

The price of local content:

A case study of the impact oil-price fluctuations has on local content development in Angola's petroleum industry

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Preface

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Abstract

Norad's Oil for Development (OfD) programme is set for renewal in 2015, a year where the petroleum industry is recovering from the largest sustained fall in oil-prices since 2008/2009. In light of these developments, this thesis seeks to examine the link between oil-prices, and the ability of oil-exporting countries to develop its local content in the petroleum industry. The literature on local content has been focused on the domestic factors that influence local content development. This paper however, contends that this focus on domestic factors somewhat neglect the influence that the external environment has on the ability of these factors to contribute to local content development. The most notable external factor in this regard being oil-prices, which reflect not only the global supply and demand for oil, but also profitability in the industry as a whole.

Through this qualitative case study of Angola, which has been one of the OfD programmes "core" recipient countries, this paper examine the link between oil prices and local content development. This is done by looking at how a decline in oil-prices affect the macroeconomic environment in the country, and how this environment influence domestic investment and development. The main findings suggest that a drop in oil-prices does indeed affect the macroeconomic environment, in a way that limits Angola's ability to develop local content in the petroleum industry.

This topic is relevant for several reasons. Firstly, it provides decision-makers in oil-exporting countries with an extra dimension when considering the shape of future local content policies. Secondly, this insight into the effects of oil-price fluctuations in Angola might help to improve the assistance to similar countries provided by petroleum-related aids programs, such as the OfD programme, in years to come.

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Chapter 1. Introduction

The question of how to achieve economic and industrial growth is one of paramount importance for every state. This is especially true for resource-rich developing countries, who have great potential for growth due to their resource endowment. However, with great resource endowment follows great government responsibility. Building a sustainable domestic economy, while efficiently making use of a country's natural resources, is a project riddled with potential pitfalls. The vast number of traps associated with extracting natural resources for the purpose of economic growth, have given name to a phenomenon known as *the resource curse*. The term, resource curse, is a reference to what seems to be a correlation between states being rich in natural resources and underachieving in terms of economic growth. This seemingly inescapable problem has inspired a considerable literature, not only on the causes, but also on the possible policy measures governments could adopt to escape the curse, and to stimulate growth in the face of a vast resource endowment.

When we focus on petroleum resources, we are looking at resources that require a very capital-intensive industry with the potential for very high profit margins. The nature of the petroleum industry has led countries endowed with large petroleum resources to become susceptible to what the literature has dubbed *Dutch disease*. The presence of Dutch disease is, if not the most common, then perhaps the most often-mentioned potential negative effect from a large resource windfall. Dutch disease essentially is the “failure of resource abundant economies to promote a competitive manufacturing sector” (Sharraf & Jiwanji 2001: 4). The literature identifies a few typical signs of the disease. Among these are the *resource movement effect*, which is the transfer of resources from other sectors of the economy to the resource sector (Corden and Neary 1982). This effect typically manifests itself through the transfer of labour and production from the tradable- to the non-tradeable sector. Related to this effect, is the *spending effect*, where a resource boom increase demand in the non-tradeable sector. This demand is then met by an increase in imports, so resources are transferred from the tradeable sector to non-tradeable sector (Sarraf & Jiwanji 2001: 4). Lastly, there is the *leapfrog effect*, which is when industrialization skips the labour intensive phase and goes straight to heavy capital-intensive industry (Ibid). This leapfrog effect is considered to be a trademark of resource-rich developing economies. By skipping the labour intensive phase, these countries leave their manufacturing sector neglected and unable to pick up the slack for the more volatile resource sector. The reason

why this is a problem attributed mainly to resource-rich countries is, quite simply, because for a period they can afford it.

Richard M. Auty (1994) emphasized how resource endowments determine a state's industrial policy. While resource-poor countries switch from a self-sufficient to a competitive industrial policy rather quickly, resource-rich countries have sometimes taken a much longer time to achieve industrial reform (Auty 1994). By having a large amount of natural resources that generate revenue, resource-rich countries naturally do not experience the same need for a labour intensive industry as resource-poor countries. This might encourage resource-rich countries to invest in heavy industry too soon (Ibid). The bottom line is that Dutch disease refer to an overdependence on the natural resource sector that depresses development of the manufacturing industry. In light of the price volatility on natural resources, this overdependence on the resource sector leave these economies particularly vulnerable to the effects of fluctuations in the price of their resources.

One of the most effective ways that governments can make natural resources work towards achieving industrial- and economic growth, is by enacting policies that ensure that the revenue created from extracting these resources is invested in the domestic industry. In the case of states with a large resource endowment, the goal of such policies is often to increase the domestic participation in the extraction and trade of these resources. In this way they can establish industrial linkages with other areas of the country's economy, through increased domestic demand. The term for policies aimed at creating domestic participation in a domestic industrial sector is *local content* policies (LCPs).

1.1 Research question, and the papers structure

This paper will focus on how governments can contribute to local content development in the petroleum sector, and how this ability is influenced by the price of oil. The theory chapter will elaborate on *why* petroleum-producing countries aim to develop their local content, *how* they use regulations to achieve this goal, and *how* external factors might influence local content development. The theory chapter also presents the theory behind multinational companies' choice of investment location, to give an understanding of why they choose to invest in a new market. Lastly, I present Kazzazi and Nouri's (2012) conceptual model for local content development in the petroleum industry. This model presents us with four variables internal to a resource producing country, which are essential for successful local content development. These four variables are local policies, local infrastructure, local environment, and local

capabilities. The four variables in the conceptual model are drawn from what the local content literature has highlighted as necessary factors for the successful development of local content.

The theory of local content development emphasise how domestic development is created through regulations aimed at attracting investment in local companies and labour. I therefore contend that the conceptual model leaves out the effect that the oil-price has on local content development, through the effect it has on investment activity in the industry. The petroleum industry is dependent on the hydrocarbons they are in the business of extracting, and consequently are inclined to invest where these resources are located, in spite of factors that might deter investment from other industries. However, in addition to being tied to the locations where hydrocarbons are found, the dependency of oil and gas makes the industry at the mercy of the market price of these resources. A high price of oil and gas means that the profit margins are high, which would cause increased investment in the industry, while a low price would have the opposite effect on investment. Thus, I argue that the global price of oil affects petroleum-producing countries ability to develop its local content, through the influence it has on the investment climate.

My research question is then: *How does a fall in global oil-prices affect the ability of petroleum producing countries to develop local content in the petroleum industry?*

The aim for the paper is to improve upon Kazzazi and Nouri's (2012) conceptual model for local content development. Their stated goal for developing the conceptual model was to provide a set of considerations for policy makers aiming to develop their local content in the petroleum industry (Kazzazi & Nouri 2012: 2174). Since the oil-price essentially represents variations in global supply and demand, I believe that by adding an exogenous resource price variable, the conceptual model gains another dimension. A dimension that might be helpful to policy makers who intend to consider the factors that influence local content development in the petroleum industry.

In this paper, I have tested the effect that a drop in oil-prices has on an oil-exporting country's investment climate through a case study approach. By looking at how the Angolan petroleum industry was affected by the decline in oil-prices in 2014, and comparing this to the effects of the previous price-fall in 2008. The reasoning behind the choice of case is that Angola is one of the core countries of the Norwegian Oil for Development program (OfD), and hence its resource management model is loosely based on the Norwegian model. This makes it interesting

from a Norwegian standpoint, as it provide us with some insight into both the transferability of the Norwegian model, and how the OfD-programme has been able to contribute to a sustainable resource management model. However, with its focus on local content regulations, the Angolan management model most resembles how the Norwegian model looked prior to Norway entering the European Economic Area (EEA) in 1994.

Recently, the OfD-programme's commitment to Angola and its other beneficiaries is in the process of being renewed, and the global price of oil has declined dramatically in the last year. Thus, this case study might serve a broader purpose as an example to other developing oil-producing countries, with ambitions to adopt a variation of the Norwegian management model, of how the price of oil affect local content development.

Besides its role in the OfD-programme, the Angolan case contains certain criteria vital to my hypotheses. Firstly, it has regulations that particularly emphasize that the petroleum industry should make use of local content. This means we could expect there to be a significant level of added costs from regulations on the foreign actors in the industry. With membership in the World Trade Organisation (WTO) becoming ever more prevalent, many developed oil-producing countries are effectively barred from enacting such encompassing protectionist policies.

Secondly, the country has petroleum resources that are technically demanding to extract, which means that petroleum production in Angola require a high degree of expert input from the established international actors in the industry. This makes the importance of foreign investment relatively high, compared to areas with shallow-water- and onshore production.

Lastly, through their special provisions in the WTO, developing countries often have significant added costs on the industry, because the WTO's least developed country (LDC) clause give them the opportunity to enact protectionist regulations. This means that investing companies face added costs from regulation and smaller profit margins, which in turn would increases their sensitivity to price fluctuations in these markets.

Together, these criteria make Angola a good case to illustrate the effects of oil-price volatility on local content development, in a developing oil-producing country.

The methods chapter goes into further detail about the considerations related to choice of research design, and data collection for this thesis. Here I present the main sources of empirical data informing the analysis in chapter 5, and give an introduction to the industry informants

that I interviewed in the research process. This methods chapter will also provide some insight into the challenges and methodical considerations the researcher was faced with in the process of writing this thesis.

In chapter 4, I present the data for how Angola's petroleum industry has been affected by oil-price fluctuations, by focusing on the four areas highlighted in Kazzazi and Nouri's (2012) conceptual model. This is to see how the fall in oil-prices have affected the four variables in the model. I begin by looking at how the country's macroeconomic environment was affected by the decline in oil-prices in 2008, and how it has responded to the current price fall. This way, I am able to see how the country's macroeconomic environment is influenced by oil-price fluctuations. I then go on to look at how the three remaining variables in the conceptual model (local policies, local infrastructure, and local capabilities) contribute to local content development, and how this ability is influenced by the changes in the macroeconomic environment.

In the analysis, in chapter 5, I look at how the changes in the macroeconomic environment affects each of the variables in the conceptual model, and how this influences their ability to contribute to local content development in Angola. The data used to assess the impact of price fluctuations on these variables, are drawn from my interviews with representatives for two international companies operating in Angola's petroleum industry, and several independent databases. From this analysis, it becomes apparent that the price of oil has indeed a major impact on the investment climate in Angola.

By looking at how the drop in oil-prices in 2008 affected macroeconomic variables that influence foreign investment, I find that there is reason to expect that the current oil glut will cause a fall in private investment. Perhaps more significant, is that the 2014 fall in oil-prices have caused a clear drop in public investment as well. Overall, we see that the decline in oil-prices cause a deterioration of the investment climate in the petroleum industry. Furthermore, I find that the Angolan government responded to the deteriorating investment climate by removing some of the added cost on the industry. Specifically, the government have eased up on some of the local content obligations imposed on certain international actors in the petroleum industry, in a bid to improve the investment climate.

As for the four variables in the conceptual model, I find that a decrease in oil-prices negatively influences their ability to contribute to local content development in the petroleum industry.

Specifically, a drop in prices affects the macroeconomic environment by deteriorating the exchange rate of the local currency. This in turn increases production-costs and reduces the competitiveness of the domestic petroleum industry. The drop in state revenue puts limits on the ability of the country's industry and infrastructure to contribute to local content development, because it leads to reduced public spending in these sectors. This has removed necessary funding from projects aimed specifically at increasing the efficiency- and capacity of the domestic industry. Lastly, I find that by deteriorating the investment climate, a declining oil-price has in some instances, impeded the government's ability to impose local content regulations on established international actors. However, due to the limited sample-size available and the single-case nature of this study, this impact on regulation will have to be explored further.

So to summarize; in this paper, I found the oil-price to affect the four variables in the conceptual model. More specifically their contribution to local development, through the oil price's effect on the petroleum industry's profitability. Thus, I conclude that the effect the oil-price has on the investment-level in the petroleum industry, should be considered as an external variable in Kazzazi and Nouri's conceptual model.

Chapter 2. Theory

This chapter focuses on the theory behind local content development. The first part of this chapter looks at how local content is defined by the literature, and how local content development has both direct and indirect benefits to the domestic economy. This is to illustrate the importance of local content development as a means to achieve domestic growth. In this first section, I also present different theoretical arguments for the state to impose regulations on the use of local content, and the different regulatory tools petroleum producing countries use to promote local content. The second section, gives a more in-depth description of Kazzazi and Nouri's conceptual model, as it explains the different elements contained in their four variables, and how they contribute to local content development. The third section of this chapter looks at the theory behind the investment strategy of multinational corporations. This is to establish a set of conditions, which I find to influence corporate behaviour in relation to investment. This allows me to make certain assumptions about how macroeconomic variables will affect investment from international companies in the petroleum industry.

In the fifth and final section of this chapter, I draw from these assumptions to formulate four hypotheses about how the price of oil affect the four conceptual model variables. Specifically, these hypotheses look into how each variable's contribution to local content development is influenced by a drop in oil-prices.

2.1 What is Local content

What qualifies as local content depends on how one chooses to define it. Different countries focus on different aspects of local participation when they measure local content. Where one country might have a strict definition, limiting local content to procurement among local companies, others define local content more simply as a certain percentage of local employment (Tordo et al 2013: 79). Regardless of how one choses to define local content, a high degree of local participation, in both production- and supply sectors of the petroleum industry, has long been an explicit goal for most petroleum-producing nations. The overarching aim of the different local content regulations (LCRs) found around the world, is to create a minimum level of foreign investment in the economy of the resource holding state. The use of LCRs rests on the premise that the local industry is not sufficiently competitive compared to the international competition, and thus needs a protective policy to compete with foreign investors and to attract investment. This goal of transforming resource-wealth into domestic development continues to

be at the centre of attention for resource holding states around the world, who seek to extract as much value as possible from their hydrocarbon resources.

2.1.1 The benefit of developing local content

What this paper refers to as *direct* local content, is the local employment created by the sector. By substituting imported labour with domestic labour, one makes sure that wages are used in the domestic economy. This input creates an increase in demand in the local economy that could be met by domestic suppliers, creating jobs and spreading the wealth throughout a society. Secondly, as this aids the domestic industry, one stimulates the substitution of imported goods with domestically produced goods, which in turn creates added value, such as increased domestic employment and demand.

The second form of local content are what this paper refer to as *indirect* local content. The local content literature refers to this as local content that promotes local development (Tordo et al 2013: 2-4). As opposed to the direct understanding of local content, indirect content will enhance a nation's industrial and technological capability in addition to employment. One example of indirect local content benefits could be employing nationals in management or engineering departments of large corporations. Where they would receive training and experience, which in turn could be put to use in the domestic industry. A way many petroleum-rich countries have tried to secure local development through regulations, is to give oil companies different incentives to invest in local research and development (R&D) (Tordo 2013: xv).

The benefits from securing such technology-enhancing investment could potentially far exceed those derived from merely achieving a certain amount of domestic labour participation. Domestic development of R&D, and administrative- and technical know-how, could be harvested to gradually increase the competitiveness of the domestic industry in relation to the established actors. Several petroleum-rich countries have been able to build on knowledge-transfers from the petroleum industry, resulting in big state oil companies and internationally competitive supply companies. Examples of this development can be found in countries as diverse as Malaysia and Norway. Where the government's local content policy has been aimed at eventually obtaining the knowledge to be able to operate independently of the major oil companies, to great success. Both countries today have big state (majority owned) oil companies in Petronas (Malaysia) and Statoil (Norway), which are at the forefront of their

domestic petroleum industry (Wade Locke 2004: 35-36) (Ibid: 50). Government policy may require oil companies to make use of domestic suppliers as far as they can be qualified as competitive by some criteria, and in some cases not even that. State owned oil companies also have the added benefit of being able to ensure that the local industry is being considered, on better or equal terms, with the foreign competition in the awarding of contracts and concessions.

2.1.2 Developing local content

The success of the petroleum management model of a country like Norway, in attracting foreign investment and local development, has caused several other resource-rich states to implement similar regulations and create similar management models. The aim of these management models is to make the extraction of resources beneficial to the resource holding state. This is done by creating incentives for local employment, in addition to establishing the transfer of technology and experience between established international actors and the local industry. For the purpose of illustrating to governments of petroleum producing countries how the local content literature finds certain internal factors influential in local content development, Kazzazi and Nouri (2012) created a conceptual model of local content development.

2.2 Kazzazi and Nouri's conceptual model for local content development in the petroleum industry

Kazzazi and Nouri's conceptual model is based on four domestic variables that the literature of local content development highlight as vital to the successful development of the domestic petroleum industry. They argue that the importance of these variables to local content development has been established through a series of studies on the issues related to local content. Here I present the literature that informed the development of their conceptual model.

Hausmann & Rodrik (2006), highlighted the complexity of the factors decision-makers are faced with when creating policies aimed at efficient management of economic activity. They suggest that public policy often tend to overlook important aspects that might be obvious to private actors. This might cause local content regulations to create unnecessary inefficiencies, and added costs in the industry. The study by Klueh et al. (2009), focused on how the government of a resource-holding state can increase domestic participation by implementing efficient policies. This include local content regulations, which secure a minimum amount of local participation. Heum et al. (2011), took at broad approach to analysing Uganda's petroleum resource management. They highlighted the need for the country's government to provide

sound macroeconomic management, credible regulations, and infrastructure, in order to create linkages between the local companies and the international petroleum industry.

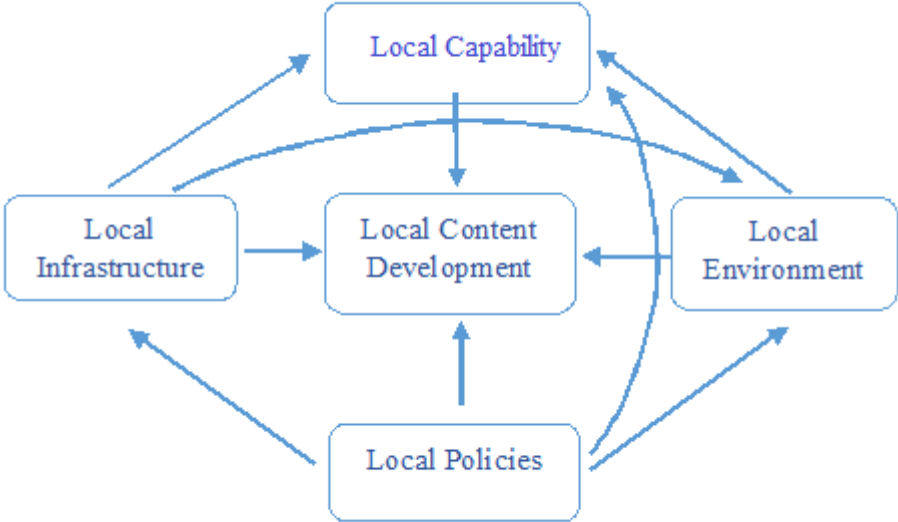
Tordo et al. (2011), stressed the importance of creating forward linkages in the petroleum industry, such as establishing local refineries. This way the domestic industry becomes involved in more than just the upstream activities of the petroleum industry. Nwokeji (2007), studied the evolution of Nigeria's National Petroleum Corporation (NNPC), with focus on the problematic aspects of public management of the country's natural resources. In relation to local content, Nwokeji found the advance of western education to enhance local participation in the petroleum industry. Nordås et al. (2003), investigated how the petroleum sector could benefit industrial growth in Nigeria. They found local content regulations to add costs on the industry, which reduce investment activity- and the production capacity in the upstream oil and gas sector. However, the LCR's do assist in attracting foreign investors and international companies, which opens up for cooperation and technology transfers between local and foreign companies.

Klueh et al. (2007), looked into São Tomé and Príncipe's ability to adopt local content measures that have been used in other developing oil-exporting countries. They stress the importance of creating realistic local content targets, and that government policy should be directed towards increasing domestic participation in sectors where local actors can contribute. Cusumano & Elenkov (1994), looked into the nature of international technology transfers. They found that the ability of a company to absorb technology from more advanced firms was influenced by the company's existing technical capabilities. In local content terms, this highlights the need to develop local capabilities for more advanced participation.

In summary, these studies provided Kazzazi and Nouri (2012) with four domestic variables that they found to influence how successful states are in developing its local content. These are: (i) local policies, (ii) local infrastructure, (iii) local environment, (iv) local capabilities (Kazzazi & Nouri 2012: 2165-2167). By developing all four of these variables in a way that is attractive to private investment, they believe that a country would be effective in creating local content development. This means developing efficient infrastructure, competitive local suppliers, industry regulations that does not put too much strain on industry profitability and an environment that provide macroeconomic incentives for private business activity.

However, if these variables are not properly developed, the expected outcome will be that the domestic industry will have a hard time attracting foreign investment, resulting in poor conditions for local development.

Figure 1. Conceptual model of how local conditions affect local development (Kazzazi & Nouri 2012: 2167)



2.2.1 Local policies

These are local policies and regulations intended to create incentives for domestic participation in the petroleum industry, such as the establishment of company registers, enforcing contracts, and aligning infrastructure development with local content goals (Ibid: 2169). Kazzazi and Nouri argue that government policies should stress cooperation between the government and foreign companies in decisions regarding local purchasing, as this will secure better opportunities for the local industry. Additionally, an industrial policy that is conducive to domestic industrial development should be focused on enabling industrial linkages between local industry and international investors (Ibid: 2169). They stress the fact that a local policy has to take into account how regulations will affect other sectors of its economy, as protectionist policies might enhance growth in the domestic industry, but adversely affect trade.

2.2.2 The local infrastructure

The local infrastructure contributes to local content development through enhancing domestic competitiveness. This it does by satisfying the needs of both the international- and local industry related to information technology, local industrial capabilities, social- and educational

standards. Kazzazi and Nouri also highlight how some analysts recommend establishing an office dedicated to creating opportunities for local companies. The goal of such an office is to enable three specific measures: (i) developing a registry of qualified local vendors, (ii) advise locals on potentials for joint ventures and other cooperative mechanisms with foreign companies, and (iii) support plans for capacity building, training and local R&D development (Ibid: 2169). The development of the local infrastructure creates an environment that either enhances or retracts from the competitiveness of the domestic industry. A well-developed infrastructure will then attract foreign investment, and through this investment enable technology transfers between the local industry and the more established international actors (Ibid: 2170).

2.2.3 The local environment

The local environment is the macroeconomic environment where all these factors come together, and its structure shape how they are developed. Important factors in this regard is the exchange rate for the local currency, and the interest rate. Both of these affect private investment decisions by affecting the cost- and return of investment. Kazzazi and Nouri (2012) include this variable since the resource curse literature have found that countries need to develop their institutional structure and macroeconomic management, if they are to avoid the dangers related to resource endowment (Ibid: 2170). Especially countries with petroleum resources needs to create an attractive investment climate, if they wish to develop a competitive local industry. A failure to encourage competitiveness could result in the development of a culture for inefficient practices, which are often associated with protectionist policies.

2.2.4 Local capabilities

Kazzazi and Nouri include local capabilities as the last variable in their conceptual model. This is because local capabilities such as education-level, experience, technological development, and management capabilities, have an effect on how local content regulations are shaped. This is because a country's capabilities set the limits for which kind of services the local industry can realistically supply. LCRs should encourage cooperation between domestic and foreign companies, in the expectation that collaborating with internationally leading competence will provide positive impulses for domestic industrial development (Ibid: 2170). For the domestic industry to be able to learn from these foreign companies, it is crucial to have an effective education system and an industrial infrastructure to build on (ibid). Unfortunately, for developing oil-exporting countries, this need for knowledge-transfers is often coupled with a

limited level of local capabilities. This inhibits cooperation in more advanced segments of the industry, causing a challenge to the improvement of more technologically advanced capabilities (Ibid: 2171).

2.2.5 Lessons from the conceptual model

The conceptual model shows how local content development will depend on a country's development within each of these variables, and how the local environment structures the interaction between them. The goal of local content development in the petroleum industry is also dependent on a resource holding country's ability to create linkages between the petroleum related industry and the other sectors of the economy. This will contribute to economic diversification. Diversification is needed if the goal is long-term growth and not just short-term domestic participation. The recipe for success in local content development requires these different variables to be conducive to both foreign and domestic investment, as investment is the necessary ingredient to expand domestic capacity and growth (Ibid: 2171).

In essence, Kazzazi and Nouri's conceptual model shows how important these internal variables are in attracting investment, and how important that investment is to local content development.

2.3 Theory of multinational companies' investment strategy

We have now seen how LCRs are essentially government tools used on foreign companies to make them invest in domestic industrial development. These regulations have to be comprehensive enough to make it unattractive not to invest, but at the same time, they need to avoid (negatively) affecting the company's bottom-line. To identify this bottom-line, we need to know what motivates the large international petroleum companies to expand into a new market. The theory of multinational companies' (MNCs) investment strategy provides insight into the basic logic behind their decision to expand into a new market. The strategies listed below are what the literature on MNC investment identifies as the most common strategies behind investing in a new market.

2.3.1 Market-seeking

In this strategy, the MNCs invest in a particular country in order to supply that country's market. Typically, this is a response to trade limitations on the supply of that market from its current location (Dimitropoulou et al 2008: 61). In the case of the large international oil companies (IOCs) in the petroleum industry, this strategy would be more focused on capturing market-shares than market supply, as they supply the global market. Meanwhile, for the supply

companies operating in the petroleum industry, protectionist measures favouring domestic suppliers would be a limit to their ability to supply the IOCs. This is the strategic logic behind supply companies establishing themselves in foreign markets. This is especially true when it becomes quite costly to operate from outside the market, as LCRs limit their ability to compete for contracts without significant local investment in both domestic industry and employment.

2.3.2 Efficiency-seeking

As profit maximising entities, MNCs are looking to establish production subsidiaries in locations that will help enhance the cost-efficiency of the goods they supply (Ibid: 64). This can be achieved by moving a labour-intensive part of production to a location where labour is cheap. The supply segments in the petroleum sector that rely on low-skill and labour-intense input, are less dependent on the local capability to supply necessary technical input than more hi-tech segments. This makes them more flexible in terms of where they choose to locate their production, and by establishing production subsidies closer to markets, these companies will increase their overall cost-efficiency. In contrast, for those segments who supply capital- and skill-intense products, there are higher requirements in terms of local technological and educational development. Investment in less developed countries by technology-heavy segments, such as subsea technology, is counter-intuitive to this efficiency seeking strategy.

2.3.3 Knowledge-seeking

In this strategy, MNCs seek to invest in countries where they can benefit from location-specific capacities, such as an advanced R&D environment, or to diversify their technological capacity. This knowledge-seeking strategy is most commonly employed by R&D-heavy industries, where new technology has a greater impact on their product (Chung & Alcácer 2002: 1536). The investment of MNCs like FCM technologies and Schlumberger in the Norwegian subsea and engineering segments can be seen as an example of knowledge-seeking strategy. Since the Norwegian petroleum industry has years of experience with offshore and deep-water operations, which require a high degree of technical input. This advanced Norwegian R&D environment is traditionally supported by both the government and industry, and has in recent years developed an expertise in floating production storage and offloading (FPSO) (Rystad 2013: 5).

2.3.4 Profit-seeking

What all of these strategies have in common, is that the goal of investment is maximizing the company's profits, which is the motivation for any market-oriented company. Host-government regulation of MNC activity will then add additional costs that may end up affecting the eventual profit margin of this investment. Dunning (2002) points to a few examples of how government policy that is designed to contribute to domestic development could cause a less attractive investment climate for MNCs. One such example is how demanding more labour intensive production to increase domestic employment could cause exports to suffer. Because as the expenses grow, the rate of production might go down. A second example is how limiting the MNC's ability to use its international affiliates for supply functions might increase the cost of production. A third example, is where a government pushing for increased R&D investment might be reluctant to give up ownership of the technology, discouraging private actors from participating (Dunning 2002: 201). As the principle motivation of the MNC's activity is creating profit, it would be safe to assume that government policies that are found to negatively affect the MNC's profit margin will make the country a less desirable target for investment.

In addition to increasing the cost of investment, such protectionist policies are, according to Dunning, less likely to attribute real domestic development. Because MNCs already rarely find it profitable to transfer technologically advanced- and skill-intensive manufacturing to new markets. This trend of not investing in the expansion of technologically advanced tasks and R&D is found to be a general logic amongst MNCs, especially those based in the U.S. (Dunning 2002: 205). This means that MNC-investment in new markets are usually directed towards labour-intensive- and low-skill manufacturing, which is comparatively more expensive in more advanced economies due to the higher wage level. Most countries benefit from FDI through the way it helps increase their technological- and managerial ability. It is then apparent that any country enacting LCRs on the petroleum industry, would have to be careful not to deter foreign established actors, and at the same time secure investment in the development of domestic capabilities.

The increased importance of international sourcing, attributed to the globalized nature of the modern economy, has made MNCs more dependent on the established knowledge base and good infrastructure, than natural resources (Dunning 2002: 309). This corporate logic of infrastructure development trumping natural resources might not transfer too well to an industry as innately resource dependent as the petroleum industry, but it does give an indication of the

importance MNCs put on having a functioning infrastructure as a prerequisite for their activities.

2.4 The oil price's influence on profitability in the petroleum industry

There is however one factor, which neither the conceptual model or the literature informing it deals with explicitly, that is the effect that the resource price has on local content development. When assessing how public policy can attract investment from MNCs, it is important to map out all the variables that will affect their investment decisions. As we have seen from the literature reviewed in Kazzazi and Nouri's conceptual model, a number of internal factors in the recipient country influences these investment decisions. However, I argue that for extractive industries, like the petroleum industry, the price of oil and gas serves as an important external variable influencing investment in the industry. This is because a drop in the market price for crude oil will lead to decreased profit margins for the companies operating in the petroleum industry.

Declining profit margins makes the petroleum sector a less attractive target for outside investment. Especially, in countries that already have added costs on the industry in the shape of comprehensive regulations and/or high-cost production. Less investment in the petroleum industry would mean fewer opportunities for domestic participation. This way, I argue that the oil-price affect local content development as an external variable, through the effect it has on the macroeconomic factors influencing investment decisions in the petroleum industry. From here on, I use the term "*investment climate*" when referring to the macroeconomic and financial conditions in a country that affect whether businesses are willing to invest there.

It could be argued that other external variables, such as the global supply and demand for energy, and in part, regional stability, are captured in this oil-price variable. This is because the global supply and demand for oil ultimately determine the oil-price. Furthermore, the price of oil arguably influences regional stability, by either strengthening the legitimacy of the current regime through high investment activity, fuelled by high oil-prices, or attributing to social unrest and discontent in a low-price scenario, as corporate expenditure contracts.

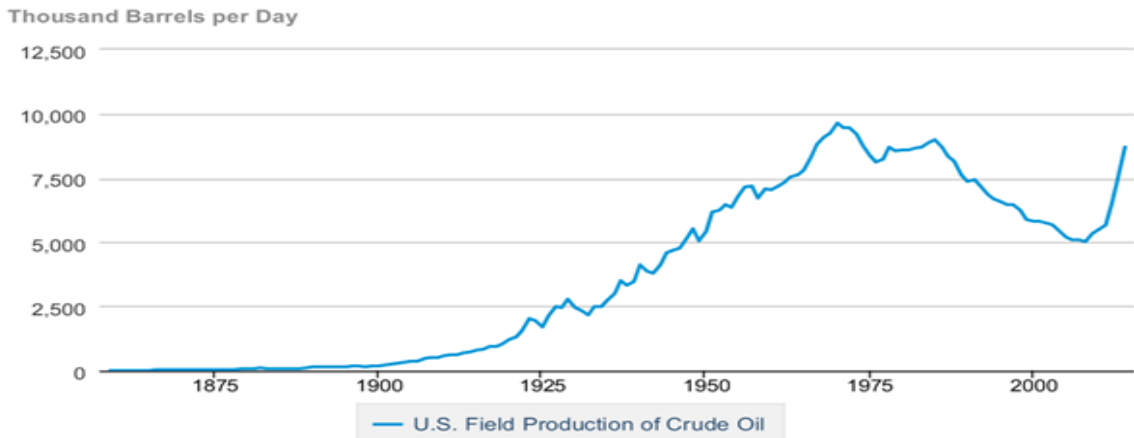
As previously mentioned, reduced profitability leads to reduced investment activity. Small profit margins will then influence local investment of the petroleum industry in two ways. Firstly, with smaller profit margins the added costs of government regulation will be more significant for the oil companies, which deteriorates the domestic investment climate by

decreasing profitability. Secondly, with a low oil-price the oil companies are less likely to invest in exploration of new areas and production from high costs fields that would otherwise be profitable in a high-price scenario (World Bank 2015a: 160). As in any industry, large profits fuel investment and declining profits leads to cutbacks. Therefore, when the oil-price took a dramatic fall in the second half of 2014, it had severe repercussions for the investment climate for the operators- and suppliers in the petroleum industry.

2.4.1 Causes behind the drop oil-prices in 2014

The 2014 fall in oil-prices can be attributed to a glut in oil supply, similar to the one the industry experienced in 1986. With the introduction of alternative fuels and improved vehicle fuel efficiency, there has been a decrease in the global demand for oil, which bottomed out in 2014 (IEA 2015: 5) (The Economist 2014). In addition to the fall in demand, progress in fracking technology has since 2007 attributed to a major surge in U.S. production of shale oil.

Figure 2. Timeline of U.S. production of crude oil (EIA 2015)



The increase in domestic production means that the U.S. is able to satisfy a large part of its own demand for oil. For oil-exporting countries outside North-America this has a major impact on demand, as the U.S. market is by far the largest consumer of crude oil in the world, averaging 19 million barrels a day, which is almost double that of China, the world’s second largest consumer (EIA 2013: Chart). Like in the 1980’s, the increase in production from new sources and declining global demand is contributing to the current glut. However, unlike 1986, this time around OPEC has not taken measures to try to push up the oil-price. While they lowered production in an attempt to keep the price up in the 1980’s, they now maintain high production-levels in a bid to keep their market-share (El Gamal et al 2015).

2.5 The link between external factors and local content development

As we have seen in this chapter, the literature on local content development in the petroleum industry highlights the need of resource holding states to help create linkages between the established international actors and the domestic industry. The purpose of these linkages is to enable transfers of experience, technology, and administrative expertise between the established international actors and the domestic industry. As the local industry acquires the relevant skill and technology, the capacity and demand of the local industry grows, spreading the benefits of increased economic activity and employment throughout the domestic economy. In the petroleum industry, these linkages are formed when international operators or supply companies invest in the local industry. This is done by either establishing a corporate partnership with a local partner, or by contracting the services of local companies. Such linkages might only occur naturally if conditions make the local industry an attractive target for investment. Alternatively, the government might force their creation, by imposing LCRs when the local conditions are uncondusive to attracting investment.

Kazzazi and Nouri's conceptual model gives us four domestic variables that are highlighted by the local content literature, as having a large influence on how attractive a country is as a target for foreign investment. As we saw in the previous sections, these four variables are the: (i) local environment, (ii) local infrastructure, (iii) local policies, and (iv) local capabilities.

However, as effective local content development require foreign investment, the resource holding state becomes vulnerable to external variables influencing the investment climate. As mentioned, petroleum-producing countries experienced a dramatic decline in oil prices in the summer of 2014. This was caused by an increase in the supply of oil, as developments in fracking technology enabled the U.S. to increase its production of cheap shale oil. This decrease in oil-prices has especially affected the segments of the petroleum industry that operates in capital-intensive markets, by significantly reducing their profit margins. Looking at how the theory tells us that MNCs motives for investment are mainly profit-driven, we can expect a fall in oil prices to cause a reduction in investment activity. This reduction in investment will consequently affect local content development, as it reduces local investment and thus the possibility of knowledge-transfers between the foreign- and domestic industry.

2.5.1 Testing the link between oil prices and local development

If there is indeed a direct link between the price of oil and the ability of the resource holding state to develop its local content, it should be included as a fifth variable in the conceptual model. In order to see if there is such a connection, we need to test the theoretical assumptions that lead us to believe that there might be one. The first assumption is that a drop in the price of oil influence macroeconomic variables in the oil-exporting country, in a way that has a negative effect on investment the petroleum industry. The second is that the resulting investment climate will have a negative impact on the resource holding state's ability to create local content development.

2.5.1.1 Operationalization and hypotheses

Testing the first assumption require us to look at how the oil-price influences public and private investment. This I do by looking at how a fall in oil-prices affect the macroeconomic environment. Kazzazi and Nouri (2012), highlight the macroeconomic environment as the factor included in their "local environment" variable, which has the greatest effect on investment in the petroleum industry. They shows us how macroeconomic variables, such as the exchange rate, inflation rate, and interest rate, have a large influence on the domestic investment climate. By looking at how these macroeconomic variables are influenced by declining oil prices in Angola, we are able to see whether low oil-prices deteriorates the local investment climate. If this assumption turns out to be true, then we would expect to see low oil-prices being followed by a depreciation of the local exchange rate, and possibly a higher interest rate, as both the public sector and business are likely to borrow money to make up for the loss in purchasing power. These macroeconomic effects discourage investment, as they increase the cost of new investments. Reversely, if we fail to see signs of these macroeconomic effects we would expect this assumption not to be true. This implies that we expect the oil-price to have a direct effect on the local environment, and through this effect, have a negative influence on domestic investment.

- This result in our first hypothesis: *A fall in oil-prices affect important macroeconomic variables in the resource holding state, in a way that deteriorates the domestic investment climate.*

From this follows the second assumption, which require us to look at the resource holding state's ability to develop local content. Excluding the local environment variable investigated

in my first hypothesis, Kazzazi and Nouri's model provide us with three additional variables essential to developing local content. These are (i) local policies, (ii) local infrastructure, and (iii) local capabilities. By looking at how the different aspects of these three variables are influenced by the macroeconomic repercussions from a low oil-price, we are able to tell whether a drop in the price of oil will affect the country's ability to develop its local content. This means that I expect to find the oil-price to influence local content development indirectly through the effect it has on the macroeconomic environment.

For local policies, this means looking at how these macroeconomic effects influences the resource holding state's ability to impose LCRs on the established industry. The theory of obsolescent bargaining tell us, that we would expect to see international companies becoming more thoroughly regulated once they have invested in a new location, as sunk costs strengthen the state's bargaining position (Jakobsen 2012: 70). If this deterioration of the investment climate, caused by the change in the macroeconomic environment, does not affect the resource holding state's ability to impose LCRs, we would expect to see LCRs on foreign companies with sunk costs to either increase or remain at their current level. On the other hand, if this deterioration of the investment climate indeed does have an effect on the resource-holding state's ability to impose LCRs, we would expect to see a relaxation of LCRs imposed on foreign companies with sunk costs.

- Resulting in our second hypothesis: *The macroeconomic effects from a fall in oil-prices will limit the resource holding state's ability to impose LCRs on foreign companies that are established domestically.*

To see whether the local infrastructure's ability to contribute to local content development affected by a drop in investment, we have to look at how infrastructure benefits local content. Kazzazi and Nouri (2012) have shown us how the local infrastructure benefit local content development, by creating conditions that enhance the competitiveness of the domestic industry. The resource holding state creates these conditions by funding efficiency-enhancing projects, establishing links between domestic and foreign companies, and subsidising the domestic industry. In a low-price scenario, we would then expect the revenue of the resource holding state to decline. This would limit its ability to invest in both capacity-improving projects and subsidies, leading to reduced local competitiveness. If the ability of the local infrastructure to enhance local competitiveness were in fact influenced by the deteriorating investment climate, we would then expect to see a halt in government spending on infrastructure projects, and

subsidies for the local industry. However, if the ability of the local infrastructure to enhance local competitiveness was not affected by a worsening investment climate, we would expect to see continued spending on planned projects and existing subsidies.

- The third hypothesis then becomes; *The macroeconomic effects from a fall in oil-prices will cause a decrease in government spending on infrastructure and subsidies for domestic companies.*

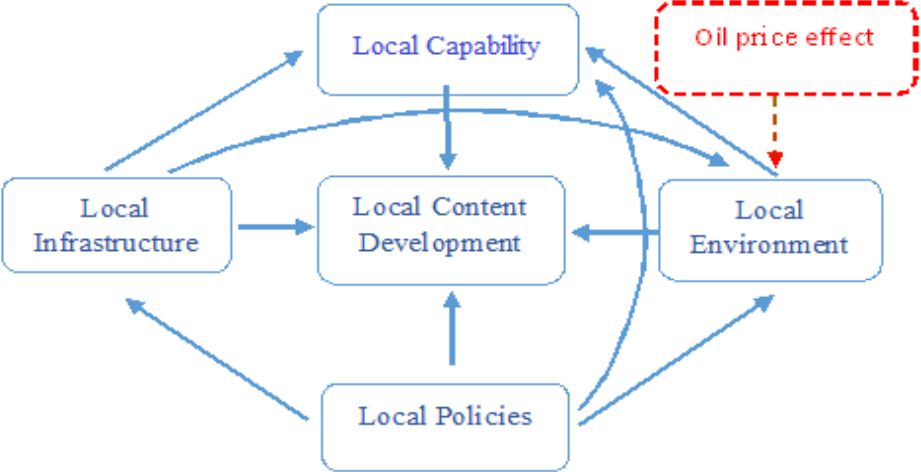
To be able to test whether the local capabilities contribution to local content development is influenced by a deterioration of the investment climate, we have to look at how these capabilities aid in developing local content. As highlighted by Kazzazi and Nouri (2012), the literature on local content development tells us that the domestic level of education and industrial capacity are important factors in this regard. We see that the country's capacity to establish corporate linkages between international companies and the local industry is one of these factors that contribute to developing local content. Similar to how we expect the local infrastructure to be influenced by a deterioration of the investment climate, we would then expect local capabilities to be influenced by a drop in public spending. If the local capabilities contribution to local content development were indeed influenced by a deteriorated investment climate, we would then expect to find a drop in public funding of measures aimed at enhancing local capabilities. More specifically we expect to see a drop in public funding of education, infrastructure, and measures aimed at increasing the competitiveness of the local industry. Reversely, if a deterioration of the investment climate does not influence the local capabilities contribution to local content development, we do not expect to see a drop in public funding of education and domestic competitiveness.

- Resulting in our fourth and final hypothesis: *The macroeconomic effects from a fall in oil-prices will cause a drop in public funding of education and public measures aimed at increasing the competitiveness of the domestic industry.*

Assuming I find these hypotheses to be true, I argue that the oil-price's effect on the local environment should be added as an external variable in Kazzazi and Nouri's conceptual model. As it is then shown to influence all four of the models variable's ability to contribute to local content development. This it does directly through the oil-price's effect on the macroeconomic variables, and indirectly through how the change in the macroeconomic variables influence

investment in and business regulations. We would then expect the revised conceptual model to look something like this:

Figure 3. Kazzazi and Nouri's conceptual model, revised to include the oil-price variable



In Figure 3, we see that this new variable's influence on the local environment is added as an external variable to Kazzazi and Nouri's (2012) original model.

Chapter 3. Method

This chapter will look at the methodology applied in this thesis, and discuss the considerations that have informed the choice of method. The main sources of empirical data used in this paper is also presented here, including my interview informants. In addition to this, the chapter also contains the author's reflections regarding case selection, data collection, and the challenges related to method and design when researching this paper.

3.1 Research strategy and design

This paper applies a qualitative research design, and makes use of a case study approach to answering its hypotheses. The reasons for this are connected to its underlying research question and the variables in focus. These domestic variables in the conceptual model are interconnected with each other, which complicates a quantitative approach, as we would not be sure that an effect on one variable does not happen through its effect on one of the other variables. Thus, a qualitative approach allow us to go into more detail, to see how external factors influence each variable separately. Qualitative research is associated with an inductive approach to knowledge accumulation, as the researcher looks at a few cases and tries to draw general lessons (Tjora 2012: 26). However, this paper also tries to apply a deductive approach, as it applies a general model to its specific case, making this paper contain elements of both induction and deduction.

As I have already mentioned, this paper applies a case study approach in the attempt to answer its hypothesis. The essence of the case study is that it attempts to illuminate a set of questions like *what*, *how* and *why* (Yin 2003: 1). This paper focus on (i) what influences local content development, (ii) why the external environment plays a part in this process, and (iii) how the external environment influences domestic variables, it is then best illustrated by a case study approach. The ambition of this paper is to apply, review and improve an existing model of the most influential variables that influence the development of domestic participation in the petroleum industry. As a single case study, its ability to draw generalizable conclusions is limited, but as a part of developing a more comprehensive model the goal is to provide insight into an external dimension that is not explicitly stated in the original model. This kind of case study is what is referred to as a heuristic case study, which aims to add to a theoretical construct, with the goal to improve the validity of the original model (Moses & Knutsen 2012: 140).

3.2 Case selection

The first reason for choosing Angola is that the conceptual model emphasises the importance of local policy in developing local content. Due to international trade regulations, very few countries have local content regulations that to such an extent favour its local industry as Angola does. With this policy variable in place, it allows us to see how the other variables are influenced by an external variable in an already regulated environment.

The second reason for choosing Angola is the country's connection with the Norwegian model, through its participation in the Oil for Development programme. As the Norwegian local content management is largely regarded as a success story, one could expect Angola to have adopted a management policy, which is similarly conducive to local content development.

The third reason has to do with the cost of oil production in Angola. To best illustrate a link between oil-prices and investment, the case needed to have a high cost of production, so that a drop in prices would have the greatest impact on profits. By choosing a country with a low production-cost on the other hand, a fall in prices would have a less dramatic effect, and the outside influence might be overlooked.

The fourth and final reason relates to what Angola represents in a broader context. It is a sub-Saharan African country, with a young population, considerable poverty, and vast petroleum resources. As several African countries are in the process of exploring and developing their oil and gas resources, using Angola as a case might highlight the potential challenges facing local content development in the region.

Other cases matching some of these criteria, such as Brazil, were considered early on in the research process, but were dropped due to it already having been used for a somewhat similar case study. That case study focused on the constraints that international companies experience from local content regulations in Brazil. With that study in mind, I decided to prioritise the novelty of making use of a less studied case. There is, of course, a problem with drawing universal generalisations from such a specific case study. Since both the production-costs for the industry and the use of LCRs vary from country to country, making very few cases identical. However, similarities do exist, and I believe many of the conditions discussed in this paper also apply for several other African oil-exporting countries. Thus, by improving upon a conceptual model, with variables that apply to any country with petroleum resources, I contend that this

price-effect is always present, regardless of location. Its effect on local content development however, depends on the effect it has on the industry's profit margin in each separate case.

3.3 Data collection

I have made use of two interviews as my main source of data about the experiences of the petroleum industry. This is related to the need to discover the petroleum industry's experience with LCRs in Angola, and how these might have changed with the recent fall in oil-prices. I assess expert interviews to be the only credible source of information, as the subject is a contemporary phenomenon. This means that it is largely undocumented and have not yet led to any official change in policy, which would allow an alternative method of measurement. The fact that I am looking to capture the industry's experiences, makes interviews the most suited form of data collection in this regard, as interviews capture the detailed subjective opinion of the informant (Tjora 2012: 105). The initial goal was draw on a series of interviews with various international companies operating in Angola, but time and geographical constraints limited the number of available participants.

The interviews were conducted using telephone and a phone recorder, due to the informants being located in Paris, France and Tananger, Norway. As there are restrictions to recording phone calls, my plans for conducting these interviews and the handling of the information gathered were reported to and verified by Norsk Samfunnsvitenskapelig Datatjeneste AS. Conducting interviews over the phone might not always be ideal, as it creates distance between the informant and the researcher. As the nature of my questions are business related, and are in no way emotionally loaded, I believe it did not complicate the interview. These interviews took between 45 minutes to an hour, and were conducted by appointment during working hours to make sure that I had the informant's attention and that they had time to prepare. Both informants were informed that the interviews would be recorded and that they had the option of anonymity. Both gave their consent to being recorded, and waved the option of anonymity. The interview with NCA/Oceaneering were conducted in Norwegian, and subsequently translated into English by me. This means that the translation process might affect the way their answers are presented in this paper. However, I have tried to translate word-for-word as far as possible.

The choice of using both interviews and existing databases in the data collection for this paper, is related to the need to provide data for several variables. To provide an accurate analysis of the interaction between five variables and their influence on local content development, it was

necessary to draw on several sources, as there was not one source that could adequately inform more than one aspect of the model. I have made use of statistics and policy briefings from The World Bank, The International Monetary Fund, and World Economic Forum, to inform the assessment of the status of Angolan local content development, and how it has been affected by the oil-price in the past. I have conducted interviews with procurement officials in two international companies that operate in Angola, in an attempt to capture the international petroleum industry's experience with local content. The necessity of a multi-method approach to data collection lends itself to such a case study approach, as it relies on the researcher having an in-depth understanding of the case (Tjora 2012: 35).

3.4 Interviews

As mentioned, the interviews for this paper required informants who were qualified to answer questions regarding procurements decisions and government regulations, in a complex African market. As the Angolan regulatory system have different regulations for foreign companies operating with an Angolan partner-company and/or in-country manufacturing, and those companies operating alone, the decision was taken to interview a procurement officer from an international company in both categories. By either being involved with a domestic partner company or establishing upstream activity in Angola, some foreign companies already make use of a certain level of local content. It is then natural that these companies does not receive the same regulatory burden, as foreign companies operating independently of the local industry. By choosing to interview a company from each category, the idea was to control for the difference in regulatory regimes, and reveal if the companies under two regimes experience different effects from the drop in oil-prices. How these LCRs vary according to segment and local investment is shown in more detail in chapter four.

My two informants both operate in the subsea/decommissioning segments of the petroleum industry. This means that the main difference between them is how invested they are in the local market. In addition to this, these are technology-heavy sub-segments of the industry, which make them a good indicator on how the declining oil-price influences international companies. As technology-heavy segments are usually where the competence of international suppliers are needed.

The first interview was with the procurement officer from NCA/Oceaneering. This company is a merger between the Norwegian company Norse Cutting and Abandonment (NCA), and the

multinational company Oceaneering. Their area of activity is in the northern Cabinda territory in Angola, where they operate from platforms, and supply services related to abandoning and decommissioning oil wells. After several years of international expansion since its founding in 1999, the company was acquired by Oceaneering in 2011, and is now a part of its Deepwater Technical Solutions (DTS) branch (NCA 2015). The company operates without a specific local partner company in Angola, and thus is my informant from the category of companies who operate independently.

The second interview is with Subsea7 S.A's sales manager and marketing director for Africa and the Mediterranean. This is one of the world's largest supply companies operating in the petroleum industry. Subsea7 S.A is the result of a merger between Luxembourgian supply giant Acergy S.A, and Subsea7 who trace its company history back to Det Søndenfjelds-Norske Dampskipselskap (DSND). Subsea7 S.A supply services in every area of subsea operations, from engineering and production, to maintenance and decommissioning (Subsea7 2015). In Angola, the company supplies the whole range of its subsea solutions through its Sonamet yard and their fabrication vessel. The Sonamet yard is located in Lobito, but the company also has offices in the capital Luanda. As this fabrication yard is run in partnership with the national oil company; Sonangol, Subsea7 S.A is my informant from the companies who operate with a domestic partner.

3.5 Databases

As previously mentioned, this paper supplements its interviews with statistics and surveys supplied by various international organisations. This section will present the main databases used in the paper.

3.5.1 The World Bank – World development indicators 2014

This is a database of development indicators including statistical indicators for country-specific development in health, energy, education, trade, infrastructure, economy. The database is updated annually, which makes it possible to look at timeline data in the World Bank's own statistics browser (World Bank 2015b). In this paper, this database is used as the primary source of statistical data related to the country's macroeconomic variables.

3.5.2 World Economic Forum – The global competitiveness report 2014-2015

This is the most comprehensive report of national competitiveness there is. The report includes 144 different economies, which are ranked in twelve different pillars, representing twelve

competitiveness indicators. These pillars are: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods and market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication, innovation. All of these indicators have several sub-categories, which makes for a detailed report (WEF 2014). The statistics compiled in this WEF-report were used as a source of data for the development of Angolan industrial- and infrastructure capacity.

3.5.3 The International Monetary Fund – World Economic Outlook Database 2015 and policy reports

The world economic outlook database contain macroeconomic data at the individual country level. This database is updated annually and provides information about national accounts, inflation, unemployment, balance of payments, fiscal indicators, trade aggregates, and commodity prices (IMF 2015a). In this paper, this database provide the data for the planned future government expenditure. In addition to this database, several IMF reports on changes in government policy are also used to fill in the areas not covered by the database.

3.6 Challenges and reflections on the data collection process

The challenges connected to researching this paper were related to connecting with qualified informants. My initial research design included interviewing as many as possible of the companies connected to the Norwegian petroleum industry who are currently operating in Angola and Brazil. The aim was to map out the costs and restriction posed by local content regulations in these areas. This focus was related to the fact that many companies based in Norway are experiencing a growing share of their revenue stemming from international operations (Blomgren et al 2015). However, it turned out that getting in touch with people within the different companies, which were sufficiently qualified to answer questions about local procurement and regulatory demands, was harder than I expected. It was apparent that I needed to get in touch with a “*gatekeeper*”, someone who could get me in touch with the necessary people. For me this gatekeeper turned out to be Norsk Oljemuseum, who were able to share some of their contacts within the Norway-based companies operating abroad. Yet, I needed more informants to continue with my original design.

The answer was to take a step back and adjust my original research design. My primary interest was always: how oil-exporting countries can achieve local content development in conjunction

with their petroleum activities. Therefore, I adjusted my design to look at how a conceptual model of local content development looks when applied to a real world case, and to focus on what external factors affect successful development of local content. This new research-design focus on how the external environment influence the resource-holding state's ability to achieve local content development in the domestic petroleum industry. This is opposed to the first design, which were focused on how the resource-holding state influences the procurement decisions of the industry. As with my original research design, I ran into trouble getting in touch with informants, but this time around, I was able to use the databases of reputable international organisations to fill in the information gap. In addition to making use of these databases, I expanded my interviews from brief focused interviews, to more detailed in-depth interviews. Such an increase in the scope of the interviews were suggested by the literature as a way of overcoming the problem of having few qualified informants (Tjora 2012: 105).

To some extent, I believe that by using impartial statistics and analysis I was able to make a more credible assessment of Angolan capabilities, then what might have been provided by Angolan officials. The lack of government informants creates a potential danger that my analysis lean too heavily toward the perception of the industry, and not taking adequate consideration of the government's social responsibility. I attempt to remedy this, by giving weight to neutral sources when assessing the impact a drop in investment will have on domestic development.

Chapter 4. Case study: Angola

This chapter will begin by introducing Angola as a case through its involvement in the Norad managed Oil for Development programme, which provides the context for why Angola might be an interesting case study in Norwegian eyes. After the case introduction, I present the country's data for each of the four variables in Kazzazi and Nouri's conceptual model. Here I first focus on the impact that the 2014-drop in oil-prices has had on Angola's macroeconomic environment, in light of how it was affected by the previous drop in oil-prices that occurred between 2008 and 2009. Afterwards, I present the country data for each of the three remaining variables: local infrastructure, local capabilities, and local policies. These data are based on the interviews conducted in the research for this thesis, and the databases presented previously, in chapter 3. The final analysis of how these four variables are affected by a drop in oil prices, and the repercussions this has for local content development, is further presented in chapter 5.

4.1 Angola and the Oil for Development programme

The success of Norway's management of its petroleum resources, in both escaping the "resource curse" and in promoting industrial development, has made its management model an export item in its own right. This management model is often referred to as the "Norwegian model", and it is defined by its high degree of government control. It includes: (i) government ownership over its resources, (ii) investment of its petroleum revenue in a sovereign wealth fund, and (iii) making use of production agreements to promote domestic development (Disch et al. 2012: 8).

The Norwegian government has established a development programme; *Oil for development* (OfD), which centres on exporting the lessons learned from the Norwegian experience. The OfD programme is an aid-program that seeks to assist social- and economic development in developing oil-exporting countries. This it does through helping its recipients with the establishment of good practices for public management of their petroleum resources. The program is run by the Norwegian Agency of Development Cooperation (Norad), and it assists in petroleum resource management through institutional cooperation with the recipient country. The focus area of the programme is to assist its beneficiaries in adopting effective and sustainable policies in issues related to petroleum management. These issues include the management of health and safety, environmental concerns, and state revenue (Norad 2014b). However, the goal of OfD is not to implement the management practices from Norway, but to

contribute with experience, and assist in implementing practices on the beneficiaries own initiative (Norad 2014a 6 & 7).

The OfD programme was officially established in 2005, but petroleum related cooperation between Norway and developing petroleum economies has existed in some form since the 1980's. The OfD programme is an extension of this cooperation, and as of 2013, the programme was assisting 18 different countries (Norad 2014a: 14). The programme categorizes its beneficiary countries as either "core" or "non-core" countries. With the core countries receiving a considerably larger share of the 1.5 billion NOK spent by the programme as of 2012. The majority of these core countries are located in Sub-Saharan Africa, but the programme also include petroleum-producing countries from South-America and Asia (Disch et al 2012: 11).

Angola is one of these core countries in the OfD programme. The country officially became a part of the programme between 2008 to 2012, but Norway has contributed with development assistance in Angola since 1987 (Norad 2014a: 18). As the programme officially ended in 2012 pending a government review, it is now set for a five year extension as budgetary negotiations are under way¹. In light of this cooperation and the current oil-glut, I look at how Angolan local content development is influenced by the fall in the global oil-prices.

4.2 Local environment

This section focus on the local environment, more specifically the macroeconomic environment, with attention to how it is affected by fluctuations in the oil price. By looking at Angola's macroeconomic management, and how it coped with the 2008 fall in oil prices, we get an indication about of the exchange rate and interest rates will react to a fall in oil prices. Apart from looking at the exchange rate and interest rate, Kazzazi and Nouri (2012) highlight how local development demands sound macroeconomic management. The Norwegian model is highlighted as a model of best practices in this regard, in addition to being an example that Angola has attempted to model itself after. The main lesson from the Norwegian model in terms of macroeconomic management is diversion of oil revenue into a fund, and using this fund as a fiscal stabilizer in times of oil price volatility. To illustrate the sustainability of Angola's macroeconomic management, this section look at its ability create an attractive investment

¹ As of February 2015.

climate, and compare it to the Norwegian model, in terms of its ability to use its petroleum revenue to reduce the negative effects of oil price volatility.

4.2.1 Impact of the 2008-2009 fall in oil prices on the Angolan economy

In 2008, the price of crude oil rose to an all-time peak of 144.51 dollars per barrel. The peak was reached in June, before plummeting steadily the rest of the year, reaching its lowest point of 43.59 dollars per barrel by February 2009. This was the largest sustained fall in oil prices since the oil glut in 1986, and it posed a new set of challenges for oil exporting countries. Apart from minor price fluctuations, the exporting countries had experienced a period of sustained growth in oil prices since 2001. With its civil war ending in 2002, this was the first time the new Angolan state faced a major price fall in its most important source of revenue. This section will look at some of the effects this incident had on the Angolan economy.

4.1.1.2 Exchange rate

As a result of fears that the price-fall would lead to runaway inflation, as the central bank had recently doubled the amount of kwanza in circulation, the Angolan central bank started spending its foreign currency in defence of the kwanza. This policy was dubbed the “hard kwanza policy” (Jensen & Paulo 2011: 27). This hard kwanza policy was a policy the country had applied for several years, which had succeeded in establishing trust in the currency. However, when the prices fell so dramatically in the last months of 2008, this created a severe strain on Angola’s foreign reserves. Already in 2008, it sold 1.9 billion dollars to private banks in a bid to maintain a stable exchange rate. Two more interventions followed in 2009, reducing the country’s total foreign reserves by 37.5 percent. In addition to this, the reserve requirements for banks was increased from 15 percent of deposits to 30 percent. The reason for the increase in reserve requirements was a surge in demand for dollars, as depositors lost faith in the kwanza (Jensen & Paulo 2011: 27). When the central bank eventually started selling dollars to banks again, it led to a 13 percent depreciation of the kwanza.

The attempt to stabilize the kwanza was largely unsuccessful, resulting in a depreciation from 75 kwanza per U.S. dollar to 92, despite the central bank’s efforts. The failed hard kwanza policy also resulted in a large reduction of Angola’s foreign reserves. Interview data from Jensen & Paulo’s (2011) study suggest that Angolan decision-makers were convinced that this was a necessary step to reduce inflation. Something that would have made imported goods even more expensive for the domestic industry. Keeping in mind its limited local manufacturing

capabilities, an increase in import prices would be a heavy blow to Angola’s main source of revenue, the petroleum industry.

Figure 4. Inflation rate movement after the drops in oil prices, 2008 (left) and 2014 (right) (IECONOMICS 2015)

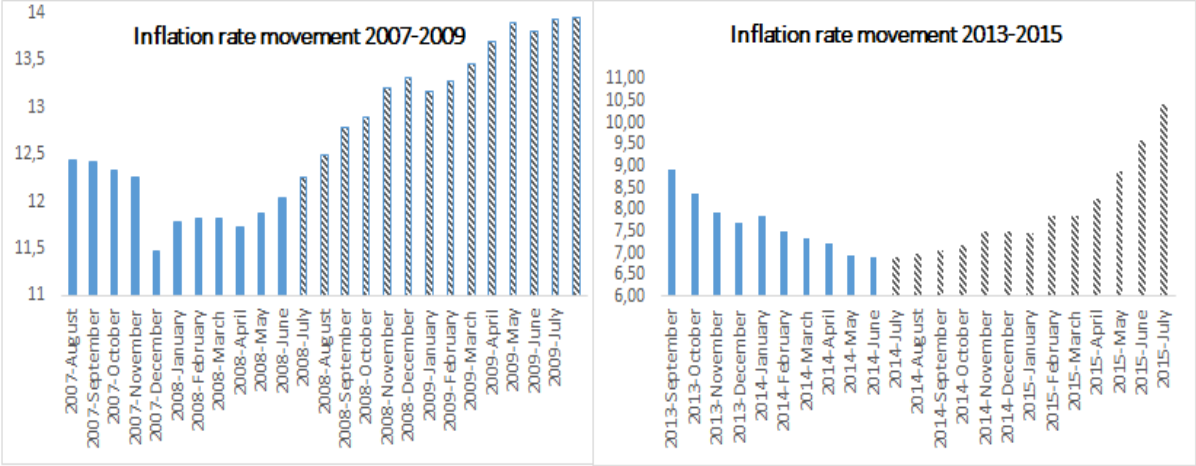
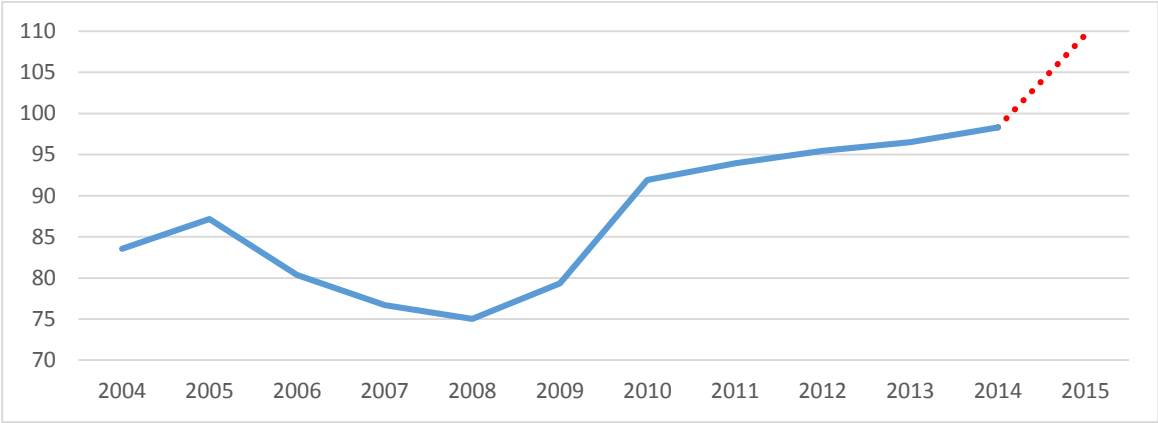


Figure explanation: Shaded areas show the rate after the oil-prices began to drop.

Figure 5 below, shows how the exchange rate was kept below 80 units per U.S. dollar, due to the hard kwanza policy, before shooting up to 91 when the central bank again started selling dollars. Then we see a steady increase in the exchange rate until there is a sharp increase again from 2014 to 2015. This last peak occurs by adding the official exchange rate as of April 2015, which was 109.54 units per U.S. dollar (Bloomberg business 2015). This last peak is dotted red as to illustrate the fact that there is yet to be any signs of a similar effort to defend the Kwanza from depreciating this time around.

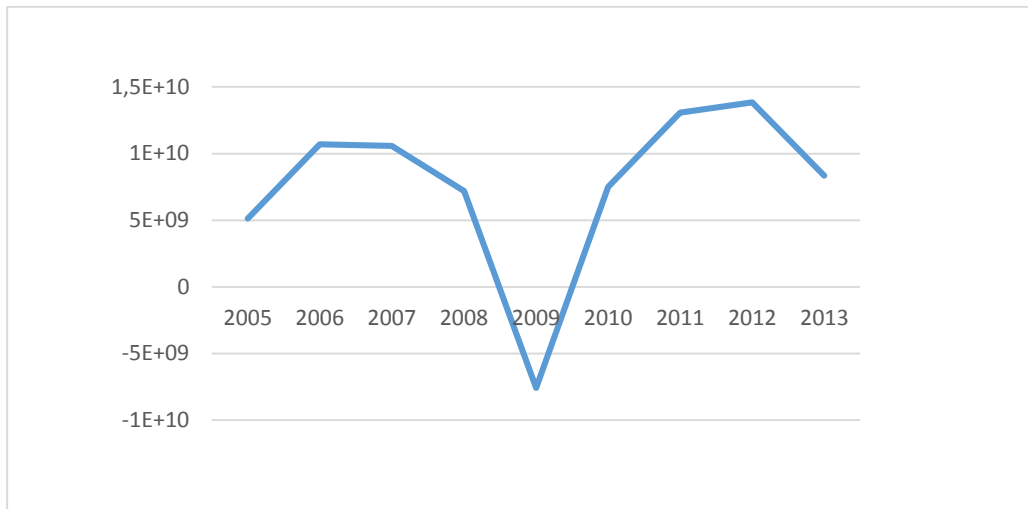
Figure 5. Official exchange rate of Kwanza per U.S. dollar (World Bank 2015c)



4.1.1.3 Current account balance

As we have now seen, the hard Kwanza policy led to Angola spending a fair share of its foreign capital reserves. This is visible on the country’s current account balance, where it experienced a significant drop between 2008 and 2009. The graph in figure 6, shows how the 7.1 billion dollar current account surplus at the start of 2008, had turned to a 7.5 billion dollar deficit by 2009. In addition to a reduction of foreign capital, a drop in the current account balance could also be caused by a large inflow of investment, and there was in fact, a 76 percent growth in investment between 2008 and 2009 measured in FDI (World Bank 2015h). It is likely then that this growth in investment contributed to the current account deficit, but the growth in investment was even larger between 2007 and 2008. Meaning that there actually was a reduction in the actual rate of growth in FDI inflow, from 153 percent the year before. Comparatively, government expenditure only increased by 1.3 percent of GDP between 2007 and 2009, after a longer period of decline in public spending (World Bank 2015d). This seem to suggest that the current account deficit is not sufficiently explained by public economic expansion, and that the drop in foreign reserves and inflow of FDI is more likely to have caused the current account deficit.

Figure 6. Angola's current account balance in current U.S. dollars (World Bank 2015e)



By running a current account deficit in 2008, Angola put added strain on its foreign exchange reserves. It is obvious that spending its foreign reserves to defend the exchange rate, in addition to running a current account deficit, would not ward off inflation long-term. At some point, it would run out of foreign exchange reserves, and inflation would take hold. Angola was saved from further inflation by the oil prices making a comeback in 2010, but runaway inflation looks like a realistic scenario in a period with low oil prices and a current account deficit.

This is because inflation is linked to the oil-price through the effect that the oil-price has on the exchange rate of the oil-exporting country's currency. A positive price shock leads to an improved trade balance, as the value of exports grow in relation to imports, which in turn causes the demand for a country's currency to grow and its value to rise (appreciation). A negative price shock will however cause the trade balance to deteriorate, as imports becomes more expensive in relation to exports, which in turn reduce the demand for the country's currency and thus lowering its value (depreciation). Exchange rate depreciation means imported items become more expensive, which increase the general price level in the economy (inflation). The impact of exchange rate depreciation on overall inflation is thus related to a country's dependence imported goods. Angola as a country is largely dependent on its petroleum sector, as oil exports amount to more than 90 percent of the country's total exports. Due to its limited domestic production capabilities, the Angolan petroleum industry require the necessary machinery and equipment to be imported from abroad. An exchange rate depreciation will increase the cost of these items, and thus the production costs for the industry as a whole. With no other significant source of export revenue apart from oil, the positive side effects of exchange

rate depreciation, such as increased demand for its now cheaper exports, are the not sufficient to reduce this widening current account deficit.

Inflation would have a negative impact on foreign investment activity, as it (i) erodes the return from investment, (ii) increases the cost of imports, and (iii) causes economic agents to invest in a safer currency.

4.2.2 The macroeconomic management

Over several years, the Angolan government have overestimated the real revenue in the annual budget. From 2011 to 2013, the annual budgeted revenue exceeded real revenue, with the potential of seriously complicating budget management (Fjelstad, Jensen & Paulo 2014: 2). Elevated expectations of revenue can cause overspending of public funds, resulting in budget deficits. This is exactly what has happened to Angola at the start of 2015. The annual budget for 2015 was calculated using an oil price of 81 dollars per barrel, which, as of March, was 33 dollars over the real price. This miscalculation coupled with massive public infrastructure projects have amounted to an increasing budget deficit, going from 0.3% in 2013 to 2.9% of GDP in 2014 (World Bank 2015f). The government is currently financing this deficit through borrowing in excess of 2 billion dollars, from the World Bank and various other financial institutions (Baily & Hoskins 2015: 20742). By borrowing money, the government increase the interest rates on its debt payments, making its debt more expensive. This has resulted in Angola having their credit rating downgraded from B+ to a BB- by Standards and Poor (Ibid). The dangers investment activity of increasing government debt is related to the effect it has on interest rates. Higher interest rates increase the cost of borrowing money for private actors, leaving business with less money.

4.1.2.1 Revised budget for 2015

The Angolan government has enacted a revised budget for 2015 to counter for the recent changes in oil prices. This new budget is calculated on a projected oil price of 40 dollars per barrel instead of the initial 81 dollars per barrel, and assumes a drop in state oil revenue of 25 percent (Baily & Hoskins 2015: 20742). By downgrading the budgetary expectations for the oil price, they are responding to the expected decline in revenue by cutting government expenditure with 25 percent 2015 (Ibid). These cuts will most likely have a serious influence on domestic development. However, the revised budget states that it will continue to protect domestic production, and public expenditure on health care and education will not be affected (World

Bank 2015f). However, the decrease in public expenditure has caused the growth projections to decline in manufacturing, construction and agriculture, which could mean a further decline in taxable income (Baily & Hoskins 2015: 20742).

While the Norwegian government, when faced with the previous oil glut, decided to cut taxation of the petroleum sector in order to attract investment, Angola has created a new tax. This tax is on foreign exchange operations, and attempts to target the increasing use of currency transfers abroad from international companies (Ibid.). This new tax will most likely have the largest impact in the petroleum sector, as the MNCs operating there will face a new penalty for the revenue they choose not to reinvest domestically.

4.1.2.2 The petroleum fund

As previously mentioned, the macroeconomic management of Angola's petroleum revenue is based off the Norwegian model. The Norwegian management model was adjusted after the price fall in 1986. Based on the lessons of the 86' oil glut, a system where the state's oil revenue was put into the national petroleum fund called the Norwegian Government Pension Fund Global (NGPFG) was implemented in 1990 (Ministry of finance 2015). The goal was to reduce the negative effects of oil price volatility in the domestic economy, by using the petroleum fund as a fiscal stabilizer. The Angolan sovereign wealth fund, Fundo Soberano De Angola (FSDEA), was established in 2012 with an initial capital of 5 billion dollars. Further funding is paid through a revenue-sharing agreement, at a rate of 100.000 barrels a day (IMF 2014a: 19). This means that the fund's capital inputs are dependent on the oil-price. The current investment portfolio consists largely of investments in sub-Saharan infrastructure, hospitals, timber works and agriculture (FSDEA 2014). These are typical long-term social investments with a high return for human and regional development, but with low short-term capital return. Additionally, in contrast to the NGPFG, the FSDEA does not have a mandate to act as a fiscal buffer in times of oil price volatility (Ibid). Overall, the FSDEA is a relatively new wealth fund that does not possess either the capital or mandate to act as a fiscal stabilizer in times of government budget deficits.

4.1.2.3 Taxes

Like the Norwegian government following the oil glut in the late 1980's, the Angolan government is now in a position where they need to create incentives for the oil companies to invest in the Angolan market. Oil sales amounted to 97 percent of the country's export revenue as of 2012, illustrating its dependence on the sector (IMF 2014b: 3). The Norwegian policy

response in 1987 was to decrease the tax level in the sector, by removing the production tax and decreasing the surtax by 5 percent (SSB 1987: 73).

In comparison, the Angolan tax regime have a production tax of 20 percent, which in marginal fields and ultra-deep waters² is adjusted down to 10 percent. In the case of production sharing agreements (PSAs) between Sonangol and international producers, no production tax is imposed on the participants (Ernst & Young 2013: 10 & 11). PSAs account for the majority of the petroleum agreements for the offshore blocks outside Cabinda, and it is the favoured agreement type in these high cost areas. The petroleum income tax of 50 percent also applies to PSAs, and is even larger (65.75 percent) for Risk Service Agreements (RSAs). In addition to the petroleum income tax, there is a surface charge at 300 dollars per square kilometre, and a petroleum transaction tax at 70 percent. Like the production tax, this petroleum transaction tax is not applicable to PSAs, which means that Angolan PSAs only impose the 50 percent petroleum income tax and the marginal surface charge (Ibid: 8-15). Comparably, the Norwegian taxation of petroleum production imposes a combined tax of 78 percent on field operators (Skatteetaten 2013: 37). Overall, the tax rate on petroleum activities in the Angolan sector is fairly low, and as the tax-rates are negotiated when entering a PSA, there is room for the government to give further tax incentives when faced with a glut.

4.3 Local infrastructure

Kazzazi and Nouri's conceptual model make use of transport-, power-, and communication variables to assess the level of a country's infrastructure development. By using data from the World Bank, World Economic Forum, and interview data from international companies, this section tries give an accurate account of Angola's infrastructure. Both in terms of development level, and its competitiveness in an international context. In addition to this, this section highlights the main challenges facing the Angolan infrastructure, in relation to the oil-price and the changing investment climate.

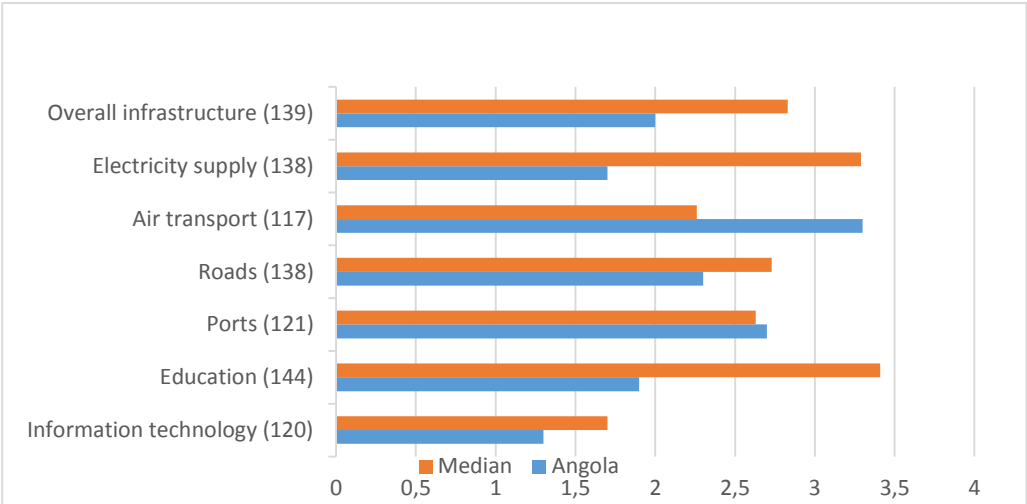
4.3.1 Current state of the Angolan infrastructure

The current level of development of Angola's infrastructure is a reminder of its third world economy, recovering from almost three decades of civil war. There are severe deficiencies in the state of Angolan infrastructure that contribute to the country being ranked 181 out of a total of 189 countries in the World Bank's ease of doing business ranking for 2015 (World Bank

² below 750 meters.

2014: 4). This ranking focuses heavily on the surveyed countries development in infrastructure and logistics. Making it a good indicator of a country’s overall infrastructure development. By looking at the development of the different aspects of Angola’s infrastructure, it is apparent that there are significant inefficiencies affecting business activity that can be attributed to insufficient infrastructure development. Summarized, these inefficiencies were estimated to amount to an annual loss of about 5 percent of GDP in total, as of 2011 (Pushak & Foster 2011: 2). Most significant are the inefficiencies in power supply and road infrastructure, which have a large impact on business development, as they limit production and industrial linkages throughout the country’s different regions.

Figure 7. Infrastructure quality indicators compared against world median (WEF 2014)



Note: overall ranking in parentheses

Figure 7, shows how Angola’s infrastructure development scores against the world median, and how it ranks compared to the other 144 countries in the WEF-sample. As we can see from this graph, the quality of Angola’s electricity supply, education sector, and roads, pose the largest challenges to its overall infrastructure development. The country’s score on quality of air transport and port infrastructure is somewhat more encouraging with scores outside the bottom ten percent of the sample. Despite relatively positive scores on these two variables, they are not able to keep the overall assessment of the country’s infrastructure from ranking in the bottom five percent of the survey.

4.3.2 Improvements

In the last thirteen years, the Angolan government has significantly increased public spending on infrastructure improvement. Annual expenditure was close to 14 percent of total GDP as of 2010, as it pursues rapid reconstruction. This is twice the estimated short-term requirements, which might reflect an economic optimism that followed a period with high oil-prices (Pushak & Foster 2011: 2 & 3).

Figure 8. Infrastructure status provided by the World Bank, compiled from (Pushak & Foster 2011)

Infrastructure	Challenges	Improvements
Roads	One of the worst performers in Africa in road quality. Poor road development limits the country's ability to trade with the surrounding region.	Significant expenditure on road development in recent years.
Power	46 percent of firms operating in Angola find power supply a restraint on business. Most companies have to produce their own power.	From 2007 to 2010, the expected delay for obtaining a power outlet was reduced from between two to six months, to seven days. Angola has entered cooperation with Namibia to share some of their power supply.
Railway	60 percent of rail capacity was out of production by 2011, and has only recently been restored in certain areas.	The rail system has been restored and upgraded in conjunction with the upgrade of Port Luanda.
Ports	The port of Luanda was for a long time one of the worst ports in Africa in terms of efficiency and costs.	The Port of Luanda has been significantly upgraded to increase efficiency by 80 percent. Plans for constructing the largest port in Africa at Dande, north of Luanda.
Internet	Lacking in supply for household use.	The supply for corporate use is average for the region.

4.3.3 Future infrastructure expenditure

Plans to increase public spending on infrastructure and education is currently in the works (Muzima & Mendy 2015: 6). With massive infrastructure projects like Port Dande and the building of schools for its large young population, there is certainly going to be added pressure on an already strained national budget. Officials are trying to finance these new expenses by the money saved from reducing- and eventually removing fuel-subsidies. Estimates suggest that the expected cut in public expenditure from subsidy removal between 2014 to 2015 will amount to about 1.4 percent of total GDP (IMF 2015b: 6). The official plan calls for a slight reduction in subsidies each year until 2020, when it is supposed to be completely removed, freeing up 3.7 percent of the country's total GDP, as of 2015. While this new financing plan is put into effect, future infrastructure projects have been put on hold until new capital has been made available. The long-term plan of freeing up capital by removing fuel-subsidies is being supplemented by new state loans. Angola is seeking 15.2 billion dollars in loans from international creditors, and the selling of government debt through its new Eurobond (England 2015b).

While the central bank met the previous oil-price fall, in 2008/2009, by spending a large portion of its foreign reserves in defence of the local currency's exchange rate, the current policy is to maintain its foreign reserves. This new policy creates problems for domestic companies that need foreign currency for imports (England 2015a). By freezing infrastructure projects, cutting fuel-subsidies, and cutting access to foreign currency, the Angolan government is increasing the costs for its domestic industry. The extent of the effect that this new development will have on local industry seems to be dependent on two variables. These are: (i) how long it takes for the Angolan government to free up enough capital to resume its massive new infrastructure projects, and (ii) how successful the local industry is at attracting private investment.

4.3.4 Interview data: Infrastructure

To see how the international companies operating in Angola are affected by the poor infrastructure development, the two supply-companies Subsea7 and NCA/Oceanengineering were asked how the local infrastructure affect their operations. In my interview with sales and marketing director for the African market in Subsea7, Geert Wiechers, he stressed the fact that infrastructure is essential for their contribution to local development.

“Subsea7 have a goal of our presence attributing to sustainable local development in the areas we operate. For instance, we created an additional fabrication yard in Ghana, and we would like to attribute to the education in these areas. Of course, what we are

able to do in terms of local development depends in large part on the local infrastructure and the domestic capabilities.” (Wiechers 03.04.2015).

The company’s need for local infrastructure in order to supply the Angolan market, is also the main rationale behind Subsea7 establishing themselves in the country.

“Our strategic concerns are that we need a local presence to be able to supply the infrastructure necessary to secure our long-term presence in the region. For this, we need local- labour and subcontractors, and in turn develop their skill-level and capabilities. This is a win-win for the local industry, and us, but it requires the support from the local government. The goal is always to develop a competitive industry, so the goal of local content measures and government policy should be aimed at creating this”. (Wiechers 03.04.2015).

This suggest that the local infrastructure, could act as a limit on the industry’s ability to contribute to local development if not properly developed.

In the interview with the department manager for NCA/Oceaneering’s plug and abandonment operations, Olav Fatland, he noted that the Angolan infrastructure does pose limits on local procurement. NCA/Oceaneering are stationed on platforms in the Cabinda territory, on the north-west coast of the country, where the infrastructure is considerably less developed than further south.

“Because of the remoteness and the lacking infrastructure in the area we operate, our service providers are almost entirely American and European companies. The lack of an Angolan alternative makes any potential requirement of service procurement from Angolan companies, unrealistic.” (Flatland 03.02.2015).

Here we can see how the current state of the Angolan infrastructure, along with its limited local capabilities, is perceived by the industry as having a major impact on their ability to invest in local industry.

4.4 Local capabilities

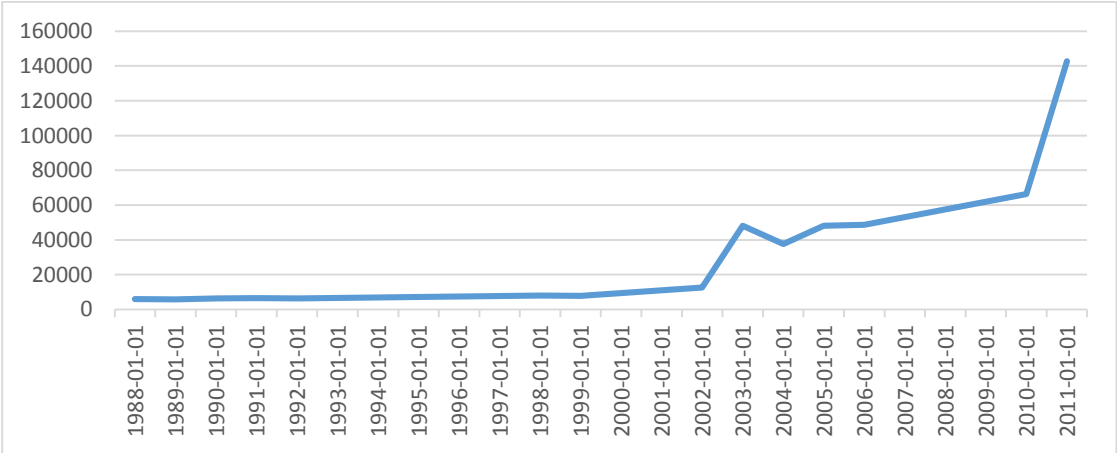
In this section, we look at the factors that the conceptual model suggest are important for the development of domestic capabilities in the petroleum industry. The conceptual model especially highlights (i) the general education level, (ii) infrastructure development, and (iii)

development of cooperation between domestic and established international companies, as three important variables in the makeup of local capabilities. By looking at each of these factors, we are able to see how the local capabilities, as a whole, is influenced by fluctuations in investment activity. In the previous section, Figure 8 show some of the challenges and improvements to Angola’s infrastructure development, so this section will focus on domestic-foreign industrial linkages, and the country’s education level. The conceptual model provides us with two assumptions in regard to these two factors: (i) that improving the general education level would have a positive effect on local capacity development, and (ii) that establishing cooperation between domestic and international companies has a positive effect on the development of local capabilities.

4.4.1 Education

Lessons from Malaysia and Brazil show how the general education level affect a petroleum producing country’s capacity for domestic participation (Tordo et al. 2013: 138 & 139). With 67.1 percent of the Angolan population between the ages of 1 to 24, and with close to 50 percent below the age of 15 (UN DSA 2012). It is obvious from these numbers, that the demographic make-up of the population poses a natural limitation on the general education level. With such a young population, those who are capable of having attained a higher degree is limited to the 30.5 percent share of the population who are between 24 and 64. Looking at Figure 9, the total number of Angolans enrolling in higher education has increased dramatically since 2002. From 12566 in 2002 to 142798 in 2011, with numbers expected to have grown to 195000 in 2015 (Angola-Today 2015). However, this dramatic increase in enrolment in higher education hides the fact that the peak in 2011 is just 2.4 percent of the eligible population.

Figure 9. Number of Angolans enrolled in tertiary education 1988-2011 (UNESCO UIS)



By comparison, the OECD average in higher education attainment for the same age group is 32 percent, and for the BRICS-countries,³ the average is 18.5 percent (OECD 2013: 37). The trend of increased enrolment in higher education needs to be considered against the fact that the percentage of Angola's total GDP spent on education has decreased against the growth of the population. While the population numbers have doubled between 1986 and 2010, the percentage of GDP spent on education has declined by 2.81 percent from 6.36 to 3.47 in the same time-period (UNESCO 2014).

4.4.1.1 Education reform, and remnants of the civil war

Much of the current lack in educational development can be attributed to the civil war that ended in 2002. The damage done to both transport- and school infrastructure requires both time and resources to rebuild. Additionally, the mentioned demographic challenges linked to having such a young population is something that poses a massive challenge to the Angolan education system. These challenges are related to the expected public expenditures needed on schools and teachers to educate this large new generation of Angolans. In a local content perspective, the education standard has to be at a level sufficient to secure local participation in the domestic petroleum industry, which require a longer education time than the current average of 4.4 years in total (Angola-Today 2015). Thousands of schools are currently being built or rebuilt, and new teachers are being trained to cope with this influx of new students.

The revised budget for 2015 has protected education from the recent cuts in public expenditure, addressing this need for educational expansion. Additionally, the process of funding this expansion program has been aided by development assistance from UNESCO, and private companies in the petroleum industry. BP, ExxonMobil and Chevron, have all funded education programs aimed at various levels of Angolan students. To some degree, these private investment efforts can be attributed to the government providing investment incentives, like tax exemptions and customs benefits (Angola-Today 2015).

4.4.2 Local industrial capacity

The capabilities of the Angolan petroleum industry is closely linked to its infrastructure development and investment activity from international corporations. Since the end of the civil

³ Minus India, no data in the OECD survey.

war in 2002, massive public expenditure on infrastructure, especially transport infrastructure, has increased domestic capabilities substantially. The expansion and upgrade of the Lobito corridor, and Port Luanda with the connected railway, has created regional linkages and increased the domestic capacity to handle the logistics connected to its oil-sector (Duarte et al. 2014). The improvements in Port Luanda have decreased turn-around time for vessels by almost two weeks since 2008, according to the port administrators (Bloomberg Business 2014). This expansion of public expenditure on infrastructure has increased Angola's infrastructure ranking from 141 to 139, out of the 144 countries surveyed in the World Economic Forum's (WEF) global competitiveness report, in the time period between 2011 and 2014 (WEF 2014: 13).

4.4.2.1 Foreign-domestic industry linkages

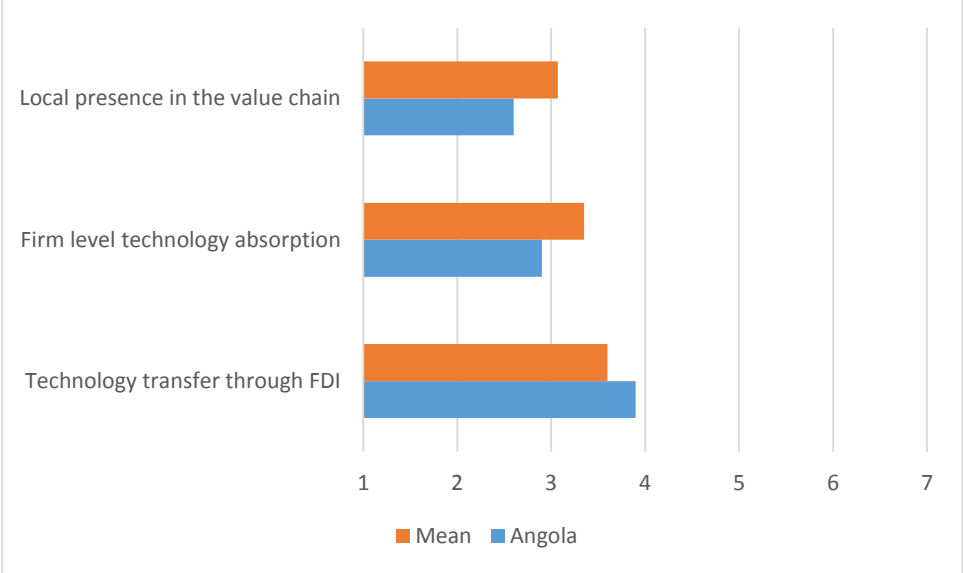
Kazzazi and Nouri (2012) highlights the creation of cooperation between foreign and domestic companies as a means to transfer technical knowledge and capital to local firms. In addition to being a policy-goal that will benefit local development. This is precisely what the Angolan government has sought to achieve through decree 127/2003. The second supply category in the government decree makes it necessary for foreign companies operating in technically demanding segments in the petroleum industry to operate with a domestic partner company. This has resulted in significant local development projects like the Paenal fabrication yard, and the Sonamet fabrication yard, with the latter being the largest fabrication yard in Africa. The Paenal yard was developed in a joint venture between SBM Offshore and Sonangol, while Sonamet is a joint venture between Subsea7 and Sonamet, a subsidiary of Sonangol. These fabrication yards are two massive industrial sites that together employ thousands of Angolan nationals, and provide domestic capabilities in both the FPSO and subsea fields. These fields are technology-heavy segments of the petroleum industry, and areas where Angolan industry would certainly struggle to compete without cooperation from established international companies.

4.4.2.2 Domestic supplier database

To assist the domestic industry in creating productive linkages with the international companies, the Angolan government, in cooperation with four of the largest operator companies, established a company registry in 2005. The registry was designed to help small- and medium sized local suppliers capture contracts. This registry called *Centro de Apoio Empresarial* (CAE), aims to streamline the IOCs process of finding local suppliers by categorization, training, and certification of those companies who register with the CAE. This

program has contributed to local companies receiving 309 contracts, amounting to 4236 jobs in its first five years of its existence (Ovadia 2012: 407).

Figure 10. Foreign-domestic partnership effect on domestic technological capability (WEF 2014)



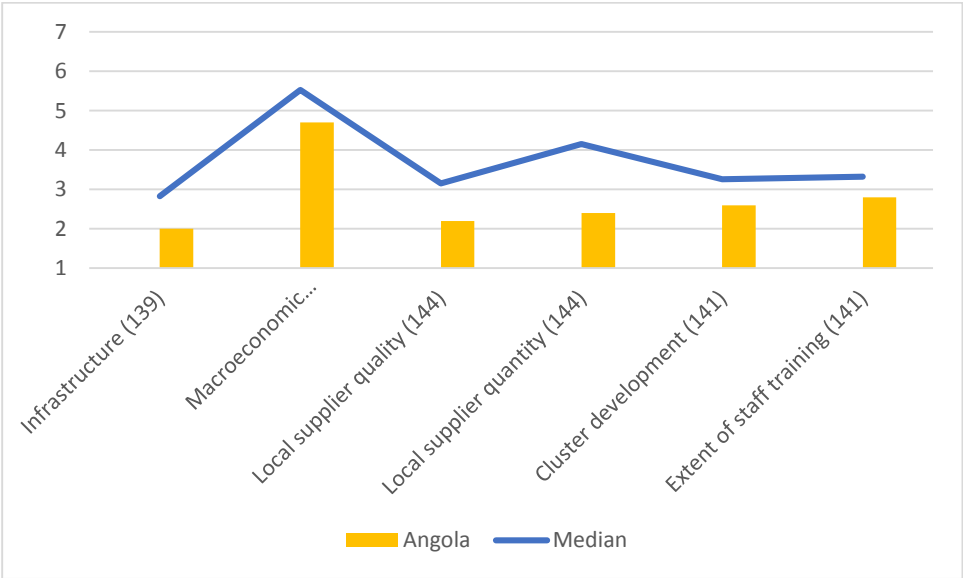
This is a promising development for the domestic industry, which is also apparent in the above average technology input received from FDI, as seen in figure 10. However, the graph also shows that the domestic ability to absorb this new technology is not great, with Angola ranking second to last in the WEF-survey in this regard. This lack of ability to absorb new technology could be seen in connection with the general education level, where poor local standards put a restraint on higher-level participation. The last variable for value chain presence looks at the breadth of presence of domestic companies in the value chain. The aim of including this variable is to illustrate the local capability to participate across the different segments of the industry. Angola scores in the bottom half of the sample-countries in this regard, ranking 140 out of 144 countries overall in the WEF competitiveness-survey (WEF 2014: 109). This data tells us that foreign-domestic industry partnerships have not substantially increased the domestic capacity outside the service segments.

4.4.2.3 Local industry competitiveness

Outside the service segments of the petroleum industry, where the use of Angolan suppliers are mandatory, the success of domestic companies in obtaining contracts is limited by their lack of competitiveness compared to foreign suppliers. To illustrate the overall competitiveness of the local industry, Figure 10 make use of the country’s score on the basic competitiveness

indicators for local business from the WEF competitiveness report (2014). The scores on infrastructure and macroeconomic environment are added, as shown in the conceptual model, to complete the picture.

Figure 11. Competitiveness indicators for local capabilities in Angola against world median (WEF 2014)



Note: Overall ranking in parentheses.

4.4.3 Interview data local capabilities

To see how the international companies operating in Angola assess the local capabilities, this section gives the accounts of Subsea7 and Oceaneering/NCA’s experience with the subject.

4.4.3.1 Subsea7

Subsea7 have developed the largest fabrication yard in Africa in cooperation with Sonamet, as part of a joint venture. This yard together with its fabrication vessel the Simar Esperanca, gives their Angolan division the capability of supplying even the most highly advanced services Subsea7 can offer. In addition to this, the fabrication yard provides employment for many Angolans. When asked about what they define as local content in their operations in Angola, the reply was:

“In Angola we at Subsea7 make use of man-hours/fabrication done in country. This is due to the limitations imposed on us by the local capabilities. There is not a lot of qualified industry in regards to engineering and subcontractors for us, due to the limited industrial and educational development of the region”. (Wiechers 03.04.2015).

It is clear from the interview data and the review of Angola's education standards, that the poor standards of Angola's educational system, has a negative effect on the local capacity to participate in the domestic petroleum industry. Especially in the more demanding high-tech segments. Mr. Weichers stresses that there are locals working in managerial and executive positions in the company, but again, the low number of qualified Angolans limit their numbers. When asked if there is one, or more, local content measures that he thought were especially effective in improving Angolan capabilities, he responded:

“I would like to highlight our joint venture with Sonamet, which have brought a lot of local benefits, such as local employment, increased demand and revenue into the local community. It has also created a high-tech environment in Africa, which can help with the development of the local industry. I would also think that developing the education system would help Angolans in securing higher positions and a larger percentage of engineering positions in the domestic petroleum industry”. (Wiechers 03.04.2015).

4.4.3.2 NCA/Oceaneering

NCA/ Oceaneering operates on platforms in the Cabinda territory, and has a different measure of local content than Subsea7. They operate with the percentage of working hours that is performed by nationals and services provided by Angolan suppliers, instead of production in country. To ensure that they make use of local labour to the largest extent possible, they have an obligation of hiring one local per visa given to an expatriate. The company's problem with finding qualified Angolan suppliers are covered in the infrastructure chapter, so this section will look at their experience with local employment. When asking their department manager about his experience with employing Angolans, he responded:

“In terms of employing Angolan nationals, we hire people both in executive- and non-management positions in the company. There is a surge of Angolan's graduating from universities in South Africa, who qualify for technical and management positions. We experience these more educated Angolans to be ambitious and with the right attitude to be an asset to the company. It seems like Angolans generally are aware that they are there to satisfy the local content requirements. In our experience, this has adversely affected the attitude of Angolans in our employment to the point where it has been a challenge to the working

environment. This is a problem we do not see with the more professional Angolans who are emerging from the universities in South Africa”⁴. (Fatland 03.02.2015).

Their emphasis is on education standards, but this time in a positive light, highlighting the effect that improving education standards are having on local participation. He also provide some insight into the indirect costs of having high minimum requirements of local employment, combined with a low-level of education and training. However, it seems that the overall education level does have an effect on local participation. When asked to highlight one or more initiatives for improving local content that he found to be effective, the reply again focused on increasing the education level:

*“I would like to highlight our recruitment conferences in South-Africa. We have been able to recruit several Angolan nationals for managerial positions from this initiative.”⁵
(Fatland 03.02.2015)*

4.5 Local policies

The conceptual model includes all public policies affecting local content development in this variable. However, for the sake of structure, this section will focus on the regulatory policies, while macroeconomic policies are presented in the local environment section. The Angolan regulatory policies for local content development are comprehensive. This is especially true for the petroleum sector, where a host of laws and regulations aim to create opportunities for local participation. The commitment to creating a framework that is conducive for both local employment and participation in the domestic petroleum industry is visible throughout the Angolan petroleum management. This is also evident through their revised annual budget for 2015, where expenditure on local development were one of the few areas of public spending that was unaffected by the severe budget cuts (Baily & Hoskins 2015: 20742).

4.5.1 Regulatory regime on local content in petroleum activities

A policy of nationalisation of the petroleum industry was introduced in 1982 through decree 20/1982. The decree secured requirements for the mandatory employment and training of Angolan nationals, by companies operating in the Angolan petroleum sector. This decree has since been replaced twice with new government decrees, which have made the requirements somewhat less clear-cut. The current decree, 17/2009, stipulates that IOC’s should aim to fill

⁴ Author’s translation.

⁵ Author’s translation.

all their positions with Angolans. To reach this ambitious goal, the ministry of petroleum must approve all employment of expatriates in the industry. Resulting in the oil-companies having to document that there is no equally qualified Angolan national that could fill the same position.

Local preference for Angolan equipment and services is covered by decree 127/2003, where article 27 establishes a preference margin of ten percent in favour of Angolan companies. This preference margin is however just for services and products that hold the same quality as the non-Angolan option. Angola being a developing country in industrial terms, the requirements on quality mean that the domestic industry only have a limited amount of products and services that are offered at a competitive level. Angola is a member of the WTO and would normally be restricted from enacting protectionist policies, but it is able to implement this preference margin through the special and differential treatment (S&D) provisions for least developed countries (LDCs). These provisions allow WTO-members classified as LDCs to implement protectionist industrial policies, as long as their economies remain under-developed. Through the establishment of Decree 127/2003, the Angolan government has created three categories of the different services required by the oil companies, where certain services are restricted to Angolan companies. The criteria for category-one contracts, which are the services that are exclusive to Angolan companies, are:

“All activities which do not require a high capital value, and basic/average and in-depth non-specialised know-how, in which the participation of foreign companies has to take place only on the initiative of Angolan companies come under this system”. (Oil Ministry decree 127/03 2003).

The second category of services, are those who are exclusive to joint ventures between a foreign and an Angolan company. Services that are in this second category of local preference are based on the criteria;

“All areas which require a reasonable level of capital in the oil industry and in-depth not always specialist know-how where the participation of foreign companies has to be permitted only in association with national companies or on initiative come under this system” (Oil Ministry decree 127/03 2003).

The third and last category of services are open to competition between foreign and domestic companies. These services are capital heavy, and typically require a large amount of expertise

and experience, which means that domestic companies are unable to supply the same product as foreign companies. The criteria for the services in this category are:

“Not excluding the possibility of partnerships between Angolan companies and foreign companies the competition system means all oil activities (offshore and onshore) not described in the systems above and which require a high level of capital in the oil industry and in-depth specialist know-how” (Oil Ministry decree 127/03 2003).

By dividing the different contracts into separate categories, the Angolan government were able to secure that large amounts of supply contracts from the oil companies are only available to domestic companies. This policy effectively forces the oil companies to invest in the development of the Angolan petroleum industry, but still making it evident that there are certain areas where the domestic industry is still unable to compete.

4.5.1.1 Tax- and tariff deductions

The oil taxation law 13/2004 makes the oil companies expenses on certain training and social programmes deductible from its tax obligations. This policy of tax deductions for local content development is continued through decree 14/2010, which makes the companies expenses in training and development of Angolan human resources tax deductible (Decree 127/03). In addition to these tax regulations, Angola also employs tariff regulations for the development of its domestic petroleum industry. Article four of the oil customs law 11/2004 makes imports of equipment used for the training of personnel exempt from import duties (Law 11/04, article 4.16). Angola also has tariff exemption on other imports of specialized equipment related to the extraction of oil. However, article six of the same law makes sure that these exemptions are only valid for equipment that cannot be supplied by an Angolan company, at a price not higher than ten percent of the foreign import (Law 11/04, article 6).

Figure 12. Laws and decrees that make the Angolan local content policy, compiled from (Calixto & Paiva 2013: 10 & 11)

Local content regulations	Laws and decrees	Local benefit
Creating local employment.	Oil activities law 10/2004, Decree 20/1982, & Law 17/2009.	Minimum requirements of nationals employed, documentation of the need for expatriates.
Preference margin on local supplies.	Decree 127/2003, Oil activities Law 10/2004, & oil customs law 11/2004.	Preference margin of 10 percent for local companies on services and equipment.
Tax and tariff incentives for the training of nationals.	Oil taxation law 13/2004, decree 14/2010, and oil customs law 11/2004.	Training and local development expenses are tax deductible, equipment used for training are exempt from import duties.
Requirements for the use of local suppliers.	Oil taxation law 10/2004.	Requirements on the use of local suppliers and service providers, and local procurement.

4.5.2 Petroleum agreements

Angola has different kinds of agreements for its varying concession blocks, which makes the level of government participation vary depending on where the resources are located. The onshore blocks are operated by joint ventures between Sonangol and IOCs, where the resources are ceded to the oil companies in return for royalties and taxes (Ramos 2012: 6). In these joint ventures, the government takes a part in both the costs and risks of exploration, which can be a large financial risk for a developing economy. This is why the Angolan government prefers to enter PSAs with the IOCs, as the oil companies then take all the initial risk and expenses attached to exploration. The Angolan oil minister Jose Botelho Vasconcelos explicitly stated this preference for PSAs:

“We are a Third World economy, and have difficulty obtaining capital, we therefore prefer production-sharing agreements because government investment is only required once a discovery has been declared economically viable.” Oil minister Jose Botelho Vasconcelo (Gentile 2007).

For a country with limited capital and industry to invest in exploration of its petroleum resources, the option to enter PSAs instead of Joint ventures is less profitable, but considerably less risky. The major producing oil fields are almost all under PSA agreements between Sonangol, and one, or a joint venture of IOCs, making PSAs the most common form of concession agreement in the Angolan petroleum sector. The Angolan PSAs are under a separate legal regime than the activities onshore, and often have different provisions in terms of local content. However, this does not mean that the terms of the PSAs are any more lax than in the initial regulatory regime. Sonangol has often used its powerful position in the PSAs to push for even more encompassing local content requirements (Ovadia 2012: 402).

As the sole concessionaire, Sonangol has close to complete control of procurement by its PSA partners, as they have to approve the awarding of any service contract that exceeds US\$100.000. In addition to control over its production partners procurement, Sonangol possess the power to give preference to any company it chooses. This preference is not only limited to Angolan companies, but can also be given to foreign companies if they make use of a certain level of local content. While these preferred companies can even obtain the ten percent preference margin usually reserved for Angolan companies, others have been forced to accept bids with up to thirty percent price-preference (Ovadia 2012: 402 & 403). The background for why the PSAs might have more severe local content regulations is connected to the IOC's own practices, and Sonangol's mandate. As the sole government negotiator of the terms of the PSAs, Sonangol is in a position to put pressure on the IOCs to accept further local content concessions. Since the oil companies operating in Angola are known to follow up on the terms of their PSA more thoroughly than Angolan law, Sonangol strategically uses the PSA to secure that they enforce their local content regulations.

A third category of production agreement has recently been implemented, namely risk-sharing agreements (RSA) between Sonangol and IOC's (Ramos 2012: 6). This new arrangement is in use for Angola's previously largely unexplored pre-salt and deep-sea blocks. As the name of the agreement suggest, this arrangement involve a greater financial risk for the IOCs than a PSA, but also predictable revenue. It could be assumed that the use of RSAs for these allocation blocks is a measure to increase the incentives for IOC's to develop a previously underdeveloped part of Angola's petroleum resources. In terms of local content, the reduced participation of a Sonangol in the actual operation of the oil- and gas fields covered by RSAs might be unfortunate. In joint ventures and PSA's they are able to learn directly from working with the

IOCs, while in the RSA the IOC is a contractor on behalf of government, which often mean that they operate the field by themselves or in joint ventures with other IOCs.

The concern for local content being included in these RSAs shaped the content of the contracts for block 9 and 21, which were entered between Sonangol and their contractors. These contracts contain the same local content regulations as we see in Angolan PSA's and joint ventures, with a ten percent local preference margin, domestic supplier provisions and tariffs deductions for the training of Angolan personnel (Open Oil 2015a&b).

4.5.3 Interview data

Sales and marketing director for Subsea7's activities in Africa, Geert Wiechers, identifies a decline in the push for local content following the most recent oil glut. He sees this change in policy as one of the most significant repercussions for his company in Angola, resulting from the decline in oil-prices.

“The push for local content has been substantially lessened in the last year. I believe this to be an industry wide trend, not just affecting the subsea sector, but also the other segments in the petroleum industry, including the operators. This means less work for local business. This is due to the declining oil-price, which makes contracting companies less interested in local tenders and more concerned with cost reduction. This is also true for Subsea7.”
(Wiechers 03.04.2015).

The shift towards easing up on the local content requirements could indicate a change in the bargaining position between the oil companies and the Angolan state. Future implications of a relaxation of local content demands in PSAs could be a reduction in overall foreign investment and less work for local suppliers.

Not all international companies experience a decline in push for local content. Olav Fatland of Oceaneering/NCA, contend that they see heavier local content regulations affecting their company after the price fall.

“The regulations in Angola are really demanding. It is required of us to provide a certain amount of local content in the initial contract. However, since December 2014 it has become stricter, with an absolute requirement to employ one Angolan worker per

visa given to an expatriate. The idea is that the expat will train that one Angolan to eventually take over his job.”⁶ (Fatland 03.02.2015).

This suggest that the declining push for local content is dependent on either the specific company, the nature of their operations, or the specific production agreement they are attached to. As both these companies are linked to subsea solutions, the significant difference between them is that Subsea7 has in-country manufacturing and an Angolan partner company. Regardless of the reason behind their different experiences, the account from Subsea7 suggests that Angola is responding to the changing investment climate. This they are doing by relaxing their local content requirements, at least for MNCs with local manufacturing and a domestic partner.

Both companies agree that local content regulations increase the cost of international operations, with NCA/Oceaneering giving it as one of the main reasons for why they merged with Oceaneering.

“When we started out in Angola as NCA we did not have the resources to follow through on the substantial local content requirements imposed on us. This resulted in our contract only being renewed by 3 months at a time. This is one of the reason for the merger with Oceaneering, who provides the financial muscle for us to be able to deliver on the requirements imposed on us. This has resulted in us being awarded long-term contracts.”

“It can be very difficult for a medium-sized to small-sized company to deliver on the local content requirements imposed by the Angolan government. It is a considerable barrier to market entry for smaller companies. It is easier for medium- and small supply companies to expand internationally backed by a multinational, especially where there is considerable local content requirements.”⁷ (Fatland 03.02.2015).

⁶ Author’s translation.

⁷ Author’s translation.

Chapter 5. Analysis

This paper makes use of Angola as its case study, and focuses on the country's response to the current drop in oil-prices, in light of the last price fall in 2008. In this section, we are looking at what sort of impact the oil price has on the four variables in Kazzazi and Nouri's conceptual model. The aim of this analysis is to see whether fluctuations in the oil price influence these variables, in a way that has a significant impact on local content development in oil-exporting countries. The belief is that the oil-price influences these variables contribution to local content development, through its effect on the domestic investment climate.

The underlying assumption is; that if the price of oil influences local content development through these four variables, then the conceptual model needs to be expanded to include an overarching *oil-price effect* variable. However, if both private- and public investment activity are found to be relatively unaffected by fluctuations in the oil-price, we would be unable see such a link between the oil-price and local content development.

To illustrate how the different internal variables are influenced by the change in investment climate, the effect of external variables on each of the variables will be discussed in light of MNC investment theory. By looking to a theory of MNC investment strategy, we are able to make certain assumptions about how companies are expected to react to a change in profitability.

5.1 The conceptual model

Kazzazi and Nouri (2012) aimed to inform governments of oil-producing countries about the different factors that influence local content development in their petroleum industry. They did this by collecting four endogenous variables that the local content literature suggests are important for the development of local content. This paper, however, contends that the effect these variables have on local development is dependent on one important exogenous variable: *the price-effect*. To assess the impact of this effect, we will now look at how the four different variables; local environment, local infrastructure, local policy and local capabilities, are affected by fluctuations in the oil price.

5.1.1 Local environment

When we look at how the Angolan macroeconomic environment was affected by the previous fall in oil-prices that started in the second half of 2008, it becomes clear that there were

significant repercussions for the country's economy. Firstly, we see that the local exchange rate came under severe pressure as a direct cause of the fall in oil prices. The exchange rate of countries that are heavily dependent on exports of a certain commodity often move in correlation with the price of that commodity. Some good examples of this are the price of oil for oil-exporters, but also the price of gold for gold-exporters, are found to have a positive correlation with exchange rates (Han, Xu, Wang 2008: 49). For the local industry, exchange rate depreciation means that imports become more expensive, but at the same time, exports become cheaper for foreign buyers. Exchange rate depreciation can be positive for exporting countries if it leads to an increase in demand for its exports, and the country is able to avoid an onset of inflation.

Fluctuations in the oil-price vary in accordance with the global supply and demand. For example, a drop in demand will cause oil prices to drop if the rate of supply does not drop in parallel with demand, and a drop in supply will cause prices to rise if there is not a parallel drop in demand. Following this logic, exchange rate depreciation induced by a fall in oil-prices will not lead to a massive increase in demand for oil from oil-exporters. This is because the initial exchange rate depreciation is caused by the fall in demand, either in total or in relation to supply.

5.1.1.1 Falling oil-prices, 2008-2009

This notion that a price-induced exchange rate depreciation is not followed by an increase in demand for cheap oil is confirmed by looking at Angola between 2008 and 2009. In light of the falling oil-prices, the country experienced a drop, equalling 23 percent of GDP, in exports of goods and services in this time-period (World Bank 2015g). On the contrary, we see that the exchange rate depreciation added to inflationary pressure, as the central bank had allowed for an increase in money supply, in the belief that they would be able to defend the exchange rate in the event of an exchange rate depreciation. This policy was only partly successful, and ended up costing a large portion of Angola's foreign reserves at the time. This suggests that high oil-prices cause financial optimism in exporting countries, which due to the high price-volatility of oil might have serious repercussions for their economy. The growth in inflation has a negative impact on domestic investment, because it increases the cost of imports, decreases the return on investment, and weakens the faith in the currency. The depreciation of the Angolan exchange rate that we see in figure 5 shows how even in the face of foreign exchange spending in defence of the exchange rate, the economy struggled to handle the inflationary pressure caused by the fall in oil-price.

This negative economic effect is also underlined by the current account deficit that emerged in 2009. The exchange rate depreciation made imports more expensive and the drop in demand for oil reduced the country's export revenue, causing the current account deficit to widen. This example from the price fall in 2008 shows that a reduction in oil prices did have an impact on the Angolan investment climate then. So, what about this time around?

5.1.1.2 Falling oil prices, 2015

We see that the drop in oil-prices has caused the exchange rate to depreciate, increasing the inflationary pressure on the economy by increasing import prices. As the national budget is still calculated based on the projected oil-price, the sudden fall in prices in 2014 caused a 25 percent deficit in the national budget for 2015. This deficit spurred the Angolan government to borrow capital from international creditors to cover this deficit. By financing its public expenditures through borrowing, the Angolan state is in a position where it might increase scare off private investors. This is because external debt coupled with government debt increases domestic interest rates, which in turn raises the price of borrowing for private actors and discourage businesses from making new investments (Turner & Spinelli 2013: 13). Still, even as some public expenditures are financed by the inflow of borrowed capital, we see that the revised budget contains a 25 percent reduction in public spending. This drop in public spending has had a negative effect on domestic growth, exemplified by the large infrastructure projects that have been frozen as a result. These projects represent a source of jobs and contracting opportunities for the domestic industry, which are lost due to the effects that oil-price volatility, have on the Angolan economy.

The Angolan case show how a reduction in oil-prices affect an oil-exporting country's exchange rate, and through it, inflation rates, public spending and interest rates. These variables have an effect on the local investment climate, either directly by influencing the profit margins for the industry, or indirectly by increasing the cost of investment in the local industry.

5.1.1.3 Petroleum revenue management

As petroleum-production is so location specific and demanding in terms of resource input, oil-exporting countries run the risk of developing Dutch disease. As we have seen, the Norwegian model aims to mitigate the negative effects that Dutch disease has on the economy by funnelling its petroleum revenue to an offshore petroleum fund. Then the revenues can generate interest that trickle slowly into the economy, while also functioning as a fiscal stabilizer in times of

price fluctuations. This way the petroleum sector's influence on the economy, in terms of exchange rate fluctuations and revenue predictability, can be controlled to some degree. Resulting in a more stable investment climate.

The Angolan case shows some of the difficulties facing developing oil-exporting countries that are trying to adopt the Norwegian petroleum management model. Norway does not have a pressing need to use large parts of its oil revenue to finance its annual budget. Instead, it makes use of "*handlingsregelen*", a budgetary rule that says that the national budget will not spend more than four percent of the fund's capital annually. This means that the deficit between public spending and annual revenue is kept inside four percent of the fund's capital. Angola on the other hand, is dependent on oil for 70 percent of the annual state revenue, and close to 50 percent of its total GDP (Muzima & Mendy 2015: 3). Additionally, Angola has several areas of its economy that are in desperate need of public expenditure, like so many developing African economies. This need for short-term investment is apparent in the way the FSDEA is managed. Apart from not being given the mandate to act as a fiscal stabilizer, oil revenue has been invested mainly in social development projects and regional infrastructure. These investments are of course needed, but they do not create the same revenue as the NGPFG, which apply a more long-term and profit-oriented investment strategy. The Angolan case shows how a developing economy might not have the luxury of applying a slow approach to public spending of oil revenue.

Budgetary discipline is also made harder by not applying a more careful approach. The result so far, has been that a drop in oil-prices has resulted in large budget deficits, as public spending has been calculated by expected future oil-revenue. Expectations that in light of the regularity in which oil-prices fluctuate are not much shy of guesswork. Yet, even as we see that there are ways in which oil-exporters might decrease the impact that oil-price volatility has on their economy, these effects are never totally removed from the equation. For example, despite its more careful approach, Norway also experienced exchange rate depreciations following both the price falls in 2008 and in 2014 (XE.com 2015). However, its budget policy kept the effects from creeping into other sectors of the economy, and causing the budget deficits we see in Angola.

The Angolan case also illustrate how, by causing budget deficits, the oil-price effect can result in the government collecting debt. This happens because budgeted public expenditure can no longer be financed by oil exports, which means that funding requires an alternative source of

capital. This causes the government to borrow money, which will increase government debt that might end up further fuelling inflation. This is because investors might lose faith in Angola's ability to service these loans without increasing the money supply, in a future with declining oil revenue. The effect on the economy would however be similar in both cases, as both growth in the monetary base or a loss of faith in the Kwanza would result in less demand for the currency, creating higher domestic prices on goods and services (Cochrane 2011: 56). Apart from adding to inflationary pressure, exchange rate depreciation makes a market less attractive to foreign investors, and the increase in national debt might cause a reduction in private sector investment through its effect on interest rates. In addition to these effects, national debt also decrease the percentage of the annual tax revenue that are spent on public projects, as the tax revenue now has to service the interest on these loans.

It is important to note that borrowing could also have positive ramifications for the domestic industry. As oil-prices vary, government loans can keep public spending from stagnating in times of falling revenue. If they contribute to fuelling public expenditures on capacity-enhancing measures, such as infrastructure development, these loans might give a positive return for the domestic industry. Keeping up activity-levels in the short-term, and increasing local capacity in the long-term. Still, the ideal scenario would be to avoid having to increase the country's debt by creating a fiscal buffer, as we see with the Norwegian petroleum fund.

5.1.1.4 The influence of oil price on the macroeconomic environment

The Angolan case illustrates how a drop in oil-prices affects the macroeconomic environment for oil-exporters. Primarily, this is due to the effect it has on government revenue, and the exchange rate of the local currency. In this section, we have seen how variations in these variables will affect the interest rate, inflation levels and public debt, in a way that is detrimental to the domestic investment climate. By increasing the cost of imports, decreasing the return on investment, and increasing the cost of borrowing, the macroeconomic effects of a low oil-price discourages private investment. This paper contend that by inhibiting private investment in the local industry, a sharp reduction in oil-prices has a negative impact on local content development. How much of an impact this oil-price effect has on the economy, is likely to depend on how much of an effect it has on the petroleum industry's profit margin, and on public budgets. Since we have now seen how effective development of local content in the petroleum industry requires conditions that are conducive to both private and public investment.

Through its budgetary rule, the Norwegian model provides oil-exporting countries with a tool for how they might mitigate some of the negative effects of oil-price volatility has on the economy. Yet, even with this rule in place, the oil-price effect will still have a negative impact on private investment, by affecting profit margins in the petroleum industry.

5.1.1.5 Policy options

By negatively affecting the investment climate, a decline in oil-prices inhibits local content development. Based on this analysis of how the oil-price influences the country's macroeconomic environment, this paper finds two options for how it can alleviate some of these effects.

Firstly, to minimize the effect of oil-price movements; Angola should aim for the FSDEA to adopt the function of fiscal stabilizer. We see that through its petroleum fund, Norway has had great success in putting its oil-revenue into low-risk investments abroad, where it can generate interests. This way the country's oil-wealth grows, and by applying the budgetary rule, the fund can be used to relieve pressure on the economy in times of oil price fluctuations. For this to happen, the FSDEA arguably needs to adopt this stabilizing function. In addition to switching its investment strategy from one primarily focused on regional development, towards more profit based investments in low-risk countries.

Secondly, we see how Angola struggles to balance its national budget following a sharp drop in oil prices. This is due to the budget using expectations of a future barrel price to calculate its annual revenue from oil exports. In 2009, the budget was calculated using an expected barrel price that was 37.5 percent higher than what it actually turned out to be. History repeated itself in 2015, as the initial budget was calculated using a barrel price 51 percent higher than what it was later revised down to. Angola could potentially solve this problem by adopting a more conservative price-estimate, and funnel any potential proceeds into the FSDEA. This is given that the FSDEA is indeed reformed into the image of the NGPFG.

5.1.2 Local infrastructure

Kazzazi and Nouri (2012) found that a country's infrastructure development is of vital importance for local content development, as it influences the competitiveness of the local industry. From a company perspective, good infrastructure development means increased revenue and a reduction in expenses on communication and transportation. Poor infrastructure has the opposite effect, as it complicates logistics, adds extra costs, and creates inefficiencies.

The theory of MNC investment strategy tell us that due to the growth in global sourcing, infrastructure has become more important than ever for corporate investment decisions. This paper acknowledges that the nature of the petroleum industry make the relative importance of resource endowment more critical to decisions regarding investment location than infrastructure development. Still, it contends that the oil-price effect variable captures this trade-off, as it is based on the industry's bottom line.

5.2.2.1 The current standard of Angolan infrastructure

The reports from the World Bank and WEF have documented how poorly developed the Angolan infrastructure really is. Both institutions rate the country's infrastructure among the worst five percent in their respective surveys. Pushak and Foster's (2011) sector analysis provides the gravest estimate, suggesting that as much as five percent of the country's total GDP is lost every year due to infrastructure inefficiencies. There can be no doubt that this affects the industry's profitability, not only for the domestic companies, but also of foreign companies that operate in Angola. From the interviews with NCA/Oceaneering and Subsea7, we are provided with first-hand accounts of how the international supply companies in the petroleum industry are affected by the current state of Angolan infrastructure. Both companies express that the shortcomings in infrastructure and capabilities inhibits them from making use of domestic suppliers. These estimates of how much the infrastructure inefficiencies amount to in annual losses does not include contracts lost to foreign companies as a result of these inefficiencies. Therefore, we can assume that the real amount lost due to poor infrastructure development is even higher than Pushak and Foster's (2011) estimate.

5.2.2.2 The influence of the local infrastructure on local content development

The interviews conducted for this paper, suggest that the underdeveloped state of the Angolan infrastructure inhibits local companies from competing for supply contracts. Illustrating the importance of public investment in infrastructure development for the ability of the local industry to secure such contracts. This is where the macroeconomic environment has an influence on infrastructure development. As I have already established, a drop in oil-prices will affect the macroeconomic environment in a way that discourages private investment and public spending. This deteriorated investment climate then affects infrastructure development, as it reduces financial input in the sector. The Angolan case provides an example of this effect, as

several of its planned infrastructure-projects have currently been frozen following the recent oil-price induced budget cuts.⁸

What we see here is that the oil-price influences the capacity of local infrastructure to promote Angolan content. Because the level of investment in infrastructure development rises or falls depending on how the oil-price affects both private- and public actor's willingness to invest in the sector. Low oil-prices create a macroeconomic environment where we would expect a low level of investment, while high oil-prices have the opposite impact on investment. The Angolan expansion in public infrastructure investment in the period of high oil-prices after 2009, and subsequent stop in expenditures when the prices fell in 2014, support this assumption.

This decline in infrastructure expenditure could of course be due to the completion of the initial projects, or a change in priority spending unrelated to oil revenue. However, the Angolan economy minister Abrãhao Gourgel, admitted to the *Financial Times* in April 2015 that the slow-down in infrastructure spending is in fact directly related to the impact that declining oil revenue has on the country's economy (England 2015b).

5.2.2.3 Removing fuel-subsidies

In 2015, the Angolan government started phasing out the country's extensive use of fuel-subsidies, and as previously mentioned, began borrowing capital to fund needed infrastructure projects. Apart from adding to the already discussed economic repercussions of falling oil-prices, these measures create added costs for the domestic industry. By removing these fuel-subsidies, the industries that depend on fuel for production and transport will have to spend more money on fuel. This causes the expenses of the domestic industry to increase, in relation to its revenue. One can assume that increased production-costs could affect local employment, as companies would try to minimize the added expenses from removal of this subsidy. Adding to this, local companies are signalling that the Angola industry are already cutting in employment because of the halt in infrastructure investment (England 2015a).

Bazilian and Onyeji (2012) warn against removing fuel subsidies in developing countries, as domestic variables such as poor infrastructure and power supply might already be adding to production costs. Therefore, by removing subsidies the government contributes to making the domestic industry even less competitive, and the country less attractive as an investment location. Supporting this conclusion is Siddig et al (2014), who found production output to

⁸ As of April 22, 2015.

decrease with an increase in the prices of petroleum products. These two studies of oil subsidies focus on the lessons from the Nigerian petroleum sector. However, Arze del Granado et al. (2012) find in their more general study of 20 countries, that higher fuel prices does lead to higher production costs, and overall higher level in domestic prices.

However, removing these fuel-subsidies will increase the amount of money the government can spend on infrastructure development by close to four percent of total GDP (IMF 2015b: 6). The IMF has also been speaking out for the general removal of fuel-subsidies, and have been advocating it as a way to increase public spending, and to increase long-term productivity. This is because public expenditure on fuel-subsidies crowds-out spending on less energy intense production (Clements et al. 2013: 16). In addition to increasing efficiency, there is also the social equity argument, that fuel subsidies benefit the rich. However, this argument is controversial, as increased fuel costs will make the overall price-level in the economy rise. Siddig et al. (2014) find that increasing fuel prices has a negative effect on household income. So, while the equity argument might be true, in the sense that of the top income group will profit relatively more from fuel subsidies than the bottom income group—the effect of higher consumer prices will have a larger impact on low-income households, where the margins are significantly smaller. Still, the removal of fuel-subsidies in times of low oil-prices are promoted by analysts, as fuel subsidies are considered a drain on public resources, and the current low overall price-level of oil will decrease the impact of removing subsidies (World Bank 2015a: 167).

As we can see, the decision to remove fuel-subsidies is likely to have a mixed effect on local investment. The arguments that favour subsidy removal highlight how this policy will increase long-term productivity, and remove the strain it puts on public resources. The arguments against, are related to the short-term effects, such as increased production costs and reduced competitiveness of the local industry. There is however another short-term effect from subsidy removal. Which is that increased fuel-prices will cause a growth in inflation. The IMF estimates that the increase in domestic prices from removing fuel-subsidies will cause an 11 percent growth in Angolan inflation (IMF 2015b: 23). This adds to the already increased inflationary pressure that the economy experience from a depreciating exchange rate. The trade-off is then between a short-term drop in competitiveness of local production and increased inflationary pressure, against long-term efficiency enhancement and freeing up public funds.

While this trade-off might increase competitiveness in the long-term, what is certain is that it will have an effect on the capabilities of the local infrastructure. The reason for this is that transportation is one of the most fuel-intensive sectors in the economy, and will be the hardest hit by an increase in fuel prices (Ibid: 24). This will have to be factored in with the already limited transport capabilities of the Angolan infrastructure, and will certainly further deteriorate the domestic investment climate in the short-term.

5.2.2.4 The oil-prices influence on local infrastructure

Through my interviews and the various studies about the Angolan infrastructure development, we see that the current infrastructure standard is far from competitive. This has caused added expenses for the industry and limited foreign companies' ability to make use of domestic suppliers. By restricting public spending aimed at improving the sector, the macroeconomic environment influences the ability of the local infrastructure to contribute to local content development. The period of high oil-prices between 2009 and 2014 contributed to significant improvements, but still the overall level of Angolan infrastructure is in the bottom five percent in the world. We see that the most recent price-fall has caused a drop in public spending on infrastructure, and that this has a negative effect on the profitability of local industry. The Angolan government is however trying to fund the necessary projects by freeing up public funds through the removal of fuel-subsidies and attracting private investment.

The literature on fuel-subsidies, show that there is a trade-off when a government tries to free up additional public funds in this way. This is because removing fuel-subsidies will increase domestic production-costs, making the local industry less competitive. In addition to this, higher fuel-prices increase the general price-level in the economy, adding to domestic inflation. On the other hand, by phasing out the subsidies slowly, while the fuel prices are relatively low, the negative effect of removing fuel-subsidies are minimized, and public spending in the sector can be increased long-term.

The need for infrastructure investment is not just limited to Angola. Looking at the WEF competitiveness survey, one can see that underdeveloped infrastructure is a problem facing many developing countries with petroleum resources. Out of the bottom 25 countries on the infrastructure rankings included in the survey, 16 are oil-exporters (WEF 2014: 17). The challenge of removing fuel subsidies is a problem facing several developing countries with petroleum endowments. As many are spending a large percentage of their annual GDP on maintaining affordable fuel for their internal market through subsidies (IEA 2014). With fuel-

subsidies having such a large effect on the competitiveness of the local infrastructure, removing these subsidies will have a significant impact on local content development. Oil-exporting countries contemplating removing fuel subsidies should then consider the effect it is likely to have on local content first.

In light of how this paper finds changes in oil-prices to affect the Angolan economy, we see that there is an issue with timing when removing fuel subsidies. The drop in oil-prices causes increased pressure on macroeconomic variables that contribute to creating a less attractive investment climate. By removing fuel-subsidies, a country further adds to the already negative investment climate. The argument that they are expensive and inefficient is of course valid, but removing them when the government's ability to stabilize the economy is already restrained, might only add to worsening the impact a fall in oil-prices has on the macroeconomic environment.

5.1.3 Local capabilities

According to Kazzazi and Nouri (2012), the capacity of a country's local capabilities are largely influenced by its development in education, infrastructure, and its local industrial capacity. This is because these variables affect the domestic ability to supply and participate in petroleum activities.

The general education-level will dictate the scope of domestic participation, as it pose a limit on the scope of services domestic companies are able to supply. With a low education-level, one would expect the domestic industry to be more competitive in low-tech and labour-intensive production: while a high education-level would enable the supply of more technology-heavy production. In addition to the spread of educational attainment, the local industry can develop advanced capabilities by establishing foreign-domestic industrial linkages, which create possibilities for knowledge- and technology transfers.

We have already seen how the local infrastructure either encourages or discourages local participation, as inefficiency increase the cost of local procurement. This section attempts to identify how variations in the macroeconomic environment influence the development of local capabilities, and its contribution to local content development. This is done by looking at how these above-mentioned variables are influenced by the change in the macroeconomic environment.

5.2.3.1 Education

We see that the general education level in Angola is not well developed, even by the standards of most developing countries. There has been large improvements in the number of people enrolling in higher education in recent years. Still, the WEF ranks the country as being the worst in terms of overall quality of higher education and training, out of the countries in their survey (WEF 2014). The country's poor education score can be chalked down to two main reasons that are closely related to each other: (i) the civil war, and (ii) its young population. With the first leaving the educational infrastructure in tatters.

The challenge with having a large share of the population below the working-age is connected to the need for massive public investment to improve the quality of their education. With close to fifty percent of the population under the age of fifteen, the need for more teachers, schools, books, and transport, creates a massive demand for funding. Until recently the government did not show a large will to meet this demand, as public spending on education as a percentage of GDP has declined since the mid 1980's. In the last years, however, there has been a rise in both public spending and private investment in the country's education sector.

We see here that developing the education sector needs both public- and private investment. This makes educational development especially vulnerable to a drop in public spending and changes in the investment climate. Considering how a drop in oil-prices affects the macroeconomic environment, we can tell that a reduction in oil-prices would have a negative effect on educational development in Angola. However, the current projects aimed at expanding education avoid suffering the fate of the country's infrastructure projects, as the revised national budget for 2015 includes a clause that inhibits the planned education expenditure from being included in the spending cuts.

The local content literature highlights how LCPs develop the local capacity by establishing knowledge- and technology transfers between established actors and the domestic industry (Tordo 2013: xv). Local companies need to participate in segments of the petroleum industry where the technology input exceeds that of local capacity in order to benefit from these transfers. By developing education, a country can expand their local capacity to participate in technology-heavy production, and securing these technology transfers through participation. My interviews with Subsea7 and NCA/Oceaneering, shows how the lack of educated nationals does in fact limit domestic participation within the more advanced segments of the industry, as there are few local actors with the necessary competence.

The Angolan case provides a more general lesson for developing oil-exporters, as their low general education-level often acts as a barrier toward domestic participation. In her study of the Brazilian petroleum sector, Dunaeva (2013) found that the lack of sufficient domestic competence acts as a market barrier for both local labour and suppliers. Both Heum et al. (2011), and Nordås et al. (2003), also found that investment in education and skill development was beneficial in securing a competitive local industry base in Uganda, Nigeria and Malaysia. The need for a well-developed education sector means that oil-exporting countries need to invest in the sector to be able to reap the technological benefits from local content in the petroleum industry. This need for investment makes educational development dependent on the macroeconomic environment, and the conditions that affect public and private investment.

Thus, I find the development of the education sector to be influenced by changes in the price of oil, through the oil-price's effect on the macroeconomic environment. The extent of the investment climate's influence on education is, however, in all probability much smaller for developed countries, whose economy is less dependent on oil-revenue than is the case for Angola.

5.2.3.2 Local industrial capacity

We see that there have been major improvements in Angolan industrial capacity following the recent boost to public spending on infrastructure. Additionally, the LCRs forcing foreign companies to adopt an Angolan partner company have increased the capabilities of the domestic industry. According to Tordo et al (2013), these foreign-domestic industrial linkages are the epitome of what LCPs aim to achieve. It is through these linkages that technology is transferred, and the domestic industry is introduced into the global network of suppliers attached to the established industry. The establishment of the domestic supplier database has assisted this process, creating an easy-access portal for IOCs looking for local suppliers and subcontractors. Angola has been successful in developing its local content in its petroleum industry through these measures. Figure 10 shows how technology transferred through FDI is ranked just slightly below average--just ranking as number 117 out of 144 countries, but still at a much higher level than the overall technological readiness would imply.

The country has obviously been able to improve its industrial capacity in the last ten years, but figure 11 shows a bleak picture of how this has translated into actual improvement of the local industry. Here we see that the local industry score is at the very bottom of the WEF survey, both in terms of quantity and quality of local suppliers. It seems that the success the country

has had in establishing industrial linkages, has yet to translate into substantial improvements of domestic capabilities. This might be explained by the lack of educational development, as we have seen how this affects both the breadth of domestic participation, and the domestic ability to absorb technology. The narrow range of domestic participation is evident from looking at figure 10. Here we see the country ranks at the very bottom of the survey in this regard, as the Angolan presence is primarily concerned with individual steps in the industry's value chain.

Lastly, figure 11 provides one last indication of how well the industrial linkages have contributed to developing Angolan local content. Even as Angola has a few industrialized areas outside Luanda, such as Lobito and Cabinda, the country has been unable to establish industrial clusters, which are viewed as competitiveness enhancers for the companies involved (Brown 2000: 4-6). The development of industrial clusters are one of the reasons for the success of Norwegian local content in the petroleum industry. In Norway a total of eight such clusters exist, each centred around a specific segment of the petroleum industry (KonKraft 2014). These Norwegian clusters typically consist of one or two large companies, which serve like a hub for the smaller companies that supply them (KonKraft 2008). This creates a network of companies, in addition to establishing synergy effects that increase the scale of their combined production. These effects contribute to boosting efficiency and profitability of the cluster, as diversified production and efficient logistics enable specialization and decrease production costs. The story of Norway's cluster development also shows that it is often the large international companies in a segment that become the main hubs in a cluster (KonKraft 2008).

This suggests that the foreign companies that have established themselves in Angola through these industrial linkages, might eventually be able to develop a surrounding cluster of suppliers. This way they could add to the development of local content, if the country were able to create an environment that is conducive to foreign investment and local participation.

5.2.3.3 The oil-price effect and local capabilities

The Angolan case shows how local content regulations can enable developing oil-exporting countries to secure industrial links between domestic companies and the established international industry. These links create benefits that the local content literature finds to be extremely important for the development of a competitive local petroleum industry. This is because such links: (i) create technology transfers, (ii) introduce local companies to international supply networks, and (iii) establish links to the domestic non-petroleum based industry. However, to capture these benefits to local development, there needs to be some

degree of domestic participation in the more technically demanding operations. We see that a failure to secure the necessary education and training is detrimental to local participation in these areas of the industry. This is also apparent when examining the Angolan case, where we see that the general education level is poorly developed. This limits the domestic capacity to absorb the inflow of technology brought by foreign companies investing in the Angolan market.

In addition to a solid education sector, the ability of the local industry to become a part of the foreign MNCs supply networks also relies on the local infrastructure and the competitiveness of local suppliers. These are domestic variables that we have seen are heavily influenced by the macroeconomic environment, through its reliance on public and private investment. This makes the extent of the local industry's ability to secure local content development, dependent on how these variables are affected by a change in the investment climate. A short-term drop in investment in the infrastructure and education sectors, caused by a temporary fall in the oil-price, might not cause an immediate effect on the local capacity. However, funding public expenditures in these sectors by removing fuel-subsidies does have a short-term negative effect on competitiveness, as I have already discussed. Additionally, as public expenditure retracts with a declining oil-price, we would expect a sustained fall in oil-prices to have long-term repercussions for the ability of the local industry to absorb technology and expertise from the established international companies.

5.1.4 Local policies

In the conceptual model, the local policies that benefit local content development are those who promote domestic input and industry linkages in the petroleum industry. Kazzazi and Nouri (2012) specifically highlight the establishment of company registers, as well as creating infrastructure development, as example of such policies. As these measures are further discussed in the local capabilities- and local infrastructure sections respectively, this section of the analysis will focus on Angolan regulatory policies, their effectiveness in enhancing local content development, and whether the ability to enhance this development is affected by a fall in the oil-price.

5.2.4.1 Securing direct and indirect local content benefits

Figure 12 summarizes how the different laws and decrees imposed on IOCs and their subcontractors create opportunities for local participation. Here we can see that the Angolan local content regulations create opportunities for the development of both direct- and indirect

local content. The minimum requirements for employment of nationals, and the need for government approval of work visas for expatriates, makes it necessary for foreign companies to train nationals. This process of developing direct local participation is assisted by the tax- and import duty deductions on the training equipment used by foreign companies to train local workers.

As for indirect local content, the creation of different service-categories with varying requirements for local participation helps local companies secure a minimum of subcontractor contracts. It also provides local companies with an incentive to improve their capabilities and competitiveness, as they will be preferred over foreign suppliers if they are able to provide equal services to their international competition. Additionally, the ten percent preference margin on local supplies and suppliers enables local companies to compete for contracts even before they are internationally competitive. From an infant industries perspective, this is beneficial for developing local competence and future competitiveness. This is provided they could supply a product with the same quality as non-Angolan companies. However, this might create a scenario where local companies are unable to compete for contracts in certain segments, as they are unable to match the quality of international companies in the more capital- and technology-intensive supply categories.

The remedy for this qualitative gap is found in article 27 of the Oil activities law 10/2004, which states that licensees should make use of local service providers as long as they provide a *similar* service at a ten percent price preference. Without specifying any quality benchmarks, this opens the door for less competitive local service providers to participate in the more technology-intensive industry segments. By creating opportunities for local employment and local industrial participation, the Angolan regulatory regime provides both direct and indirect local content benefits.

Still there is the question of how the local policies contribute to the competitiveness of the domestic industry. In the conceptual model, Kazzazi and Nouri point out that policies aimed at enhancing local content, should foster competitive local participation. We see that through its protectionist regulations, the Angolan industry is insulated from direct competition from foreign firms, especially in the areas of the industry where they have the technological capacity to participate. The infant-industry case for protection argues that a new company or industry, will not be competitive initially, but after a period of protection it might develop a competitive capacity (Oatley 2012: 91). In the case of Angola, one could see how this argument might be

used to justify its comprehensive regulatory regime. After decades of civil war, and the general backwards technological development of the region, the goal of protection should then be to achieve competitiveness through the development of experience and production of scale.

By looking at the score that the country's supply sector got in WEFs survey in figure 11, we see that this protectionist policy has yet to create competitive local suppliers. This might be explained by the lack of domestic ability to absorb the spill-overs in technology and experience from working with the established industry. Still, just like the country in general, the Angolan petroleum industry is developing its capabilities, and through its industrial linkages, it might benefit from these protectionist policy.

5.2.4.2 Petroleum production agreements and bargaining power

The use of PSAs and RSAs that include Sonangol as a production partner create an opportunity for local participation in the various oil fields. Sonangol has a share in all but three of Angola's 44 concession blocks (Sonangol 2014). These kind of agreements are negotiated individually, making them flexible, and in some cases, containing heavier local content demands than the initial framework might require. This suggest that future PSAs might also contain less demand for local participation depending on changes in the bargaining position of the government and the IOCs. This flexibility in allowing local content demands being attached to the PSA, means that these demands could be adjusted to attract more investment if need be. According to my interview with Subsea7, such a downward adjustment of local content demands is exactly what has happened as the fall in oil-prices deteriorated the investment climate.

This relaxation of local content regulations might imply that there has been a shift in bargaining position between the government and the MNCs in the petroleum industry. While the literature suggest that MNCs have an advantage when negotiating with developing countries (Letnes 2002: 38). The mechanism of obsolescent bargaining suggest that this relationship changes after the investment have been made. This happens because investment are often non-reversible, so for the investing company this capital is sunk into the investment location, leaving it at the mercy of government regulation (Jakobsen 2012: 70). Companies investing in the extraction of natural resources seem to be especially vulnerable to the effects of obsolescent bargaining (Ibid: 74).

My interview data suggest that as the macroeconomic environment deteriorate, this bargaining relationship again changes in favour of the MNCs, because the country's petroleum sector has

become a less profitable investment target. However, my industry interviews also show that there is a difference between international companies with and without a degree of domestic attachment. This suggest that whatever relaxation of the Angolan push for local content we see, it is limited to companies that already have sunk costs in the country.

The Angolan policy of negotiating petroleum contracts on a block-by-block basis means that the bargaining position between the government and IOCs plays a part in how they are shaped. The investment climate then influences this bargaining position, by creating an advantage for the government in a high-profit environment, as demand is on the side of the resource holding state. Reversely, a low-profit environment would create an advantage for the IOCs, as the resource holding state would have to create investment incentives for the industry. As the local content regulations attached to the petroleum contracts add significant costs to the IOCs and their suppliers, this change in bargaining position could have future repercussions for local procurement among international companies. This is because one would expect petroleum agreements in a low-price scenario to contain fewer expenses for international companies, such as using inefficient local suppliers.

5.2.4.3 The oil-price effect and local policy

The Angolan case illustrates how comprehensive industry regulations can be used to increase the local content level in a domestic petroleum industry. We see that by applying regulatory policies (such as minimum employment requirements, tax and tariff deductions, preference margins, and mandatory use of local capacities) the country has been able to secure both direct- and indirect local content. According to Tordo et al (2013), we would expect this to add to the development of both local capacity, and the overall economy. The data reviewed in this paper does however suggest that the expected boost to competitiveness that justify these protectionist policies, are yet to materialize. Creating added costs for the established industry, without the expected return to local development.

These regulations are introduced to the IOCs and their international suppliers through the various production agreements. As these agreements are negotiated on a block-by-block basis, they are likely to be influenced by the bargaining position between the government, in Angola's case Sonangol, and the IOCs. The data presented in this paper, suggest that changes in the investment climate can cause a shift in bargaining power between the two. Where a profitable investment climate, caused by high oil-prices, will help strengthen the government's bargaining position, as the demand for its resources rise. The interview data capture the opposite reverse

effect, where a decline in oil-prices reduce profitability, which lowers demand for the countries resources, and thus strengthens the bargaining position of the IOCs. As the local content regulations add significant costs and limited return for the foreign companies, one would expect these production agreements to contain less local content obligations in a low-price scenario.

Chapter 6. Discussion

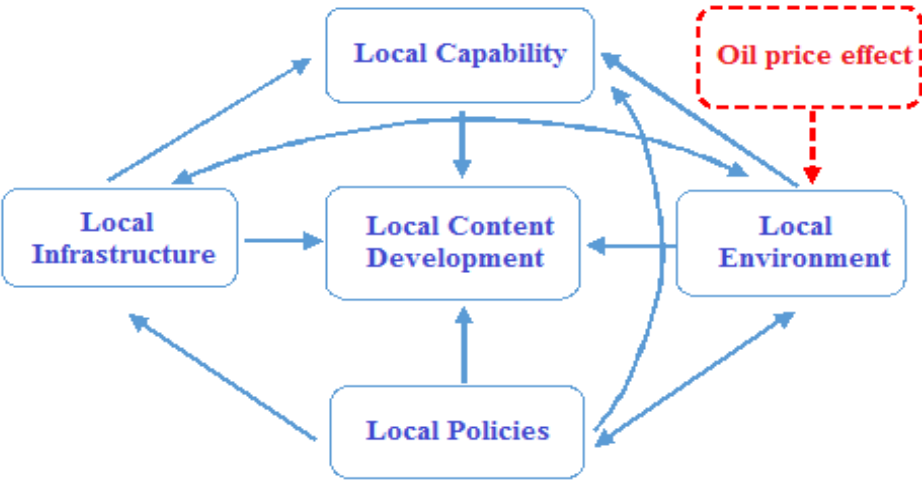
The resource curse literature emphasises how countries might counteract an onset of the curse by developing local content in the resource sector. The reason being that it is one of the most effective ways resource-rich countries can make their resources contribute to domestic growth. We have here seen how both direct- and indirect domestic participation contribute to creating increased domestic demand- and employment throughout the various sectors of the domestic economy. By looking at Angola, we see that local content regulations increase this effect. Because they, by restricting the access of foreign companies to the domestic market, create incentives for foreign companies to invest domestically. This has a favourable impact on domestic industrial capacity, as investments bring in new technology and opportunities for local suppliers. However, we also find that the ability of the host-country to absorb these local content benefits depend on the country's capacity to supply qualified labour and suppliers.

The theoretical arguments for local content regulations are strong, especially for developing oil-exporting countries. These countries often have a limited industrial base, while the major IOCs often have an established network of international suppliers, who come into direct competition with domestic suppliers. The expertise and experience required for technology-intensive operations, such as deep-water oil production, does not make developing local capabilities the most cost-effective option from an industry perspective. From the interviews I have conducted in my research for this paper, it is evident that local content regulations do impose significant added costs on the foreign companies operating on the Angolan petroleum industry. So much so, that it effectively keeps out all but the largest IOCs and international supply companies. The theory behind the investment strategy of multinational companies tells us that the main underlying reasoning for investment is profit maximisation. While one could argue that investment in a new location for oil- and gas production is market-seeking behaviour, the bottom line is still to increase the company's revenue stream. The consequence of applying comprehensive local content regulations are exactly this, a trade-off between creating investment in the domestic economy, and making the market less profitable by increasing the expenses of the industry. The negative effects from this trade-off is, however, only temporary, since local content regulations will naturally ease up as the domestic industry matures. This trade-off becomes important when the price of the resource declines, as the influence of added-costs on the industry's overall profitability and willingness to invest, grows as prices fall.

In this case study, I find that a decline in oil-prices does lead to a deterioration of the conditions for private investment in Angola's petroleum industry. As we see from my analysis, a fall in investment has a major impact on the different variables in the conceptual model, and their ability to contribute to local content development. More specifically, we see that a drop in oil-prices influences the macroeconomic environment in a way that limits investment and development of the domestic- infrastructure and industrial capacity. Previous drops in oil-prices have led to exchange-rate depreciation, increased inflationary pressure, and a rise in public debt in the Angolan economy. This further deteriorates the domestic investment climate, as it increases domestic production-costs, makes loans more expensive, and curtails public spending. Lastly, we see this drop in investment also affects the government's ability to impose local content regulations, as the need to reduce added-costs on the industry undermine its bargaining position. However, my interviews only found this last point to be true for companies who already have considerable sunk-costs in Angola, which might suggest that this will have a limited impact on Angolan content.

As I find the price of oil to influence Kazzazi and Nouri's conceptual model, either directly or indirectly, I suggest that the model should be expanded to include an external *Oil-price effect* variable. However, as oil production can be profitable at a low price in some areas and not in others, due to the amount of technical input required this variable needs to base itself on the profit margin of the international companies. In addition to the profit margin, we need to add the effect of added costs, such as taxes and expenses related to local content regulations. We are then left with a variable consisting of the profit margin on one side, and added costs on the other. Following the logic of what I have found in this paper, we can then expect a reduction in oil-price to reduce investment in the domestic capacity for long-term local content development. The conceptual model will then look something like this:

Figure 13. Kazzazi and Nouri's conceptual model, revised to include the oil-price variable and interaction effects



In this revised model, I have added two new interaction effects, and this fifth variable. The first interaction effect, is the local environments influence on the infrastructure’s ability to supply local content. As I found the environment to be more directly linked to the infrastructures capacity to promote local content than the oposite, which is how its presented in the original model. The second interaction effect, is the local enviroinments influence on the ability of local policy to promote local content development. In this case-study of Angola, I found the macroeconomic aspect of the local environment to influence how decision-makers prioritised local content regulations. In the original model this interaction was one-way, only including the way policies influence the macroeconomic environment. Lastly, there is the oil-price variable, which influence the way policies, infrastructure, and capabilities, are able contribute to local content development, through its effect on the macroeconomic environment.

Chapter 7. Conclusion

This case study of the Angolan petroleum industry has attempted to answer four hypotheses regarding the influence of oil-price fluctuations on local content development. This has been carried out through analysing data collected in interviews with selected industry representatives, and the use of independent statistical databases. The aim of these hypotheses have been to answer the research question; *How does a fall in global oil-prices affect the ability of petroleum producing countries to develop local content in the petroleum industry?*

To answer its research question, this paper has based its hypotheses on the variables in Kazzazi and Nouri's conceptual model for local content development. The hypotheses examine the link between the oil-prices, macroeconomic factors, and the ability of these variables to contribute to local content development.

- The first hypothesis was: *A fall in oil-prices affect important macroeconomic variables in the resource holding state, in a way that deteriorates the domestic investment climate.*

This paper finds this hypothesis to be true for Angola. By causing an exchange-rate depreciation, and the government to borrow money to finance the national budget, a significant fall in oil-prices contributes to curbing domestic investment. This is because these effects add to the inflationary pressure in the economy, and increase interest rates, both of which discourage private investment. In addition to influencing private investment, this paper also find that by negatively affecting government revenue, a drop in oil-prices cause public investment to decline as well.

- The second hypothesis was: *The macroeconomic effects from a fall in oil-prices will limit the resource holding state's ability to impose LCRs on foreign companies that are established domestically.*

The findings in this paper suggest that this is indeed the case, at least in the case of international companies with sunk costs in the domestic industry. As the local content obligations imposed on these companies in Angola has decreased substantially after the prices fell in the summer of 2014. This suggest that the bargaining position between the international petroleum industry and the resource-holding government experienced a shift in favour of the industry, following a drop in oil-prices. This poses as a restraint on the government's ability to impose added costs on the industry. However, this effect was not present for companies who do not have the same

level of sunk-costs. This suggest that the effect on bargaining position might have a limited impact on local content development, as companies with sunk-costs already have a large stake in developing local capacity.

- The third hypothesis was: *The macroeconomic effects from a fall in oil-prices will cause a decrease in government spending on infrastructure and subsidies for domestic companies.*

This paper finds that in the case of Angola, a deterioration of the macroeconomic environment has an adverse effect on the infrastructure's ability to contribute to local content development. This is caused by the negative effect a low oil-price has on public spending and the competitiveness of the local industry. I found that public funds for infrastructure improvement have been lost, due to decreased oil-revenues, and that new funding has to be freed up by removing fuel-subsidies. A move that will increase the production-cost of local suppliers.

- The last hypothesis was: *The macroeconomic effects from a fall in oil-prices will cause a drop in public funding of education and public measures aimed at increasing the competitiveness of the domestic industry.*

This paper also find this hypothesis to be true, as a decrease in public spending on expanding education and local industrial capacity will have long-term effects on the domestic ability to absorb the benefits from local participation. This is because the local industry requires a certain level of advanced capacity in order to effectively cooperate with the established international industry, and secure technology transfers. In the case of Angola, the data analysed in this paper suggest that a lack of advanced local capacity does limit effective cooperation between the foreign- and the domestic industry. A drop in public investment does nothing to improve this situation, and the removal of fuel-subsidies will decrease, rather than increase, the competitiveness of the local industry.

As all four of the hypotheses are confirmed in the case of Angola, I contend that a fall in oil-prices has a negative impact on the ability of petroleum producing countries to develop their local content. This implies an affirmative answer to the paper's research question. From this follows certain implications for Kazzazi and Nouri's conceptual model. This paper finds that the price-effect *does* influence all the different variables in the model's ability to contribute to local content development, through its effect on the macroeconomic environment. Therefore, I

conclude that a variable encapsulating the ratio between oil-prices and profit margins should be incorporated into the conceptual model, as shown in Figure 13.

As a new period of Angola's participation in the OfD programme is about to commence, this case study has also attempted to provide some insight into the challenges related to current management practices. We see that there is certainly a need to reduce the impact of oil-price fluctuations on the economy. This is something that could be achieved by reshaping the country's petroleum fund in the image of the Norwegian pension fund, with its stabilising function, and increased focus on long-term profitability. In addition to this, it is evident from the massive budget deficits (that followed the fall in oil-prices in both 2008 and 2014) that there is need for budgetary reform in Angola.

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Appendix

A1. Interview guide for service companies, Angola

In this interview guide I have highlighted the questions in bold, and then added notes after each question as to clarify what I am asking, and to give some extra considerations for the informant. I hope you find the time to answer these questions, and feel free to give broad answer and provide pointers if you feel like there is an important aspect of your companies local content considerations which have not been considered.

Questions regarding this interview guide can be directed to email: sigvehassel@gmail.com, phone: +47 92628839.

Introduction

A. Presentation;

A1. I would like the interviewee to present himself/herself by providing some information about (i) what is their position in the company, (ii) how long they have worked for the company, (iii) what is your connections to the company's operations in Angola, and (iv) in what way do you come into contact with considerations regarding local content?

A2. In addition to the presentation of the interviewee, give an account of which sort of operations [company] have in the Angolan petroleum sector.

B. How would you define local content?

The definition of Local content can simply be the percentage of nationals employed by a company, but it could also relate to programmes for development, or a company's use of local subcontractors. Which definition of local content does your company operate with in relation to their operations in Angola?

Local content considerations

C. Can you tell me about the specific rules for the use of local content, that are (or previously have been), imposed on your company's operations in Angola?

By operations, I mean all aspects of the company's operations from qualifying for the initial contract and licence to operate, to the procurement for [company]'s operations in Angola, and employment.

D. These questions are aimed at what kind of measures [your company] have specifically aimed at developing local content in Angola?

D2. Does your efforts focus on the use of Angolan labour and subcontractors, or do they aim towards programmes for education and training. Or Perhaps both?

D3. What is your experience with the use of Angolan nationals in managerial and executive positions?

D4. Does [company] have an Angolan partner company?

More broadly, I wonder if [company] have any corporate policy directed at local content development regardless of government local content policy. (like some companies have a specific CSR profile).

E. Would you say that there are any strategic considerations affecting the industry's local content measures?

In regards to corporate social responsibility, but also, in regards to the awarding of contracts and licences. I am wondering how you perceives local content laws in terms affecting market access and ease of business.

E2. Do you perceive non-Angolan companies operating in the Angolan petroleum sector, as using local content measures as a strategic tool to gain market access?

E1.2. Or as their corporate social responsibility?

F. From a financial perspective, how does local content measures affect the company's operations in Angola?

I wonder how you perceives any **positive** (such as improved logistics, lower wages ect), or **negative** (training costs ect) financial implications resulting from the adoption of local content measures.

F1. Does local content regulations affect [company]'s investment decisions? In relation to the changing oil price.

In regards to the decreasing oil prices, (i) does this affect your perception of the cost of local content measures, and (ii) does this make a less regulated markets more attractive for investment?

G. What do you perceive as the pros and cons for the companies operating in the petroleum related industry, concerning substantial government local content regulations?

In terms of procurement from domestic supplier/subcontractors, if there are any issues with competence, and can you see the regulations having any effect in the development of the Angolan industry. Do you perceive such regulations as a barrier to market entry for smaller companies?

Finishing questions

H. Are there any specific local content measures that you know of, that you would like to highlight as positive for the development of the Angolan petroleum related industry?

Perhaps a specific programme aimed at work training, scholarships, or investment in the Angolan industry and infrastructure.

I. How will [company] continue to work towards realizing their local content commitments and social responsibilities in general, and in Angola in particular?

