in established and legitimate means of creating wealth. Rent seeking may negatively affect those who would otherwise benefit from normal means of wealth production by detracting from the value that would otherwise be attributed to them. It is different from corruption, which is simply stealing resources. However, the distinction can become somewhat blurred; Mbaku (1992) gives the example of Ghana where he argues that corruption can be seen as rent-seeking behaviour. Nonetheless, both lead to a diversion of resources away from the promotion of the greater good.
All forms of rent-seeking may be harmful to development, but not to the same degree. The impact of institutional quality is the tension between production and special forms of rent-seeking. Therefore, there is a distinction between cases where rent-seeking and production are competing activities and cases where they are complimentary activities.

Furthermore, production and rent-seeking are competing if the most effective rent-seeking activities are located outside the productive part of the economy, such as in the hands of bureaucrats or warlords. Mehlum et al. (2006) consider natural resources as one financial incentive which impacts the balance of power inside a country and therefore can influence at an institutional level. They highlight additional evidence that the resource curse could appear only in the countries with grabber institutions, which are the same extractive institutions favouring the rent seeking activity (Acemoglu et al. 2000). This means that the effects natural resources have on growth and development depends on the quality of institutions, or whether they are grabber friendly or producer friendly.

However, this conclusion contrasts with the findings of Tornell and Lane (1999) and Torvik (2002) which exhibited a negative relationship between natural resources dependence and economic growth without institutional condition. Moreover, Sachs and Warner (1995) found that wealth derived from natural resources has a direct impact on growth, and that this effect is more prominent than the indirect effects via the institutions. However, Sala-i Martin and Subramanian (2003), Isham et al. (2005) and Boschini et al. (2007) conclude that the indirect effect via the institutions is more influential.

These forms of direct wealth grabbing are done so by bad institutions, also referred to as 'grabber friendly' institutions. When institutions are grabber friendly there is a disadvantage from being a producer in the competition for natural resource rents. Hence, production and
rent-seeking are competing activities. All these forms of direct wealth grabbing are made possible by ‘grabber friendly’ institutions.

Natural resource wealth provides incentives for rent seeking behaviour and corruption that generate an environment which perpetuates these institutions. Resource rich countries that have few other industries give educated and talented individuals few opportunities for personal wealth creation. The result is that they may be tempted to participate in institutions that benefit themselves over others. In such an environment, individuals may be tempted to participate because rent seeking and corruption appear more beneficial to the individual compared to production by normal means, made difficult because productive institutions have been eroded or weakened.

Robbins (2000) indicated that corruption is an institution, not the absence of one. Both rent-seeking and corruption are institutions that can weaken or destroy other productive institutions, such as transparency and accountability. They are destructive institutions, for instance, constant fighting over resource rents may result in political instability and shorter political time frame (for example in Nigeria, Iraq and Libya recently). In such an environment, the quality of democratic decision-making is reduced and the democratic institutions of government begin to decline, such as the long established formal conventions around government purchasing which may be worn down by the destructive rent seeking behaviour that contrasts with them.

As these destructive institutions solidify and sustain the rich, the divide between rich and poor increases and life becomes more difficult for the poor and for those trying to develop or maintain democratic institutions. Some of the literature explored this phenomenon and suggested that a wider diffusion of wealth is more conducive to democratic institutions (Woolcock et al. 2001). As the game of rent-seeking is played out, participation in
democratic, legal and political institutions becomes more like hard work and less appealing, whilst corruption becomes more appealing. Thus, the institutions of rent seeking and corruption are self-perpetuating and worse rent seeking may exert influence to ensure the economy remains natural resource dependent and retard attempts to diversify the economy, therefore, that they can continue to extract rents.

The more they destroy the legitimate productive institutions, the more rent seekers are likely to benefit. In addition, rent seekers may create institutions to justify and sustain their rent seeking. For example, a corrupt government may put in place legislation that legitimises rent seeking in some way, or at an informal level, (World Bank, 2005). Once the rent seeking environment is established and the divide between rich and poor is further widened, rebuilding or creating those necessary formal and productive institutions becomes more difficult. A lack of transparency can help perpetuate such environments. Where institutions are weak and total resource revenue wealth is not publicly known, it is easier for those in power to take money from the public for their own personal gain, bribes or other illegitimate uses. Countries like Nigeria provide an unfortunate example of being cursed by its natural resource wealth, largely because of corruption (Sala-i-Martin and Subramanian, 2008).

Resource rents remove political barriers on how those in power spend public funds, which encourages spending on wasteful but politically important projects as well as outright corruption. Karl (1997) and Ross (2001), among others, have shown how the availability of resource rents fuelled ever increasing and unsustainable spending for patronage and political purposes in contexts as different as the Venezuela oil boom and the South East Asia timber boom. Economic studies show that natural resources need not be a curse if institutions are good enough to discourage corruption and graft.
At low levels of resource abundance, more resources help growth, but at sufficiently high levels, more resources hurt growth. As institutions become more producer friendly and less grabber friendly, the threshold for a negative effect increases, so that natural resources are growth enhancing for a wider range of abundance. Sachs and Warner (2001) run regression model enhanced with an interaction term between institutional quality and resource abundance. Their coefficient estimate implies that when institutions are sufficiently good, a larger share of primary commodities in exports is associated with a faster, not slower growth.

Similarly, Larsen (2003) found that solid institutions have protected Norway from the natural resource curse. The lesson that the institutional framework matters is corroborated by the case studies reported in Auty (2001). While the effect of resource rents on growth may depend on the strength of institutions, there is also much evidence that the institutions themselves are influenced by the existence of rents.

Wantchekon (1999), for instance, examined data related to 141 countries between 1950 and 1990 and found that 1% increase in natural resource dependence, as measured by the ratio of primary exports to GDP, increased the possibility of authoritarian government by nearly 8%. He also found that countries which were rich in natural resources were more likely to experience failed or slow transitions to democracy. Ross (2001) investigated whether there was any variation in regime outcomes across different types of resource economy and different regions. After analysing data across 113 countries, from 1971 to 1997 measured by the ratio of mineral based fuel export to GDP, he concluded that a country which is reliance on oil have significant negative effect on its political institutions, thus less democratic.

Mehlum et al. (2006) studied growth between 1965-1990 using the sample of 87 countries from Sachs and Warner (1997). They found that the effect of resources on economic growth was mediated by institutions. In countries where resource exports represented more than 10% of GDP, the resource curse was only present in the countries with low quality institutions. In
countries with low quality institutions, rent seeking and production were competing activities; whilst in countries with high quality institutions; rent seeking and production were complementary activities. Moreover, these natural resources are predominantly publicly owned, and are susceptible to low economic growth. These effects are mostly dependent on the quality of institutions. Moreover, Robinson et al. (2002) have suggested that such rent seeking behaviour is most likely to lead to negative economic outcomes when resource booms are perceived to be temporary due to political elites focussing on maximising the rents that they can extract from them in the short term. Where resource booms are perceived to be permanent, they argued, political elites will be less interested in short term rent maximisation. This is because permanent booms increase the likelihood that they will stay in power, and hence they are able to make personal gains by promoting long term economic development. However, even when booms are perceived to be permanent, Robinson et al. (2002) put forward that economic outcomes are likely to be negative because the political elites will still have an incentive to engage in inefficient redistribution of economic resources in order to influence elections. Lane and Tornell (1996) also showed that the submission of national governments to rent seeking behaviour of various interest groups leads to revenue windfalls being wasted with no benefits to economic growth.

Assessing the role of political institutions in economic performance is not an easy task. Long-standing, deep-rooted political and social challenges have shaped each national institution and economy. Similar political institutions, situated in two different countries, can affect their respective economy in different ways, and at the same time institutions that differ politically, set in two different countries, can lead their countries to a similar economic performance. It has been already demonstrated that economic institutions (such as property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance, institutions for conflict management, etc.) are the major source of economic
growth across countries (Rodrik, 2008). Among other things, economic institutions have
decisive influence on investments in physical and human capital, technology, and industrial
production. It is also well-understood that in addition to having a critical role in economic
growth, economic institutions are also important for resource distribution. In other words,
economic institutions are endogenous (Acemoglu and Robinson, 2006) and reflect a
continuous conflict of interests among various groups and individuals over the choice of
economic institutions and the distribution of resources.

Additionally, Pereira and Teles (2009) indicated that political institutions fundamentally
matter only for incipient democracies, and not for consolidated democracies. Political
institutions demonstrate that consolidated democracies and political institutions are
substitutes for determining economic growth. Consolidated democracies have already
internalised the effects of political institutions. Incipient democracies, on the other hand, need
the effective and ostensive presence of political institutions. As a consequence, their impact
on economic performance is more visible and necessary. The econometric model results
developed by Pereira and Teles (2010) also suggest that the adoption of a democratic regime
positively effects economic growth once it is controlled by the variables that measure
political institutions.

In addition, the effects of political institutional variables are different for autocracies and
democracies (Pereira and Teles, 2011). In democratic governments the longer political power
is held by a particular political leader, the greater economic growth will be; however, when
dealing with autocracies such effect is reversed. Political polarisation also has an opposing
effect under democratic and authoritarian regimes. While this variable does not assist
authoritarian governments to achieve good economic performance, it does provide a positive
impact on democratic governments.
Given that political institution variables often suggest a certain degree of political rights, the results suggest that even autocratic regimes can have a satisfactory economic performance as long as some political rights are granted to society. It also might suggest that political institutions work as a substitute for democracy in an authoritarian regime, generating economic growth. In other words, autocracies can differentiate from one another in terms of political institutions. Similarly, Przeworski, (2000) found no significant difference between economic growth as a function of political regime, either in democracies or autocracies. Therefore, it is imperative to determine which type of democracy and/or autocracy is considered within the analysis for its respective specific political institutions. As suggested by Acemoglu (2009), to be able to understand how different political institutions affect economic decisions and economic growth, research may need to go beyond the distinction between democracy and non-democracy. Although the adoption of a democratic government is not sufficient to achieve greater economic growth, shifting to a democracy with strong political institutions might be.

According to Wright and Czelusta (2004), policies are critical determinants of the effects of natural resources on growth. Therefore, countries with policies that have focused on exploration, technology, and knowledge-related investments have been successful. Similarly, bad policies or institutions can lead to undesirable outcomes such as rent-seeking and corruption. Ross (2001) argued that oil and mineral dependence are strongly associated with unusually bad conditions for poor citizens and also has a harmful effect on governments; they tend to suffer from unusually high rates of corruption, government ineffectiveness, military spending, and civil war.

Civil war is an extreme manifestation of institutional collapse. Collier et al. (2003) found that the risk of a secessionist civil war increases by 8% when the natural resource endowment is double the world average. Competition for rents can exacerbate already existing conflicts and
provide the parties with the financial means to purchase arms and increase their military power.

Civil wars break out for the control of such rents which not only divert away factors of production from socially productive uses, but also destroy institutions and the rule of law. In less extreme cases, the struggle for resource rents may lead to hoarding of economic and political power in the hands of elites that, once in power, would use the rents to placate their political supporters and thus secure their hold on power, with slow growth as a result as shown by Elbadawi and Soto (2013).

Acemoglu et al. (2005) attributed the remarkable performance of Botswana to its good institutions, which has the best score amongst all African countries on the Groningen Corruption Perception Index. Another successful country is Norway, which was one of Europe’s poorest countries in 1900 and is now one of its richest. Norway is considered one of the least corrupt countries in the world. David and Wright (1997) argued that the positive feedbacks of Norway’s resource extraction can explain much of their later economic growth. However, there are other studies that have focused on the potential for policy failure, and specifically the absence of effective institutions to invest the proceeds of resource depletion productively.

Gelb and Associates (1988) pointed out that the resource revenues are often committed by national governments to supporting existing political and economic institutions. The submission of national governments to rampant rent seeking behaviour by powerful interest groups within countries gives rise to a voracity effect, whereby the growth benefits of windfalls are dissipated by a combination of weak governments and significant rent seeking activity among competing societal groups (Lane and Tornell, 1996). However, the root of the problem is political; resource booms tend to put large amounts of resources into the hands of the state and thus create an incentive for agents to participate in rent seeking, as opposed to
productive activities that encourage growth. Brunnschweiler and Bulte (2008) point out that contrary to the paradoxical result that resource abundant countries tend to invite rent seeking and therefore suffer from worse institutions, and also found that countries with certain institutional designs may fail to industrialise and to develop significant non-resource sectors.

It is generally argued that institutional quality is a key factor in determining economic growth. We can conclude that one of the explanations for slower growth in oil rich economies is that oil rents exert particularly negative effects on the development of political and economic institutions, and that, in turn, suppresses growth even further. Furthermore, oil exports have a negative impact on the quality of institutions, and institutional quality is particularly an important determinant of economic growth.

Essentially, economic policies and the institution that produce them are not independent from each other. The scale of economic activity in general and specifically how advanced or primitive the non–oil industries are, are mainly determined by the governments’ choices. Hence, the governance of the institutions of a country determine the pace and nature of growth of an oil-rich economy. Therefore institutions are a pivotal factor in the economic growth.

The exact notion of “good institutional quality” is still undergoing academic debate, even though the majority of academics almost unanimously agree that institutions are an important driver of economic development and growth. In other words, institutions can shape and condition economic performance. Oil reserves can be a “blessing” for countries with good institutions, and a “curse” for those with bad institutions. One of the ways to undertake the “resource curse” reversal is with high quality institutions with strong governance, which equates to good developmental outcomes from oil exports. However, oil exporters with lower quality institutions are very likely to experience the “resource curse” effects.
It is the governance of oil rich countries that makes the difference in whether the “curse” will damage economies or whether the wealth from oil will be transformed into sustainable development. In fact, a sound governance structure is most important to ensure sustainable development. However, in reality, it is the most complicated task to accomplish for the majority of oil exporters.

4.7.2 Institutional quality Measurement

Citizens of developing countries are demanding a better performance on the part of their governments, and they are increasingly aware of the costs of poor management and corruption. Attitudes are also changing in industrial countries where bribery is no longer viewed as a legitimate cost of doing business overseas.

This development has led to a new interest in measuring the performance of governments using indicators of governance and institutional quality. This study takes Worldwide Governance Indicators (WGI) to examine institutional quality in the case of Libya. The emphasis of the importance of institutions to economic prosperity goes back at least to Adam Smith (1776), and in more recent research such as Sala-i-Martin (1995) and Johansen and Robinson (2001). Despite this interest in institutions much of the research on economic growth treats institutions peripherally, if at all. Indicators of governance provide access to many of the existing indicators for all countries. Several databases have been developed to characterise the quality of institutions. Many data sources can be used to document economic institutions. The main databases are as follows:

- Transparency International, which produces measures of perceived corruption. Corruption is defined as the abuse of entrusted power for private gain. The CPI measures the perceived level of public sector corruption in many countries.
- Freedom House, a non-governmental organisation, produces comparative data on the level of democracy and freedom according to two broad categories: Political rights and civil liberties.
- Sachs and Warner (1995) have developed data on openness to trade. They examine the linkage between openness and economic growth for 79 countries over the period 1970-1989. They evaluate a country to have a closed trade policy when it has at least one of the following characteristics: Non-tariff barriers covering 40 percent or more of trade; or average tariff rates of 40 percent or more. They document the year of openness for a large number of developed and developing economies.
- The Governance Matters database reports six broad dimensions of governance for more than 200 countries over the period 1996-2011. This measure is used in this study to evaluate institutional quality. The evaluation of governance is based on experts’ views. The six aggregate indexes are reported in standard normal units, ranging from -2.5 to 2.5. They use exogenous instruments for their governance indexes to compensate for possible reverse causality from income levels to governance.

The six indices of governance, which is provided in the Governance Matters database, are discussed by Kaufman et al. (2009). Five of these six indices of governance are used for this study (more details in chapter 7). They capture various dimensions of institutional quality, which are as follows:

Government effectiveness, which includes, the quality of public services, the quality of the civil service, and the degree of its independence from political pressures.

Political stability, which comprises, measures of politically motivated violence and terrorism.

Regulatory quality, which encompasses, perceptions of the ability of the government to formulate and implement sound policies.
Rule of law, which captures perceptions of the extent to which citizens have confidence in, and abide by, the rules of society, such as the quality of contract enforcement, property rights, etc.

Control of corruption, which includes, the extent to which public power is exercised for private gain.

Indicators measure different aspects of the quality of governance; for example, the level of corruption, the extent of civil liberties, bureaucratic efficiency, the rule of law, and the predictability of policymaking. Measures differ in terms of specificity regarding the aspects of governance being assessed. For example, an indicator of corruption is less specific than an indicator for bureaucratic corruption. Aggregating multiple indicators, for example in Transparency International’s Corruption Perceptions Index, tends to reduce specificity. Indicators differ in terms of their demonstrated links to development outcomes. Most empirical evidence linking governance to development outcomes is based on non-specific indicators.

In summary, simply copying or adopting policies that have been effective elsewhere rarely succeeds. Many resource rich developing countries have experimented with oil funds or stabilization programs, with disappointing results. Successful management of a natural resource curse calls for a combination of policies and institutions. On the economic policy front, counter-cyclical stabilization policies have a critical role to play, as do policies that maintain the competitiveness of the real exchange rate for the non-resource tradable sector, and financial policies that encourage investments in that sector. On the institutional front, institutions such as transparency, rule of law, government efficiency, political stability and checks and balances on the use of rents, that increase the costs of non-productive activities
can help countries to move away from rent seeking equilibrium to more dynamic, diversified, and growing economies.

Also, improvements in institutions that ensure resource rents are effectively used for long-term development. The emphasis on transparency and public awareness of the issues that concern the good use of oil revenues, thus developing constituencies in support of prudent policies, and more secure property rights will increase the incentive to entrepreneurs to adopt new and efficient technologies that maximizes long-term performance. Moreover, proficient and established institutions provide an appropriate environment for growth-enhancing activities like investment, innovation, and entrepreneurship, and permit society to function smoothly as individuals are able to invest their time in fruitful activities.

It is the governance of oil rich countries that makes the difference in, whether the “curse” will damage economies or whether the wealth from oil will be transformed into sustainable development. In fact, the sound governance structure is the most important. However, in reality, it is the most complicated task to accomplish for the majority of oil exporters. Regarding the gaps in the literature, there have been numerous studies on natural resource curse. However, this study is significantly different, for instance; there are only a limited number of studies have examined the Dutch disease in Libya. In addition, most of the studies who examined the resource curse have focused on one model, particular on one variable (Exchange rate) hence neglecting some very important channels. This study adopts a different approach, to find whether the Dutch disease exists or not. Also, this study focuses on important non-oil sectors, such as manufacturing, agriculture and institutional quality. It modifies extends our understanding of the nature of the resource curse. Therefore, it is important to use more than one model when studying issues related to resource curse in oil rich countries.
Chapter 5 Methodology

5.1 Introduction

It was observed in Chapters two and three that the discovery of oil has been the bedrock of development in some countries. However, in other countries this has not been the case. Rather, they have experienced the resource curse which could be explained by the Dutch disease (owing to the negative structural changes in the economy resulting from the oil boom) and/or poor institutional quality. Following examination of the economic structure and the role of oil in Libya in chapter four this chapter presents a critical discussion of the theoretical framework underpinning Dutch disease, and describes an empirical model to examine the situation regarding Libya from 1970 – 2010. The chapter also explains the methodological approaches that would help address the other research objectives in this study.

As indicated in Chapter one, the primary objectives of the study are to critically evaluate the extent to which the paradox of plenty or resource curse, exists in the context of Libya in order to further inform the literature in this area; to analyse what specific economic reforms are required to improve economic outcomes; and to recommend possible ways of diversifying the economy away from oil in order to improve economic and social outcomes. Institutional quality is very important, and therefore the analysis will also examine the extent to which the nature of institutions influences the resource curse, and what institutional reforms are also needed in this area to enhance the opportunities for the promotion of sustainable development via oil.

In examining the existence of the Dutch disease in Libya, two key models are used, both of which employ annual time-series data covering 1970-2010. The first model is underpinned by Corden and Neary’s (1983) theoretical framework; a time series econometric approach is applied to estimate this model. Almost all models of Dutch disease, as observed in Chapters
two and three, the real exchange rate is assumed to be in equilibrium at the start of a resource boom. The discovery of a new natural resources or price shocks leads to a sudden shift of the equilibrium real exchange rate from its initial level to a new, appreciated level (Rosenberg et al. 1998). The first model, following the study by Al-maulali et al. (2010), allows the study to examine whether increases in oil price lead to changes in the real exchange rate, and thus whether Dutch disease exists in Libya.

According to Corden and Neary (1982), the increased revenues from oil and appreciation of the exchange rate may lead to structural changes in the economy negatively affecting the manufacturing and agriculture sectors. This results from mobile factors of production migrating to the booming sectors and away from manufacturing and agricultural sectors. Therefore the second model will examine the sectorial impacts of the Dutch disease. This is an attempt to reinforce the first analysis and to provide definite evidence as to whether the Dutch disease phenomenon exists in Libya. To achieve this, there are three areas that the literature on Dutch disease recommends for examination, specifically: decline in manufacturing, agricultural growth and an increase in the non-traded sector. These three relationships are examined using the model by Chekouri et al. (2013), and Rajan and Subramanian (2011).

To examine and analyse both models mentioned above, a first step is to conduct a unit root test, as it is essential in determining whether time-series data is stationary or not. The procedure is important in order to avoid the problem of spurious regression which cannot be used for the intended purpose (Koop, 2013, Griffiths et al. 2008, Gujarati, 2014) and is necessary for the conversion of the data into a form that satisfies the stationary condition before starting the analysis. Hence, in this study, two unit root tests will be used. The Augmented Dickey-Fuller (ADF) and the Phillips-Peron (PP) tests are initially applied, as these are the most commonly used in many studies (Glynn et al. 2007, Kogid et al. 2010).
Then the Johnson co-integration test is then employed to study the long-term relationship among the variables. Model specifications and descriptions of the selected variables are also provided.

To assess the role of institutions, the study applied a different approach instead of time-series approach. Due to a lack of long-term time series data on key institutional indicators for Libya it was impossible to follow the approaches used by similar studies (Mehlum et al. (2006) and Sachs and Warnner, (1997). Alternatively, to achieve the assessment of the quality institutional in Libya, a descriptive statistical analysis is used alongside five governance indicators: political stability, government effectiveness, regulatory quality, rule of law and control of corruption. As presented in Chapter 2, these are key indicators of institutional quality identified by several studies, such as Mehlum et al. (2002 & 2006), van der Ploeg (2011) and Oskenbayev (2013). Furthermore, the three-country comparison in Chapter three and the institutional analysis will help to evaluate what reforms are required, and the best options as far as diversifying the economy from oil is concerned, hence avoiding the resource curse in Libya. The rest of the chapter is organised into six main sections: Research approach, Dutch disease - theoretical framework, model specification, data sources, and method of analysis and finally a summary of the chapter.

5.2 Dutch Disease: Theoretical Framework

As discussed earlier, the resource curse is known as a phenomenon observed in natural resource-rich countries, where natural wealth has a negative impact on development. Dutch disease is identified as one of the main causes of this negative outcome (Chevallier-Boutell, 2009; Ismail, 2010; Brahmbhatt et al., 2010; and Bature, 2013). Dutch Disease refers to the negative effects of a natural resource boom on the manufacturing or agriculture sector. The reason behind this is that a boom and subsequent surge in resource exports can cause an
appreciation of the real exchange rate, which reduces the competitiveness of the country's other, non-resource tradable goods, and therefore, damage a nation’s productive economic sectors.

The ‘Dutch disease’ phenomenon was first used by *The Economist* magazine in 1977 to describe the evolution of the Dutch economy following the discovery of North Sea gas driving up the value of the Dutch currency. There are many potential channels for this effect, but the impact of resource extraction and export on the exchange rate is clearly the most important. Indeed, a more descriptive phrase like ‘resource-led deindustrialisation’ could be used to refer to the phenomenon whereby value-added industries are crowded out by a resource boom (Stanford, 2014).

Many studies, including Corden and Neary (1982), Bevan and Adam (2003), Oomes and Kalcheva (2007), Egert (2008), Roemer (1994), and Akpan (2007), found that Dutch disease exists, causing a real appreciation of the national currency and reducing the share of the manufacturing sector in different exporting countries. The literature has reported that oil prices lead to higher real exchange rate appreciation and shrinking competitiveness in non-oil tradable sectors (Gelb, 1988). Empirical evidence on this issue generally suggests that substantial exchange rate overvaluation has a strong negative impact on growth (Aguirre and Calderón, 2005). Furthermore, Rodrik (2008) claimed that there is an association of the real exchange rate with economic growth. Dutch disease researchers typically model the economy as consisting of three sectors. A detailed discussion is presented in the next section.

**5.2.1 Model Explanation: Spending Effect and Resource Movement Effect**

Corden and Neary (1982) present the “core model” of Dutch disease economics. They assume a small open economy composed of three sectors: a tradable goods sector,
represented by the booming sector (oil and gas), a non-booming sector (manufacturing and agricultural) and a non-tradable sector (services and construction).

Corden (1984) points out that a boom in the resource sector can take three different forms: (i) a technology-induced rise in productivity, (ii) a windfall discovery of natural resource, or (iii) a rise in the world price of the natural resources exported by a country. This study focuses on the second and third kind of natural resource boom. The three sectors use a common factor of production, labour and a sector-specific factor: capital. The main model assumes capital to be sector specific, whereas labour is assumed to be mobile. There are two types of effects which can lead to Dutch disease and real exchange rate appreciation:

*The spending effect:* This occurs when an income increase from the booming oil sector motivates demand and spending by the private and public sectors, leading to higher prices and output in the non-tradable sector. In the non-booming resource tradable sector, however, prices are fixed at international levels, profits shrink following rising economy-wide wages and increased demand is increasingly met out of rising imports. In response, labour tends to shift from the tradable sector to the non-tradable sector, resulting in a contraction of the non-booming tradable sector. This has potential negative impact on economic growth, given that expansion in the manufacturing and agricultural sectors are key to economic growth as discussed in chapter two.

*The resource movement effect:* This effect is divided into two sub-effects: the direct resource movement effect and the indirect resource movement effect. The first implies increasing marginal productivity of labour and therefore increasing wages in the booming sector. As in the case of the spending effect, increased wages in one sector tends to attract labour from other sectors; from the non-tradable (services and construction) and the lagging sectors (manufacturing and agriculture) into the booming sector (oil and gas).
The shift of labour will continue until wages are stable in all sectors. The result is known as ‘direct de-industrialisation’ (Table 5.1). Furthermore, the indirect resource movement effect is similar to the spending effect and results from reducing production in the non-tradable sector, again with negative implications for economic growth.

On the assumption of one specific non-mobile factor (capital) and one mobile factor (labour) in all sectors, both the resource movement effect and the spending effect imply a shift of labour away from the manufacturing sector, resulting in an unambiguous decline in manufacturing and agriculture output. The booming sector’s output increases since the value of output initially increases, and it absorbs ex post production factors from other sectors. There is ambiguity regarding the change in non-tradable output.

Table 5.1 Summary of Dutch Disease Symptoms: Spending effect and resource movement effect

<table>
<thead>
<tr>
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<th>Output</th>
<th>Employment</th>
<th>wage</th>
<th>Price</th>
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<tr>
<td><strong>Spending effect</strong></td>
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<tr>
<td>Oil sector</td>
<td>-</td>
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<tr>
<td>Manufacturing &amp; Agriculture sectors</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>given</td>
</tr>
<tr>
<td>Services sector</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Resource movement effect</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Oil sector</td>
<td>+</td>
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<td>Manufacturing &amp; Agriculture sectors</td>
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<tr>
<td>Services sector</td>
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</tbody>
</table>

Source: Oomes and Kalcheva (2007)

The spending effect implies an expansion of this sector, yet the resource movement effect implies a contraction. The strength of the spending effect depends on the tendency to consume services. In particular, when a resource boom occurs, increased government spending on construction and public services is likely to be the main channel for use of oil rents. Hence, this marginal propensity to consume non-tradable will be high. The strength of the resource movement effect depends on the factor intensity of each sector. If the booming
resource sector is the capital-intensive sector (as is often the case in less development countries as well as in more industrialised countries, albeit to a lesser extent), the spending effect will dominate the resource movement effect.

Corden and Neary (1982) employ the term “direct deindustrialization” to describe the movement of labour from the manufacturing sector to the booming sector. The flow of labour from the tradable (Manufacturing and Agriculture) to the non-tradable sector (construction and services), together with the increased demand for goods from that sector due to the spending effect, causes a further shift of labour from the manufacturing sector to the non-tradable sector. The ‘direct deindustrialization’ has consequences for economic growth. O'Toole (1994) has also argued that the increase in prices of a country’s natural resources, and high foreign earnings which results in the appreciation of the real exchange rate, can harm international export competitiveness, and negatively impact domestic sectors leading ultimately to lower growth. The relationship between real exchange rate and economic development is certainly an important issue, both from the descriptive and policy prescription perspectives (Tarawalie, 2010, and Drine and Rault, 2003). According to Edwards (1994) it is not an overstatement to say that real exchange rate behaviour now occupies a central role in policy evaluation and design. A country’s exchange rate is an important determinant of the growth of its cross-border trading and it serves as a measure of its international competitiveness (Bah and Amusa, 2003).

5.3 Empirical Model Specification

The term “natural resources curse” stems from the observation that resource-rich countries tend to have less economic growth and worse development outcomes than countries with fewer natural resources, and reflects the failure of many resource-rich countries to benefit fully from their wealth. This phenomenon has been proven empirically and has been analysed in many studies, such as Auty (1990), Gelb (1988), Sachs and Warner (1995, 1999), Gylfason
et al. (1999), and Al Sabah (2014). The failure has been attributed to different reasons, including a decline in the competitiveness of other economic sectors, caused by appreciation of the real exchange rate – the phenomenon we have referred to as Dutch disease.

As presented in Chapter 3 and in section 5.2, Dutch disease is due to an oil-boom associated appreciation of the real exchange rate. McKenzie et al. (2015) argued that Dutch disease is generated by an oil price effect, resulting in exchange rate appreciation. However, the mechanism may work in reverse as well if there is a negative oil price shock, which would result in exchange rate depreciation. Furthermore, Beine et al. (2012) studied the Dutch Disease effects in a Canadian context have focussed on the exchange rate channel, and examined the 2002-2008 exchange rate appreciation and the associated run up in oil prices. They concluded that 42% of this appreciation can be attributed to the increase in the value of resource exports, and that more than 20% of the non-oil sector's redundancies over this period were attributable to Dutch disease. Coulombe (2012), following Krugman (1987), indicated that a positive oil price shock led to a decline in the manufacturing sector in both the short and medium terms.

As mentioned in chapters 2 and 4, Libya’s economy is heavily dependent on oil exports, thus, the international price of oil is of great relevance to the country's economy. Small variability in oil prices is expected to have a large impact on the relative value of the currency. This relationship between the price of oil and the exchange rate has been established by the empirical literature for oil-producing countries. Akram (2004) and Bergvall (2004) found that oil prices significantly affect the relative value of currencies (appreciates) in Norway, the United Arab Emirates, and in several industrialised countries respectively. Other studies, such as Cooper (1994) and Brown 1986, found causation in the opposite direction; in the case of OPEC members and large industrial economies, respectively, exchange rates influence the
price of oil. The literature in this area focuses on oil producers, large developed economies capable of influencing the world price of oil.

The examination of the Dutch disease phenomenon in Libya is undertaken using two main models and a time-series analysis. The main goal of the first model is to find out whether the oil price did cause a real exchange rate appreciation in the local currency in Libya, thereby causing Dutch disease and demonstrating the existence of a resource curse effect.

The empirical model follows the studies by Al-maulali et al. (2010) and Benhabib (2014) and helps to examine whether increases in oil price lead to changes in Libya’s currency exchange rate, and therefore whether there are adverse effects on other economic sectors. This study employs time series macroeconomic data on exchange rate, oil price, gross domestic product and trade balance. In accordance with Dutch disease theory (Corden and Neary, 1982, Corden, 1984) and other empirical studies, the first model will focus on two main variables: real exchange rate as an independent variable and oil price as a dependent variable as indicated in equation (5.1):

\[
RER_t = \beta_1 OP_t \\
(5.1)
\]

Where: \( RER \) is real exchange rate; \( OP \) is oil price and \( t \), time. Following the studies by Al-maulali et al. (2010) and Benhabib (2014), other key explanatory variables are included in the model as presented in equation (5.2). A key variable, oil exports, identified in some of the empirical literature, has been excluded from the model in equation (5.2) due to its high correlation with the oil price variable.

\[
RER_t = \beta_1 OP_t + \beta_2 GDP_t + \beta_3 TB_t \\
(5.2)
\]

Where: GDP is the gross domestic product and TB is the trade balance. Including a constant \( (\alpha) \) and error term \( (\varepsilon) \), equation (5.2) becomes:
$$RER_t = \alpha + \beta_1 OP_t + \beta_2 GDP_t + \beta_3 TB_t + \varepsilon_t$$

(5.3)

Consequently, the model can be transformed to logarithms to make the estimated results much easier to interpret (Koop, 2005, Hill et al., 2012, and Koop, 2013).

$$\ln RER_t = \alpha + \beta_1 \ln OP_t + \beta_2 \ln GDP_t + \beta_3 \ln TB_t + \varepsilon_t$$

(5.4)

The second model will focus on the effect of oil exports on key sectors in the economy, which could enhance and confirm the results from the first model. This model has been applied to an oil-rich country, Algeria, with economic features similar to Libya by Chekouri et al. (2013), and helps to test the three important sectors which are affected by Dutch disease, according to theory. Therefore, three propositions derived from Dutch disease literature will be tested, namely a slowdown in manufacturing and agricultural growth, and an increase in non-traded sector growth, where the study estimates three relations as follows:

$$\ln AGR/GDP = \alpha_1 + \beta_1 \ln OLEXP + \varepsilon_1$$

(5.1)

$$\ln MAN/GDP = \alpha_2 + \beta_2 \ln OLEXP + \varepsilon_2$$

(5.2)

$$\ln NON-T/GDP = \alpha_3 + \beta_3 \ln OLEXP + \varepsilon_3$$

(5.3)

where $AGR/GDP$ is the share of agricultural output in GDP; $MAN/GDP$ is the share of manufacturing output in GDP; $NON-T/GDP$ is the share of non-traded output in GDP; $OLEXP/GDP$ is the share of oil exports in GDP; $\alpha_1$, $\alpha_2$, $\alpha_3$ denote the constant terms, $\beta_1$, $\beta_2$, $\beta_3$ the coefficients and $\varepsilon_i$ ($i=1,2,3$) the respective error terms.

All the data was transformed into natural logarithms, and it is common to take the natural logarithm of a time series if it seems to be growing over time. According to Koop (2005, 2013), the use of a natural logarithm is common, especially if the time series data is non-stationary. For instance, the logarithmic transformation is an appropriate means of transforming a highly skewed variable into one that is more approximately normal (Gujarati,
Gujarati (2014) further observes that time series data usually suffer from several problems, the most important of which is autocorrelation, in addition to the nature of the data, which may not be stationary. However, there are many solutions to these problems, the most recognised of which is transfer of time series data into a natural logarithm (Chatfield, 2013).

5.4 Definition of Variables and Data Sources

All variables were transformed into real terms using the consumer price index (CPI) (2005=100). The definitions of the variables and expected sign are summarised in Table 5.2. These have been derived from the theoretical discussion and empirical evidence, which was previously discussed in Chapter 2. The data covers the period during 1970 to 2010, where a number of important economic development plans and significant changes to economic policies occurred. The limitation of the period of time of this study is due to data availability, and Libya’s political crisis which began in 2011.

There are important events (economic sanctions) which took place during the 1980s and 1990s; in 2002 exchange rate policy was pegged to Special Drawing Right (SDR). Furthermore, the Libyan exchange rate was fixed at 0.2959 against the US dollar from 1975 until 1985. The largest currency changes took place in 2002, (see chapter 3) with the currency losing 86% of its value against the U.S dollar (CBL, 2005).

The time-series data were derived from a wide range of national and international sources, which can be said to be reliable. These sources have previously been used by key studies, attesting to their reliability, and these appear to be the most convenient sources of data for the current analysis (Table 5.2). The data from these different sources for the entire time series from 1970 to 2010, except that of monetary data, are only available in annual terms. According to Shiller and Perron (1985), a long-run analysis of economic time series is essential, and the length of the time series is much more important than the number of
observations. Further, Kennedy (2003) observes that the power of unit root tests relies far more on the span of the data than on the number of observations. Consequently, this study has chosen annual data instead of quarterly data for the analyses.

The time-series data for real exchange rate (RER) were obtained from the Penn World Table (PWT). The data for real GDP, real trade balance (RTB), manufacturing (MANF), agriculture (AGR) and construction and services (NON-T) were obtained from the United Nations Conference on Trade and Development (UNCTAD) database. Real oil price (ROP) and oil and oil export (OLEXP) were collected from the Organization of Petroleum Exporting Countries (OPEC). Regarding institution quality descriptive analysis, the indicators covering five area of governance have been obtained from Worldwide Governance Indicators (WGI), (see Table 5.2).
Table 5.2: Variables definition, measurements and expected signs

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>DEFINITION</th>
<th>MEASUREMENT</th>
<th>DATA SOURCES</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>First model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REXR</td>
<td>Real exchange rate</td>
<td>Nominal exchange rate multiplied by the producer price index (PPI) for US $ and divided by the consumer price index (CPI). (Rodrik et al., 2008; Alamaulali et al. (2010); Chinn, 2002; Edward, 1989).</td>
<td>i) US PPI from the United Nations ii) Libya CPI from World Bank and the Libyan Central Bank iii) Nominal exchange rate of Libyan Dinar to one US$: Penn World Table. Available online: <a href="https://pwt.sas.upenn.edu">https://pwt.sas.upenn.edu</a></td>
<td>+</td>
</tr>
<tr>
<td>Second model</td>
<td>MANF</td>
<td>Manufacturing</td>
<td>Manufacturing share in GDP (at 2005 prices) (Rudd, 1996; Rajan and Subramanian, 2011; Chekouri et al., 2013).</td>
<td>UNCTAD. Data Centre. Available online: <a href="http://unctadstat.unctad.org/">http://unctadstat.unctad.org/</a></td>
</tr>
<tr>
<td>Sectorial</td>
<td>AGR</td>
<td>Agriculture, hunting, forestry, fishing</td>
<td>The agriculture share in GDP (at 2005 prices) (Rudd, 1996; Chekouri et al., 2013).</td>
<td>UNCTAD. Data Centre. Available online: <a href="http://unctadstat.unctad.org/">http://unctadstat.unctad.org/</a></td>
</tr>
<tr>
<td>NON-T</td>
<td>Construction and services</td>
<td>Service and construction share in GDP (at 2005 prices). (Chekouri et al., 2013; Rajan and Subramanian, 2011)</td>
<td>UNCTAD. Data Centre. Available online: <a href="http://unctadstat.unctad.org/">http://unctadstat.unctad.org/</a></td>
<td>+</td>
</tr>
<tr>
<td>OLEXP</td>
<td>Oil exportation</td>
<td>Oil export share in GDP (at 2005 prices). (Chekouri et al., 2013).</td>
<td>OPEC. Annual Statistical Bulletin. Available online: <a href="http://www.opec.org/">http://www.opec.org/</a></td>
<td>-</td>
</tr>
</tbody>
</table>
5.5 Method of Analysis

In examining the existence of Dutch disease in Libya, using equations (5.4) and (5.5), (5.6), and (5.7), a time series econometric approach is applied, with a focus on co-integration (Gujarati, 2011; Koop, 2013). Before applying the co-integration test and the vector error correction model (VECM), it is necessary to determine the order of integration of the variables. A co-integration relationship is present within a set of non-stationary time series when it is possible to identify a linear combination of those variables that gives stationary results. In other words, when the variables have unit roots, but some linear combinations of them are stationary, then it can be concluded that the variables are co-integrated (Koop, 2013; Martin, 2012). To determine this, a unit root test is conducted.

The stochastic properties of the data have been assessed on the basis of a conventional unit root test – the Augment Dicky Fuller (ADF) and Phillips and Perron (P-P). The critical values for the rejection of null hypothesis of the unit root are those computed according to the Mckinnon Criterion (1973). Both tests have been carried out in three settings; with a constant, without a constant and with a constant plus linear trend. Johansen’s co-integration methodology has been adopted to identify the long run relationship among the variables and to test for the number of co-integrating vectors.

5.5.1 Unit Root Tests for Stationarity: Augmented Dickey-Fuller (ADF) - Phillip-Perron (PP)

There are several tests for determining whether a series is stationary or nonstationary. Hence, in this study, two unit root tests, the ADF and the PP, as the most popular, were conducted on the individual series to proof whether the variables were stationary and integrated to the same order. In addition, both tests have been widely used in many studies, such as Kogid et al. 2010, Choi (1995) and Piazolo, (1995), and these confirmed that there are three important tests of integration to apply, ADF and PP being the most important.
These steps are important in order to avoid the problem of spurious regression (Brooks, 2008). As a result, if variables are non-stationary, this leads to spurious regression, which cannot be used for the intended purpose (Griffiths et al., 2008; Gujarati, 2012; Koop, 2013).

The ADF depends on rejecting a null hypothesis of a unit root (the series are non-stationary) in favour of the alternative hypothesis of stationarity. ADF test is the wider version of the standard DF test, which is used to solve the problem of autocorrelation in the standard DF test. DF test can be augmented through adding various lagged dependent variables. By using Akaike criteria (AIC), the optimal number of lags, where it is necessary requirement to performing further testing, can be determined.

The AIC is applied in the model selection. Smaller values of the AIC are preferable, since higher numbers reduce the power of the test to reject the null of a unit root. The E-Views software automatically selects an optimal lag length for each time-series variable. This means that the time series is stationary. The ADF test can be done using different model specifications: i) with an intercept; ii) with an intercept; and trend; and ii) without an intercept and trend (Brooks, 2008). Moreover, the ADF test is comparatively better when using a small sample, as in the case of this study (Davidson and MacKinnon, 2004). In addition, most studies used the ADF test as a better and simpler alternative to aforementioned tests.

Phillips and Perron (PP) have developed a more comprehensive theory of unit root non-stationarity (Phillips and Perron, 1988). Their tests are similar to the ADF test, and usually give the same conclusions and critical values; the test of statistic is also usually fairly complex. The main difference is that the PP test incorporates an automatic correction into the DF procedure to allow for auto-correlated residuals. As for the lag length necessary for the removal of the serial correlation in the residuals in both tests of stationarity, in the ADF test,
the gap is determined by the Akaike Information Criterion (AIC), while the Newey-West standard is utilised in the Phillips Perron (PP) tests (Cheung and Lai, 1997). Finally, the test provides conclusions that are qualitatively the same as those produced by the ADF test.

5.5.2 Co-integration Tests

In order to estimate the co-integration relationship, one can use the Engle-Granger or Johansen approaches. However, it has been argued that the application of the Engle-Granger approach is not appropriate in the presence of more than two variables. In addition, there are some problems to this test, the most important is that it does not contain the right number of relationships between variables (Koop, 2005, Koop, 2013). These problems are resolved by using the Johansen approach. Moreover, the Johansen approach is more appropriate for co-integration than Engle-Granger, particularly when there is more than one variable, as in the first model which contains four variables, as then the existence of two or three co-integrating equations becomes possible (Brooks (2008). Therefore, it is preferable to apply Johansen’s co-integration method for this study.

The Johansen approach was developed by Johansen (1988) and Johansen and Juselius (1990) to examine the long-run equilibrium relationship among variables when a unit root is confirmed for a data series. Therefore, if all variables are individually integrated of the same order and there is at least one linear combination of these variables that is stationary (Alexander, 2008, Ssekuma, 2011, and Dwyer et al. 2012), then the variables are co-integrated. Testing for co-integration implies testing for the existence of a long run relationship between economic variables.

The co-integration test in the present study uses a version of the Johansen-Juselius approach that follows those of previous studies (Oriavwote and Oyovwi, 2013, Abdullahi et al. 2012). Moreover, to determine the number of co-integration vectors, Johnsen developed two
likelihood ratio tests: the Trace statistic test ($\lambda_{\text{trace}}$), and the max-eigenvalue statistic ($\lambda_{\text{max}}$). The $\lambda_{\text{trace}}$ statistic examines the null hypothesis that the number of distinct characteristic roots is less than or equal to $r$, against the general alternative. The likelihood ratio statistic for the trace test ($\lambda_{\text{trace}}$), as proposed by Johansen (1988), is

$$
\Lambda_{\text{trace}} (r) = -T \sum L \log (1 - \lambda_i)
$$

where $r = 0, 1, 3, p-1$; the symbol $\lambda_i$ denotes the largest predicted value of the characteristic root (eigenvalue) achieved from the estimated matrix; and $T$ is the number of observations that can be applied in the model. The value of $\lambda_{\text{trace}}$ in this statistical test will be lower when the values of the characteristic roots are close to zero. In other words, the value of $\lambda_{\text{trace}}$ will be larger when the values of the characteristic roots are further from zero (Hill et al., 2008; Griffiths et al., 2008). The maximum eigenvalue $\lambda_{\text{max}}$ statistic, as proposed by Johansen, is as follows:

$$
\lambda_{\text{max}} (r, r+1) = -T \sum (1 - \lambda r+1)
$$

The max-eigenvalue statistic test ($\lambda_{\text{max}}$) examines the null hypothesis that the number of $r$ co-integrated vectors is an $r$ value against the alternative of $r+1$ co-integrated vectors. Therefore, the null hypothesis of $r=1$ is tested against the alternative of $r=2$, and also $r=2$ will be against the alternative $r=3$, etc. This means that when the estimated value of the characteristic root is close to zero, the value of $\lambda_{\text{max}}$ will be small (Dorodnykh, 2013). Moreover, in some cases Trace and Maximum Eigenvalue statistics may yield different results, indicating that in this case the results of the trace test would be preferable (Asari et al., 2011).

5.5.3 Vector Error Correction Model (VECM)

Chang and Caudill (2005), Majeed and Khan (2008), Olayiwola and Okodua (2013), Gujarati, (2011), and Koop, (2013), state that if variables are found to be co-integrated, the next step is to specify and estimate a Vector Error Correction Model (VECM) derived from
the VAR to examine the short-term relationship between the variables including the error correction term to investigate the dynamic behaviour of the model.

Once the equilibrium conditions are imposed, the VECM model describes how the examined model is adjusting in each time period towards its long-run equilibrium state. Since the variables are supposed to be co-integrated, then in the short run, deviations from this long-run equilibrium will feed back on the changes in the dependent variables in order to force their movements towards the long-run equilibrium state. Hence, the co-integrated vectors from which the error correction terms are derived are each indicating an independent direction where a stable meaningful long-run equilibrium state exists. The VECM specification forces the long-run behaviour of the endogenous variables to converge to their co-integrated relationships, while accommodating short-run dynamics. The dynamic specification of the model allows the deletion of the insignificant variables, while the error correction term is retained. The size of the error correction term indicates the speed of adjustment of any disequilibrium towards a long-run equilibrium state (Engle and Granger, 1987).

5.6 Summary

This chapter has presented and explained the methodology utilised to address the research objectives. It started with a general introduction focusing on the resource curse phenomenon and its potential causes, the Dutch disease and institutional quality, and then a specific of the models for the empirical analyses. It initially addresses the first model regarding the Dutch disease theory based on Corden and Neary (1983), which explains the theoretical underpinnings by identifying the two components of Dutch disease, the spending effect and the resource-movement effect. The discussion then proceeded to examine the selected econometric model. The main variables in this model include the real exchange rate as the dependent variable, and oil price, gross domestic product and trade balance as independent
variables. By examining the fluctuation of the exchange rate, the first would model help to examine whether oil prices cause the Dutch disease in a country like Libya.

The second model examines the sectorial impacts of Dutch disease. This is informed by the theoretical and empirical literature on the Dutch disease which recommends the evaluation of three key areas specifically: slowdowns in manufacturing and agricultural growth, and increases in the non-traded sector (Corden and Neary, 1982, and Torvik, 2001). Testing whether oil exports have any impact on these three sectors (as the theories predict) is expected to reinforce the first model’s results. It was also argued that institutional quality could be another channel for the natural resource curse. A simple descriptive analysis would be employed to examine this.

For the empirical estimation of the Dutch disease models, the common unit root tests, the ADF and the PP, were identified as the appropriate tests for stationarity of each time series. Further, the Johansen co-integration trace test and the maximum eigenvalue statistics would also be used to test the long-run equilibrium relationship among the variables in the models, with the Vector Error Correction Model being applied in order to evaluate the short run properties of the co-integrated series. The chapter explained how time-series data on the selected macroeconomic variables for Libya were collected from different sources for the period 1970-2010, and demonstrated how the variables of interest were measured. The results of the two models on assessing the Dutch disease in Libya will be presented and discussed in the next chapter, while the assessment of the influence of institutional quality on the resource curse is presented in chapter 6. These results would help inform the discussion on what economic and institutional reforms are needed to enhance the opportunities for the promotion of sustainable development, as well as the best options to diversify the economy away from oil so as to avoid the resource curse.
Chapter 6  Assessment of the Dutch Disease in Libya: A co-integration analysis

6.1 Introduction

This chapter addresses the first research objective of the study and is an empirical investigation of the Dutch disease phenomenon in Libya. The chapter is divided into two main sections. Following from the methodology chapter, the first and second sections apply a time series approach on data covering 1970 – 2010 to examine the problem. The sectoral analysis seeks to reinforce the first analysis so as to provide more conclusive evidence on whether indeed the problem exists in Libya. This follows the argument by Corden and Neary (1982) that there is the potential for sectoral shifts in the economy resulting from the Dutch disease. There is also the argument that given the exchange rate policy in the country over the last few decades, the first analysis, although widely used in the literature, may not be sufficient to examine the evidence regarding Dutch disease in the case of Libya.

Libya typically generates 80% - 95% of its total revenues from the oil sector (CBL, 2005; CIA, 2014). The country’s economy depends heavily on oil exports, so the Dutch disease phenomenon hypothetically exists. Moreover, the manufacturing and the agricultural sector have declined (see Chapter 4 section 4.3.1-4.3.2), thus, such evidence of the resource curse in the country seems to be underpinned by the Dutch disease hypothesis.

However, the oil industry in Libya is not only an enclave but also an extremely capital intensive industry. For these reasons, the link between the oil industry and the rest of the economy is particularly weak and does not contribute much to the reduction of unemployment.

The oil sector creates fewer workplaces per capital unit invested and those jobs usually require highly skilled labour. The Libyan unemployment rate averaged 17.73% between 2005 and 2010, reaching an all-time high of 20.7% in 2009 (see chapter 3) and a record low of 13 %

147
in 2005 (CBL, 2010). However, unofficial estimates indicate that unemployment affects at least 30% of the total population. The Libyan labour market is shaped by the co-existence of expanding unemployment for nationals and growing numbers of foreign migrant workers a paradoxical situation arising from a combination of mismatched skills and public sector dominance in the labour market. Given the nature of the economy, could the country be experiencing the problem of a resource curse that cannot be explained by the Dutch disease? This is the additional focus of the chapter and further examined in chapter 7.

As discussed in chapter one, the classical version of the Dutch disease ascribes the economic phenomenon to a situation where a country’s currency gets stronger because of exports, foreign direct investment or foreign aid. The higher exchange rate makes exports expensive and imports cheaper and as a result, the home industry weakens. An economy like Libya is therefore vulnerable to the Dutch disease problem when it depends heavily on endowed natural resources instead of relying on self-generated sources of income.

The oil boom over the last three decades has caused an increase in the financial surpluses of oil-exporting countries, resulting in significant changes in spending patterns. The large and sudden effect of liquidity changes to these economies following oil price shocks has led to increases in asset prices and reduced controls on price stability. Therefore, oil prices may have been the dominant source of real exchange rate movements, linking real oil prices with real exchange rates. The rest of the chapter is organised as follows: The first section examine the existence of the Dutch Disease in Libya using the real exchange rate function while the second section focuses on the sectorial analysis of the Dutch disease. The final section presents a summary of the chapter.
6.2 Dutch Disease: Real Exchange Rate Analysis

As discussed in chapter five, following the study by Al-Maulali et al. (2010) and Benhabib (2014), allows us to examine the presence of Dutch disease in Libya. That is, to see whether increased oil exports and higher oil prices have led to changes in the real exchange rate that may have had adverse effects on other sectors of the economy. Following equation (5.5) this section employs time series macroeconomic data on exchange rate, oil price, gross domestic product and trade balance. This analysis covers a time span of forty years, from 1970 to 2010 and it is limited to 2010 because of the political instability that has existed in the country since 2011. Therefore, there is a lack of reliable data after that period of time. Furthermore, the government’s compilations of official economic data are inadequate, as well as data on Libya in many of the international sources are incomplete. All references on Libya since 2011 acknowledge major uncertainties, due to the complex situation there and the challenges of fieldwork and data compilation (Combaz, 2014, World Bank, 2013). The confusing array of the institutional chaos following the fall of the government is compounded by “a dearth of published research on the political forces that emerged during and after the revolution” (Lacher, 2013, p. 5).

The data analysis involves three steps: 1) examining the stationarity of each time series using the Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) tests; 2) identifying the existence of a long-run relationship between the variables by means of a co-integration test and; 3) finding the short run dynamics of the relationship between the variables by estimating a vector error correction model (Gonzalo, 1994; Koop, 2005; Enders, 2004; Al-Majali and Al-Assaf, 2014; Banumathy and Azhagaiah 2015).
6.2.1 Unit Root Test of Stationarity

Recent research on time series analysis shows that many macroeconomic time series contain unit roots and non-stationary regresses that may invalidate most of the standard empirical results (Granger, 1987; Enders, 2004). Hence, it is important to determine the stochastic properties of the series, and it is the key to determine whether the series is stationarity at level or in its difference. Therefore, a preliminary analysis of the data by means of the Augmented Dickey–Fuller (ADF) and Philips Perron (PP) tests has been conducted for each variable to formally test for the presence of unit roots in the series. The critical values for the rejection of null hypothesis of the unit root are those computed according to the Mckinnon (1973). Both tests have been carried out in three settings: with a constant, without a constant and with a constant plus linear trend (Gujarati, 2011, Koop, 2013). The lag length for the ADF test is based on the Schwarz Information Criterion (SIC), and the lag structure for the PP applies the Bartlett Kernel with an automatic Newey-West bandwidth (Davidson and MacKinnon, 1973). ADF and PP tests were applied in both sections. The outcomes of the tests are present in Table 6.1.
Table 6.1: ADF and PP Unit Root Tests

### ADF test statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level lags</th>
<th>First difference lags</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>With constant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEXR</td>
<td>-0.794178</td>
<td>-4.157252**</td>
</tr>
<tr>
<td>LOP</td>
<td>-2.025966</td>
<td>-5.835030**</td>
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<tr>
<td>LGDP</td>
<td>-0.817991</td>
<td>-5.589111**</td>
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<tr>
<td>LTB</td>
<td>-3.775075**</td>
<td>-7.428444**</td>
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<tr>
<td><strong>Constant and Linear Trend</strong></td>
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<tr>
<td>LEXR</td>
<td>-1.415032</td>
<td>-4.335929**</td>
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<td>LGDP</td>
<td>-1.449569</td>
<td>-2.871447***</td>
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<td>LTB</td>
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<tr>
<td><strong>No constant</strong></td>
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<tr>
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<td>-0.951838</td>
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</tr>
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<td>LGDP</td>
<td>2.086614</td>
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<td>LTB</td>
<td>1.201093</td>
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### P-P test statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level lags</th>
<th>First difference lags</th>
</tr>
</thead>
<tbody>
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<td><strong>Constant and Linear Trend</strong></td>
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<td>LTB</td>
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<td>-12.03906**</td>
</tr>
</tbody>
</table>

Note: ** and *** indicates statistically significant at 5% and 10% respectively. Critical values (with a constant) at 5% and 10% are 2.94 and 2.60 respectively.

The ADF and P-P tests, as presented in Table 6.1, show that all variables are non-stationary at level in the three settings for both tests. These tests were repeated after taking the first difference for all the variables. The results indicate that the null hypothesis is rejected at the first difference, making all the variables stationary in both tests (Brooks, 2008), except for the LGDP, the table shows the absence of stationarity with value of 0.1832 under the constant
and linear trend in the ADF. The combination of the unit root tests results suggest that the variables are integrated of order one I(1). This implies the possibility of co-integrating relationships. Consequently, the Johansen methodology in testing for co-integration can be applied (Johansen, 1995). As presented in chapter 5, there are several tests for whether a series is stationary or non-stationary, with the ADF and the PP being, the most popular. Arguments were also presented as to why the ADF was more appropriate than the PP test for this study. The ADF test is better when using a small sample as in the case of this study (Davidson and MacKinnon, 2004).

6.2.2 Co-integration Test

The Johansen co-integration test, based on the Trace and Maximum Eigenvalue statistics, was applied. To identify the long run relationship among the variables and to test for the number of co-integrating vectors, the test has used the critical values of Mackinnon et al. (2000). Results are based on inclusion of linear deterministic trends in data. To select the optimal lag length, Schwarz Information Criterion (SIC) has been applied. The results of the Johansen co-integration test are presented in Table 6.2.

The first row of the trace statistic tests the hypothesis of no co-integration, the second row tests the hypothesis of one co-integrating relation, the third row tests the hypothesis of two co-integrating relations, and so on, all against the alternative hypothesis of a full rank (Mongale et al. 2013). From Table 6.2, since 78.14 and 37.32 exceeds the 5% critical value of the trace statistic, it is possible to reject the null hypothesis of no co-integration vectors and accept the alternative of one or more co-integrating vectors. The max statistic test confirms the result of the trace statistic, so it can be concluded that there are two co-integration vectors in the system. This indicates a long run equilibrium relationship between LRXR and the independent variables LOP, LRGDP and LTB. The selected normalised co-integration long run relationship results are presented in Table 6.3.
Table 6.2 Johansen Co-integration Test Results

<table>
<thead>
<tr>
<th>Hypothesised No. of CE(s)</th>
<th>Eigen-value</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.678197</td>
<td>78.14413</td>
<td>47.85613</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.563777</td>
<td>37.32675</td>
<td>29.79707</td>
<td>0.0056</td>
</tr>
<tr>
<td>At most 2 *</td>
<td>0.184868</td>
<td>7.461123</td>
<td>15.49471</td>
<td>0.5247</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.002845</td>
<td>0.102555</td>
<td>3.841466</td>
<td>0.7488</td>
</tr>
</tbody>
</table>

Max-Eigen Statistic

<table>
<thead>
<tr>
<th>Hypothesised No. of CE(s)</th>
<th>Eigen-value</th>
<th>trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.678197</td>
<td>40.81739</td>
<td>27.5843</td>
<td>0.0006</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.563777</td>
<td>29.86563</td>
<td>21.13162</td>
<td>0.0023</td>
</tr>
<tr>
<td>At most 2 *</td>
<td>0.184868</td>
<td>7.358568</td>
<td>14.26460</td>
<td>0.4476</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.002845</td>
<td>0.102555</td>
<td>3.841466</td>
<td>0.7488</td>
</tr>
</tbody>
</table>

Note: * denotes rejection of the hypothesis at the 5% significant level.

The results in Table 6.3 indicate that the null hypothesis of long-run co-integrating factors (a stable relationship among the endogenous variables) is accepted at 1% significant level and the explanatory variables also have the expected signs (Johansen and Julius, 1990, Koop, 2005, and Gujarati, 2014). The long-run real exchange rate function for Libya can be written as:

\[ LREXR = 1.414 \times LOP - 6.903 \times LRGDP + 8.266 \times LTB \]

There is a significant positive relationship between the exchange rate (LREXR) and oil price (LOP). A 1% increase in the oil price will cause the Libyan exchange rate to increase (depreciate) by 1.41%. The relationship between Libya’s exchange rate and the gross domestic product (LRGDP) was negative, with a 1% increase leading to a decrease in the exchange rate (appreciate) by 6.9%. Moreover, the result indicates that trade balance (LTB)
has a positive relationship with the exchange rate, as a 1% increase in the trade balance leads to an increase (depreciation) in the exchange rate of 8.3%. The variables are co-integrated, thus, the next step is to estimate a vector error correction model, including an error correction term, to investigate the dynamic behaviour of the model in the short-run. The unit root tests also indicate that the short-run dynamic model must be specified in the differences of the relevant variables.

6.2.3 Vector Error Correction Model (VECM) – Short Run Dynamics

A feature of co-integration is that the short and the long-run effects can be isolated, as short-run effects may differ from the long-run equilibrium. The VECM provides the correction terms that reflect influences of deviation of the relationship among the variables from long-run equilibrium and short-run parameters. In the short-run model, a dummy variable (DUM) representing the period 2002 - 2010 has been included as an exogenous variable in the VECM to take into account the dramatic increase in the exchange rate in 2002, due to the pegged Libyan dinar to special drawing rights (SDR). Prior to 1999 three exchange rates prevailed in the market: official rate, commercial or special rate and parallel market rate. In 1999 the Central Bank of Libya (CBL) introduced a special exchange rate close to the parallel market rate (2.15 L.D./1 U.S$ as compared to 0.36 L.D. /1 U.S.$ official rate). The spread between the two rates was gradually decreased. In 2002 the exchange rate was unified. However, a Great Man Made River (GMR) tax was imposed on the transactions of the private sector and public economic enterprises not financed by the state. In 2003 the tax was included in the unified exchange rate. This led to depreciation of the Libyan Dinar by 15% (CBL, 2005). Additionally, the Central Bank worked to consolidate and stabilise the exchange rate of the Libyan dinar. The dummy variable reflecting the period of all these changes and also, major changes occurred in the Libyan economy, such as the end of the United Nations embargo on Libya, and shows dramatic changes in prices, then in oil revenues, and finally
changes in the exchange rate of the Libyan Dinar against the U.S. Dollar. Hence, when it is
included in the short-run model the coefficient of error correction term (ECT) turns negative,
and statistically significant, and therefore consistent with the method of error correction.


<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT_{t+1}</td>
<td>-0.479198***</td>
<td>0.12004</td>
<td>-3.99***</td>
</tr>
<tr>
<td>D (LEXR (-1))</td>
<td>0.186483</td>
<td>0.16592</td>
<td>1.124</td>
</tr>
<tr>
<td>D (LOP (-1))</td>
<td>0.147212*</td>
<td>0.09014</td>
<td>1.633*</td>
</tr>
<tr>
<td>D (LGDP (-1))</td>
<td>-0.447072</td>
<td>0.39924</td>
<td>-1.20</td>
</tr>
<tr>
<td>D (LTB (-1))</td>
<td>0.435238**</td>
<td>0.19147</td>
<td>2.273**</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.119405</td>
<td>0.04057</td>
<td>-2.942</td>
</tr>
<tr>
<td>DUM</td>
<td>0.548064</td>
<td>0.13069</td>
<td>4.193</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.547149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>2.855820</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ECT is the error correction term, D is first differences and DUM is dummy variable for the period 2002-2010, ***. **, and * respectively denote 1%, 5% & 10% significance level.

The expectation of the ECM is that, the coefficient of error correction term (ECT) should be
negative and be statistically significant. Kremers et al. (1992) and Dhungel (2014) assert that
the significance of the error correction term is an efficient and a useful way of establishing
co-integration.

The error correction term coefficient is negative (-0.479), statistically significant (with t-
statistic of 3.99), and consistent with the error correction method (Table 6.4). Thus, this
indicates that the deviation from the long-run equilibrium path is corrected by nearly 48%
over the following year. Its magnitude suggests a high speed of adjustment. The value of the
F-statistic is 2.85 and R-squared is 0.54 which means that the ECM explains 54% of the
systemic variation in the dependent variable. However, even though the value of R-squared is
relatively low it does not significantly affect the validity of the results because the estimated
ECT is compatible with the requirements in the short-term. The fact that the coefficient of the
error correction term is significant further confirms our finding of the existence of a long run relationship among the variables in our model (Mukhtar and Rasheed 2010; Issa and Ouattara 2004).

6.2.4 Discussion of the Real Exchange Rate Model

Contrary to the prediction of the “Dutch disease” theory, the estimated long run results presented in Table 6.3 indicate that an increase in oil price leads to depreciation of the Libyan domestic currency. This result is different from the economic concept of Dutch disease, as suggested by Brahmbhatt et al., (2010), Chevallier (2009), Akpan (2007) and Corden & Neary (1982), which highlights the potential negative effects that natural resource windfalls (and the accompanying appreciations in exchange rates) can have on the rest of the economy. Benhabib (2014) in the investigation of the relationship between oil price and exchange rate found that a 1% increase in oil price tends to depreciate the Algerian exchange rate by nearly 0.35%.

Consistent with the current study’s results, Al-Mulali and Normee (2010) also found no evidence that the Dutch disease exists in Kuwait in either short or long run tests because the increase in oil prices caused Kuwait’s exchange rate to depreciate. They found positive coefficients for the oil prices, whereby an increase of 1% in oil price led to a depreciation of Kuwait’s exchange rate by 0.015%. They argue that fixed exchange rates regimes could help to absorb the effects of the Dutch disease, resulting in higher inflation. Besides the US dollar, the government of Kuwait is using the basket peg of currencies like the Euro, GBP and the Yen.

Al-Mulali (2010) found similar results in the case of Norway and states that an increase by 1% in oil price will cause the real exchange rate to depreciate by 0.22% and that this has a positive effect on its economic growth. Other studies support this result, such as Gelb (1988)
and Spatafora and Warner (1995), who using aggregated data, could not find evidence of Dutch disease in the manufacturing sector due to oil booms. Oil price shocks caused real exchange rate depreciation to the UAE’s currency (Che Sab & Al-Mulali, 2011).

Sala-i-Martin and Subramanian (2008) also indicated that there was no evidence of Dutch disease due to oil price. Moreover, they found that the real exchange rate is insensitive to the oil price. They highlighted an issue that is all too prevalent in analysing the impact of oil prices on macroeconomic variables in oil-exporting countries, which is the importance of knowing the type of spending and not just the quantity. The spending of revenues on trade bears no impact on the real exchange rate. Thus if the bulk of the windfall is spent on importable goods, any signs of a Dutch disease may be weak, as in the case of Libya (see chapter 4). Additionally, there has been limited evidence of the Dutch disease due to oil discovery in cross-country studies. Gelb (1988) provides an extensive empirical cross-country study of the Dutch disease, where the effects of windfalls on oil exports were examined for a group of oil exporting countries. Most of these countries spent huge amounts of the windfall they gained in the wake of the 1973 oil boom. However, almost all countries in their study showed no sign of Dutch disease. Furthermore, Habib and Kalamova (2007) found no long-run relationship between real effective exchange rates and oil prices for Norway and Saudi Arabia. The most recent study was provided by Buetzer et al. (2012), who identified different shocks to real oil prices and found no evidence that, the exchange rate of oil exporters systematically appreciate against those of oil importers. Other authors such as Spatafora & Warner (1995) and Leite and Weidmann (1999) have, after a range of cross-sectional and individual studies, concluded that there is no evidence of any effect of natural resources on macroeconomic indicators. Likewise, Aziz (2009) provides strong evidence to suggest that increases in oil prices lead to a depreciation of the exchange rate, thus illustrating
the potential positive effects that the price of oil can have on the exchange rate and other sectors of the economy.

It could be argued that the effect of the appreciations of exchange rates depends on government policy and how the economy is managed. Policies covering the synthesis of spending can help curb Dutch disease. Directing spending to tradable rather than non-tradable could help slow the impact through the spending effect. Improving the quality of spending to ensure that productivity in non-tradable sectors increases more rapidly would also help alleviate real exchange rate appreciation and other Dutch disease effects. Spending on investment projects, rather than on increasing recurrent permanent expenditures, such as wages enables countries to adjust to volatility of revenues more easily. These results do not contradict the core Dutch disease model, which ultimately leaves the effect of an oil boom on other sectors ambiguous. Nor do they imply that Dutch disease mechanisms, namely the resource movement and spending effects, are not present.

As mentioned in chapters 2 and 3, fiscal policy is a natural instrument to help curb Dutch disease effects. In fact, excessive public spending has been a common component of economic mismanagement of booms stemming from positive Dutch disease shocks. Fiscal policy may play a role not only by mitigating the “spending effect” associated with Dutch disease, but also by smoothing expenditures to reduce output volatility. In this case, a fiscal rule and the use of a stabilisation fund could be appropriate (Gelos, 2014, IMF, 2015)

Certainly, another possibility is that the Dutch disease might not exist. In many of the instances where manufacturing is found to be lagging in oil export countries, there has been other factors involved regarding to institutional quality that could explain the slow growth of manufacturing.
The difference between the estimated results in this thesis and the theoretical evidence could be due to the exchange rate policy and government control. In general, the Central Bank has followed a policy, similar to Kuwait, by pegging the Libyan Dinar (LD), either to the US dollar or to the IMF’s special drawing rights (SDR). The dinar’s peg to the SDR and ample foreign exchange reserves mean that the currency is not likely to come under pressure. The Central Bank remains committed to the peg and Libya’s foreign-reserve stock of billions of US dollars have supported the currency over the period of analysis.

The most important objectives of Libya’s central bank were to; (i) raise the value of the Libyan Dinar against foreign currencies to support the purchasing power of the LD; (ii) lower the prices of goods to maintain their stability; (iii) resolve the problem of citizens who need foreign currency for various personal purposes, and without restrictions on the exchange rate; (iv) eliminate the parallel market for foreign currency. Furthermore, it also aimed to establish an appropriate framework to adjust the LD exchange rate up to its real effective exchange rate that coincides with Libyan economic indicators, achieving an efficient use of available resources and eliminating distortions in the prices. Moreover, from the early 1970s until the period of this study, all businesses in the country were state controlled. They essentially operated without the need to make profits in any conventional sense, but were only expected to supply a range of goods and services to the Libyan people at government controlled prices.

It can be argued that the Dutch disease phenomenon has not been identified in Libya through the exchange rate, and is therefore only able to be identified in other ways. To accomplish this, the second model is being used to examine the sectorial impacts of Dutch disease. As such, it is an attempt to provide definite evidence as to whether the Dutch disease phenomenon exists.

In Indonesia between 1960 and 1985, when there were high oil revenues, the country avoided the impact of the Dutch disease by devaluing the exchange rate periodically. This was done in
collaboration with policy makers, who placed the currency on a crawling peg in 1986, a move that has since maintained the real value of the Rupiah (Roemer, 1994). The rapid and volatile appreciation that tends to dominate the economies with escalating natural resource exports can be mitigated through exchange rate and fiscal policies. However, exchange rates have distinct and different advantages. No single exchange rate regime is appropriate for all countries in all circumstances. Hence, countries will have to weigh the costs and benefits of floating in light of both their economic and their institutional readiness (Duttagupta et al. 2006). Therefore, it can be argued that Dutch disease consequences relating to the exchange rate can be mitigated through appropriate policies.

There are some features for the Libyan economy, which reflect the result of the exchange rate model in Libya. For example, the Central Bank worked to consolidate and stabilise the exchange rate of the Libyan Dinar. In addition, there is an absence of the influential role of the financial markets in such countries as Libya because it is still nascent. Restrictions imposed on the exchange rates in such countries has a negative impact, which makes the application of the Dutch disease theory rather unrealistic (Luintel, 1993).

Furthermore, the lack of stability in domestic production was reflected in the depreciation of the Libyan Dinar against the U.S. Dollar. This led, in turn, to a decline in per capita real income, stimulating the Central Bank of Libya to follow a policy of gradual reduction in the value of the Libyan Dinar in order to reach the balanced price that dominated in the markets. There were three rates of the Dinar, the official price, the preferential price, and the black market price and this ended up unifying the exchange rate at 1.20 Dinars to the U.S. Dollar at the beginning of 2002. This procedure led, to a relative reduction in market prices. In practice it can be said that the stability of the exchange rate of the Libyan dinar, and government intervention in the management of economic activity, has reduced the importance of this variable in the Libyan economy.
In this respect, sustainability of the devaluation effect on the real exchange rate is of great importance because economic agents will be reluctant to invest in the tradable sector without their confidence in the government's ability to maintain the exchange rate. Devaluation could boost exports and cut down on the fiscal deficit, but that could create the impression that the government is losing control of the economy. The value of the domestic currency in the foreign exchange market is an important instrument in a central bank’s toolkit, as well as a key consideration when it sets its monetary policy. However, in the short-run, contractionary effects of devaluation on the non-tradable sector may balance or even be larger than these effects; thus, devaluation may depress the economy in the short-run.

As mentioned in chapter three, the correlation of remittance outflows with the stock of immigrants suggests that importing foreign workers mitigates the effects of the Dutch disease (Espinoza et al. 2013). If the oil booms are always accompanied by imports of foreign labour, it may be that the usual Dutch disease type bottlenecks simply do not exist. Most of the public and private sectors in Libya are reliant on foreign workers, and especially with the required skilled. Therefore, more specifically, the import of foreign labour acts as a policy response to oil shocks to solve problems of supply shortages. This directly eases the upward pressure on the real exchange rate (Fayad, 2010).

Consequently, in labour importing countries such as Libya, there is little to suggest that the Dutch disease is a serious problem (Fayad et al., 2012). All of this indicates that the Dutch disease has not occurred in Libya over the time period analysed, with no evidence that changes to oil price leads to an appreciation of real exchange rates.

Concluding the exchange rate relate Dutch disease analysis, it can be acknowledge that, high oil prices generally provoke a large appreciation of exchange rates in oil exporting countries. Many previous studies suggest that an appreciation of the exchange rate is one of the major
factors that impede economic growth and development. That is, the Dutch disease underpins the resource curse phenomenon in these countries. However, this evidence is not clearly established in the case of Libya. On the contrary, oil prices depreciated the Libyan Dinar against the US dollar by about 1.41% during the period of the study. This inverse impact between oil price and the Libyan Dinar reflects the puzzling role of the exchange rate policy in Libya.

As a result the evidence on the impact of Dutch disease effects on the economy through real exchange rate is mainly inconclusive. Moreover, it is worth noting that shocks that cause Dutch disease, such as the export price, are usually associated with periods of economic prosperity. Dutch disease is an unintended consequence of foreign exchange and natural resource abundance; the negative effects would not necessarily offset the benefits of this inflow, the challenge for policymakers is to adequately manage the boom and its accompanying risks. Therefore, the optimal policy response would consist of taking advantage of the boom, while at the same time dealing with its undesired consequences. Additionally, fiscal and exchange rate policies could be play important role to control and hence protect the economy by mitigating or avoiding Dutch disease.

The Libyan case has shown how natural resource abundance can be a blessing and a curse, whether a country is suffering from Dutch disease or not. Although many countries are highly dependent on their natural resources, it is not likely that they all suffer or have suffered from Dutch disease – Libya is a prime example of this. Due to the nature of the economy, Dutch disease does not manifest itself in terms of the effect of oil prices on the exchange rate.

On the other hand, Libya could potentially be suffering from Dutch disease, but no evidence can be brought by one model alone; a variety of channels are required. Hence, the evidence on the negative impact of Dutch disease is still partial, and generally the evidence is mixed
and inconclusive. In particularly, the real exchange rate appreciation associated with Dutch disease phenomenon. So it is not clear why lower growth should be an unavoidable outcome. The next section will apply another model to examine whether Dutch disease surely exist in Libya to reinforce the first model. It will examine the impacts in each sector of the economy. Three key observations derived from the Dutch disease literature will be tested. These concern a slowdown in manufacturing and agricultural growth and an increase in the non-trade sector growth.

6.3 Dutch Disease: Sectorial Analysis

Using the real exchange rate, the previous section did not provide evidence of the Dutch disease in Libya between 1970 and 2010. This result was unexpected given the poor economic indicators in the country over this period, such as unemployment; with estimates indicate that unemployment affects at least 30% of the total working age population, which clearly indicates the problem of the natural resource curse.

This section extends the analysis to examine the sectorial impacts of the Dutch disease. As such, it is an attempt to reinforce the first analysis in the previous section and to provide definite evidence as to whether the Dutch disease phenomenon exists in Libya. To accomplish this, the study evaluates three areas that the literature on Dutch disease recommends for examination, specifically, slowdowns in manufacturing and agricultural growth, and an increase in the non-traded sector.

As observed in chapter 4, hydrocarbon exports still dominate the total exports of Libya, given that they account for more than 95% of the total revenues. The country’s economy depends heavily on oil; this structure of exports has not changed since Libya first became an exporter of oil, in the sense that the economy of Libya retained the characteristics of an economy based primarily on the production and export of oil. As discussed in chapters 4 and
5, Corden and Neary (1982) have suggested that, a boom-traded sector refers to oil and gas, a traded sector comprises of manufacturing and agricultural and a non-traded sector relates to services. A boom in the resource sector can take on such forms as oil discovery or an increase in oil prices. The effect on manufacturing and agriculture refers to mobile factors of production migrating to the booming sector away from these sectors. Furthermore, when the increased income from the oil sector is spent on the non-traded sector it raises the price of the non-traded sector relative to the non-oil traded sector, or real exchange rate, as mentioned earlier. Additionally, the increased price of the non-tradable sector also implies increasing wages. Consequently, labour will to some extent be attracted from the tradable sector to the non-tradable sector. This shift in labour will continue until factor prices equalise between all sectors. The effect on the tradable sector is not only a reduction in labour, but also less production and exports from this sector (Corden and Neary, 1982, Falck, 1997).

As discussed above and in the methodology, the three relationships to be tested use a model developed by Chekouri et al. (2013) and Rajan and Subramanian (2011). This model has been used in Algeria to test for the symptoms of Dutch Disease. Since the Algerian context is similar to the Libyan economy, Chekouri et al. (2013) original model will be appropriate for this analysis.

The three relations in natural logarithm functional forms, as presented in chapter 5, are as follows;

\[
\ln(AGR/GDP) = \alpha_1 + \beta_1 \ln(OLEXP) + \varepsilon_1 \quad (6.1)
\]

\[
\ln(MAN/GDP) = \alpha_2 + \beta_2 \ln(OLEXP) + \varepsilon_2 \quad (6.2)
\]

\[
\ln(NON-T/GDP) = \alpha_3 + \beta_3 \ln(OLEXP) + \varepsilon_3 \quad (6.3)
\]
The data series are denoted as:

\[
\begin{align*}
AGR/GDP &= \text{share of agricultural output in GDP} \\
MAN/GDP &= \text{share of manufacturing output in GDP} \\
NON-T/GDP &= \text{share of non-traded output in GDP} \\
OLEXP/GDP &= \text{share of oil export in GDP, with}
\end{align*}
\]

\[\varepsilon_t = \text{respective error terms}\]

Following the theoretical framework of Corden and Neary (1982), if the Dutch disease exists in Libya then the expected signs of the estimated coefficients will be as follows: \(\beta_1 < 0, \beta_2 < 0\) and \(\beta_3 > 0\).

The rest of the discussion follows a similar approach to the one applied in the previous section of this chapter. The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests of stationarity were applied. The Johansen co-integration approach was employed to test for co-integration among the variables and to evaluate the long-run relationship between the selected variables.

### 6.3.1 Unit root tests

It is necessary before the start of the analysis to turn to the unit root test, as explained in chapter 5 and section 6.1. The results for both the ADF and PP show that for all of the variables in models (6.1), (6.2) and (6.3), the null hypothesis of a unit root cannot be rejected at the level. After their first differences, the null hypothesis of non-stationarity is rejected for all variables. Thus the outcomes confirm that the variables are integrated of order one (Table 6.5).
### Table 6.5 ADF and PP Unit Root Tests

<table>
<thead>
<tr>
<th></th>
<th>ADF test statistic</th>
<th>PP test statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level lags</td>
<td>Level lags</td>
</tr>
<tr>
<td><strong>With constant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-1.904013 0</td>
<td>-5.199285** 0</td>
</tr>
<tr>
<td>Agricultural</td>
<td>-1.565245 0</td>
<td>-4.063735** 3</td>
</tr>
<tr>
<td>Non-traded goods</td>
<td>-1.222373 0</td>
<td>-6.660559** 0</td>
</tr>
<tr>
<td>Oil export</td>
<td>-1.272794 0</td>
<td>-6.011973** 0</td>
</tr>
<tr>
<td><strong>With constant and linear trend</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-0.368787 0</td>
<td>-5.712848** 0</td>
</tr>
<tr>
<td>Agricultural</td>
<td>-1.477117 0</td>
<td>-4.224345** 3</td>
</tr>
<tr>
<td>Non-traded goods</td>
<td>-1.939831 0</td>
<td>-6.607399** 0</td>
</tr>
<tr>
<td>Oil export</td>
<td>-1.248847 0</td>
<td>-5.977567** 0</td>
</tr>
<tr>
<td><strong>No constant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1.016613 0</td>
<td>-4.919907** 0</td>
</tr>
<tr>
<td>Agricultural</td>
<td>0.377516 4</td>
<td>-4.010829** 3</td>
</tr>
<tr>
<td>Non-traded goods</td>
<td>1.478486 0</td>
<td>-6.309191** 0</td>
</tr>
<tr>
<td>Oil export</td>
<td>-0.893761 0</td>
<td>-6.089995** 0</td>
</tr>
</tbody>
</table>

Note: ** and *** indicates statistically significant at 5% and 10% respectively. Critical values (with a constant) at 5% and 10% are 2.94 and 2.60 respectively.
### 6.3.2 Co-integration Test

Most of the variables are integrated and of the same order, as indicated in the unit root test result for Augmented Dickey-Fuller (ADF). Therefore, the next step is the co-integration test of the Johansen approach. As noted before, the Johansen test relies on two types of tests: (i) the trace test; and (ii) the maximum eigenvalue test. To select the optimal lag length, the Schwarz Information Criterion (SIC) has been employed.

According to Table 6.6, for the first model, the estimated Johansen approach based on the trace statistic is 22.131. This is greater than the critical value at the 0.05 significant level of 15.494, and the max-eigenvalue statistic is 19.994, which is greater than the critical value of the 0.05 significant level of 14.264. Therefore, the results suggest that there is one co-integrating vector between the agriculture and oil export. The second model results show the following: trace statistic was 23.138, which is greater than critical value at the 0.05 level at 15.494, while the max-eigenvalue statistic was 16.011, also greater than the critical value at 0.05 significant level at 14.624. The results also indicated that two co-integrating vector between manufacturing and oil export exist. Regarding the third model, the result indicated there are two co-integrations between non-tradable sector and oil export, as shown in trace statistic at 21.228, which is greater than critical value at the 0.05 significant level of 18.397. Overall, this suggests a long run equilibrium relationship between the dependent variables AGR, MANF, NON-T and the independent variable LOEXP. The selected normalised co-integration long run relationship results are presented in Table 6.7.
Table 6.6 Johansen Co-integration Test Results

<table>
<thead>
<tr>
<th>Hypothesised No. of CE(s)</th>
<th>Eigen-value</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Series LAGR and LOEXP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None *</td>
<td>0.40115</td>
<td>22.13181</td>
<td>15.49471</td>
<td>0.0043</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.053323</td>
<td>2.137085</td>
<td>3.841466</td>
<td>0.1438</td>
</tr>
<tr>
<td><strong>Max-Eigen Statistic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None *</td>
<td>0.40115</td>
<td>19.99472</td>
<td>14.26460</td>
<td>0.0056</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.053323</td>
<td>2.137085</td>
<td>3.841466</td>
<td>0.1438</td>
</tr>
<tr>
<td><strong>Series LMANF and LOEXP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None *</td>
<td>0.351277</td>
<td>23.13814</td>
<td>15.49471</td>
<td>0.0029</td>
</tr>
<tr>
<td>At most 1*</td>
<td>0.175193</td>
<td>7.126402</td>
<td>3.841466</td>
<td>0.0076</td>
</tr>
<tr>
<td><strong>Max-Eigen Statistic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None *</td>
<td>0.351277</td>
<td>16.01174</td>
<td>14.26460</td>
<td>0.0262</td>
</tr>
<tr>
<td>At most 1*</td>
<td>0.175193</td>
<td>7.126402</td>
<td>3.841466</td>
<td>0.0076</td>
</tr>
<tr>
<td><strong>Series LNON-T and LOEXP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None *</td>
<td>0.309641</td>
<td>21.22865</td>
<td>18.39771</td>
<td>0.0196</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.183888</td>
<td>7.518548</td>
<td>3.841466</td>
<td>0.0061</td>
</tr>
<tr>
<td><strong>Max-Eigen Statistic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None *</td>
<td>0.309641</td>
<td>13.71010</td>
<td>17.14769</td>
<td>0.1479</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.183888</td>
<td>7.518548</td>
<td>3.841466</td>
<td>0.0061</td>
</tr>
</tbody>
</table>

Note: Trace statistic and Max-eigenvalue statistic indicates one co-integrating equations at the 0.05 critical values (first model), and indicates two co-integration equations at the 0.05 critical values in the second model. The third model Trace statistic indicates two co-integrating equations at the 0.05 critical values. * Denotes rejection of the hypothesis of no co-integration at the significant level.

Table 6.7 Oil export impact on three sectors - Co-integration estimates for Libya (1970 – 2010)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard errors</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>LARG</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LOEXP</td>
<td>-0.2457***</td>
<td>0.0571</td>
<td>4.302</td>
</tr>
<tr>
<td>LMANF</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LOEXP</td>
<td>-0.5026***</td>
<td>0.1026</td>
<td>4.898</td>
</tr>
<tr>
<td>LNON-T</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LOEXP</td>
<td>0.1581***</td>
<td>0.0482</td>
<td>3.280</td>
</tr>
<tr>
<td>LAGR</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NON-T</td>
<td>-0.3058***</td>
<td>0.3372</td>
<td>0.906</td>
</tr>
<tr>
<td>MANF</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NON-T</td>
<td>5.9888***</td>
<td>1.0078</td>
<td>5.942</td>
</tr>
</tbody>
</table>

Note: *** denotes 1% level of significance.
The estimated coefficients are interpreted as long term multipliers (Koop, 2005; Gujarati, 2014). Table 6.7, indicates that there is a significant negative relationship between oil export and agriculture. An increase of 1% in oil export will lead to a decline in agriculture output by 0.24%. The relationship between manufacturing and oil export was also negative, with a 1% increase leading to a decrease in output in the manufacturing by 0.50%. Furthermore, the results show that there is a positive relationship between the non-tradable sector and oil export. Hence, a 1% increase in OLEXP will lead to a rise in the NON-T by 0.15%. Therefore, the signs of the coefficients are in line with Dutch disease theory. In addition, the non-traded sector has a negative impact on agriculture but the impact is not significant, as indicated by the very low t-statistics. Whereas, there is positive relationship between non-tradable and manufacturing, as 1% increase led to rise 5.98% in the manufacturing output. The variables are co-integrated; consequently, the next step is to examine the relationship between these variables in the short-term. The results are presented in Table 6.8.

6.3.3 Vector Error Correction Model (VECM) – Short Run Dynamics

Table 6.8 presents the estimated VECM, which reflects the short term relationship between three sectors and oil export. In this model, oil exports were found to cause negative influence in the short-term as well. Nonetheless, they were statistically non-significant, with t-statistics of 1.48 in LAGR, 0.34 in LMANF and 0.55 in NON-T respectively.

The results show that the estimated coefficient for the error correction term (ECT) in the three equations, are negative and statistically significant, consistent with the method of error correction. Furthermore, in the first equation, value of the R-squared is 0.51 and of the F-statistic is 4.54 therefore; the ECT explains 51% of the systemic variation in the dependent variable. In the second equation, the value of the F-statistic is 2.45 and is 0.36 in the R-squared, which means that the ECT explains 36% of the systemic variation in the dependent
variable, and third equation the R-squared is 0.39 and F-statistic is 2.76, which explains 39% of the systemic variation in the dependent variable.

Table 6.8 Sectoral model- Short-run estimates ECM (1970 – 2010)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriculture sector</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC_{t-1}</td>
<td>-.6337</td>
<td>.1336</td>
<td>-4.742</td>
</tr>
<tr>
<td>D (LOEXP(-2))</td>
<td>-.3372</td>
<td>.2341</td>
<td>-1.440</td>
</tr>
<tr>
<td>D (LAGR(-2))</td>
<td>-.9500</td>
<td>.6381</td>
<td>-1.488</td>
</tr>
<tr>
<td>R-squared</td>
<td>.514691</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>4.545180</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manufacturing sector</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC_{t-1}</td>
<td>-.3901</td>
<td>.1024</td>
<td>-3.8061</td>
</tr>
<tr>
<td>D (LOEXP(-2))</td>
<td>-.0639</td>
<td>.1826</td>
<td>-0.3498</td>
</tr>
<tr>
<td>D (LMANF(-2))</td>
<td>-.2114</td>
<td>.5188</td>
<td>-0.4074</td>
</tr>
<tr>
<td>R-squared</td>
<td>.364285</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>2.455856</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-tradable sector</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC_{t-1}</td>
<td>-.4099</td>
<td>.1101</td>
<td>-3.7216</td>
</tr>
<tr>
<td>D (LOEXP(-2))</td>
<td>.6881</td>
<td>.1499</td>
<td>1.1254</td>
</tr>
<tr>
<td>D (LNON-T(-2))</td>
<td>.3360</td>
<td>.6092</td>
<td>0.5515</td>
</tr>
<tr>
<td>R-squared</td>
<td>.392212</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>2.765614</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ECT is the error correction term, D is first differences.

6.3.4 Discussion of the Sectorial Analysis

The results reported in the Tables 6.7 presents the long run results using the data set in Libya from 1970 to 2010. The second analysis investigates the impact of oil exports and whether it has influence on the manufacturing, agricultural and non-traded sectors.

In the classic economic model describing the Dutch disease there is a non-tradable sector, which includes services, and two tradable sectors, the booming sector and the lagging or non-booming tradable sector. The booming sector is usually the extraction of natural resources such as oil and gas. The lagging sector is usually manufacturing and agricultural.

As a result, oil exports have influences on agricultural, manufacturing and services sectors. It can be concluded based on the result that, there is mobility from both sectors to the boom oil sector and non-traded sector. The manufacturing shows a positive relationship with the non-
traded sector. It can be stated that there exists negative relationship between oil exportation and agriculture and manufacturing sectors, which has led to a substantial decline in output in both sectors, and therefore adverse effects on the economy of Libya. According to the result obtained, there is clear sign of the Dutch disease existence in Libya through the sectoral analysis model, which is in line with the theoretical predictions of the Dutch disease phenomenon.

This result is supported by the Dutch disease theory, where an increase in revenues from oil could adversely affect the tradable manufacturing and agricultural sectors by shifting labour from these sectors. Therefore, both sectors output has declined, and became less competitive in exports (Corden and Neary, 1982). If the increases of foreign exchange were spent entirely on imports, there would be no direct impact on the country’s demand for domestically produced goods (IMF, 2010). In the case of Libya, as observed in the first section, Dutch disease does not appear in the exchange rate model, but it clearly appear in the second section during the examination of the sectorial impacts. The agricultural and manufacturing sectors both declined, which could be a sign of Dutch disease. Government policy has focused more on the oil sector at the expense of other sectors.

The main hypothesis of Dutch disease theory is that drastic increases in resource exports lead to a reductions in manufacturing exports and agriculture, which is in line with our result. Where the natural resources discovered are oil or minerals, a contraction or stagnation of manufacturing and agriculture could, they say, accompany the positive effects of the shock. Brahmbhatt, et al. (2010), consider channels through which such natural resource-based wealth could affect the economy and focus on the developmental implications of Dutch disease, particularly the potential negative effects related to productivity dynamics and possible policy responses and reform policies to curtail these effects. In addition to this, government policies were not sufficiency favourable to promoting agriculture and
manufacturing. As explained in the exchange rate model, manufacturing in Libya is very small with low levels of employment. It therefore means that an export led growth process may not cause any change in the manufacturing sector in Libya, with all other things being equal going by the result obtained.

6. 3.4.1 Dutch Disease and the Manufacturing Sector

According to the long run, as the result show, the impact of oil export on the manufacturing sector is negative and statistically significant, leading to a decline of the manufacturing sector output. In contrast, the result shows that there is a positive relationship between non-tradable sector and the manufacturing sector. In the first analysis, the oil price had a depreciation impact in the real exchange rate. This implies that an impact for the non-tradable sector has become more expensive, and the non-tradable sector may therefore have to rely on the manufacturing sector to increase productivity. For instance: cements and electrical cable plants. This reason explains the positive long run relationship between the manufacturing and non-tradable sectors. The large investment into building roads, schools, and hotels, implies that non-tradable sector rely more on the material from the local manufacturing production, therefore, explaining the positive relationship with manufacturing sector.

The manufacturing sector was in a developing stage during the 1960s and 1970s, but productivity fell far behind the oil sector in the 1980s, which is had a detrimental impact on the sector. The manufacturing process was limited due to the unavailability of raw materials, difficulties to import from abroad due to UN and USA sanctions, as well, the lack of a skilled labour force, and narrow local markets. Non-oil manufacturing made a particularly small contribution of 4% at that time, and approximately less than 10% of GDP in 2002. However, in the 1980s the government concentrated on developing light processing industries. The manufacturing projects during that decade included textile complexes, fertilizer factories, cements and an electrical cable plant. Gains in value added from manufacturing over this
period were impressive, but only for domestic consumption, and are unlikely to have export
potential. Still, in terms of contribution to GDP, in 1983 manufacturing contributed very low
to total GDP.

In that year, an estimate of about 80,500 people worked in the manufacturing sector, around 7% of
the total labour force. As mentioned in chapter 4, the development of heavy industry became a high priority for the government in the 1980s. However, as indicated earlier, because the expenditure under the development budget was highly dependent on oil revenues, actual expenditures often failed to reach their planned levels. Thus, the government's aim was to increase the capacity for the heavy industry in the 1980s but was hampered by declining revenues, and many projects were behind schedule.

As a result, the country became heavily dependent on oil as a single source. With increasing oil revenues, as the share of non-oil related industries remained small and were declining. Hence, growth in manufacturing slowed down and the labour force shifted to the non-tradable sector, and is thus affected by the Dutch disease. This is due to the extra revenue brought in by the oil boom triggering more demand for labour in the non-tradable goods sector. Furthermore, there is also a resource movement effect. The increased demand for non-traded goods will push wages up in the sector, bidding labour out of the tradable goods sector where wages cannot be increased without reducing the profit margin. As the marginal product of labour and wages in the non-tradable sector increases there will be an incentive to relocate labour from the tradable sector to the non-tradable sector. As a result of increased demand for non-traded goods, their price rises. But prices did not increased in this case Libya, as mentioned in the first section and chapter 4, due to government policy which has not changed wages for most of the sectors. As changes in wage policies are the biggest reasons for labour
mobility. The labour force may be small but it has to move to the non-tradable sector and booming sector, which are more stable and secure, allowing individuals to keep their jobs.

Due to this reason, the effect can be negligible, since the hydrocarbon and mineral sectors tend to employ fewer people. Furthermore, labour would shift to the production of domestic goods that are not traded internationally to meet the increase in domestic demand, and the consequence of this movement is to lower export. Thus, the effects on this sector can be small.

In addition, the positive impacts of non-traded sectors on the manufacturing sector could reduce the negative effects of the oil export to a certain extent. Smith (2014) indicates that an increase in oil export, allows the government to invest extra revenue in other sectors such as infrastructure that raises production generally. Smirnova and Kulkarni (2005) indicates that resource rich countries tend to have a smaller manufacturing sector than resource poor countries. More recently though, other evidence similar to this model, of the negative effects on manufacturing has been presented by Ismail (2010), who found that, in general, an increase of 10% in an oil windfall is associated with a 3.4% fall in value added across the manufacturing sectors, such effects are larger in economies that are more open to capital flows and in relatively less capital intensive manufacturing sectors.

Kim (2003) also concluded that oil produced similar situations for not only the Netherlands but also Venezuela and Mexico. Libya’s case is slightly different, however, as the manufacturing sector was small before the first oil boom. Increased oil revenues gave Libyan officials the means to improve and expand the domestic manufacturing sector, yet the manufacturing sector decreased, as predicted by the Dutch disease theory, instead of increasing. The reason behind this was not the appreciation of the real exchange rate, but rather institutional quality. This could be the reason why the government failed to manage natural wealth to promote sustainable development.
It is self-evident in economic theory that the development of industry is the engine of economic growth. Brunnschweiler and Bulte (2008), in essence, argue that the success of any economic development model is mainly determined by the smooth growth of the manufacturing industry, yet it becomes crowded out by the oil sector. Libya’s manufacturing is limited, as the industry's workforce is small, with many factories employing very limited numbers, all of which are under government control, which does not pay attention to developing these sectors. Therefore, it can be stated that manufacturing sector has been highly affected, due to an increase of oil export. This has led to a reduction in the manufacturing sector’s output, proving the existence of the Dutch disease phenomenon in Libya.

**6.3.4.2 Dutch Disease and the Agriculture Sector**

The Dutch Disease theory suggests a potential decline in the agricultural sector, as labour will move from this sector into either the non-tradable or the booming sector. As a result, there is a negative relationship between the agriculture and the oil export. This is in line with economic theory of Dutch disease. It can also be observed from long run result that increases in oil export led to a decline in Libyan agricultural production potential by 0.95%. Whereas, before oil discovery, agriculture was the country’s main source, of revenue, making up about 30% of its GDP (Laytimi, 2002). After discovery of oil and increasing oil revenues resulted in declines in agriculture's contribution to GDP, and comprised of less than 5% in 2005 (IMF, 2006).

However, the agriculture has received more attention from the government, but instead of promoting the sector to increase the productivity and to contribute to the GDP, the government encouraged city residents to purchase land for leisure rather than encouraging them to farm. So the government did not pay attention to protect fertile farmlands from urban sprawl, hence inflating values and reducing production. Therefore, labour has been shifting
from the agriculture to the booming sector and non-traded sector, as a result of oil discovery. In addition, oil revenues provided urban employment, resulting in higher rural migration, this is what is called the labour shift away, and has created a severe shortage of agricultural workers, forcing a heavy reliance on food imports.

Libya is now highly dependent on imported foods, such as cereals, with 2457 tons, and fats and oils by 144 tons (see Table 6.9). As a result of this, large part of oil money was spent on imported food, this was not necessarily disturbing for the government as long as there was a continuous revenue inflow into the country from oil revenue, which became a curse for the Libyan economy rather than a blessing. The discovery of oil in Libya triggered the collapse of the country’s agriculture industry, the repercussions of which have continued up to the present day. According to the test between oil revenue exportation and agricultural growth, during the time period of this study, the results further validate the Dutch disease in Libya.

Table 6.9 Agricultural production and trade by quantity (2004 – 2008)

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Imports</th>
<th>Exports</th>
<th>Available for consumption</th>
<th>Balance</th>
<th>Self-sufficiency ratio %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>296.4</td>
<td>2457.94</td>
<td>0</td>
<td>2754.34</td>
<td>2457.94</td>
<td>10.76</td>
</tr>
<tr>
<td>Potatoes</td>
<td>195</td>
<td>13.13</td>
<td>1.45</td>
<td>206.68</td>
<td>11.68</td>
<td>94.35</td>
</tr>
<tr>
<td>Vegetables</td>
<td>697.5</td>
<td>43.18</td>
<td>0</td>
<td>740.68</td>
<td>43.18</td>
<td>94.17</td>
</tr>
<tr>
<td>Fats &amp; oil</td>
<td>37.7</td>
<td>144.59</td>
<td>2.08</td>
<td>180.21</td>
<td>142.51</td>
<td>20.92</td>
</tr>
<tr>
<td>Eggs</td>
<td>55</td>
<td>0</td>
<td>0</td>
<td>55</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Fruit</td>
<td>650</td>
<td>49.46</td>
<td>0.72</td>
<td>698.74</td>
<td>48.74</td>
<td>93.02</td>
</tr>
<tr>
<td>Red meat</td>
<td>81.63</td>
<td>39.34</td>
<td>0</td>
<td>119.97</td>
<td>38.34</td>
<td>68.04</td>
</tr>
<tr>
<td>Pulses</td>
<td>7.4</td>
<td>10.05</td>
<td>0.11</td>
<td>17.34</td>
<td>9.94</td>
<td>42.35</td>
</tr>
<tr>
<td>Poultry</td>
<td>105</td>
<td>0.02</td>
<td>0</td>
<td>105.02</td>
<td>0.02</td>
<td>99.98</td>
</tr>
<tr>
<td>Sugar (refined)</td>
<td>0</td>
<td>56.22</td>
<td>0</td>
<td>56.22</td>
<td>56.22</td>
<td>0</td>
</tr>
<tr>
<td>Milk &amp; dairy products</td>
<td>230</td>
<td>480.68</td>
<td>0</td>
<td>710.68</td>
<td>480.68</td>
<td>32.36</td>
</tr>
</tbody>
</table>

Source: FAO (2008)

The share of the oil sector increased gradually to more than 55% of GDP. The country has thus become wealthy, but now bears an economy that relies primarily on oil and shows no sign of diversifying. Libya has in fact sought to expand its agricultural sector since the early 1970s, with large part of government expenditures designated to it (CBL, 2000), but its success in this regard has been limited. The second model with oil exports and agriculture supports the existence of Dutch disease phenomenon in Libya.
6.3.4.3 Dutch Disease and the Non-tradable Sector

According to the result of the non-tradable model, oil exports have a positive influence on the tradable sectors, which is as expected and in line with the Dutch disease theory. It can conclude that, there is a particular tendency for workers to move to the non-traded sectors given that it provides stable work and has a greater share of the GDP than in manufacturing or agriculture. Moreover, the government has invested highly in this sector and it is more secure for labour to migrate into it due to higher demand, rather than to increased wages.

It can be observed that the Libyan service sector grew rather rapidly and huge financial investments were made into building roads, schools, and hotels. Thus, the demand for labour increased, with foreigners comprising most of the labour force. However wages were not sufficiently high. Unfortunately, labour laws have not been updated since the 1970s, and existing policies remain as valid today as they were 40 years ago (Mahmood, 2013). The government has implemented several incentives in an effort to boost the development of the sector. All of these incentives have attracted the labour to shift from tradable sectors to the non-tradable sector, as it is easier than in the case of the oil sector due to limited jobs and higher required skill sets.

Figure 6.1 Economic structure as % GDP 2011-12 estimate

Source: Minster of Planning (2010)
There is potential for employment growth in the services sector to provide an important cushion to reduce job losses in manufacturing. The services and construction sectors have expanded over the last years before 2011, and could represent an even larger share of GDP if the government prioritised capital spending on development projects in line with other non-oil sectors such as in manufacturing. After 2011, however, the funding for reform and infrastructure projects ceased due to the Arab Spring crisis.

Concluding the sectorial analysis, it can be observed that the Libyan economy is still poorly diversified and the contribution of the non-oil sector to the total GDP remains weak compared to the hydrocarbon sector (Figure.1). Libya remains a major hydrocarbon-exporting country. The analysis provides some evidence that the three sectors (manufacturing, agricultural, and non-tradable goods) have been influenced by oil revenue. Consequently, the government has not paid enough attention to these sectors, despite having invested lots of money in the service and construction industries. The hydrocarbons industry is almost closed and has little effect on the development of other economic sectors. The initial economic reforms were oriented in favour of the agricultural and manufacturing sectors. They were very weak and failed to boost non-mining tradable exportation. The private sector was unable to cover the significant decline in the industrial public sector. Consequently, Libyan oil exports still dominate the total exports and account for more than 90% of them. As such, the economy of Libya has retained the characteristics, of an economy based primarily on the production and export of oil. The dominance of the oil sector has been an important element weakening incentives to develop the production of tradable goods outside the oil sector. As a result of this neglect of alternative revenue sources there has been a slowdown in non-hydrocarbon activity, a significant decline in the performance of the Libyan economy in general. Therefore, the study’s results reveal that these sectors are clearly affected by oil revenues and that Dutch disease does theoretically exist in this country.
6.4 Summary

Theoretically, the general appreciation of the national currency resulting from an oil boom negatively affects the economy, but this theoretical hypothesis is not evident in cases such as Libya. The results from the first analysis suggest that a country may experience a resource curse, but this may not be as a result of an appreciation of the real exchange rate; the resource curse, therefore, may not be explained by the exchange rate related Dutch disease phenomenon but by sectorial changes in the economy.

As the analyses revealed, over the period of the study, the oil revenues has decreased the share of two sectors of agriculture, manufacturing in GDP in Libya. That is to say, the oil sector has been a curse for the other sectors in Libyan economy. Over the period, an increase in oil export in Libya, has led to a 0.50% and 0.24%, fall in the share of manufacturing and agriculture sectors respectively, and 0.15% rise in non-tradable sector. The negative impact of oil sector on manufacturing and agriculture sectors, and also the positive impact of oil export on non-tradable sector, confirm the Dutch disease theory and give stronger clues as to the existence of the Dutch disease in Libya. As a result, Libya’s manufacturing growth has slowed down and, the agricultural sector has offered a very limited performance and productivity. The service sector has performed somewhat better. Basic Dutch disease theory predicts that an oil boom should push wages up, which in turn should reduce employment in the non-booming sector. In our model for Libya, due to the nature of the country’s economy, wages in the non-traded sectors have not experienced any increase despite the rise in oil exports. However, there is a shift from agriculture to non-traded sectors, and manufacturing and agriculture to booming sector, due to available jobs in booming sector and non-tradable sector and therefore stimulating higher demand may depend more upon the provision of stable, secure jobs than on increasing wages.
Thus, the discovery of oil and the resultant shift in government policy have led to a reduction of the non-tradable sector. This means that the phenomenon of Dutch disease can indeed be found in Libya, a country for whom, it could be concluded that oil resources could be considered both a curse and a blessing.

In the context of the Libyan economy, this confirms that the government, which owns the oil sector, has a crucial role to play in enhancing the positive values and consequences of an oil boom, whilst at the same time minimising the adverse effects such a boom has upon the non-oil sector. In reality, the Libyan government has been collecting revenues from oil exports and through corruption amongst government officials and companies and general mismanagement, been using the money without respecting national economic needs.

The Libyan government’s policy towards the hydrocarbons sector has led to an expansion of the gap between the activities of the oil industry and other manufacturing activities. Increased production in the non-oil industry can boost exports and create a wide range of productive activities and enterprises that would contribute to the reduction of unemployment and increase the country’s general growth. Salaries and pensions are paid from the public treasury or by public sector companies, and largely fail to achieve desirable levels of economic criteria. This explains how and why the economy of Libya did not develop or gain any benefit from the country’s revenue, as does the failure of institutional policies and decision makers, to make adequate reforms or changes.

The country needs to reform its economic policies and diversify its oil revenues, and to focus on other sectors in order to develop and build its economy. Theoretically, a country rich with natural resources should utilise their comparative advantage in the field, and thus a decline in manufacturing would not be a disaster. However, it can be hugely detrimental in the long-run as competitive manufacturing industries cannot return as quickly as they left. If there were to
be a decrease in the price of natural resources, or indeed if they were to run out altogether, the country could look to return to manufacturing as a source of income. But, Libya would be severely hampered due to the uncompetitive nature of a neglected manufacturing sector. Furthermore, Libya’s economy needs to veer away from its notionally socialist model and towards a more market-based economy. This would permit future generations to enjoy a brighter future and experience better economic development and stability.

Our results reveal, then that the economy of Libya is clearly affected by the Dutch disease. It therefore seems that the Libyan government has often failed to take measures to avoid problems related to resource abundance or to diversify its economy well away from the dominance of the oil sector. This resource curse is best explained by the Dutch disease hypothesis. As a result, other problems (such as weak institutions) become very important to manage oil revenue and avoid the resource curse.

There is a growing consensus as to the importance of institutions in explaining the resource curse. Mehlum et al. (2006) concluded that better institutions could help a country to avoid the resource curse. Additionally, natural resource abundance penalises growth only indirectly (through institutional quality), especially in the case of geographically concentrated resources such as oil (Isham et al., 2005 and Sala-i-Martin & Subramanian, 2008). Furthermore, oil-rich countries may record a slowdown in their long-term growth rates for reasons other than Dutch disease. Such decelerations may be a result, for example, of a lack of property rights and weak rules of law (which are missing in many developing countries) and intense rent-seeking activities, as these can reinforce corruption in business and in government (Gylfason, 2002). Boschini et al. (2007) state that resource-rich countries are cursed only if they have poor quality institutions; the curse is reversed if institutions are sufficiently good. The next chapter assesses the nature of institutional quality in Libya compared with Norway.
Chapter 7 Institutional Quality and the Resource Curse in Libya

7.1 Introduction

This chapter addresses the second objective of this study, to examine the extent to which the nature of institutions in Libya may have had implications for the resource curse in the country. It also assesses what reforms, if any, are needed in this area to enhance the opportunities for the promotion of the sustainable development via oil. Most studies have focused on the role or impact of policy on economic development, but in countries such as Libya the quality of institutions are very important.

As discussed in chapter 2, economic and political institutions, understood as the rules of the game in a society (North, 1990), play a significant role in defining a country’s long-term growth potential. Countries with good economic institutions, such as an effective rule of law, more secure property rights, and a good business climate, are better suited to attract investment, participate in international trade, and possess more efficient human capital, all of which results in better growth performance over the long term (Robinson et al., 2005). They are also useful for efficient utilisation of resource revenues for sustainable development. Economic institutions can also be shaped by interactions between different countries and cultures, particularly the extent to which a country is open to trade, investment and financial flows.

Mehlum et al. (2006) illustrated that when institutional performance is strong, resources play a positive role in economic growth. It is argued that, considering the increase in potential oil generated revenues, high institutional quality can help strengthen the economy and poor institutional quality may lead to the resource curse, and therefore weak economic growth, for oil rich economies. This chapter therefore, discusses the nature of institutional quality within
Libya and examines whether natural resources are a blessing or curse in a country which is heavily dependent on oil revenue.

Although the importance of institutions is largely acknowledged, the determinants of the quality of institutions are difficult to ascertain (Lehne et al., 2014). Mehlum et al. (2006) and Sachs and Warnner, (1997) are the key studies in this research area and they applied a regression model to examine institutions quality for 87 countries. This is a very useful approach however; the lack of sufficient time-series data for institutional quality on Libya makes it impossible to adapt the approach to the current study.

Therefore, this study uses a different approach to assess whether Libya has grabber-friendly or producer-friendly institutions. This in turn will establish whether Libya suffers from the resource curse or not, and if this could be explained by the quality of its institutions. Descriptive analysis is an appropriate approach for institutions quality analysis in this study, as previously discussed. Therefore, it is used alongside the five governance indicators, which are: political stability, which primarily reflects the strength of political institutions; government effectiveness; regulatory quality; rule of law; and control of corruption. As presented in Chapter 2, these indicators have been identified as key institutions in several studies, such as Mehlum et al. (2002; 2006), Robinson et al. (2006), van der Ploeg (2011), and Oskenbayev (2013). The link between the quality of economic and political institutions is further reinforced as better economic institutions tend to support economic development, and economic development over time may lead to demand for better political institutions. Hence, the positive relationship between the quality of economic and political institutions is strong (Lehne et al., 2014). Political institutions affect the choice and shape of economic institutions both directly and indirectly, although the relation between institutions, governance and economic growth is complex (Acemoglu et al. 2004).
To measure broad economic institutions, this study uses five World Bank Worldwide Governance Indicators (WGIs). These indicators measure government effectiveness, regulatory quality, the rule of law, control of corruption, and political stability.

The WGI indicators are based on data sources that include expert judgement and surveys of households and businesses. They therefore reflect the quality of institutions as perceived by expert professionals and economic agents more generally. They range from -2.5 to +2.5, with higher values corresponding to better institutions. It is important to note that data for these good governance indicators are not available for developing countries before 1996. The rest of the discussion is organised into two sections. The first section will explain and analyse the five governance indicators independently. The second section will consist of a summary of the results.

**7.2 The Governance Indicators**

These five World Bank indicators, and studies such as Aidt, (2009), Meon and Sekkat (2005), and Arndt and Oman (2006), are used to examine the nature of governance in Libya and its impact on the resource curse. It is clear that the concept of institutions differentiating through quality encompasses various key components including the rule of law or government effectiveness, and that these components cannot be considered in isolation (North, 1990). Alesina (1998) and Easterly and Levine (2002) claim that institutional quality measured by control of corruption and the rule of law is important for growth. Jalilian and Parker (2006) argued that regulatory quality could determine economic growth, and the standard of regulation effects economic performance, particular in developing countries.

As discussed above, this section will use descriptive statistics analysis to evaluate the institutional quality of Libya using the WBI’s five governance indicators which have been identified as significant within the existing literature.
Comparative analysis between Libya and Norway will highlight any shortfalls within Libya’s institutional quality, as well as potentially providing indicators as to how Libya may be able to improve its institutional quality. Norway and Libya are two very different countries culturally, historically, geopolitically, and climatically. Therefore, the comparative analysis which will follow the descriptive statistics analysis will help put Libya’s institutional quality into perspective.

7.2.1 Control of Corruption

The propose of this section is to analyse the control of corruption in Libya, and then to conduct comparative analysis between Libya and Norway. The measures of institutional capacity tend to improve as income increase. Control of corruption tends to be weaker in resource-rich countries. Hence, countries like Libya, a large oil exporter, are more likely to be exposed to, and suffer from, corruption. Therefore, whether the resource curse exists or not is dependent on the quality of the institutions within that country.

Figure 7.1 indicates that the control of corruption in Libya was very low during 1996 to 2011. The average indicator value during that period was -1.096, with a minimum of -1.26 in 2010 and a maximum of -0.73 in 2000. Comparatively, during the same period Norway had an average value of 2.14, with a minimum value of 2.14 in 2008 and a maximum value of 2.32 in 1998. It can be observed that Libya’s control of corruption decreased 3 years in a row between 2008 and 2011, which shows corruption within Libya, has become progressive. This could potentially be due to an absence of anti-corruption measures, or the presence of inefficient measures. However, according to the World Bank (2014), three years after the government collapsed Libya was ranked 189/191 out of the countries surveyed, indicating that the severity of corruption increased significantly.
In contrast, Norway has had a significantly different outcome. Given that the corruption index range’s maximum is 2.5, which signifies a complete absence of corruption, and the minimum is -2.5, which signifies the highest form of corruption, such a high value on the corruption index implies that Norway experiences only very low levels of corruption. Even though the average level of corruption in Libya was high between 1996 and 2011, the corruption values have increased between 2011 and 2015 (World Bank, 2015; TI, 2016). Due to the militias gaining a steady grip over the country, corruption has become a deeper and more pronounced matter in frequency and severity.

Research on the causes of corruption has proliferated in recent years. Recently, Majeed and Macdonald (2010; 2011) put forward that the role and importance of military elites and financial market reforms are vital in determining the cross-country variations in corruption levels. They suggested that the presence of military elites in politics fosters corruption, which can be applied to Libya’s extremely low corruption values in recent years and use of military elites in their political and governance institutions. Appropriate financial reforms can significantly limit the potential for corruption. When this concept is applied to Norway, their stable long-term fiscal policy strategy of integrating oil revenues would resulted in Control of Corruption scores close to a complete absence of corruption. Hence, oil wealth is often a breeding ground for corruption (TI, 2015). However, oil companies could help end corruption by making public details of the payments made to governments and state-controlled oil firms. The access to this important information will minimise opportunities for hiding the payment of kickbacks to secure oil tenders, a practice that has blighted the oil industry in transition and post-war economies, such as Libya.
Lipset and Lenz (2000) suggest that the act of corruption is a response by individuals who highly value economic success, whilst simultaneously having restricted access to opportunities. A society of frustrated overworked citizens creates strong incentives for corruption (Rondinelli, 2007). The Control of Corruption measure is significantly related to perceived corruption; even when accounting for developing economies, countries with oriented cultures had higher corruption. In Libya, corruption is commonly not perceived as a morally or commercially reprehensible practice. Contracts are usually the result of personal relationships involving family members or friends. However, Norwegian citizens are presented with many economic opportunities, have a high standard of public understanding, and perceive corruption as a crime. As a result, Norwegian citizens have fewer incentives to undertake corrupt behaviour, and are made fully aware of the social and moral deterrents instead. It can be indicated that corruption is a crucial variable for identifying institutional quality and economic development. Higher institutional quality can reduce corruption in both developing countries, such as Libya, and developed countries, such as Norway. However, less developed countries often have higher levels of wealth inequality, which creates additional economic incentives for bribery (Birdsong, 2015).
Recently, Libya has become a weak state being ruled by a corrupt military and bureaucracy. These ruling classes have created poor quality institutions, which has made it extremely difficult for those institutions to be effective rent seekers and manage their natural resources in such a way to promote sustainable development. The absence of strong institutions has prevented Libya from being able to avoid the negative effects of the resource curse. In contrast, low levels of corruption in government suggest that effective rent-seeking must be for a legitimate cause. Production and rent-seeking are complementary activities when institutions are producer-friendly. Whereas high levels of corruption in government favour rent-grabbers and are complementary to grabber-friendly institutions (Mehlum et al., 2005). Hence, the negative effects of the resource curse are very high in a country with grabber-friendly institutions. Therefore, the magnitude of the effect of the resource curse depends on the quality of institutions.

Analysis of the corruption score so far can be concluded that institutional quality in Libya is low, which suggests the existence of grabber-friendly institutions and therefore the resource curse is likely to exist. In contrast, countries with low levels of corruption, like Norway, suggest that the country has producer-friendly institutions, and therefore the country is more likely to avoid the resource curse.

The existing literature highlights issues concerning corruption in Libya, such as the authorities’ ineptness in curtailing corruption and the prevalence of a culture of corruption. It is the widespread nature of the problem amongst Libyans that corruption has become a cultural norm, and certain corrupt activities not perceived to be corrupt to them. Evidence has shown the serious underlying consequences of corruption on economic growth. Corruption in Libya has negatively affected foreign relations and the reputation of the political system, especially with countries and companies that have had an interest in investing in Libya’s economy, which has led to decreased economic development. As a result, the relationship
between corruptions and the resource curse, as well as theoretical and empirical arguments in the literature, suggest that corruption may be a major explanatory factor in the resource curse (Dietz et al., 2007).

The most frequent explanations given to the low levels of corruption in Norway were: the high moral standards of Norwegian civil servants; their independence in the exercise of their duties; the monitoring systems built into public administration; and, above all, the transparency of Norwegian institutions. When considering this context in the case of Libya, all of these above elements are absent. The corruption culture and financial irregularities are prevalent, and circumventing of regulations within institutions has become pervasive across all sectors of Libyan society for decades. In addition, a perpetuation of corruption at the highest levels (through nepotism and tribal/political patronage) left behind officials who see corruption as the only effective means to ‘getting things done’. Administrative corruption has long plagued Libya’s public sector, and most notably, government institutions.

Friedrich (1972) describes the concept of corruption in such a way that it suggests that corruption constitutes a breach of law or standards of high moral conduct. In Norway the media has an important role in maintaining the high level of transparency by disseminating information about suspicious economic activities.

However, Libyan government officials have low moral standards, and do not have independence when exercising their duties; there is a lack of effective monitoring systems and governance; and there is poor transparency between different government departments. Consequently, corruption can be seen to be as one of the greatest hindrances of development in Libya. Corruption often leads to inefficient capitalism and mismanagement, and is therefore compounded by the vulnerability of the institutions’ poor quality.
The Norwegian government had several specific measures to combat corruption, such as international cooperation, and involvement of the business sector (Klemencic and Stusek, 2008). In Libya, the government have failed to combat corruption (TI, 2013). In addition, the new revenue generated through the exploitation of oil has incentivised corruption amongst Libyan officials on a massive scale. “Libyans have gone in for so much uncontrolled spending and grafting that a cash shortage has arisen” (Otman and Karlberg, 2007, p.17).

Norway is regarded as one of the countries with the least corruption in the world (TI, 2015). It is argued that in everyday life, expectations or demands for bribes from public officials are not encountered and businessmen do not offer bribes (OECD, 2013). In almost all cases offers or expectations of bribes are not only likely to cause offence, but also attract openly negative reactions. However, corrupt behaviour is the norm in Libya. The penetration of corruption in all sectors and firms, and individuals in the political system, became commonplace in the Libyan community. Institutions in Libya, in both the public and private sectors, should support integrity in public life. Such institutions, both formal and informal, must be sufficiently strong enough to return to a non-corrupt equilibrium. Corruption in Libya has led individuals possessing a lack of professionalism in carrying out duties, created a loss in the sense of value in their work, and a suppression of interest in the public’s rights. Libya needs appropriate action to fight corruption and reform its institutional quality. Corruption and the ability of governments to ignore the needs of their populations make it challenging to achieve what is required to improve their institutional quality, which is invaluable to negate the effects of the resource curse.

Corruption permeates every sector of Libya’s society and institutions, including the government, public sector, and private businesses. Despite efforts to fight corruption, Libya is characterised by allowing corrupt official to act with impunity for corruption during and after the last government. Corruption is the key factor which can lead to poor quality, grabber-
friendly institutions. Therefore, Libya needs to promote a culture of transparency in different sectors which will help achieve good governance. This requires a strong political will from Libyan civil society organisations and the support of international organisations. Therefore, to against the problem of corruption is the political will of government and existence of a strong, influential public opinion. If there is upset social environment, population establishes vertical links, which increases shady relations and enhances the institutionalisation of corruption. If social environment is healthy, transparent democratic institutions are developed, there is confidence in population, and they establish horizontal links, their quantity and possibilities to influence are better. Norway should be a used as a good example to follow in this case.

7.2.2 Rule of Law

The rule of law, in its most basic form, is the principle that no one is above the law. The principle is intended to be a safeguard against arbitrary governance, whether by a totalitarian leader or by mob rule (Newton, 2010). Thus, in principle, the rule of law is hostile both to dictatorship and to anarchy.

However, lack of rule of law can be found in both democracies and dictatorships due to neglect or ignorance of the law, and the rule of law is more liable to deteriorate if a government has insufficient corrective mechanisms for restoring it. The rule of law cannot exist without a transparent legal system, the main components of which are a clear set of laws that are freely and easily accessible to all, with strong enforcement structures, and an independent judiciary (UN, 2012).

A government’s power can be limited through a combination of two keys elements; they are effectively limited by the legislature, and they are effectively limited by the judiciary. These components cover whether people can access and afford civil justice; whether civil justice is
free from discrimination; whether civil justice is free from corruption; whether civil justice is free from improper government influence; whether civil justice is subject to unreasonable delays; whether civil justice is effectively enforced; and whether alternative dispute resolutions are accessible, impartial, and effective (WJP, 2008).

Economic development requires good, producer-friendly institutions producer-friendly, which are essential for the establishment of rule of law (Carothers, 2007). Rule of law is also indispensable for sustained economic development. Therefore, institutions need economic development for their continued existence (Hout, 2007). Rule of law and other formal institutions and norms cannot bring about the desired results without the support of informal institutions and norms, particularly in developing countries.

The World Bank provides data for Rule of Law index, the range of which ranges from -2.5, representing an extremely poor rule of law, and +2.5, representing an extremely strong rule of law.

Figure 7.2 shows the Rule of Law index scores for Libya and Norway between 1996 and 2011. The average score for Libya during this period was -0.99, with a minimum score of -
1.18 in 2011 and a maximum score of -0.7 in 2008. In contrast, Norway performed significantly better; the average score for this period was 1.93, with a maximum score of 1.99 in 2004 and a minimum score of 1.81 in 2000.

Figure 7.2 show that Libya has made no progress with its rule of law, rendering any improvements in institutional quality as very improbable. The rule of law in Libya has considerable shortcomings, such as instances of imprisonment without trial, torture, insufficient separation of powers, and the judiciary is not independent (BTI, 2012). Particularly since 2011, the judiciary is non-existent as long as the country is being controlled by militias. Norway has been assessed as having the world’s strongest and fairest rule of law according to global ranking by the World Justice Project (WJP, 2015).

It has effective control in limiting government powers, gives citizens equal access to civil justice, and has an effective criminal justice system (WJP 2015). Libya is lacking of all these features. Effective rule of law helps reduce corruption, and to protect people from injustices on all scales (Langseth, 1999). This demonstrates the interconnectedness between rule of law and control of corruption. Norway’s high scores on the Rule of Law Index demonstrates a strong and effective rule of law, which in turn makes corruption less likely and reduces the effects of corruption, which has led to extremely high scores in the Control of Corruption Index. Libya, on the other hand, has a very weak rule of law, which is unable to control and deter corruption, and therefore incentivises grabber-friendly institutions, one of the negative effects of the resources. Typical features of grabber-friendly institutions are a weak rule of law, a high risk of expropriation, a malfunctioning bureaucracy, and corruption in the government (Mehlum et al. 2002).

Norway can be a good example for a country avoiding all these obstacles to build a strong rule of law. As mentioned before the rule of law cannot exist without a transparent legal system, the main components of which are a clear set of laws that are freely and easily
accessible to all, strong enforcement structures, and an independent judiciary, like in Norway (UN, 2012).

The independence of the judiciary protects magistrates against any interference, pressure, or threats. The Norwegian judicial system enjoys high levels of public trust and has a long-standing reputation of independence, competence and integrity (FER, 2014).

The Libya's current judicial and rule of law institutions were only established after Libya’s independence in 1951. Judges and magistrates are not protected from interference by the regime, especially in cases of a political nature. Moreover, whilst under the law, all parties are treated equally before courts and tribunals, in reality, Libyan society still operates on personal and tribal connections and bribery is an effective mechanism within the justice system (Al-Baddawy, 2007). Whereas in Norway, active bribery of domestic or foreign public officials is covered under a single provision in the Penal Code with a substantial pecuniary penalty for the briber, and thus acts as a deterrent effect. Citizens consider the judicial system to be among Norway’s least corrupt institutions (GCB, 2013). Norway’s public and civil institutions are well established and access to justice is generally guaranteed to the citizens, although access to affordable legal counsel remains limited, particularly for disadvantaged groups. However, Norway’s rule of law is not flawless, as reports of police discriminating against foreigners and ethnic minorities is perceived to be a problem (David et al. 2011).

In Libya, even though there is a separation of powers between the legislative and executive branches, the judiciary is not independent (Benwell and Oonagh, 2011). However, this applies only to court proceedings on political issues; common criminal proceedings such as those for murder, robbery, larceny, traffic violations, and proceedings relating to matters of personnel statutes are not subject to political influence. The most recent example of how the judiciary can be politically influenced was the case of the five Bulgarian nurses and the
Palestinian doctor sentenced to death in Libya. They were set free for political reasons and “blood money” (BTI, 2010). Therefore, the Libyan justice system cannot be considered free from political influence; it is deeply intertwined with the interests of other institutions, thus, the legislative power is not free and independent as is in Norway. Hence, the institutions are weak in Libya due to low of rule of law, which is required to be strong to promote and improve its institutions.

Currently, nearly five years since the system’s collapse, things are getting worse regarding the rule of law. In fact, militias are in control instead of rule of law. Ongoing violations include arbitrary arrests and detention, torture, impunity for unlawful killings, and forcible displacement, which lead to dramatic consequences for the country. Amnesty International found that hundreds of armed militias continue to act above the law, many refusing to disarm or join the national army or police force, which leads to increased instability. Therefore, Libya is currently facing a big challenge in restoring the rule of law in the country in order to move forward and build strong institutions to maintain its wealth and develop its economic sectors for a brighter future for the next generation.

7.2.3 Government Efficiency

A consensus has emerged that the efficiency of governments has an impact on a country's economic performance, as it reflects the quality of institutions (Lehne et al., 2014; World Bank, 2015). High quality public institutions and governments, more generally, is viewed as necessary in order to ensure that policies have a positive and lasting effect on the nation’s income. This section analyse the government effectiveness indicator in Libya and Norway, during period from 1996 to 2011. The Government Effectiveness Index scores range from -2.5 to 2.5, representing poor government efficiency and strong government efficiency respectively (World Bank, 2015).
Table 7.1 illustrates that Libya’s average for the Government Effectiveness Index was -1.11, with a minimum of -1.35 in 2011 and a maximum of -0.86 in 1996 and 2004. The average value for Norway was 1.92, with a minimum of 1.82 in 2009 and a maximum of 2.1 in 2004. These indicate that, as compared to Norway, Libya has a very low level in government efficiency. Due to decades of state interference in business decisions in Libya, government efficiency is very poor with inconsistent and non-transparent applications of existing regulations (IMF, 2009). Therefore, governments in Libya have been inefficient to generate new insights for decision making. Hence, Libya is lacking an effective business strategy, operational planning capabilities, and deep data management and transformation expertise to improve both the efficiency and quality of services delivered.

Table 7.1 Government Efficient Index: Libya and Norway 1996-2011.

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<td>2000</td>
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<td>2002</td>
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<td>2003</td>
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<td>2004</td>
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Oliveira (2012) proposes several measures of performance to determine the efficiency of governments: secure property rights, a well-functioning bureaucracy, free from corruption, being politically free and sustained by a democracy. Studies by Tanzi and Schuknecht (1997, 2000), Gupta and Verhoeven (2001), and Afonso et al. (2005) measure public sector efficiency by relating government expenditure to socio-economic indicators that are assumed to be targeted by public spending, such as education enrolment ratios or infant mortality. The results of their cross-country examinations suggest substantial efficiency differences between countries, irrespective of their income level. As shown in Table 7.1 Libya is underperforming in the most of these measures mentioned above, particularly regarding the ability to protect property rights and corruption. Libyan property rights are complicated due to previous government policy actions and a weak regulatory environment. For example, the Libyan
government eliminated all private property rights in 1978, as discussed in Chapter 4, and nationalised most private businesses.

The renting of property was declared illegal and ownership of property was limited to a single dwelling per family, with all other properties being redistributed. This process, and the destruction of official property documents that followed later, has greatly complicated the subsequent effort to acquire clear and legitimate title to property throughout Libya. In addition, corruption intensified after the 2011 Libyan government collapse. Despite efforts to fight corruption, Libya is characterised by impunity for corruption. Furthermore, the bureaucracy in Libya is one of the most opaque and amorphous in the Middle East region; its legal and policy frameworks are extremely difficult to navigate (TI, 2014). For example, the issuance of licenses and permits are often delayed for significant periods of time for unspecified reasons, and the adjudication of these applications is most often done in a subjective and non-transparent fashion. This has created a growing environment for bribery and rent-seeking behaviour.

In contrast, Norway's government efficiency is highly competent, providing internal oversight and maintaining high levels of public trust. Some examples of Norway's government’s efficiency are hard-working incumbent that provides services efficiently, and also high levels of performance which could in turn increase government efficiency further.

Norway focusses on political and administrative norms and values that have traditionally been strong so that citizens can relate to more general aspects of trust, such as universalism in service provision, the strengthening of public services, and political control of state-owned companies (Grønlie, 2001). The expectation is that people supporting these values will score highest on trust measures, particularly towards the main political institutions and the public administration.
The efficiency of government has a significant bearing on a country's competitiveness and economic development as the quality of public services, the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment contribute to such policies (Aryeetey et al., 2012), as it appeared from the result of both countries.

Libya has a low score due to the inefficient government. This could be a result of the lack of transparency, bureaucracy with high corruption, as well as unsecured property rights. It can be concluded that the resource curse is caused by the low quality or performance of a government, which would reflect that the country's institutions are grabber-friendly, and therefore the resource curse phenomenon can exist. Norway has a highly efficient government and as result possesses high levels of bureaucracy free from corruption, as well as providing internal oversight. A good government leads to good, producer-friendly institutions, and thus reduces the negative effects of natural resources on economic growth.

Resource-rich countries that have experienced the resource curse appear to be those that may have low quality areas of government, such as significant interventions in market activities, an inefficient public sector, an overburdening government size, a low level of public goods provision, or a low level of political freedom. Libya needs to improve government efficiency through economic and/or political reforms that improve any aspects of the quality of institutions.

7.2.4 Political Stability

Political stability is the regularity of the flow of political exchanges. Alternatively, it could be argued that there is political stability to the extent that members of society restrict themselves to the behaviour patterns that fall within the limits imposed by political role expectations. Any act that deviates from these limits is an instance of political instability (Dowding and
Kimber, 1983; Lei, 2013; and Nalbandov, 2014). The different views to political stability are seen to be the absence of violence; the existence of a legitimate constitutional regime; governmental longevity; the absence of structural change; and a multifaceted societal attribute and change (Hurwitz, 1973).

Table 7.2 shows the data on the political stability index for Libya and Norway between 1996 and 2011. The range of this index is between -2.5 (weak) to 2.5 (strong) for political stability. The average value for Libya during this period is -0.37, with a minimum of -0.03 in 2010 and maximum of 0.81 in 2008 and 2009. Therefore, political stability in Libya can be described as very weak. On the other hand, Norway’s average during same period was 1.3 with a minimum of 1.13, in 2007 and maximum of 1.52 in 2002. Hence, Norway's political stability can be described as strong. As indicated in Table 7.2, Libya has very low political stability. Libya’s political evolution is currently dominated by the government, which determines the main direction of policy. This does not mean political stability has not being improved gradually between 2004 and 2009, but Libya cannot be considered politically stable compared to Norway. As a result, a country like Libya could show a low score, even though they appear to be quite stable over period of time.

Table 7.2 - Political Stability Index- Libya and Norway, 1996 – 2011.

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<tbody>
<tr>
<td>Libya</td>
<td>-1.07</td>
<td>-0.91</td>
<td>-0.39</td>
<td>-0.16</td>
<td>0.08</td>
<td>0.34</td>
<td>0.44</td>
<td>0.35</td>
<td>0.73</td>
<td>0.81</td>
<td>0.81</td>
<td>-0.03</td>
<td>-1.29</td>
</tr>
<tr>
<td>Norway</td>
<td>1.38</td>
<td>1.36</td>
<td>1.45</td>
<td>1.52</td>
<td>1.18</td>
<td>1.18</td>
<td>1.28</td>
<td>1.21</td>
<td>1.13</td>
<td>1.25</td>
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This indicator does not measure how long a particular government has been in power. Instead, it captures perceptions of the likelihood of politically-motivated violence, including terrorism. Thus, countries that are functioning democracies, but are marred by domestic politically-motivated violence, may also not score well on this indicator (WGI, 2015). Since the revolution on 1 September 1969, Libya’s political system has shown considerable
stability, despite many institutional transformations, tensions, and conflicts with foreign nations including war with Chad, conflict with the United States, and U.N. sanctions from April 1992 to April 1999 (UN, 2003, and Allan, 2014).

Therefore, Political instability occurs when there is a sudden change. This sudden change can leave citizens in doubt about their nation's situation and may lead to revolt. Revolutions, terrorism, and public violence are associated with failed political stability. Political stability requires that the public interacts freely and openly with legislators on a regular basis. Granting individuals a voice in how a nation is run enhances the stability of the region. While there are problems within any nation, and times of war or hardship are common, a stable political system is one that can withstand these occurrences without major societal upheaval and ongoing endurance of these circumstances. Libya is still facing the challenge to enhance political stability in order to avoid the resource curse of oil, which is the main reason behind the political instability. Regarding the results of the high levels of corruption in the country, it can multiply the negative effects of political instability. Therefore, revenue generated from natural resources, such as oil, can have negative effects on political stability. This can lead to negative effects on economic performance, especially countries with a grabber-friendly environment or poor institutional quality. All of these negative factors indicate that the resource curse phenomenon exists, and that natural resources are a blessing for countries with producer-friendly institutions.

In contrast, Norway's political environment is amongst the most stable in the world. The fragmented party system has led to the formation of a large number of minority governments, fostering a culture where decisions are often taken on the basis of political consensus (EIU, 2010). Norway can be used as a good example for long-term political stability, which has led to strong and effective institutions and thus resulting in an efficient government.
Tabellini and Alesina (1990), and Cukierman et al. (1989) both put forward the idea that political instability leads to economic development inefficiencies. Collier and Hoeffler (2002) have shown that natural resources increase the chances of civil conflict (political instability), which would in turn affect institutional quality. Moreover, in countries with weak institutions natural resources are one of the main sources of civil war and revolution (Cabrales and Hauk, 2010). In late February 2011, during the uprisings and civil unrest in Libya and its neighbouring countries, the impact of political instability was evident in a fall in the stock market (LCB, 2012). It can be seen that political stability leads to an increase in investment, while investors flee from instability. Economic growth and political stability are deeply interconnected (Hussain, 2014). The uncertainty associated with an unstable political environment may reduce the speed of economic development. Furthermore, poor economic performance may lead to government collapse and political unrest (Alesina et al. 1996). In addition, political instability makes it difficult to reform or improve the institutions’ quality.

It can be concluded from Libya’s case study that the resource curse manifests in resource-rich countries that face political instability. In other words, institutional quality determines if natural resources are a curse or a blessing.

The structure of government makes it difficult for countries to get rid of the resource curse. In addition, corruption and conflict help to perpetuate political instability, which further exasperates the resource curse. It can be concluded that countries which are more politically stable will get more opportunities to have high institutional quality (producer-friendly), and therefore will be able to use their natural resources more effectively in the future. They are therefore better able to avoid the negative consequences of the resource curse than those which are unstable, as in the case of Libya. Therefore, the grabber-friendly institutions are the key to the cause of the resource curse.
7.2.5 Regulatory quality

The index of regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that promote private sector development. Improving regulatory management and regulatory reform are among the best ways that governments can promote economic development, investment and trade.

The World Bank provides data from 1996 to 2011 for regulatory quality index. Figure 7.3 indicates that, during 1996 to 2011 the average value for Libya was -1.49, compared to Norway with an average value 1.41. Libya’s minimum value was 1.95 in 1998 and its maximum value was -0.88 in 2008; whereas Norway’s minimum value was 1.12 in 2000 and its maximum value was 1.6 in 2011.

This is due to inefficient regulatory management and regulatory reform is required. Furthermore, the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector needs improving. According to the World Bank (2005), the Libyan government lacks the strong institutions capable of formulating and implementing policies and regulations to promote economic development. The Libyan state institutions and regulatory frameworks are weak; civil society was limited and much of society; and the youth were particularly excluded from political and economic decision-making (UN, 2014). In contrast, Norway has strong policy frameworks, strong institutional frameworks, appropriate regulatory frameworks, and are better able to manage change, which makes Norway one of the most developed economies.
Improved regulatory quality can promote economic growth by creating effective and efficient incentives for the private sector. However, burdensome regulations have a negative impact on economic performance through economic waste and decreased productivity (Jalilian et al. 2007). Building effective regulatory structures in developing countries is not simply an issue of the technical design of the regulatory instruments; it is also concerned with the quality of supporting regulatory institutions and capacity (World Bank, 2002).

The regulatory environment has a powerful impact on income and welfare. However, the magnitude of these effects depends, among other characteristics, on the domestic enabling environment which should be conducive to the efficient functioning of the market. The efficiency and extent of regulatory reform is a function of the level of the economic, political, and institutional development in a country (Hafeez, 2003). As the cornerstone of the new development paradigm is a private-sector led growth strategy, the challenge to deregulate and reform becomes unique in developing countries which may have a lack of a rule of law and property rights, weak judicial institutions, and ineffective or non-existent commercial codes.
and bankruptcy laws. Moreover, state management of the regulatory reform process is not always free from political constraints, and this is particularly noticed in the Libyan case.

7.3 Summary

As a result of descriptive analysis, data of five governance indicators and relation information confirms that institutional quality of Libya is very low and this negatively effects economic growth. Perceptions of political stability are remarkably low, there are significant problems with government effectiveness, rule of law high level of corruption, with poor regulatory regime.

Libya’s low institutional quality score relating to all of the above indicators confirms the presence of grabber-friendly institutions in the country. Hence, this contributes to the evidence that the country could be suffering from the resource curse phenomenon. It is clear that the legal and regulatory environment lead to a stable legal framework for both domestic and foreign investment, and therefore greater transparency. As of yet Libya does not have a comprehensive database that can be used as a basis for the efficient implementation of laws and regulations across levels of government. Both the legal frameworks pertaining to small and medium enterprises and for domestic private sector development remain insufficient.

However, among several indicators of administrative weaknesses, Libya ranks particularly low in overcoming hurdles to implement economic policy and reduce bureaucratic red tape. For several years, Libya ranked the lowest on this particular measure out of all the countries the World Bank includes in its Governance Indicators. The biggest challenge of Libya to avoid the resource curse problem is to reform its institutional quality.

Corruption remains the most important challenge as tackling the institutional roots of corruption is the only method to resolve the issue. High profile punishments for specific individuals only serve as a distraction and a political tool, as demonstrated by notable
corruption cases by warlords and successive governments after the collapse of the state since 2011. Without reform and improved institutions, the future will be ambiguous for the country. Unfortunately, the country's political stability and absence of violence has deteriorated significantly since uprising in 2011. This is consistent with Libya facing various challenges associated with a higher risk of conflict in order to avoid the curse.

Libyan development of institutions associated with oil management, policies, and processes of governance require substantial change and reform. According to Karl (2007) oil producers are particularly susceptible to policy failures. As a matter of fact oil extractions for exports very rarely operate in the democratic context. Andersen and Aslaksen (2008) observed negativities on development via oil are more likely to prevail in presidential regimes and in non-democracies. Authoritarian regimes and weak pre-existing institutions are one of the main causes in mismanaging the development of the oil process. Similarly perspective is provided by Brunnschweiler and Bulte (2008) on the basis of their findings that, “countries with certain institutional design may fail to industrialise, and failing to develop a significant non-oil sector may make them over dependant on oil” (p.250).

In Libya, factors such as the over dependence on oil and immature political system with weak political and economic institutions, accompanied by a corrupted rivalry in rent seeking, can further damage the underdeveloped institutions and destabilise the political system. Additionally, corruption and government effectiveness in both the public and private sectors hinder competition and lowered efficiency, further complicating the ability of the informal sector to create employment opportunities.

The complex, multifaceted phenomenon of corruption signals a failure of public institutions and good governance. A lack of regulatory quality and rule of law in Libya not only exasperates corruption, but also acts as a serious obstacle to achieving good and strong
institutions quality in the country. Oil-rich countries, such as Libya, have extremely low scores. Therefore public contracting in the oil sector is plagued by revenues vanishing into the pockets of western oil executives, middlemen, and local officials.

This analysis in the chapter indicates that the quality of institutions is decisive as to whether natural resources are a blessing or a curse in case of Libya. The effects of the natural resource curse on economic growth in Libya include two channels, the Dutch disease and institutions. Institutional quality is an important determinant of growth. The effect of Dutch disease is detected through accompanying institutional quality as another major channel of the natural resource curse effect.

This Chapter has identified institutional quality as the main conduit through which natural resource in abundance affects economic growth. Specifically, rich natural resource economies have the potential to escape the resource curse provided they have good institutions. Therefore, the conclusion arising from these studies is “to abandon the stylised fact that natural resource in abundance is bad for growth” (Lederman and Maloney, 2007, p. 33), and instead to understand under what circumstances the resource curse does or does not hold.

Countries rich in natural resources constitute both growth losers and growth winners. The quality of institutions determines whether countries avoid the resource curse or not (Mehlum et al., 2006). The combination of grabber friendly institutions and resource abundance leads to low growth. Producer friendly institutions, however, help countries to take full advantage of their natural resources. This analysis in the chapter confirms the conclusions of Mehlum et al. (2006), as this furthers the evidence that the dangerous mix of weak institutions and resource abundance causes the resource curse. Resource abundance may give politicians impulses to destroy institutions in order to be able to benefit from the resource rents, whilst simultaneously suppressing.
Furthermore, it is beyond any doubts that institutional quality is of particular importance in either failure or success of economic development through the exploitation of oil. In fact, there exists a unanimous agreement in the literature on this statement. The resource curse would be experienced in its pure form by countries, like Libya, with weak, underdeveloped institutional setups, unstable political systems, and immature regimes. Whilst countries like Norway with strong and accountable institutions, stable and mature political systems, sound governance structures and processes would be capable of achieving sustained development through the exploitation of oil reserves.

Evidently, oil reserves in the ground do not exert the negative impacts on the state and level of countries’ development. Mismanagement of oil wealth within unaccountable and underdeveloped institutions in the context of fragile political systems and regimes are the problem. For evaluation of the present level and state of Libyan development, the comparison can be drawn on the basis of the UN’s Documents Index ranking. Libya and Norway entered oil eras almost at the same time, and they have similar populations and levels of oil reserves. Presently, Norway is ranked 2nd on the Index, whereas Libya is ranked 56th. Libya still undergoes the process of oil led development, and its economy is completely dominated by the oil industry. Libya faces two challenging tasks, the diversification away from oil dependence, and the introduction of free market reforms. It is a complex and complicated transformation, despite several positive developments already put into practice. General macroeconomic indicators are good, yet the development of non-oil sector industries is particularly slow (see Chapter 4).

This allows the verification of the Dutch disease hypothesis, but through the second model on sectoral analysis (see chapter 6). Thus, the Dutch disease theory is applicable in the case of Libya through testing whether oil exports have influences on each of the key sector in the economy. The growth in non-oil sectors is exceptionally low (such as manufacturing and
agricultural), which indicates the existence of the Dutch disease. The origins of the Libyan resource curse may not be due to the country’s oil reserves, but due to the weak, non-transparent institutions, and chaotic administration. Thus, it would be appropriate to emphasise the “curse” of institutional quality in Libya. Substantial public sector reform is imperative and a priority. Hence, improved institutional quality can decrease dependence on natural resources; and that an abundance of resources benefits both economic development and institutions.
Chapter 8  Conclusion and Policy Implications

8.1 Introduction

With a focus on Libya this thesis contributes to the literature on why developing countries with resource-based economies have performed less well than developing countries as a whole, a phenomenon termed as the resource curse. Only very few studies have examined this in Libya a gap that this current study helps to address. It investigated the existence of the resource curse in Libya by examining the effect of oil revenues on the economy over the period 1970-2010, and to draw lessons for use in future economic policies and sustainable economic development. Given the current political turmoil in the country, the outcomes of the study are even more crucial to inform the development path post the current crisis, which could also help avoid such crises in the future.

As indicated by economic theories and most empirical studies, high oil revenues resulting in appreciation of a country’s exchange rate affect its economy through the shrinking of its manufacturing and agricultural sector, and thereby lower growth and development. Others have however attributed this resource curse to poor institutional quality leading to excessive rent seeking behaviour and resulting poor growth. Appropriate diversification of the economy and improved policies and institutions, have therefore being suggested to deal with the problem.

Following this, the thesis examined the two key explanations of the resource curse in the case of Libya; the Dutch disease and institutional quality. The latter is also linked with the level of rent-seeking and corruption in a country. The outcomes of the analyses indicate no strong evidence of the resource curse resulting from the Dutch disease phenomenon. There was however strong evidence of the resource curse materialising in Libya as a result of weak institutions, rent-seeking, and corruption over the period 1970 – 2010. Libya therefore
seemed to have had a more ‘grabber-friendly’ than ‘producer-friendly’ institutions following Mehlum et al. (2006) arguments. Oil has therefore not led to the required level of economic development in the country; it has been more of a curse than a blessing. Looking forward, diversification of the economy from oil, policy reforms, and more importantly, improvements in institutions are needed in order to avoid the resource curse. The rest of the chapter presents a more detailed summary of the whole thesis in addition to key conclusion, policy implications, with the final section addressing limitations and direction for future studies.

8.2 Key Conclusions

The first of the research objectives of this study is presented and discussed in Chapter 6, which investigates the Dutch disease phenomenon in Libya.

The analysis in Chapter 6 was divided into two sections to achieve the first objective. Both sections apply a time series approach to data covering 1970–2010 to examine the problem. The second section is the sectoral analysis, which seeks to reinforce the first analysis so as to provide conclusive evidence on whether the problem of the resource curse exists in Libya or not.

The Augmented Dickey-Fuller test (ADF) and the Phillips-Perron test (P-P) were used in both models, with all variables being non-stationary for both tests. The results indicate that the null hypothesis is rejected at the first difference, making all the variables stationary in both tests. The combination of the unit root tests results suggests that the variables are integrated of order (1), presenting the possibility of conducting a co-integration analysis.

The Johansen co-integration test, based on the Trace and Maximum Eigenvalue statistics, was applied so that the long run relationship amongst the variables could be identified, and to test for the number of co-integrating vectors. The max statistic test confirms the result of the trace
statistic, indicating co-integration vectors in the system. This reveals the existence of a long run equilibrium relationship between the dependent variable and independent variables.

The results of the first model indicate that an increase in oil price leads to depreciation of the Libyan domestic currency. This result is different from the economic concept of Dutch disease, as indicated by Brahmbhatt et al. (2010), Chevallier (2009), Akpan (2007), and Corden and Neary (1982), which highlights the potential negative effects that natural resource windfalls (and the accompanying appreciations in exchange rates) can have on the rest of the economy. Alternatively, it can be stated that the extent to which oil prices affect the level of the domestic exchange rates depends on government policy and how the economy is managed. The difference between the results in this thesis and the theoretical evidence could be due to exchange rate policy and government control. In general, the Central Bank in Libya has followed a policy of pegging the Libyan Dinar (LD) to either the US dollar or to the IMF’s special drawing rights (SDR). The Dinar’s peg to the SDR, and ample foreign exchange reserves, mean that the currency probably did not come under pressure. This indicates that Dutch disease resulting from the exchange rate has not occurred in Libya over the time period analysed, and it is therefore not a plausible explanation for the resource curse in the country.

Further assessment of Dutch disease was examined using a sectoral model, including the manufacturing, agriculture and non-trade sectors. This is one of the few studies that have applied the sectorial model to examine Dutch diseases, following the study by Chekouri et al. (2013). The results show that there is a negative relationship between manufacturing, agriculture sectors and oil exports; such results are supported by the hypothesis and by theory.

As a result of the sectoral analysis model, signs that Dutch disease is emerging in Libya become evident. The discoveries of oil and growth in oil exports in Libya have triggered the
collapse of the country’s agricultural and manufacturing industries. As a result, there is a flow of labour from agriculture heading towards the booming oil and non-traded sector. The agriculture sector has been the country’s main source of revenue, contributing to more than 28% of Libya’s GDP. As a result of oil revenue increases, the sector fell far behind the oil sector and declined to less than 5% of the GDP. The manufacturing sector has also been negatively affected. It was in its developing stages when large-scale oil exportation first began in the country; with increasing oil revenues, the share of non-oil related industries remained small and fell into a state of decline. Hence, the growth of the manufacturing sector slowed down and its labour shifted to the booming oil sector, from which it can be concluded that Libya has indeed been a victim of Dutch disease, through increases in oil export.

The repercussions of this have continued up to the present day, and the country is now highly dependent on imported foods, with manufacturing remaining very small. Services and construction, as non-tradable sectors, could be expected to maintain stability and contribute to national growth rates.

Chapter 7 addresses the second objective of this study. Institutional weakness is central to the explanation of the negative effects of resource booms. Thus, institutions quality has played a crucial role in the economic development of many resource-rich countries like Libya. On the one hand, natural resources rents can damage governance institutions by removing incentives to reform and even to establish a well-functioning bureaucracy. In fact, the quality of a country's institutions is central in the resource paradox, and institutional quality tends to vary along with levels of economic development. Libya is a country in which institutional quality is crucial to its economic development. The purpose of Chapter 7 is to therefore assess the role of institutions regarding the resource curse phenomenon in Libya using a descriptive analysis of data from five governance indicators.
Most of the indicators state that Libya is below average, and the control of corruption index has negative values for the country. Further, the perceptions of political stability are remarkably low. Libya’s low institutional quality score relating to all the above indicators confirm the presence of a grabber-friendly environment in the country. All this is evidence that Libya could be suffering from the resource curse.

8.3 Policy Implications

The general results of this study seek to inform and guide policy-makers in Libya, and also to better understand the factors affecting economic development in oil-rich countries. This will help governments to expand their knowledge and will allow them to re-prioritize development strategies, and therefore will transform the resource curse into a blessing.

In addition, the fact that oil is a non-renewable energy resource means that these countries will have to look at other ways to sustain GDP growth in the long term. As a result, countries such as Libya have to focus on diversifying their economy and to focus on its non-oil sectors. Thus, the results of this study highlight the most important factors that hinder economic development, and therefore show what to focus on when turning natural resources into a blessing rather than a curse. This can be achieved by adopting the right economic policies that lead to sustainable development. Following the analysis in the thesis, the rest of the section outlines specific policies which could help achieve a more sustainable development via oil in Libya. These include improved institutions, the creation of a Sovereign Wealth Fund, and diversification of the economy.
8.3.1 Institutional Quality

Improvement in institutional quality and public involvement in the decision-making process are necessary in addressing the political effects of mineral wealth-corruption, rent-seeking and authoritarian regimes.

State ownership of natural resources reduces the incentives to improve the quality of institutions. Therefore, the regimes that run a nation through bureaucrats managing state-owned firms have incentives for maintaining weak economic institutions, since this gives them more power and does not require transparency about how the resources are managed and how resource revenue is spent. To improve the institutional quality the government must focus on establishing a rule of law, protecting and improving property rights, maintaining an independent judiciary, having fair and efficient enforcement of contracts, having limits on the government’s ability to transfer wealth through taxation, and having regulations in effect that reduce the rate of return on unproductive entrepreneurial activities (Sobel, 2008). These measures create institutions that make it more profitable for individuals to engage in the creation of wealth through productive entrepreneurship, reduce and diminish rent-seeking activities, and eliminate some of the bureaucratic obstacles that tempt individuals to engage in corruption.

The role of institutions is a crucial matter in mitigating the resource curse. It is therefore necessary for Libya as a country to promote and improve the rule of law, transparency, control of corruption, property rights, and regulatory quality. This will lead to the creation of strong and sound institutions that will increase prosperity and help the country avoid the curse of natural resources through a more efficient use of resources.
Institutional quality and governance are now considered key themes in explaining development outcomes in mineral-rich countries, and there should be more focus on institutional and governance in future studies with less emphasis on economic factors.

It is possible that a resource curse only materialises when natural resource wealth exists in the presence of low institutional quality. Dealing with a mineral economy is complex and requires well developed state capacities among state leaders and policy makers. In most oil-rich developing countries, however, the quality of planning is poor and decision-making by state institutions is aimed at short-term gains that represent, preserve, and extend the interests and authority of a small governing elite. It is reactive, self-interested, and at times greedy rather than visionary.

Governance and institutional quality are currently considered key themes in explaining development outcomes, following the principles of good governance, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption as a promising way out of the vicious cycle of the resource curse.

The abundance of natural resources is, after all, not the cause of poor economic development. However, it is rich resources that create incentives for poor wealth management, which in turn results in negative growth for the economy. If countries learn from their past failures, they will understand that the resource curse is not inevitable. Strong institutions, transparency, accountability, and rule of law would break the corruption-resource nexus and hence create the conditions necessary for overcoming the resource curse.

Finally, failure in achieving these political challenges will not only leave Libya exposed to the economic risks of the resource curse and oil price volatility, but will potentially increase the risk of civil conflict, which would be disastrous for the country. The value of Libya’s oil may lead to an increased risk of rebels attempting to make personal gains from the resource.
Therefore, greed must be mitigated by maintaining institutional strength; this would reduce the incentives of would-be rebels. However, it is of vital importance that Libya understands that oil also has the potential to aggravate existing tensions within the country, as highlighted by the ‘Arab Spring’ revolution of 2011, since which time the government has been gradually losing control of the country.

### 8.3.2 Sovereign Wealth Fund

Establishment of a natural resource fund or ‘Sovereign Wealth Fund’ (SWF) is vital to reducing the impact of commodity price volatility on the economy and ensuring that a share of the wealth will exist for future generations after the oil is depleted. For example, Norway has made sustainable use of its resources by setting up a ‘future generations’ fund. The sovereign wealth fund is capable to benefit the country, following the analysis in chapter 3.

First, such a fund should be clearly authorised under domestic law. Second, the legal structure should include a clear mandate for the manager to invest in SWF assets and conduct all related transactions. Third, it should be legally transparent, with a sound governance structure, so that it provides accountability and enables risk management. Fourth, all applicable regulatory and disclosure requirements in the countries in which investments have been made should be fully complied with. Where the SWF’s activities have significant direct domestic macroeconomic implications, those activities should be closely coordinated with the domestic fiscal and monetary authorities to ensure consistency with the overall macroeconomic policies. Finally, the Libyan government should be clear and publicly disclose policies, rules, procedures, or arrangements in relation to the SWF’s general approach to funding, withdrawal, and spending operations on behalf of the government.

Sovereign wealth funds have emerged as important investors of global equity, attracting growing attention. Despite frequently voiced concerns that SWF investments serve as political objectives and could create conflict with national interests in countries like Libya,
little is known about the SWF investment allocations. This huge amount of money has therefore been of little benefit to Libya so far (LCB, 2013), and some of it has recently been used to destroy the country rather than develop it. It also did not escape from the ambitions of host countries in possession of the money under the pretext of "maintaining" it. This was all due to a lack of public oversight and transparency, together with the absence of tight control by the prevailing political leadership. Furthermore, the governance, accountability, and transparency arrangements of sovereign wealth funds reflect the quality of political institutions within the countries that own them.

8.3.3 Diversification of the Economy

With the implementation of appropriate policies, Libya can continue to benefit from its natural resources, develop a vibrant private sector, and reorient its economy away from hydrocarbon dependence. Achieving these goals requires a range of well-targeted institutional reforms and prudent macroeconomic management. There is significant scope for diversification into tourism and trade, in light of Libya’s rich archaeological sites, Mediterranean climate, and proximity to major European markets. The basic legal infrastructure for private-sector development was adopted in 2010; the next step is to ensure that the laws are implemented effectively, which will require coordination among agencies and an efficient and reliable judiciary. Libya will also need to upgrade basic infrastructure, including roads and electricity, with investment targeted at removing obstacles to economic development.

The Libyan economy still lacks the level of diversification that would enable the country to reduce its dependency on the oil sector. Moreover, there are no clear and specific plans to guide the country through the anticipated non-oil future. Libya faces the challenging task of reducing its dependence on short-lived and potentially volatile oil revenue because of the absence of strong institutions. The country generally has strong growth prospects if it can use
the wealth generated from oil to finance the broader development of its economy. To help accomplish this, this thesis presents some important recommendations to the Libya government.

Libya needs to promote economic diversification if it is to prevent the booming export sector and the non-traded goods sector, from crowding out the non-booming export sector. This can be achieved through expansion in the non-booming export sector in terms of embracing the privatisation process, developing suitable infrastructures, then focusing on the development of heavy industries, particularly petrochemicals and basic metal industries. Promotion of other manufacturing industries, agriculture, and services, including financial services and tourism, is also vital.

Agriculture and manufacturing can be key to shifting from the regional dominance of oil revenue to another source for national income. Diversifying the economy into agriculture and manufacturing sectors will create jobs and increase incomes, raising domestic demand through the doubling of average income per capita. Economic diversification means heavily reducing the dependence on one resource.

Furthermore, diversification also encourages more inclusive growth and reduces inequality. It depends on good macro-economic management, sound institutions, focused infrastructure investment, appropriate tax and tariffs to attract direct foreign investments, programs or regulations that bring down labour costs, and ideally a strong and engaged technocracy. Successful diversification needs a continuation of efforts to improve the legal and regulatory environment, including the reform of the labour code, the reform and consolidation of the judicial system to streamline and speed up conflict resolution, and improving the private sector's confidence in the country's legal institutions. There is also a need to suitably integrate production and marketing of high value commodities through appropriate institutions.
Market reforms in developing and strengthening desired institutions through required legal changes would go a long way towards boosting agricultural growth and manufacturing, augmenting income of small farm holders and promoting exports.

This study highly recommends that the government of Libya should adopt a step-by-step approach to building up the non-oil sectors, which would gradually move the economy through well-thought-out stages that are calculated to ultimately achieve a diversified economy. It can seek external help by importing experts and professionally skilled people to accomplish this goal. The Libyan government should also realise that the oil sector cannot be considered to be a reliable economical pillar, because 1) its status is determined so decisively by international markets and global conflicts, and 2) it is difficult for any country to control or predict a future based on oil. The current situation in the country is an example of this. Libya must look beyond extractives. Non-hydrocarbon businesses are less prone to predation and more difficult for armed groups to blockade. Other sectors can generate meaningful jobs for many more young Libyans who expect something positive from it and would imbue the economy with more resilience.

It can be concluded that institutional quality is the key factor to enabling countries to manage their resource wealth adequately, but equally important for their ability to diversify into other sectors to avoid the resource curse. This can only be achieved through the implementation of the institutional quality structural reforms that would enhance the role of oil in economic development and promote economic diversification.

Finally, the Libyan government should focus on the perceived benefits of the non-oil sectors to help strengthen the role of these sectors in forwarding economic development. The first challenge for the government would be to build and develop effective, accountable, and inclusive institutions at all levels to achieve the desired goals. Therefore, by setting a good
standard of institutional quality, the government would be able to manage its wealth in a manner that promoted sustainable development and avoided the resource curse. In addition, the country's primary objective must be the diversification of exports from oil. Exports of non-petroleum goods must receive more attention in government plans. The government must maximise its revenue from extractive activities, manage them transparently, and invest the wealth in sectors that will generate higher, equitable benefits for the population. Therefore, the message to policy makers who struggle to overcome the impediments to economic development that potentially accompany the resource curse is that they need to develop and maintain better institutions and adopt improved management strategies towards the financial proceeds coming from such abundance. What this thesis has presented here provides a useful lesson for governments and policy makers, particularly in Libya, on how they might take advantage of their abundant natural resources, improve economic development and growth rates, and avoid the inherent impediments that can potentially come with resource abundance.

8.4 Limitations and Direction for Future Studies

This study has attempted to examine the issue of the natural resource curse in Libya. Although the thesis has reached its aims, it has also encountered limitations. Firstly, Libya has a unique regime. Under this regime, a series of far reaching social experiments have been tried, producing a somewhat unique political system.

In contradiction to the prediction of the “Dutch disease” theory, it can be concluded that the results of this study differ from the economic concept of Dutch disease regarding real exchange rate appreciation (Brahmbhatt et al., 2010; Chevallier, 2009; Akpan, 2007; and Corden and Neary, 1982). This highlights the potential negative effects that natural resource windfalls, and the accompanying appreciations in exchange rates, can have on the rest of the economy. The difference between the estimated results in this thesis and the theoretical
evidence could be due to the exchange rate policy and government control. The exchange rate model is very useful in examining Dutch disease; however, outcomes are affected by a country's exchange rate regime and the policies used to manage the exchange rate. Exchange rate policies therefore play an important role wherever Dutch disease appears. Due to the nature of the economy, Dutch disease does not manifest itself in terms of the effect of oil prices on the exchange rate, thus evidence on the impact of Dutch disease on the economy through real exchange rate is mainly inconclusive. It can therefore be stated that the effect of the appreciations of exchange rates depends on government policy and how the economy is managed.

There is a considerable overlap between exchange rate appreciation and a state controlled economy, and therefore it can be concluded that it is necessary to use more than one model for future research to determine whether the presence of Dutch disease is an assured result, particularly in developing countries such as Libya, which carry strong evidence of the existence of the Dutch disease phenomenon. So, given the shortcomings of the real exchange rate model, the sectoral model is an additional approach designed to verify the presence of Dutch disease. To reinforce the first analysis and to provide definite evidence as to whether the Dutch disease phenomenon exists in Libya, a variety of channels are required.

Only a few studies have examined the natural resource curse in the context of Libya, and therefore there is a difficulty in applying the resource curse theory, making it difficult to carefully compare outcomes. However, future studies on Dutch disease could consider applying this model and possibly extending it, to help gain a deeper understanding of the Dutch disease in all resource-rich countries.

Additionally, the exchange rate policy could play an important role in controlling and protecting the economy by mitigating or avoiding Dutch disease. This has allowed the
researcher to understand the nature of a country from all aspects – economic, political and cultural, for example – and thus opened the door to the correct variables, and allowed the right approach to be taken. This study has also provided an overview of one of the richest developing countries in North Africa, and offered valuable information that will be useful to future studies. Other issues, such as weak institutions, are very important, and can have great influence on the economy.

This study supports the views of other studies and adds to the literature on this topic. There is a lack of comprehensive data on institutional quality in Libya for the period of this study, and the fact that it is a single country study as opposed to one that uses cross-national econometric models (as used in most other studies of this type) is significant. The lack of sufficient time-series data for institutional quality on Libya makes it impossible to adapt the approach to the current study, and this thesis therefore uses a descriptive analysis to analyse institutional quality through five governance indicators.

This thesis argues, that even when weak institutions prevail, export-oriented coalitions can not only help countries avoid the curse, but can help them turn resource wealth into a blessing. Weak institutions are a major factor for the natural resource curse phenomenon, particularly in developing countries like Libya. It is important that future studies examine the role of oil in economic development for the period following the economic changes in Libya since 2011, including institutional quality, governance, and a secure environment. All of these can play a complementary role alongside the traditional economic factors in explaining the natural resource curse in developing countries. This study aligns with traditional economic theory, a theory which holds that the macroeconomic differences of the Libyan economy and the social unrest are all due to insufficient economic diversification, rent seeking, conflicts, corruption, and undermined political institutions. These could be key areas of focus for future studies.
Further research should be conducted to investigate the effect of oil revenue on economic development from different channels, taking into account the countries’ policies and its systems. Moreover, there is abundant room for further progress in determining factors that impact economic development in oil-rich developing countries, just as there is broad scope for studies in developed oil-rich countries such as Norway. Finally, the application of these models to all oil-rich nations, developing and developed countries, would confirm the scope of their application and generalisability.
Appendix 1 Nigeria: Ratio of Economic sectors to GDP, 1960–2005 (in %)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>69.9</td>
<td>47.94</td>
<td>26.91</td>
<td>26.34</td>
<td>20.65</td>
<td>36.52</td>
<td>32.60</td>
<td>34.21</td>
<td>41.83</td>
</tr>
<tr>
<td>Crude Oil</td>
<td>1.13</td>
<td>11.27</td>
<td>20.25</td>
<td>26.91</td>
<td>47.53</td>
<td>34.58</td>
<td>41.50</td>
<td>37.22</td>
<td>49.64</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>4.80</td>
<td>7.2</td>
<td>9.18</td>
<td>4.46</td>
<td>3.44</td>
<td>6.51</td>
<td>4.70</td>
<td>3.06</td>
<td>3.62</td>
</tr>
<tr>
<td>Others</td>
<td>24.17</td>
<td>33.59</td>
<td>43.66</td>
<td>42.29</td>
<td>28.38</td>
<td>22.39</td>
<td>21.20</td>
<td>25.51</td>
<td>4.91</td>
</tr>
</tbody>
</table>

Source: Central Bank of Nigeria (2005)

Appendix 2 Nigeria: Percentage of oil revenues invested in different sectors and debt servicing

<table>
<thead>
<tr>
<th>Year</th>
<th>Health</th>
<th>Education</th>
<th>Agriculture</th>
<th>Transport and communication</th>
<th>Debt servicing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>2.45</td>
<td>12.55</td>
<td>0.26</td>
<td>0.47</td>
<td>6.76</td>
</tr>
<tr>
<td>1990</td>
<td>0.92</td>
<td>3.19</td>
<td>0.29</td>
<td>0.32</td>
<td>23.47</td>
</tr>
<tr>
<td>2000</td>
<td>1.14</td>
<td>4.25</td>
<td>0.30</td>
<td>0.15</td>
<td>6.28</td>
</tr>
<tr>
<td>2004</td>
<td>1.29</td>
<td>3.18</td>
<td>0.32</td>
<td>0.24</td>
<td>11.84</td>
</tr>
<tr>
<td>2005</td>
<td>1.51</td>
<td>2.52</td>
<td>1.91</td>
<td>0.58</td>
<td>7.47</td>
</tr>
<tr>
<td>2006</td>
<td>1.79</td>
<td>2.87</td>
<td>2.03</td>
<td>0.34</td>
<td>4.72</td>
</tr>
</tbody>
</table>


Appendix 3 Nigeria: Ratio of oil revenue and exports, 1975 - 2006 (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Oil total revenue</th>
<th>Oil total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>77.46</td>
<td>92.64</td>
</tr>
<tr>
<td>1980</td>
<td>81.09</td>
<td>96.09</td>
</tr>
<tr>
<td>1985</td>
<td>72.58</td>
<td>95.76</td>
</tr>
<tr>
<td>1990</td>
<td>73.28</td>
<td>97.03</td>
</tr>
<tr>
<td>1995</td>
<td>70.56</td>
<td>97.57</td>
</tr>
<tr>
<td>2000</td>
<td>83.50</td>
<td>98.72</td>
</tr>
<tr>
<td>2004</td>
<td>85.99</td>
<td>96.38</td>
</tr>
<tr>
<td>2005</td>
<td>85.85</td>
<td>98.34</td>
</tr>
<tr>
<td>2006</td>
<td>88.64</td>
<td>97.6</td>
</tr>
</tbody>
</table>

Appendix 4 Norway: Ratio of economic sector to GDP 2007

<table>
<thead>
<tr>
<th>Sector</th>
<th>Ratio to GDP %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.3</td>
</tr>
<tr>
<td>Industry</td>
<td>41</td>
</tr>
<tr>
<td>Services</td>
<td>56</td>
</tr>
</tbody>
</table>

Source: The Economist (2007)

Appendix 5 Norway: Key economic figures for 2007

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>NOK (in billion)</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of exports</td>
<td>1,042</td>
<td>45.8</td>
</tr>
<tr>
<td>Value of oil and gas exports</td>
<td>480</td>
<td>21.1</td>
</tr>
<tr>
<td>Value of total imports</td>
<td>686</td>
<td>30.1</td>
</tr>
<tr>
<td>Surplus on current balance</td>
<td>351</td>
<td>15.4</td>
</tr>
<tr>
<td>Net foreign assets</td>
<td>1,350</td>
<td>59.3</td>
</tr>
</tbody>
</table>

Source: Statistics Norway (2007)

Appendix 6 Norway: Exports and imports of services by type, 2007

Source: Statistics Norway (2007)
Appendix 7 - Structure of GDP by Key Activity

Source: Statistics Norway (2007)

Appendix 8 - General government total expenditure by function, NOK

<table>
<thead>
<tr>
<th>Function</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total expenditure</td>
<td>743,174</td>
<td>768,187</td>
<td>821,068</td>
</tr>
<tr>
<td>General public services</td>
<td>74,989</td>
<td>78,421</td>
<td>91,242</td>
</tr>
<tr>
<td>Defence</td>
<td>29,812</td>
<td>28,753</td>
<td>32,997</td>
</tr>
<tr>
<td>Public order and safety</td>
<td>15,981</td>
<td>16,549</td>
<td>17,467</td>
</tr>
<tr>
<td>Economic affairs</td>
<td>63,414</td>
<td>66,369</td>
<td>68,296</td>
</tr>
<tr>
<td>Environmental protection</td>
<td>3,241</td>
<td>3,321</td>
<td>3,631</td>
</tr>
<tr>
<td>Housing and community amenities</td>
<td>5,727</td>
<td>3,937</td>
<td>5,370</td>
</tr>
<tr>
<td>Health</td>
<td>126,654</td>
<td>132,713</td>
<td>139,598</td>
</tr>
<tr>
<td>Recreation, culture, religion</td>
<td>18,461</td>
<td>19,072</td>
<td>19,747</td>
</tr>
<tr>
<td>Education</td>
<td>104,207</td>
<td>107,916</td>
<td>114,340</td>
</tr>
<tr>
<td>Social protection</td>
<td>301,082</td>
<td>311,137</td>
<td>328,382</td>
</tr>
</tbody>
</table>

Source: Statistics Norway (2007)
Appendix 9 UAE: Economic structure – ratio of industries to GDP in 2007

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>RATIO to GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Production</td>
<td>25</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12.6</td>
</tr>
<tr>
<td>Commerce and Hotels</td>
<td>11.5</td>
</tr>
<tr>
<td>Real Estate</td>
<td>9.1</td>
</tr>
<tr>
<td>Construction</td>
<td>8.6</td>
</tr>
<tr>
<td>Transportation</td>
<td>7.3</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>6.5</td>
</tr>
<tr>
<td>Government Services</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: Grant et al., (2007)

Appendix 10 UAE: Growth in the UAE and Libya, 1970 – 2004 (in %)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UAE</td>
<td>n/a</td>
<td>-2.1</td>
<td>6.4</td>
<td>5.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Libya</td>
<td>2.2</td>
<td>-7.0</td>
<td>-0.6</td>
<td>1.6</td>
<td>3.5</td>
</tr>
</tbody>
</table>


Appendix 11 UAE: Macroeconomic Data, 2002 - 2004

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal GDP ($ billion)</td>
<td>71.20</td>
<td>79.85</td>
<td>85.10</td>
</tr>
<tr>
<td>Population (million)</td>
<td>3.75</td>
<td>4.04</td>
<td>4.32</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>18 966</td>
<td>19 759</td>
<td>19 699</td>
</tr>
<tr>
<td>Real GDP growth, % year to year</td>
<td>1.9</td>
<td>7.0</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Appendix 12 UAE: Amounts of Investment, Number of Enterprises and Labour in each Emirate, 2004

<table>
<thead>
<tr>
<th>EMIRATE</th>
<th>INVESTMENT (million Dh)</th>
<th>No of ENTERPRISES</th>
<th>LABOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abu Dhabi</td>
<td>34,327</td>
<td>218</td>
<td>37,281</td>
</tr>
<tr>
<td>Dubai</td>
<td>14,660</td>
<td>1,177</td>
<td>83,079</td>
</tr>
<tr>
<td>Al Sharjah</td>
<td>3,666</td>
<td>933</td>
<td>64,314</td>
</tr>
<tr>
<td>Ajman</td>
<td>1,038</td>
<td>422</td>
<td>26,904</td>
</tr>
<tr>
<td>Ras Al Khimah</td>
<td>3,055</td>
<td>92</td>
<td>12,015</td>
</tr>
<tr>
<td>Umm Al Quwain</td>
<td>416</td>
<td>82</td>
<td>3,771</td>
</tr>
<tr>
<td>Al Fujairah</td>
<td>5,816</td>
<td>49</td>
<td>3,911</td>
</tr>
</tbody>
</table>


Appendix 13 UAE: Investment into Manufacturing Industries, Number of Enterprise and Labor in 2004

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>INVESTMENT (million Dh)</th>
<th>No. of ENTERPRISES</th>
<th>LABOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and beverage</td>
<td>27,394</td>
<td>281</td>
<td>25,596</td>
</tr>
<tr>
<td>Textiles and leather</td>
<td>960</td>
<td>246</td>
<td>32,481</td>
</tr>
<tr>
<td>Wood products and furniture</td>
<td>672</td>
<td>365</td>
<td>20,057</td>
</tr>
<tr>
<td>Paper products and publishing</td>
<td>1,586</td>
<td>220</td>
<td>14,012</td>
</tr>
<tr>
<td>Chemicals and plastics</td>
<td>14,674</td>
<td>542</td>
<td>31,545</td>
</tr>
<tr>
<td>Non-metallic mineral products</td>
<td>7,132</td>
<td>413</td>
<td>38,260</td>
</tr>
<tr>
<td>Basic metal industries</td>
<td>6,941</td>
<td>60</td>
<td>7,248</td>
</tr>
<tr>
<td>Fabricated metal and equipment</td>
<td>3,462</td>
<td>775</td>
<td>58,334</td>
</tr>
<tr>
<td>Other industries</td>
<td>157</td>
<td>134</td>
<td>3,742</td>
</tr>
</tbody>
</table>

Libya

Appendix 14: Libya map

Source: Google Earth (2016)

Appendix 15

Source: Adapted from Google Earth (2016)
Appendix 16: Libya Macroeconomic Indicators

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth</td>
<td>104.4</td>
<td>-12.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Real GDP per capita growth</td>
<td>103.5</td>
<td>-12.8</td>
<td>3.4</td>
</tr>
<tr>
<td>CPI inflation</td>
<td>6.1</td>
<td>3.7</td>
<td>7.5</td>
</tr>
<tr>
<td>Budget balance % GDP</td>
<td>13.8</td>
<td>-9.3</td>
<td>-13.2</td>
</tr>
<tr>
<td>Current account % GDP</td>
<td>25.5</td>
<td>2.0</td>
<td>-0.5</td>
</tr>
</tbody>
</table>

Source: Central Bank of Libya (2014).
List of references


238


