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MEXICO'S OIL INDUSTRY: A PARADIGM SHIFT IN THE MAKING?

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ABSTRACT

This study examines the potential of the oil sector in the emerging economy of Mexico. Important energy reforms were initiated in 2013 and their implementation will determine future liberalisation and development of the oil sector. The purpose of this study is to provide a deep understanding of the recent past, current situation and the potential near future developments of the oil sector in Mexico. A SWOT analysis represented the conceptual framework for the conducted research. Dunning’s eclectic framework concerning the theory of ownership-location-internalization of firms’ internationalisation process, was applied as a theoretic framework of the study. The findings of this study conclude that the oil sector has long been inefficiently managed with lacking technological expertise and financial resources. The initiated reform, if implemented, could boost the oil production and increase economic growth in Mexico in the near future.

Keywords: Mexico, Oil, Reform, Emerging economy

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Thank you!

Linn Engvall

Alexandra Stojanoska

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LIST OF ACRONYMS AND ABBREVIATIONS

BPD - Barrels per Day
BRICS - Brazil, Russia, India, China, South Africa
CONAPO - Consejo Nacional de Población
FDI - Foreign Direct Investment
FTA - Free Trade Agreement
KMZ - Ku-Maloob-Zaap
MINT - Mexico, Indonesia, Nigeria, Turkey
MORENA - Movimiento Regeneración Nacional
N11 - Bangladesh, Egypt, Indonesia, Iran, Korea, Mexico, Nigeria, Pakistan, Philippines, Turkey, Vietnam
NAFTA - The North American Free Trade Agreement
OECD - Organisation for Economic Co-operation and Development
PAN - The National Action Party
PEMEX - Petróleos Mexicanos
PESTLE - Political, Economic, Socio-cultural, Technological, Legal, Environmental
PRD - Party of the Democratic Revolution
PRI - The Institutional Revolutionary Party
R&D - Research and Development
SME - Small and Medium-sized Enterprises
SWOT - Strengths, Weaknesses, Opportunities, Threats
UN - The United Nations
UNCTAD - The United Nations Conference on Trade and Development
UNDP - The United Nations Development Programme
WEC - World Energy Council
WEF - World Economic Forum

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1. INTRODUCTION

Today's fast-paced shifts of global economic and political structures are of vast interest to governments, companies and individuals of the world. People in developing countries have been brought out of poverty due to rapid growth in emerging markets, as investors turn away from the advanced economies in favour of the transforming emerging economies. A stern watch is kept by stakeholders on emerging markets in order to analyse the development of growing economies to find the best investment destinations and the most lucrative financial opportunities.

The former Goldman Sachs' senior member Jim O'Neill coined the acronym BRIC in 2001, representing the economies of Brazil, Russia, India and China, with the addition of South Africa in 2010. Investors have intermittently used the BRICS as a promising clustered destination for their investments. A large number of acronyms have since been proposed, for example N11 (*Bangladesh, Egypt, Indonesia, Iran, Korea, Mexico, Nigeria, Pakistan, Philippines, Turkey and Vietnam*), CIVETS (*Colombia, Indonesia, Vietnam, Egypt, Turkey, South Africa*), and VISTA (*Vietnam, Indonesia, South Africa, Turkey, Argentina*). Jim O'Neill followed up the BRICS acronym with MINT, which stems from the original N11 group and represents the highly populated and rising economies of Mexico, Indonesia, Nigeria and Turkey. O'Neill has discussed the importance of the MINT and the possibility that the countries might outcompete the BRICS in terms of growth (Goldman Sachs 2007). This paper focuses on the M of the MINT countries; Mexico, a prominent country expected to play an important part in the future on the global arena. Its large population and proximity to important markets through NAFTA (North American Free Trade Agreement), as well as its increasing growth makes the country's development an area of interest for investors and other stakeholders.

Energy resources are expected to increase in importance as a driver of economic development in the near future, regarding both total demand for energy and energy consumption. The population growth of the world is also expected to keep a steady increase, which is one contributing factor for the greater energy demand. The energy prices are also projected to increase in the near future to the benefit of resource-rich countries that will gain competitive advantages. Oil is expected to remain the most dominant energy resource up to at least 2030, even though it will lose significant shares to renewable energy sources (Roland Berger 2014).

Oil has been historically important in Mexico and is likely to be significant for the country's development in the near future as the oil sector is expected to dominate the Mexican industrial climate. A framework for sweeping energy reforms has recently been approved by the Mexican Congress, which will open up the oil sector to foreign investment and end the seven-decade long monopoly that has been controlled by the state-owned enterprise Petróleos Mexicanos (PEMEX). Foreign investments are known to be an essential part in the economic development of emerging countries and can help catalyse an entire industry by providing the necessary financial and technological support, and large foreign investment inflows are expected to contribute to the development of the Mexican oil sector. Another reason of the oil sector's future importance is the continuous increase in oil demand by the growing Mexican population. The purchasing power is likely to rise as the middle class in Mexico grows (Euromonitor 2013). Oil will thus be an important resource for Mexican development and perhaps the most important industry in Mexico in the near future.

1.2 Problem Discussion

The authors intend to investigate pending global development, and found that Mexico's oil sector would undergo an exciting transformation in the near future. Mexico is a market with large potential for growth and is expected to be an important future player in the world in general. After analysing global trends of the near future, as well as the current industrial landscape of Mexico, the importance of the energy sector is identified with expected major potential of the Mexican oil sector. The aim of this paper is to examine the Mexican oil sector with regard to potential effects of the new reforms, the impact of expected foreign investment and other challenges and opportunities that outlines the Mexican prerequisites for the development of the oil sector. As Mexico stands on the threshold of major development in its oil sector, this paper seeks to anticipate its future potential by considering the past and current development of the country in general, and the oil sector in particular. The oil sector has had huge importance for the Mexican economy for the past 100 years and has been a cash cow for the government and currently account for around 30 per cent of state revenues. However, Mexico now appears to be facing a paradigm shift as the monopoly of the oil sector ends and significant economic growth is expected in the near future. The reforms were proposed in December 2013 and are currently being processed through secondary legislation and amendments of the Constitution to implement the new rules that will regulate the oil sector. Since the reform is a recent phenomenon with only assessment of potential outcomes pointing

to the direction of future development, more research in the field will be necessary in order to follow the debate of Mexico's natural resources, and also for the international community to grasp the changes and expected developments of the Mexican oil sector. The oil sector in Mexico is part of a bigger picture, namely the development of the world's energy reserves and future oil dependence. This study aims at contributing to the research on the oil sector's development in Mexico, and also to the global debate of the world's energy demand and energy sources.

1.3 Purpose

The purpose of this study is to generate a deep understanding of the possible development of the oil sector in Mexico by providing a comprehensive picture of the past developments in the industry and the current influence of the new reform. By answering this purpose, the research of this paper will contribute to the projections of the oil sector's development in Mexico.

1.4 Research Questions

In order to properly analyse the development of the oil sector in Mexico, this study aims at providing answers to two research questions, which will help obtain a comprehensive picture of the challenges and opportunities faced by the industry:

- (1): What are the recent past and the current situation of the oil sector in Mexico, and the implications of this?
- (2): What is the potential near future development of the Mexican oil sector?

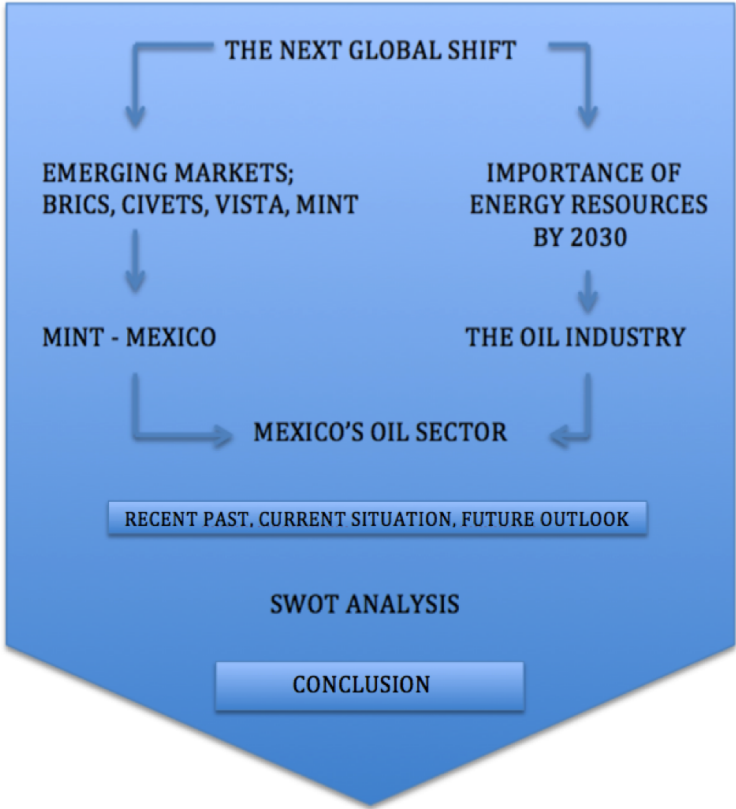
Hence, the oil sector will be analysed from the viewpoint of the two research questions. The selected research questions are chosen to bring a deep understanding of the oil sector's current and future potential. By answering the research questions in a comprehensive way, the study will be able to fulfil the purpose of understanding the development of the oil sector.

1.5 Limitations

The image below represents how the authors have funnelled their study into one specific area. While seeking to contribute to existing forecasts of the development of emerging markets, a severe limitation on the area of investigation is needed. This research has thus limited the area of investigation to the emerging market of Mexico. The main reason for selecting the

Mexican market is the combination of a large population and economic growth, which is a positive indicator of the country’s ability to develop. Also, the interesting reforms set out by the new government are projected to have a positive impact on the development of Mexico. To carry out a good analysis the research has further been limited to involve the oil sector’s recent past, current situation and its potential to be successful in the near future. The oil sector has been chosen after first depicting the industrial landscape of Mexico and in combination with global forecasts of the near future. The oil sector might be the industry with most potential to flourish in the near future.

Figure 1. Picture of the researchers’ process of narrowing down their subject to one chosen area of interest.



Source: Authors’ own depiction

The authors’ choice to conduct a study of the Mexican oil sector limits the conclusions to a specific context. Instead of investigating the whole energy sector of Mexico, this study has tried to effectively discern oil from gas developments, and solely focus on the development of crude oil and no other energy sources such as natural gas, shale gas, renewables, etc. Both proven crude oil reserves and projected reserves are discussed in the study. Another research

limitation regards the chosen time period ranging from the recent past to the near future. Given the relatively short-term time frame of the research, this study will be able to provide a justified forecast with reliable data on the development of demographics and other factors of importance for determining the development of the oil sector. The limitations have been made in order to carry out a good analysis and be able to provide a valid and specific future outlook that might interest various stakeholders of the Mexican oil sector. Thus, the results of this study may not be applicable to oil sector developments in other markets, nor will the results answer how the development of other energy sources will play out.

2. METHODOLOGY

The following chapter aims to justify and outline the main reasons leading to the choice of methodology. Beginning with a brief description of Triangulation and how it has been applied to the research questions in the research methodology, followed by the choice of sources and data to this study, as well as the research quality.

2.1 Research Methodology

The research methodology used for this descriptive study is a blend of both qualitative and quantitative methods. The mixed methods approach takes the strengths of both quantitative and qualitative research into account with a focus on finding the best method to answer research questions, regardless of the qualitative-quantitative divide (Kumar 2014). The triangulation method was selected because of its balanced and comprehensive nature, allowing for an expansion of this study and permitting the authors to examine the research questions using both facts and statistics for a more clarifying research and results.

The authors have collected data from exclusively secondary sources, mainly from different intergovernmental organizations such as the Organisation for Economic Co-operation and Development (OECD), The United Nations Conference on Trade and Development (UNCTAD), the World Bank and the United Nations (UN). The reason for choosing sources of a secondary nature is the very essence of this paper, which concerns the development of an industry due to current reforms and not for example the strategies of companies, which more easily could be researched by gathering data from primary sources. The authors realized that conducting interviews with representatives from various think tanks or stakeholders only would provide for subjective views on the area rather than offering analytical material that

would benefit this study. Therefore, the use of interviews would only have served as a complement to the study, and the authors decided to exclude this method.

2.2 Triangulation

Triangulation means that the researchers use more than one method or source of data in the study. The term has been employed somewhat by Denzin, (Todd D. Jick), referring to an approach which uses “multiple observers, theoretical perspectives, sources of data and methodologies”. The approach was originally conceptualized by Webb et. al and can be associated with a quantitative strategy, as an approach for using multiple measures in order to enhance confidence in findings (Bryman & Bell 2011). These perspectives can be substantiated by using several methods and/or in several theoretical approaches. Triangulation refers to combining different sorts of data on the background of the theoretical perspectives applied to the data. As far as possible, these perspectives should be treated and applied equally and in a consequent way. Triangulation should also produce knowledge on different levels; meaning insights that go beyond the knowledge made possible by one approach and thus contribute to promoting quality in the research (Flick, 2014).

There are different types of triangulation. Denzin (1970) extended the idea of triangulation with research methods and designs beyond its conventional association, distinguishing four forms of triangulation:

1. Data triangulation, which is the form, entails gathering data through several sampling strategies resulting in collection of data at different times and social situations as well as on a variety of people.
2. Investigator triangulation, referring to the use of more than one researcher when gathering and interpreting data.
3. Theoretical triangulation, referring to the use of more than one theoretical position when interpreting data.
4. Methodological triangulation, referring to the use of more than one method for gathering data.

2.3 Motives for Choosing Triangulation

As mentioned, triangulation is an approach where a combination of both qualitative and quantitative methods is utilized. This study does not contain a pure triangulation approach; however, it does contain clear characteristics of the approach, due to both qualitative and quantitative measures being used. To clarify, the qualitative part of this study consists of interpreting and analysing secondary information carried out by non-governmental institutions, think tanks, as well as official websites of governments and essential companies and institutions for this study. The quantitative part consists of secondary quantitative data in form of statistics collected from both governmental- and non-governmental institutions. The main reason for collecting existing data was to fulfil the goal of improving the confidence and reliability in our qualitative findings. The authors also want to highlight the awareness of this study containing qualitative data to the larger part.

2.4 Motives for not choosing Solely a Qualitative Research Method

The main definition of qualitative research is that it is a type of scientific research, consisting of an investigation which seek answers to questions, uses predefined set of procedures to answer questions, collects evidence and produces findings not determined in advance, as well as findings applicable beyond the immediate limits of the study. A qualitative approach is a way of thinking when conducting a qualitative research. Four major approaches are the most common. *Ethnography* is the approach to qualitative research comes mainly from the anthropology field. The emphasis is to study an entire culture. Ethnography is a very broad area with a great variety of practitioners and different methods. The most common approach is however *Participant Observation* as a part of field research (Research Methods 2006). There is no limiting of what will be observed and no real end in an ethnographic study. *Phenomenology* is considered both a philosophical perspective and an approach to qualitative methodology. The approach is focused on people's subjective experiences and interpretations of the world, thus, the phenomenologist aims to understand how the world appears to others. *Field Research* is an approach considered a broad approach to qualitative research, as well as a method of gathering qualitative data. The idea is that the researcher goes "into the field", observing the phenomenon in a natural state. Even here, such as in ethnography, the most common method is the *Participant Observation*. *Grounded Theory* is an approach originally developed by Glaser and Strauss in the 1960s (Glaser & Strauss 2012). The purpose is to develop theory about the area of interest. It is a complex, iterative process, where the research

begins with raising *generative* questions. The authors will not discuss the different characteristics of the four key approaches further in this study.

Why was not Participant Observation, the most common qualitative method, solely suitable for this study? One main characteristic is that it is highly demanding, requiring that the researcher become one with the culture and context being observed. Firstly, being limited with time, this was not an alternative for this study. Secondly, to truly be able to comprehend and examine the research questions, the authors were highly dependent on statistics and data to be able to quickly get an overview of different situations. Therefore, the authors have in this study mixed the qualitative and quantitative methods, and chosen not to use a deep and complex quantitative study. The main reason for this is as earlier mentioned that triangulation gives this study the most accurate picture.

2.5 Sources and Research Quality

The sources utilized for this study consists for the greater part of scientific articles supplemented with books, material from official organizations' websites and newspapers. The books were collected from the economic library of Gothenburg University; however, the library did not have many books about the subject meaning that the majority of the data collected stems from the Internet. Many scientific articles were collected from the Gothenburg University economic library databases; however, as the proposed reforms are a part of recent events in Mexico, few accurate academic articles have been available on this subject. The majority of the websites utilized were either official websites of the intergovernmental authorities or institutions. Whether it concerned scientific articles, websites or books, attention was mainly paid to the perceived reliability of the source and its contents. Books and articles gave guidelines about how to further investigate concerning the certain area of this research. The websites have only been used if the source of the information was clear and deemed reliable for the kind of information needed.

3. CONCEPTUAL FRAMEWORK

This section outlines the theoretical and conceptual framework of the study.

3.1 Dunning's OLI Framework

This study will base its theoretical framework on the well-known theory of Dunning. Dunning's eclectic framework was developed in the 1970s, and outlines the OLI variables that companies consider before entering new markets through internationalisation. OLI is an abbreviation of Ownership, Location and Internalisation, aspects considered by companies when facing internationalisation (Dunning 1988). The eclectic framework is enabling an analysis of companies' strategies for internationalisation, as it outlines the aspects that impacts to what extent their operations internationalize and the industrial composition of their operations internationalisation.

The factors are believed to have strong impact on the aspects that firms face when they are to choose entry strategies in order to see a successful internationalisation. Also, the three aspects explain the sources of comparative advantages that the companies have compared to national companies. The Ownership-specific factors concerns firms' competitive advantages such as knowledge and international experience, financial resources, R&D, the technology intensity, size, product/service adaptability and resource capacity that in turn affects the type of objectives the company will have when internationalising. The company may either already have sufficient resources or seek resources when entering the new market. The size and expertise, as well as managerial know-how and other important capabilities within the company, will determine if the company will be able to conduct high investment entry modes when internationalizing its operations. The Location-specific factors refer to aspects that are "specific in origin to particular locations and have to be used in those locations", as for example markets, resources, production costs, cultural characteristics and political conditions (Dunning 2000). Another location factor is the impact on transaction costs, which companies need to consider when selecting modes of entry. Location advantages are thus related to the balance between market risk and potential, in order to determine the best geographic location for the company. Finally, the Internalization-specific factors regard the choice of the firm to integrate and use its competitive internal advantages, such as knowledge and R&D, instead of outsourcing them to external operators (Dunning et. al 2004).

3.2 SWOT Analysis

The conceptual framework of this research paper has been concentrated to the application of one model, which has served as the main tool for the researchers to accomplish a thorough analysis of the chosen area of interest in order to answer the research questions and purpose. A SWOT analysis is the acronym of Strengths, Weaknesses, Opportunities and Threats, a model first described by Learned et al. in 1969. The SWOT analysis tool has been used throughout this research paper and is a common tool used to evaluate advantages and disadvantages of a company, a new product, a new market, etc. SWOT outlines four important aspects to consider in order to provide a comprehensive picture of the concerned contention (Glaister and Falshaw 1999).

Figure 2: SWOT Analysis Model



Source: Authors' own interpretation

The SWOT model has allowed this study to structurally outline the advantages and disadvantages of the identified area, as well as the risks and opportunities. In order to obtain an extensive dissection of internalities and externalities through strategic thinking, an application of the straightforward nature of the SWOT analysis has been utilized. Strengths and weaknesses refer to internal factors, while opportunities and threats are external factors. Strength is a resource or capacity, which can be used as an advantage to achieve certain goals. A weakness is a limitation, fault or defect, which might prevent the achievement of certain

goals. An opportunity is any favourable situation. A threat is any unfavourable situation, which may damage future development. The expected results after conducting a SWOT analysis is to be able to employ existing strengths, redress existing weaknesses, exploit opportunities and avoid possible threats, as well as to help form a plan for the future or at least give a brief taste of what is to come (Nordregio 2001). The SWOT analysis can help make out the strengths, weaknesses, opportunities and threats that exists in the receiving country/industry, as well as in the internationalising companies.

There are both advantages and disadvantages with a SWOT analysis. Even though it is a well renowned and respected tool for strategic planning, it is mostly used by companies for market assessments or before the launch of a new product. The benefit is that categorizing any issue into strengths, weaknesses, opportunities and threats provide a comprehensive picture of the issue because it compels the researcher to take both positive and negative aspects into account. Despite its simple nature, a SWOT analysis can help analyse the most complex situations and steer away the focus from just static facts in order to use the strengths and capture the opportunities while either eliminating or monitoring the weaknesses and threats. SWOT is a helpful tool for decision-makers in need of a clear picture of the variables of advantages and disadvantages for any strategic decision. One potential weakness of SWOT analyses is that the quality is very dependent on the researcher's ability to carry out sufficient internal and external analysis, which is a time-consuming task. Another disadvantage is that the observer determines the definition of a threat or a strength, and that a strength may become a weakness if not utilized, just like an opportunity may become a threat if captured by a competitor. Logical reasoning in a combination with reviewed literature will be applied when this study prioritizes the most significant strengths, weaknesses, opportunities and threats.

There are many different models and tools, which may be used to obtain an overview of a certain situation. The authors discussed the use of several models for the research of this study. One strong candidate was the PESTLE model, an acronym of the Political, Economic, Socio-cultural, Technological, Legal and Environmental aspects for performing an analysis related to the context of an organization, industry etc. (CIMA 2007). Both the SWOT and PESTLE models are helpful tools when analysing companies and industries. However, the SWOT analysis model is found to be more accurate and suitable for this analysis than PESTLE, since it allows a discussion of the research questions without solely focusing on

predetermined factors in a way that PESTLE does. The main reason leading to our choice to reject the PESTLE model is that the SWOT analysis model allows a less restricted dialogue, in order to properly examine the most crucial factors focusing on both the internal and external situations. Furthermore, the SWOT analysis will facilitate a discussion regarding the future.

Conclusively, the authors have chosen to keep the theoretical and conceptual framework as straight-forward and at the same time as open as possible. The reason behind their choice is mainly to maintain an open mind-set to see the real-life picture rather than being blinded by previous research. It is a strategic choice to use the conceptual SWOT analysis tool, which allows for an unbounded realistic analysis of the pros and cons of the studied area. The addition of the OLI theory will secure the necessary solid theoretic base to guarantee the research's reliability and validity. Thus, a combination of Dunning's eclectic framework and the SWOT analysis tool make out the conceptual and theoretical framework of this study.

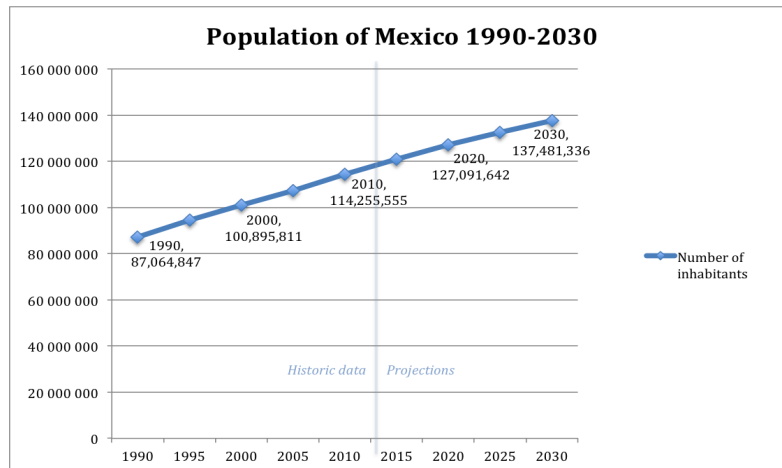
4. MEXICO'S CONTEXTUAL BACKGROUND

This section briefly describes the underlying country-specific factors that influence the future oil demand in Mexico. Aspects such as history, politics, demography, urbanisation, economy and security all affect the conditions faced by the oil sector. The contextual background is essential to this study as it provides an understanding of the Mexican ownership-specific, location-specific and internationalisation-specific factors, which later will facilitate the application of the theoretical framework on the results of the study. This section thus outlines the context of the oil sector.

4.1 Demography and Urbanisation

Mexico has a fast-growing population that has grown from around 35 million people in the 1960s to more than 120 million today. Mexico has the largest Spanish speaking population in the world, with a predominantly catholic population mainly belonging to an ethnic group of Spanish and Indian origin (World Population Statistics 2013). Figure 3 shows the population growth development since 1990 when Mexico had a population of 87 million. The figure also presents estimated population growth to 2030 when around 137 million people is expected to live in Mexico (CONAPO 2014). The population is expected to increase continuously to 2050, despite a negative net migration rate due to the migration to the U.S. (OECD 2013).

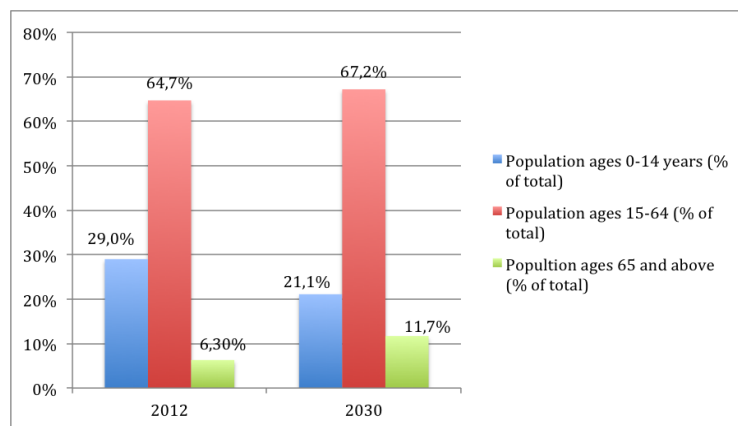
Figure 3. POPULATION GROWTH IN MEXICO 1990-2030



Source: Estimates based on CONAPO's data (2014).

Mexico has a relatively young population with 29 per cent under the age of 15 and an elderly population over the age of 65 of only around 6 per cent in 2012. Figure 4 outlines the current population structure and the anticipated structure in 2030. The projected structure indicates that Mexico continuously will have a young and large population in the workforce in 2030, even though the population is ageing. Life expectancy was estimated to approximately 74 years in 2012 (OECD 2013).

Figure 4. POPULATION STRUCTURE IN MEXICO 2012 AND 2030



Source: Estimates based on data from the World Bank, (2014), and Euromonitor International, (2013).

The urban population is estimated to represent around 79 per cent of the total population (World Bank 2014). Most of the largest cities are like Mexico City located in the Centre/South of Mexico, while some major cities are located close to the border to the United States in the north. Mexico City dominates the urban landscape (Statista 2014).

Mexico has a history of economic inequality and still suffers from regional disparities of economic growth and income levels. Mexico had the 2nd highest level of income inequality in the Organisation for Economic Co-operation and Development (OECD) in 2013 (OECD 2014). Mexico's gini coefficient had a high rate of 47.2 in 2010, where 0 represents perfect equality and 100 implies perfect inequality (World Bank 2014). Inter-regional disparities have grown for the past 20 years as the benefits of trade liberalization have been better captured by some regions (OECD 2012). It is likely that future increases in oil production and the economic growth it brings will keep enhancing regional disparities (Rodriguez-Oreggia 2007). Poverty has after decades of reduction increased again since the mid-2000s due to rising food prices and the global financial crisis in 2008. The share of people living in poverty in 2010 was equivalent to 52 million people and almost half of Mexico's population. In 2011, the bottom 10 per cent of the population enjoyed 1.3 per cent of total disposable income while 36 per cent was received by the wealthiest 10 per cent (OECD 2012). The wealthiest share of the Mexican population is wealthy enough to put Mexico on a global rank of 11 regarding purchasing power. Despite the high rank regarding purchasing power, the fact remains that Mexico has the lowest disposable household income in the OECD (OECD 2014).

4.2 History and Political Situation

Mexico has transformed extensively over the past decades. Mexico was governed by the same party, the Institutional Revolutionary Party (PRI), for 71 years before the one-party rule ended in 2000 and the PRI had to step aside for the first opposition party to rule the country. Mexico is today a multi-party democracy. Another transformation over the past decades is the Mexican development from being a protectionist economy in the 1930s with large-scale nationalizations of industries, to restructuring its economy in the late 1980s and opening up to foreign investments, trade flows and allowing private enterprises to gain access to markets. The energy sector remained closed for private investments. Mexico is today once again led by the PRI and President Pena Nieto, who took office in December 2012 (Foreign Affairs 2014). Since no political party gained majority during the 2012 elections, the three biggest parties inked the "*Pacto por Mexico*" in 2012, which outlines commitments for social, economic and political improvements. The PRI started off with initiating historical reforms of the energy sector in December 2013, intended to open up the energy sector to private investment and cease the monopoly that has dominated the energy market for seven decades. PEMEX is the name of the state-owned oil-producing company that has had monopoly on petroleum

production since established in 1938, although the opening up for competition could be around the corner as the government aims to open the energy market to private companies.

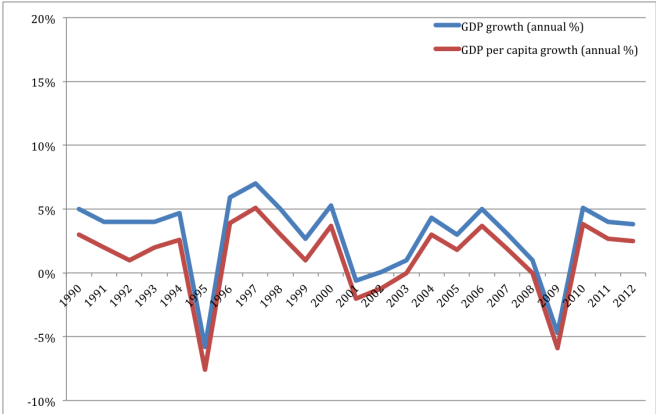
The optimism that exists regarding Mexico's future development mostly stems from the new reforms initiated by the government, as impressive results are expected to rise from the implementation of the reforms and the three-party agreement of *Pacto por Mexico*. The change in attitude of the political forces in the country sparks a public belief in the Mexican economy that has long been absent (WSJ 2013). The government is however heavily dependent on oil revenues which in 2013 accounted for 33 per cent of total government revenues. It is an area of concern given the decreasing oil production in Mexico of the past 8 years (Goldman Sachs 2013). Mexico's tax system has been argued to be operating inefficiently with a need for a broadening of the tax base in order to reduce poverty, develop human capital and invest in public infrastructure (OECD 2013). A broadening of the tax base would also help decrease the government's dependence on oil revenues and the energy sector. An optimistic forecast of broadening of the tax-base and decrease of oil-revenues dependence is based on the fact that the Mexican economy consists of an economic complexity facilitating a variety of industries. Mexico is characterized by a high rank of economic complexity among key emerging markets, meaning that Mexico exports a wider variety of products compared to other countries. Since a country's economic complexity highly correlates with its income per capita, this indicates improved long-term prospects for Mexico (Goldman Sachs 2013).

4.3 The Mexican Economy

Mexico is since 1994 an OECD member and is the second largest economy in Latin America. It is an emerging country with a bright future outlook for reasons such as its democracy, large domestic market and important energy reserves and other resources. Mexico has a financially strong banking system. The Mexican Stock Exchange is well developed and the 2nd largest in Latin America after Brazil's. It is closely linked to the U.S. Stock Exchange and therefore moves under some influence of the stock exchanges of New York and Nasdaq (Economy Watch 2010). The Mexican economy has modestly recovered from the global financial crisis in 2009 and presented a GDP average growth rate of 3.8 per cent in the years of 2011 and 2012. The year of 2013 showed a disappointing growth rate of 1.1 per cent (IMF 2014). Figure 5 reports Mexico's annual GDP growth for the period 1990-2012. The figure shows an average growth rate of approximately 3.5 per cent during the period, excluding the negative

growth rates in 1995, 2001 and 2009. GDP per capita was US\$ 9.749 in 2012, compared to US\$ 6.664 in 2000 (World Bank 2014).

Figure 5. MEXICO'S GDP GROWTH (ANNUAL per cent) 1990-2012



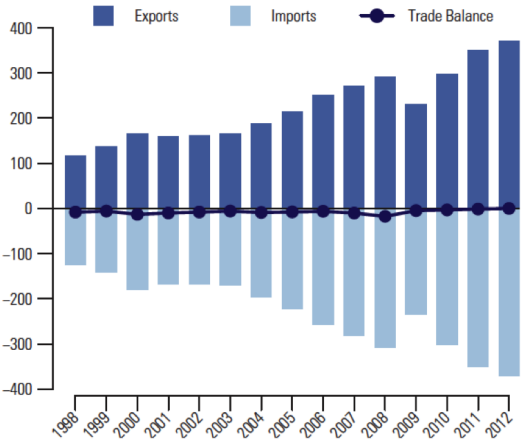
Source: Diagram based on data from the World Bank's 'World Development Indicators' (2014)

Mexico’s economic structure has remained stable over the last decade. The agriculture sector has on average accounted for almost 4 per cent of GDP, the industry sector for approximately 35 per cent of GDP and the service sector for around 61 per cent of GDP during 2000-2012 (World Bank 2014). Employment in the agriculture sector has decreased from 18 per cent in 2000 to 13 per cent in 2010, which indicates that the agriculture sector no longer employs a large share of the population even though it still contributes with the same per cent to GDP, most likely due to increased productivity in the sector. The industry sector has employed around 26 per cent of the population during the whole period of 2000-2010. Employment in the service sector has increased from 55 per cent in 2000 to 61 per cent in 2010. The unemployment rate in Mexico was around 5 per cent during both 2012 and 2013 (OECD 2014). The inflation has been brought down to levels of 4-5 per cent in the past decade (UN 2014).

Mexico’s trade balance regarding merchandise trade has developed steadily as shown in Figure 6 below. Exported goods in 2012 consisted of 54 per cent machinery and transport equipment. Other significant export commodity groups included mineral fuels, lubricants and miscellaneous manufactured articles. Between 2010 and 2012, the most exported goods were petroleum oils and oils obtained from bituminous minerals, crude, motor cars and other motor vehicles (UN 2014). In 2012, exports of goods and services represented 33 per cent of GDP (World Bank 2014). Machinery and transport equipment also accounted for a significant part

of Mexico’s imports, with around 46 per cent of total imports. Other important import commodity groups were manufactured goods. Between 2010 and 2012, the most imported goods were refined oil and parts of motor vehicles (UN Data 2014). In 2012, imports of goods and services accounted for 34 per cent of GDP (World Bank 2014).

Figure 6: TOTAL IMPORTS, EXPORTS AND TRADE BALANCE (Bln US\$ by year)(Services are not included)



Source: Graph from the United Nations Statistic Division, ‘Mexico Trade Profile’ (2014).

The three most important export markets for Mexico in 2011 were the U.S., Canada and China. Exports to the North American market represented over 80 per cent of total exports, as exports accounted for 78 per cent to the U.S. and 3 per cent to Canada. The most important trading partners regarding imports in 2011 were the U.S., China and Japan, which emphasizes the trend of Mexico trading increasingly with Asia (UN Data 2014).

Mexico applied a protectionist trade policy during the decades of 1930-1980, based on import substitution policies to promote domestic-led industrialization and avoiding dependence on foreign powers. Mexico had to restructure its economy when faced by decreasing economic growth and opened up to trade liberalization in the 1980s (CRS 2012). Today, Mexico has a large network of free trade agreements (FTAs), with the aim to increase trade, diversify its export markets and maintain strategic global relations. Mexico has established 12 FTAs involving agreements with 44 countries since the 1990s, which includes most of the countries in the Americas, as well as the European Union, Israel and Japan. NAFTA came into force in 1994 and is without doubt the most important FTA for Mexico, considering that 80 per cent of its exports goes to North America. The trilateral trading area facilitates a great internal market that has contributed to the large flows of goods and services between Mexico, the United States and Canada. Mexico has experienced an expansion of economic activity and

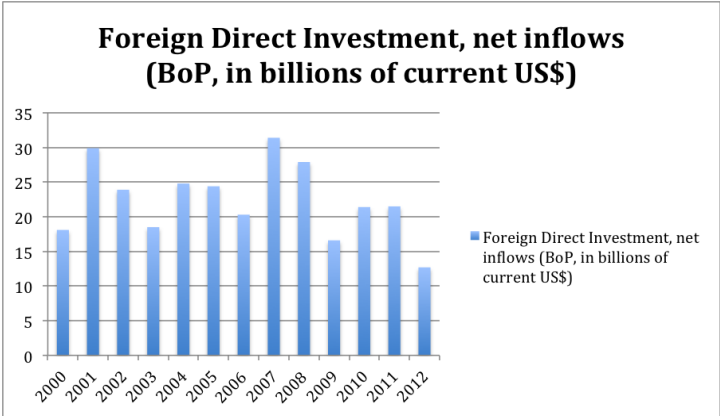
growth due to the steep increase in demand and the access to the North American market since entering NAFTA (UN 2013). The NAFTA eliminated trade and investment barriers between the three countries over a fifteen-year period. However, the agreement did not include the oil sector as the energy industry was excluded.

Positive impacts of NAFTA include a tremendous reduction in prices for clothes, food and televisions in Mexico, which has resulted in improved conditions of the population despite a slow increase in income per capita. Costs of basic household goods are estimated to have halved. The intraregional trade flows between Mexico, the United States and Canada has increased from around US\$290 billion in 1993 to more than US\$1.1 trillion in 2012 (CFR 2014). Mexico's exports rose from around US\$60 billion in 1994 to almost US\$400 billion in 2013 (Foreign Affairs 2014). The importance of NAFTA for Mexico is likely to remain in future as a foundation for its important trade relation to the United States, the cooperation in the maquiladoras (see explanation of the maquiladoras below), and as an enabling factor for FDI inflows from North America. Efforts to further increase regional trade in the future will stem from new trade agreements, such as the Trans-Pacific Partnership, which is currently being negotiated (CFR 2014).

Manufacturing, financial services and retail trade has been the industries that has contributed the most to the Mexican economy in terms of GDP over the past decade (OECD 2014). The automotive industry and assembly manufacturing has been very successful for reasons such as low labour costs in the maquiladoras and the proximity to the U.S. (The Economist 2013). The electronics industry is another important industry as Mexico is the second biggest exporter to the U.S. market. The steel industry is significant for the Mexican economy, currently accounting for 2.6 per cent of GDP (UK T&I 2013). Transport equipment, industrial machinery and ICT equipment are important sectors in Mexico's export. The most important service industries during the past decade have included tourism, finance and banking. The tourism industry is the fifth biggest source of revenue and third biggest source of hard currency after oil revenues and remittances (Fox News 2013). The industrial landscape of Mexico represents a large variety of industries, ranging from sophisticated high-tech businesses to labour intensive manufacturing. Mexico is a country with a fascinating economic complexity, considered to be a strength in the country's long-term prospects. However, the oil sector is anticipated to be one of the most significant sectors in Mexico in the near future.

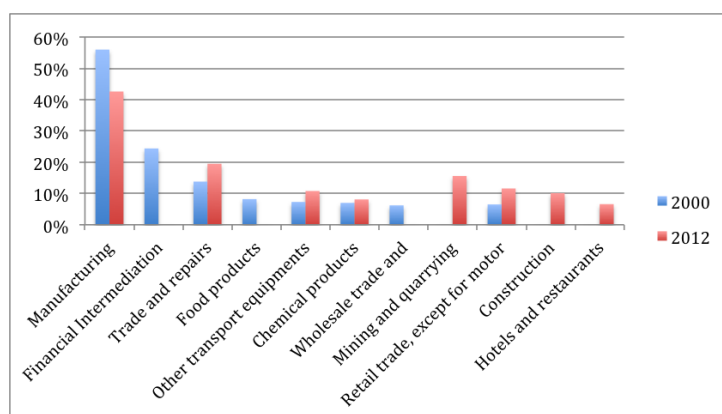
Maquiladoras are manufacturing factories in Mexico based on legislation issued in 1989, which assembles imported components into finished products aimed for exports, located primarily in cities bordering to the United States. The maquiladoras allow for foreign investment participation/ownership in capital and management without special authorization and also offer duty-free temporary import. A predicament is that large parts of the manufacturing industry currently located in the centre of Mexico, will move towards the border in the north where manufacturing dynamics exists (Vargas-Hernández 2008). This is also due to the fact that Mexico is leaning more towards the American market, which has stronger purchasing power than the Latin American market. A favourable factor for foreign participation in Mexican industries is the intellectual property rights protection, which has lead to foreign companies of high technology sectors to move their production to Mexico from China which lacks equivalent intellectual property legislation (Goldman Sachs 2013). China’s rising wage costs are another reason why foreign investment in Mexico is increasing. FDI plays a major role in the Mexican economy as capital flows into different industrial sectors. Mexico is an attractive investment destination as investors and stakeholders have expectations of long-term growth in the country. Figure 7 shows the net inflows of FDI during the period 2000-2012. FDI flows increased in 2013, as Mexico received almost US\$24 billion in FDI solely during the first half of 2013, 2.5 times more than the same period in 2012 (Secretaría de Economía 2013). FDI net inflows as per cent of GDP, was 2.0 per cent in 2011 and 1.3 per cent in 2012 (World Bank 2014). The manufacturing sector received the largest share of FDI in Mexico in 2012 with an amount of around US\$7 billion (OECD 2014). Figure 8 below shows inward FDI flows of the top-8 industry recipients in 2000 vs. 2012.

Figure 7. MEXICO’S FOREIGN DIRECT INVESTMENT NET INFLOWS 2000-2012



Source: Data based on data from the World Bank’s World Development Indicators (2014.)

Figure 8. Inward FDI flows, Top-8 industry recipients in 2000 vs 2012 (per cent of total inward FDI)



Source: Estimates made on data from OECD StatExtracts. Please note that each industry's share is estimated as a percentage of total inward FDI flows in Mexico in 2000 and 2012. Some industry definitions overlap, which is the reason the total per cent exceeds 100.

Another important source of income for Mexico is remittance inflows that accounted for 2 per cent of GDP in 2010, which is an increase from 1 per cent in 1990 but a decrease from the peak at almost 3 per cent of GDP in 2006 (UNDP 2011). The recent decline may be a result of the decreasing negative net migration rate of 1.2 million in 2012 compared to 2.9 million in 2002 (World Bank 2014). Analyses of the migration flows to the U.S. reports a substantial decline due to factors such as the weakened U.S. job and housing markets, improving economic conditions in Mexico and strengthened border enforcement (Pew Research 2012).

Apart from joining NAFTA in 1994, two other major events have affected the economy since the 1980s. The first is the restructuring of the economy in the late 1980s - early 1990s. From being a protectionist country with a focus on import substitution in order to create a domestic-led industrialization but leading to serious economic challenges, Mexico implemented trade liberalization measures and opened up its economy to attract foreign investment and improve the economic conditions in the country. The second is the currency crisis in 1995. Foreign investment flew from the country, the peso was overvalued, imports surged and the capital deficit widened. Mexico received a support package by the International Monetary Fund (IMF) to get back on its feet after the currency devaluation (CRS 2008).

4.4 Levels of Education, Technology and R&D

Mexico's future growth prospects will depend heavily on how well it manages and develops the skills of its workforce. Knowledge-intensive and innovation industries are anticipated to grow in importance in the near future, which is why talented human capital will be the most

important resource. Finding ways to optimise the use of Mexico's human resources, particularly women and its young people, will be the key to address this challenge. The currently limited supply of talented human capital results in a major bottleneck in Mexico's innovation system. Reforms to improve primary and secondary education have been introduced, as well as improving the school infrastructures and the teaching quality. By looking at spending on education in relation to Mexico's national wealth, GDP shows that in 2010, 6.2 per cent of Mexico's GDP was directed towards expenditures on educational institutions, which is slightly below the OECD average (6.3 per cent) (OECD 2012). Mexico has the highest average annual rate of growth of first-time upper secondary graduation rates among the OECD countries. An estimate of 49 per cent of today's young Mexicans will graduate from upper secondary education. The proportion of 25-34 year-olds with at least an upper secondary qualification accounts for 44 per cent, which is nearly twice as much compared to the proportion of 55-64 year-olds. The trend is quite similar at the tertiary level. The proportion of the 25-34 year-olds graduating tertiary levels is still far below the OECD standard.

Several efforts have been made to improve performance of the national innovation system but major weaknesses still remain. By almost every performance indicator, Mexico falls significantly behind the OECD median (OECD 2012). The 2008-12 Special Programme for Science, Technology and Innovation has a various set of objectives, such as focus on innovation by enterprises and especially by small and medium-sized enterprises (SME's), sustain efforts to improve science and technology infrastructures, and greater decentralisation of innovation activities. Amendments to the National Law of Science and Technology in 2009 resulted in changes in governance. Issues such as investing in human resources at all levels and consolidating technology transfer from public research to business, are crucial parts of these amendments.

Over the past decade, the Mexican government has significantly increased investments. Mexico's competitiveness in the production of high-tech goods will improve in coming years, and the high-tech sector is alone expected to account for 15 per cent of the increase in value of merchandise export by 2030 (HSBC 2014). The National Council for Science and Technology also launched an information system to improve and help plan investment decisions, as well as to improve visibility and to guide researchers (OECD 2012).

Mexico's R&D industry is rather small. Despite recent changes in politics and policies, spending on R&D remained at less than 0.5 per cent of GDP in 2006–2012. R&D performed by the business sector decreased between 2006 and 2009, as a share of GDP in constant prices. It is mainly concentrated in large enterprises in medium-high to low-technology manufacturing, as well as to a lesser extent in innovative SME's (Euromonitor International 2013). Measures for targeting business R&D and innovation have not fully succeeded in constraining Mexican firms' preference for imported technologies over the development of domestic capacity. Reforms have been implemented to remove legal and regulatory hurdles to the creation of enterprises; however, the development of the innovative companies has been slow. Among OECD countries, Mexico records one of the lowest scientific and innovative outcomes (measured by number of scientific publications and patents per GDP) (OECD 2012). Various support measures to boost business R&D investment were applied, proving disappointing results in terms of increased expenditure and innovative outputs as measured by patent applications.

4.5 Security Issues

Political instability, corruption, drug cartels, homicides and kidnappings have long been pressing security issues in Mexico. Mexico has one of the highest rates of kidnappings in the world (BBC 2014). The Northern parts are experiencing the worst of violence. Security is one of Mexico's most pressing issues, and improvements remain to be seen as homicide rates have more than doubled since 2000 (Goldman Sachs 2013). Corruption is a huge problem in Mexico where perceived corruption consistently is characterized by high rates in international rankings (Transparency International 2013). The population's trust on the police force is very low, indicating that Mexico must take actions toward strengthening the functioning of its institutions to fight corruption and improve the level of security. Corruption, crime and theft are the most common areas of concern when doing business in Mexico (WEF 2013; 2014).

5. THE OIL SECTOR

Energy rich countries will have a comparative advantage as global energy demand increases due to population growth, scarcer resources and an increase of industrial activity. Global energy consumption is estimated to increase by 26 per cent to 2030. The growing middle class in combination with an increased use of automobiles will enhance the global demand for fuel (Brookings 2011). Oil is expected to remain the dominant energy source in the near future, even though it will lose significant shares to renewable energy sources (Roland Berger 2014). The trends are valid also in the case of Mexico, where population growth, a rising middle class and a high demand for oil is expected to characterize developments of the country in the near future. The oil sector will thus play a vital role and be one of the most important sectors in the future development of Mexico. This section begins with describing the recent past and current situation of the Mexican oil sector. Then the potential near future development in the Mexican oil sector is discussed.

5.1 The Recent Past and Current Situation of the Mexican Oil Sector

For the last seven decades, Mexico's energy sector has been a state-run monopoly, to a large extent closed to international investment. Due to new reforms initiated by the government in December 2013, an era that began 75 years ago appears to come to an end.

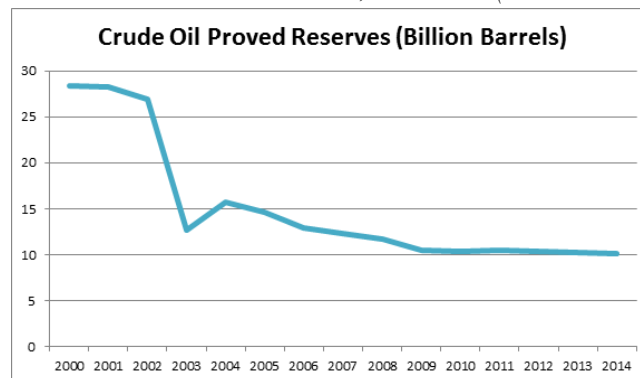
5.1.1 Brief History

Discovering oil in Mexico at the turn of the 20th century, foreign investors played an important role in helping Mexico become a significant part of the global oil industry. The constitution of 1917 announced that the Mexican subsoil and its contents belonged to the state. The early exploration and production of oil by Royal Dutch Shell, Jersey Standard and Standard Oil of California (today familiar as Chevron), resulted in Mexico becoming the world's largest oil producer in the 1920's, however, the foreign ownership provoked displeasure among the Mexican people (Brookings 2013). This resulted in a nationalization of the oil sector and the creation of PEMEX in 1938, a state-owned firm, holding a monopoly over the Mexican oil industry, which barred all foreign companies from operating in Mexico. PEMEX became a symbol of national pride with the oil strongly tied to the Mexican nationalism. PEMEX has since remained a monopoly of the Mexican oil sector, with the government maintaining tight control over the finances and the management (U.S. Department of State 2014).

5.1.2 Deposits, Reserves and Refining

Most of the Mexican deposits are located offshore, in the southern part of the country, particularly at Campeche Basin, a part of the Gulf of Mexico divided in two fields – KMZ (*Ku-Maloob-Zaap*) and Cantarell. There are also onshore basins, located in the northern parts of Mexico. Once the largest producing field in the world, Cantarell started to have pressure problems during the 1990's. Efforts were made to reverse the production decrease, leading to successful results for a while and the field reached its peak in 2004 at 2.1 million barrels per day. Since then, the decline has been considerable with Cantarell producing approximately 400,000 barrels per day less in 2012. The production of KMZ has been rising since 2006, reaching approximately 867,000 barrels per day at the end of 2012, replacing parts of Cantarell's decline (U.S. EIA 2014). Figure 9 shows proved crude oil reserves between 2000 and 2014.

Figure 9. Crude Oil Proved Reserves, 2000-2014 (Billion Barrels)



Source: Estimates made on data from EIA International Energy statistics - Crude Oil Proved Reserves

The refining capacity is in need of modernization. PEMEX lacks sufficient techniques to explore Mexico's vast oil reserves, especially regarding deep water drilling. The country is yet a net importer of refined petroleum products, such as gasoline and diesel fuel, due to the lack of modernized refining possibilities to be able to meet its domestic demand for refined products. Mexico has six refineries that are in need of major repairs and upgrades, which often results in them operating below their capacity. Of the 2.5 million barrels of crude oil produced each day in 2012, PEMEX could only refine 1.2 million barrels per day. The remainder was sent to the U.S. Gulf Coast refineries since the Mexican capacity was not sufficient (Brookings 2013). A large part of the U.S. Gulf Coast refining capacity is designed to process heavy crude oil, which requires more expensive and sophisticated technologies than the Mexican refineries possess. This results in exports of heavy crude oil to the United

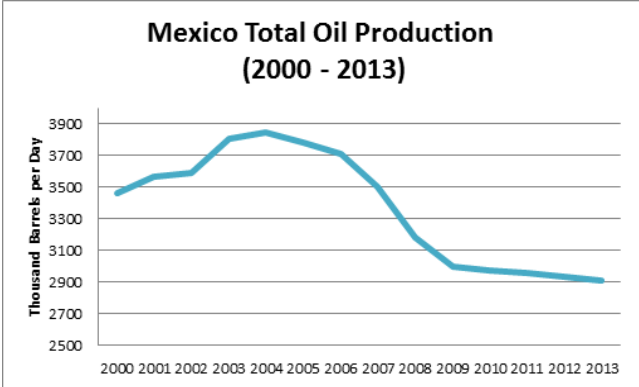
States refineries, which sends part of the refined products back to Mexico (CRS 2014). PEMEX owns 50 per cent of a refinery in Texas, Royal Dutch Shell (Reuters 2013).

The Gulf of Mexico Oil Spill in 2010 affected the oil industry around the Mexican Gulf. This major disaster contributed to numerous environmental and economic threats. The disastrous catastrophe resulted from an explosion aboard on a deep water drilling rig managed by the oil company BP. The spill was only brought under control almost three months later. According to federal reports, nearly five million barrels of oil were released from the damaged well of which approximately 800,000 barrels could be captured by containment efforts.

5.1.3 Production

In 2013 Mexico produced an average of 2.9 million barrels per day of total oil liquids, where crude oil accounted for 87 per cent of the total output. The total oil production is shown in Figure 10. Since the peak in 2004, the production has been declining substantially with 22 per cent to 2009, mainly as a result of production declines from Cantarell and other offshore fields. However, the decline thereafter has remained at less than 1 per cent per year (EIA 2014). Mexico’s oil production has declined significantly over the past decade, mostly due to inefficient infrastructure, however, as a non-OPEC oil producer, Mexico falls only behind Russia, the United States, Canada and China and is thus a major global producer of oil (CRS 2014).

Figure 10: Mexico Total Oil Production (Crude oil included) 2000-2013 (Thousand Barrels Per Day).



Source: Estimates made on data from EIA International Energy statistics - Mexico Total Oil Production. Please note that this is the total oil production in Mexico, where crude oil is included.

The U.S. Energy Information Administration claims that Mexico possesses the biggest unexplored crude oil fields outside of the Arctic Circle. However, due to a lack of finance and technology it is not yet possible to explore. Industry analysts say that a change of this would reverse eight years of oil output declines for PEMEX and increase production to as much as 4

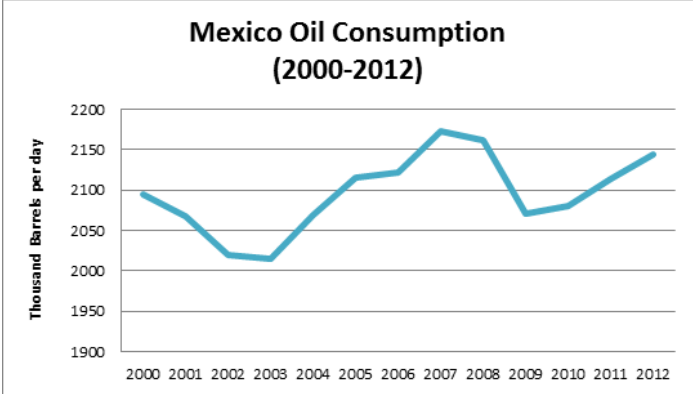
million barrels per day by 2015. For Mexico to fully benefit from its oil reserves, new infrastructure is needed in refining, extraction, but also in transport (Forbes 2014). Analysts and experts have recognized the potential of the reforms to transform the country although there is still uncertainty concerning how far the reforms will allow Mexico to go (Chron 2014).

PEMEX and the Mexico Institute of Petroleum signed a technology collaboration agreement in April 2014, focused on the oil and gas sector and sponsored by PEMEX. The agreement is ought to initiate research technologies needed to help PEMEX improve its productivity and efficiency, most significantly in onshore fields, but also to improve and develop their deep and ultra-deep water projects offshore. Due to the newly implemented major energy reforms to expand development of the Mexican onshore and offshore oil and gas reserves, this will help ensure that the technology needed to accomplish these goals is available (GE Newsroom 2014).

5.1.4 Consumption

In 2012, Mexico’s total energy consumption consisted of mainly oil (53 per cent), followed by natural gas (36 per cent) (U.S. EIA 2014). The importance of oil is gradually decreasing, due to natural gas increasing as a feedstock in power generation. Remaining fuel types contribute with less amounts to the Mexican energy consumption (11 per cent). Figure 11 below demonstrates the Mexican petroleum consumption during the past decade, indicating high levels just before the financial crisis in 2008, followed by a decreasing consumption continuing till the end of the financial crisis in 2009.

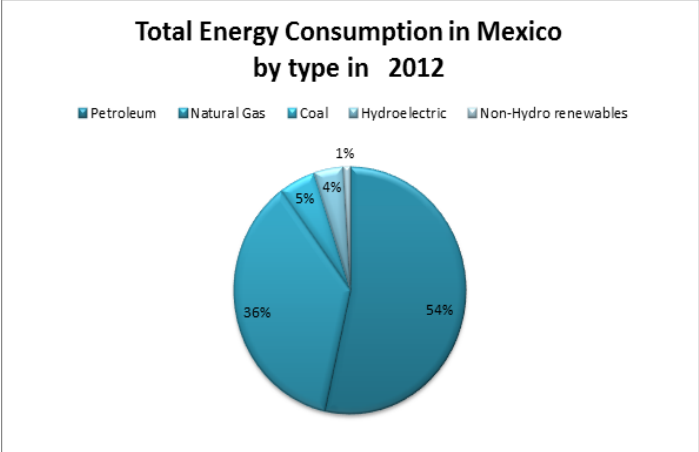
Figure 11: MEXICO OIL CONSUMPTION (Petroleum) 2000-2012 (Thousand Barrels per Day)



Source: Estimates made on data from EIA International Energy statistics - Total Petroleum Consumption

The following years have been characterized by a modest increase in consumption. However, it is expected to grow further, due to the reforms of the energy sector as part of the *Pacto por México*. Figure 12 shows the total energy consumption in Mexico by type in 2012.

Figure 12: TOTAL ENERGY CONSUMPTION IN MEXICO BY TYPE IN 2012.

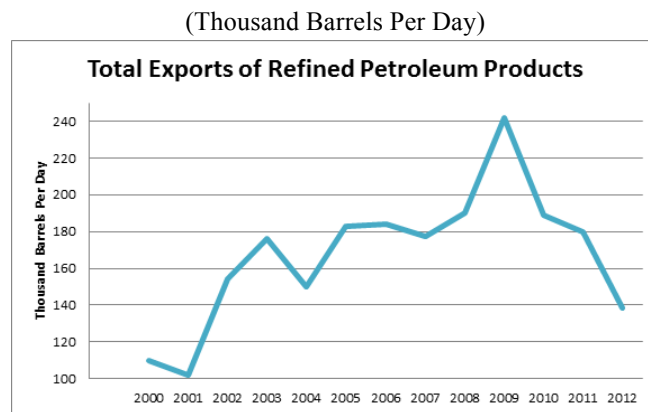


Source: EIA - Total Energy Consumption by type in 2012.

5.1.5 Trade

Oil is a crucial part of the Mexican economy, generating 13 per cent of the country’s export earnings, a proportion that has declined over the past decade. Furthermore, earnings from the oil industry, with taxes and direct payments included from PEMEX, accounted for about 32 per cent of total government revenues in 2013. Figure 13 demonstrates total exports of refined petroleum products between 2000 and 2012. The majority of the Mexican crude oil exports are of the heavy type, which accounts for 82 per cent of exports, while the lighter crude oil is mainly retained for domestic consumption. The exports of crude oil will most likely continue to go to the United States as the main destination, due to the United States possessing more sophisticated refining techniques necessary to process the heavier crude oil (CRS 2014). Mexico is an important, but declining, net crude oil exporter, and a net importer of refined petroleum products. The largest trading partner is the United States, which is the destination for most of the exported crude oil and also the source of most of the Mexican imported refined products.

Figure 13: TOTAL EXPORTS OF REFINED PETROLEUM PRODUCTS, 2000-2012



Source: Estimates made on data from EIA International Energy statistics - Total exports of refined petroleum products.

As mentioned, the reforms are aimed to privatize Mexico's oil industry to attract the foreign direct investment needed to be able to pick up the declining trends in the oil sector. Foreign oil companies would get access to Mexican oil fields, allowing exploration of the Mexican deep-water oil. However, foreign investors will only contribute if Mexico is willing to share favourable commercial conditions. Before the reforms, all revenues from the oil were sent to the federal government and approximately one-third of the government's income is derived from oil. Instead of investing in development of new fields, PEMEX was treated like a cash cow by the government, with the aim only to maximize short-term profits. This resulted in production decrease of 20 per cent over the last decade. Investors are also drawn to the Mexican involvement in NAFTA (US Economy 2013). Bloomberg reported that the reforms would allow companies such as Exxon Mobil Corp. and Chevron Corp. to develop Mexico's oil fields, the largest unexplored crude area after the Arctic Circle (Forbes 2013).

5.1.6 The Reforms

After yearlong efforts to reform significant parts of the Mexican economy, President Peña Nieto published the constitutional amendments, as part of the "*Pacto por México*" to reform the Mexican energy sector in December 2013, upon gaining the necessary approval from a majority of the Mexican states. The reforms gained remarkable attention from political levels, recapturing interest to work towards a significant modernization of the Mexican energy sector. The law allows the Secretaría de Energía de México to grant licenses to private institutions, including foreign institutions, which are interested in upstream and downstream activities such as exploration, exploitation, refining, pipelines, transport, petrochemicals and even management. However, Secretaría de Energía can also choose not to issue licenses and

production sharing contracts for exploration and extraction of oil, if the Mexican intent to preserve its national ownership of the oil is jeopardized. The reforms were based on two principles, namely the state's exclusive dominance over the subsoil, together with the right to contract with third parties in exploration and exploitation of hydrocarbons, and the state's ability to allow concessions on other petroleum industrial activities such as refining, pipelines, etc. So far, contracts with third parts have been prohibited, due to PEMEX exclusive right to manage all petroleum industrial activities (Brookings 2013).

The reforms will require significant new investment, shared risks and technologies to be able to reach greater extraction of oil. This is of crucial significance, since without these parts Mexico will continue to depend on importing refined oil products. The refining capacity is also in need of modernization. It is said that these reforms will apply as an awakening for the traditionalists who recall the nationalism of the oil of seven decades back in time. One significant change is the new boundaries for the radically reduced power of the Mexican Oil Labour Union allowing private companies to invest with restricted interference from the union. The lack of transparency and low productivity have for a long time been present with the involvement of the union (Brookings 2013).

5.1.7 The Debate

The energy reforms have provoked debates in a politicized context, with protests led by the leftist parties and by the opposition. Both have defended national and protectionist positions, where private investments in the oil sector are seen to be to the detriment of the Mexican national sovereignty. Hence, there will be several challenges to overcome. There are highly opposed labour unions and political opponents, which feel left out. The first and largest hurdle is in the political area, where the Mexican political alliance that led to the reforms has disintegrated. The Mexican Congress is currently far more divided than a year ago and the opposition parties are intent to hold back the process. The second important hurdle is the productivity of Mexico's conventional oil fields, which has been declining for the last decade. The widely spread corruption and organized crime represents a third hurdle that discourages investors. It has become clear that strengthening security forces will not make up for the situation with the criminal justice system, leaving the government and private enterprises with a challenge that will be hard to overcome. The investments have increased to boost the shipping capacity, however, corruption remains a significant issue, provoking the infrastructure projects in general and mainly at the ports (Forbes 2014).

The National Action Party (PAN), the Mexican centre-right party, has presented the most ambitious plans relating to the energy reforms. Production sharing contracts will become legal and in return participating companies would pay royalties, taxes and licenses. The newly formed *National Hydrocarbon Commission* will regulate PEMEX, as the company is recently more autonomous from the government. The PAN's plans include a proposal where they will work towards eliminating PEMEX outstanding debt by issuing the Citizen Bonds, as well as abolishing the five labour union seats on the PEMEX Board of Directors. In comparison, proposals from the left Party of the Democratic Revolution (PRD) are quite modest. Standing against private investments in PEMEX, they wish instead to modify the tax system to increase Mexico's oil production. Furthermore, PRD stand for a deeper transparency into the operations of PEMEX to be able to combat corruption. The most radical opposition to the reforms comes from Andrés Manuel, the presidential candidate from the PRD who lost in 2006. With his recently formed political movement *Movimiento Regeneración Nacional* (MORENA), he has rejected opening the energy sector to private investment in every form. However, the strong majority of PRI and PAN members in both the Lower House and the Senate indicate that it is extremely unlikely that PRD would succeed (Brookings 2013).

5.2 Potential Near Future Development in the Mexican Oil Sector

5.2.1 History of FDI in the Mexican Oil Sector

Mexico ranked 18 in the world and 7 among developing countries as recipient of FDI in 2013, but none of it reached the oil sector. Mexico has been one of the most restrictive countries regarding oil legislation in the world. While foreign companies exploited Mexico's oil reserves in the 1920s, changes were made in the Constitution in 1938 to nationalize the oil sector. Oil fields were expropriated in order to make sure foreign investors did not receive revenues of Mexican oil exploitation and production. The constitutional restrictions regarding the oil industry have to date stated in Article 27 that Mexico's direct ownership of its natural resources, where oil is included, can only be exploited by Mexican nationals or companies under Mexican law after concessions granted by the Federal Executive. It also states that only the nation may carry out the oil holdings which constitute the exploration, exploitation, refining, transport, storage, distribution and first hand sales of oil products obtained from its refinement (IIJ 2005). PEMEX have had exclusive rights to manage and exploit oil reserves to produce crude oil and petroleum since the nationalization of the resources in 1938. It is

now considered to be strong enough to engage in collaborations with foreign firms and gain access to new technology and enhance production, without risking being overtaken by foreign ownership (U.S. Embassy 2013).

Many thought that the oil sector would open up through NAFTA in 1994, but the former government specifically excluded the oil sector from the agreement. That it ultimately was the PRI that took the decisive step to reform the oil sector came as a surprise to some, considering that the PRI historically has been against reform of the oil sector and has been allied with some of the actors extracting rents and gain from PEMEX, including the trade union and the companies that sell goods and services to PEMEX (CIDE 2012). The opening up of the oil sector is a very sensitive issue due to the government's dependence of oil production as source for public finances. Instead of increasing the efficiency and gaining synergies through co-operation with foreign companies, Mexico's oil sector has remained isolated from foreign direct investment until today. Limited reforms in 2008 resulted in sub-contracts with foreign companies to provide oil services only in order for PEMEX to gain access to technology and technical expertise, but no foreign investment leading to returns on oil production for the foreign companies have been present in the country since the nationalization of the oil sector. Thus, the present reform regarding regulations of foreign investments is historic and may lead to significant changes in the oil sector if implemented properly. The example of Brazil's state-owned oil company Petrobras could be an inspiration for PEMEX. When Petrobras opened up to foreign investment in 1997 from having monopoly on the market, the innovation skills of the company as well as the oil production increased significantly. Petrobras managed to grow because of private investments that provided the necessary capital and technology for the company to increase its production and export. Brazilian Petrobras is not the only example of an oil company that has successfully evolved through investments and competition, for example the Norwegian semi-state owned Statoil has also gained competencies through learning-by-doing, partnerships and joint ventures with foreign companies (Barcelona GSE 2011). A similar development for PEMEX would imply that it remains state-owned while transforming into a more efficient company.

5.2.2 Incentives and Threats for FDI in the Mexican Oil Sector

Mexico has a stable economy and gets high ratings from both the World Bank in terms of business environment attractiveness and the Economist Intelligence Unit for low country risk (BCG 2014). The macroeconomic stability of the country is a favourable factor for foreign

companies to invest (U.S. Embassy 2013). The sharp increase in oil prices since 2001 is a natural reason for foreign companies' interest to invest in the oil sector with expected return on their investments. Also, oil prices are expected to increase at least to 2030 and increasing consumption and demand for oil are also anticipated to keep rising (WEC 2013).

Foreign investors' biggest incentive to engage in the oil sector is the hope to profit from new and rich oil findings. The new terms for return on investment will no longer be restricted to service contracts where foreign firms were denied shares or profits derived from the oil resources. New regulatory changes open up for exploration and production contract models of licenses, production-sharing, profit-sharing and service contracts. Regarding Mexican intentions to preserve ownership of oil; PEMEX will remain state-owned but will have to compete with private firms on new projects (EIA 2014). PEMEX will be given more budgetary and administrative autonomy. PEMEX is proposed to keep 20 per cent of the oil production revenues of Mexico, which in combination with the country's proposed broadening of the tax base will release PEMEX from giving all its revenues to the state and instead gain financial space to develop techniques and compete with private energy firms. Also, proposed legislation contains a local content-requirement, operators must use Mexican suppliers and services to at least 25 per cent by 2025 (Bloomberg 2014). The effect of foreign investors will therefore also impact all Mexican supplier firms involved in the oil sector.

Exactly what type of taxes foreign firms would be facing while investing in Mexico is yet to be determined. Competitive tax structures are an important factor for Mexico to develop, considering that they will compete with the rest of the oil-rich countries to attract foreign investment. Regulatory changes in production-sharing legislation would help increase the exploration and production of oil, so that foreign companies would receive a share of the outcomes of the production as a reward for its investment.

The gang-related violence might increase foreign companies' doubt of investing in the country with hesitation for the safety of their investments and staff. An increasing problem is oil thefts from pipelines with 1500 illegal fuel taps that caused losses of around 1.1 billion dollars between 2012 and 2013 (EIA 2014). However, the largest destinations of FDI in Mexico during the period 2000-2012 were Mexico City, Nuevo Leon, Mexico State and Chihuahua, where two of the states in the top-4 have the highest rates of violence in the country (Dean et. al 2012). The lack of established and trusted institutions in Mexico with

high rates of perceived corruption is a risk for foreign companies contemplating to invest in the oil sector. The risk and uncertainty that the government might take unpredictable actions towards prices, taxes and royalties are an issue. The relationship between the government and the foreign companies can be amicable if both parties benefit from the collaboration; clear economic objectives for both parties are needed. To increase direct investment flows, Mexico needs to establish a secure environment and implement regulatory terms and conditions for foreign investors to participate in exploration and production (U.S. Embassy 2013).

5.2.3 The Reform's Potential Effect on FDI

The first step in the implementation process of the energy reform (“Round Zero”), consisted of PEMEX sending in its request in March 2014 to the Ministry of Energy, outlining which oil fields it wishes to develop and can demonstrate that it has sufficient technical and financial resources to do this. PEMEX requested 83 per cent of total proved reserves, and 31 per cent of total prospective reserves, which if granted means that the rest is open for bidding from private domestic and foreign firms. The biggest difference after the implementation of the reform is the incentive-based performance contracts that will be offered to foreign and private companies, not just the previously restricted service contracts. Both brownfield and greenfield investments are to be expected from foreign companies in the future alongside mergers and joint venture agreements. The reforms would mean that PEMEX could form strategic partnerships with foreign firms in exploiting oil reserves. Four types of contracts will be available; service contracts, profit-sharing contracts, production-sharing contracts and licensing. If new deepwater reserves are accessed through the proper technology, this could increase Mexico’s oil production by 33 per cent alone (GCA 2014).

The idea of the so-called “*Sixth Transitory Article of the Constitutional Reform Decree*” is that the rest of the oil fields will be available for private companies through contracts. The plan is to have a bidding process each year where private companies as well as PEMEX are able to compete for the opportunity to exploit parts of Mexico’s oil fields. The bidding on new fields (“Round One”) is expected to start in the end of 2015 at the earliest, but more likely in 2016-2017, since time is needed to train regulators and find specialists in drawing up contracts (The Economist 2014). The bidding rounds are planned to be held annually where private companies alongside PEMEX compete, under the same rules and tax treatment, for access to oil fields. The future development of Mexico’s oil sector depend on the implementation of secondary legislation this May and June 2014 that are meant to accompany December 2013 constitutional reforms allowing for private partnerships as well as contracts

between PEMEX and private companies. The submission of around 28 bills will complement the Constitutional amendments made in December 2013. If this secondary legislation is approved by Congress and thus implemented without any politically caused disruptions, it should be clear in September 2014 which oil fields are to be developed by PEMEX and which are to be contracted out to other companies. Based on the experience of other countries similar process, the time of the implementation process is likely to be extended, seeing that it took two years for Brazil in 1997 to define Petrobras' Round Zero assignments, and over one year for Colombia's Ecopetrol.

The National Hydrocarbon Commission is planned to administer the assignment and contracting of exploration and production activities, while the Energy Regulatory Commission will regulate and grant permits of storage, transportation and pipeline distribution of petroleum-based products. Secretaría de Energía will be responsible for granting new contracts. A public trust governed by the Banco de México will receive and administer revenues from oil assignments and contracts (Shearman & Sterling 2014). The effectiveness of the regulatory entities has to be developed as the reforms are implemented, in order to attract foreign firms to invest in the country.

Political disagreements of whether to allow private investments in the natural resources sector still remain a potential risk for the energy reform's legislative requirements to be fulfilled all the way through. The leftist PRD has adopted hard-line opposition towards the energy reform, which may be an obstacle for the implementation of the liberalisation of the industry. The Morena Party has organized street protests against the energy reform (Forbes 2014). When President Peña Nieto featured on Time Magazine's international cover in February 2014 with the title "*Saving Mexico*", there were angry outbursts amongst the inhabitants of Mexico claiming that Peña Nieto was selling out the national energy resources to foreign firms (Huffington Post 2014). Thus, if the political environment causes a disruption of the energy reforms, foreign firms' opportunity to invest in the oil sector is likely to be delayed.

Another area of importance for approval of the amendments is the public demand of transparency throughout the reform of the oil sector. Since the Mexican constitution of 1917 decreed that oil belonged to the Mexican State, the oil reserves have been a source of pride for the Mexican people. Therefore, a transparent reform process clearly showing the future destination for the oil revenues is crucial for the people of Mexico to feel included in the development and exploitation of their natural resources. The Ministry of Energy has therefore

released statements and have had a media event revealing some insight to the Round Zero process to reduce public fury demanding transparency (Latinvex 2014). Political stability and transparency in the government will be crucial when the oil sector opens up to private investors and seek to attract domestic and foreign investment.

5.2.4 Expected FDI and its Effects on the Oil Sector and Mexico

Foreign participation is expected through joint ventures with PEMEX to increase production through getting access to proper technology for exploiting new oil fields. Many U.S. firms and other foreign companies will thus be given the opportunity to invest in the Mexican oil sector through these partnerships (BBVA Research 2014). The U.S. based ION Geophysical Corp. has already been granted contract for carrying out seismic work onshore and offshore when Mexico opens up its oil sector. Canadian oil producers are getting ready to invest, and the Canadian giant Scotiabank is planning to invest \$10 billion in oil projects in Mexico over the next four years (Fox News Latino 2014). The U.S. and Canada may have a competitive advantage through investment protections and tax incentives through NAFTA, as well as the proximity to the Mexican market, but Mexico has a number of FTAs and many countries will seek the opportunities that the energy reform brings. Firms from the EU, Russia, Malaysia, Japan, the Gulf Nations and China will be competing to participate in Mexican oil production (HBJ 2014). Russia's Lukoil signed an agreement with PEMEX for exploration, extraction and cooperation on environmental best practices. Interested firms of partnering with PEMEX to explore deep-water reserves in the Gulf of Mexico are Shell, Exxon, Repsol and Petrobras (Business Day 2014). BP has offered to share its expertise in oil capping technology gained from its experience in the Gulf of Mexico at no cost to Mexico, as a first step to create a working relationship with PEMEX (WSWS 2012). More investment from Asia can be expected considering the fact that Mexico is increasingly shipping crude outside the North American market to especially China and India (HSBC 2014).

Impacts on the economy may not be fully evident until 2016 (BCG 2014). The reform may increase FDI flows to Mexico by USD20-30 billion per year by 2016 or 2017 (1.5-2.5 per cent of GDP) (Reuters 2014). The earliest inflows are predicted to be upstream activities with exploitation and production activities. The flow of investment might in the long run lead to more and cheaper national energy production (FT 2013). The government of Mexico believes that annual economic growth will rise by 1 percentage point to 2018 due to the opening of the oil industry to private investment. Another indicator of larger future financial flows into the country is that Moody's Investor Service has issued more favourable credit ratings for

Mexico, referring to the opening up of the energy industry to foreign investment as one of the main reasons (Bloomberg 2014). With large foreign investments, the oil sector will have the financial capacity to increase its oil production, which in turn may lead to reduced poverty because of lower energy prices and the creation of more jobs can be anticipated. Mexico's government expects a creation of 2.5 million additional jobs by 2025. A positive scenario consists of a multiplied effect of energy investments with opportunities in other indirectly affected businesses in manufacturing, mining and services, especially energy-intensive businesses. More jobs will lead to an increase of income and purchasing power of the Mexican population and raise demand for goods and services, leading to a benign circle creating wealth and economic growth in Mexico and maybe fewer incentives for migration to the U.S. (BBVA Research 2014).

No infrastructure for various types of refining crude oil has been built since 1979, which results in PEMEX not being able to process the heavy crude oil that dominate the Mexican market and therefore has been forced to import refined oil products (BCG 2014). Infrastructure is also needed to move oil from the production centres to its final destination. However, in 2012, PEMEX awarded a contract for the design of a new refinery facility at Tula, the first refinery to be built in Mexico in 30 years. Whether Mexico will be able to be successful in refining, considering the proximity to the U.S. already operating sophisticated refining centre, remains to be seen (EIA 2014). Mexico exports cheap crude oil and imports expensive refined oil products, which will make Mexico a net oil importer by 2020 unless the energy reform is implemented and utilized to achieve technical and economic benefits in the Mexican oil sector. The number of refineries in Mexico is likely to increase as foreign investments become allowed (Fordham ILJ 2009). Thus, not only is advanced technological transfers in deep-sea drilling expected, but also technology of downstream activities such as refining. A likely scenario as private investments become legal is that instead of using the revenues of oil production as necessary state funding, private companies might instead reinvest the revenues in oil infrastructure to secure a further expansion of its oil production and revenues.

A sharp increase in oil exploitation and production can be expected when foreign firms get access to the abundant oil resources. It is estimated that Mexico have 29 billion barrels in deep-sea deposits and around 13 billion barrels in shale reserves yet to be explored by companies with the proper technology and financial assets (Financial Sense 2013). Mexico is

believed to be a major producer again by 2025 if the reforms succeed (Oil & Gas Journal 2013). The oil production is through the reform expected to increase, or rather recover from the past years decline in production, from the current 2.5 million bpd to at least 3.5 million bpd by 2025 (JPT 2014). Since PEMEX's Chief Executive has announced that PEMEX is likely to increase oil investments by 10 million dollars per year for the next decade, and an increase in oil production of one million bpd by 2025 is anticipated. Service companies and contract drillers such as Schlumberger, Halliburton, Weatherford, Baker Hughes and Noble Corp. are likely to be recipients of bigger capital spending from PEMEX and provide services that eventually will lead to increasing oil production from PEMEX and their private partners, and increase tax revenues for Mexico (AAM 2013).

The collaboration with foreign companies would facilitate technological improvements. PEMEX is in need of deep sea drilling technology and expanding its productive capacity. Large U.S. and foreign companies that are able to utilize economies of scale and possess the needed technological skills will see lots of opportunities in deep and ultra-deep drilling (BBVA 2014). The Mexican northern border towns might benefit vastly from the opening up to foreign investment. As much as \$1.2 trillion of economic activity could be seen in the region of both sides of the border in the next decade through new investments and increased activity (BBVA 2014).

There is a debate whether PEMEX can take the same path as the Brazilian company Petrobras, which since 1997 ceased to have monopoly but remaining a significant oil producer and has successfully entered into agreements with many Latin American countries regarding oil exploration and production. The Brazilian administration allowed competitors to participate in developing the oil fields. Foreign trade and relations have improved substantially in Brazil after the opening up, a development that is foreseen in Mexico if the reforms are implemented. The reforms are seemingly implemented according to plan so far, as the government released new rules regarding local content requirements. Compared to Brazil, where international oil companies are required to use 40 per cent local content, Mexico just decided on a local content requirement of 25 per cent with a decade for the companies to comply. This means that foreign firms when getting access can move in almost immediately with their technological expertise. Regarding the decision on royalties, Mexico has determined a sliding scale that firms have to pay based on the current oil price

(EconoMonitor 2014). The new released rules indicate conscious encouragement of FDI to Mexico, and are meant to pass through Mexican Congress before final approval.

The bidding rounds will determine which companies will be permitted to develop which oil fields, and the interest is huge from foreign oil companies. Investments from the U.S. are likely to be generous considering the logistic opportunities of extraction and distribution because of the geographical proximity and the good bilateral relation of the U.S. and Mexico through NAFTA. The interest of the U.S. also contains possibilities for enhancing its energy security, as for example the U.S.-Mexico Transboundary Hydrocarbons agreement, a framework for joint development of oil and gas in the Gulf of Mexico, was approved by the Bipartisan Budget Act of 2013. The agreement may help Mexico exploit more of its deep-sea reserves through technological help from the U.S. The U.S. is the destination for around 85 per cent of Mexico's oil exports. It is anticipated that most of Mexico's export will continuously be exported to the U.S. because of the proximity and because the U.S. Gulf Coast has the necessary sophisticated refineries to process crude oil (CRS 2014).

6. ANALYSIS

The main perspectives used to carry out our analysis are derived from the models described in the theoretical and conceptual framework of the study.

6.1 Dunning's Eclectic Framework

Dunning's OLI framework has been applied on the near future anticipated FDI in the Mexican oil sector, in order to distinguish the ownership-, location- and internalisation advantages that foreign companies may have when investing. The OLI framework also helps us analyse why the foreign firms choose to invest in the Mexican oil sector. The implications of this for Mexico will be discussed to understand how the country can benefit as well as be challenged by this, although these effects will not be analysed through the help of the OLI-framework but instead as a complement to obtain an overview of the situation. We further dig into the reasons behind FDI into Mexico's oil sector by analysing the extrinsic or intrinsic motives the companies may have, to understand if it's resource-seeking, strategic asset-seeking, market-seeking or efficiency-seeking motives as the main push/pull-factors for the investment (Kraemer and van Tulder 2009). As oil is regarded a highly strategic asset, the foreign firms have resource-seeking and strategic asset-seeking motives for their investments in the

Mexican oil sector. Hence, intrinsic motives in order to secure the energy supply meet needs of refining/manufacturing, as well as making profit. Foreign firms are likely to be interested in the geological potential, quality and accessibility of the resources to maximize their extraction, production and financial profits. Efficiency-seeking motives could be applicable on foreign firms in the oil sector with regards to the high initial investments needed to set up the firms' operations and the economies of scale needed to cope with these. The firms therefore need to be efficient, large and able to handle high risks, which in turn have resulted in an oligopolistic industry structure. The foreign firms may also have market-seeking motives, as the Mexican market with its large population is a lucrative place to sell your oil. Extrinsic motives that the firms potentially may have are to strengthen their global position and to rule out competitors. The government of Mexico has several intrinsic and extrinsic motives for welcoming FDI. It wants to acquire know-how and technology from foreign firms, hence strategic asset-seeking motives. Also, it is efficiency-seeking and market-seeking as Mexico hopes to gain access to new markets through foreign firms' networks and to improve the efficiency of the oil industry (Kraemer and van Tulder 2009).

There are many ownership-specific advantages that characterize the foreign firms about to invest in the oil sector. Firstly, the size of the transnational oil companies has to be huge in order to handle the high risks associated with the exploitation and production through economies of scale. The size is therefore a strength and may be a reason for continuous expansion as the companies may wish to take advantage of their economies of scale. The oil industry is rigid in the sense that the companies are required to invest heavily with high fixed costs and no flexibility to make quick decisions. The firms therefore have to be large and wealthy. The companies are likely to have superior organizational structures and management skills developed from years of experience in the oil industry with presence in many different markets and hence many different experiences. A firm-specific advantage is thus their substantial know-how of managing oil operations. As the foreign firms are constantly faced with competition, they are efficient and trained survivors that can withstand failures and tough times, unlike the Mexican long protected oil sector. The foreign firms' international experience, managerial know-how and size are some of the reasons for their willingness to pursue FDI in Mexico in order to fully utilize their comparative ownership-specific advantages (Dunning et. al 2004).

Their access to financial resources is another ownership-specific advantage as the investments easily can reach billions of dollars as they invest in necessary infrastructure. Mexico's oil sector is in need of the companies' capital as the alternative is to lend money from national or regional development banks. The benefit with FDI is that Mexico will not have to pay back anything. Mexico benefits from FDI through help with the costs of exploring new fields and the high fixed costs of the production process, but also by sharing the high risks associated with the oil industry. Technical and market risks (demand and price volatility) are thus shared, as are social and environmental risks. A major ownership-specific advantage is the foreign companies' technological resources and skills to extract resources economically, skills that Mexico badly desires for especially offshore drilling. Other important firm-specific advantages are access to markets and to transportation and distribution channels as the firms govern several parts of the value chain (Dunning 2000).

The global demand for oil as a resource is strong as every country need it to some extent for essential or strategic raw material use, either for industrial/consumer goods, military equipment, transportation, energy or communications as it is one of the fuels for a well-functioning society. Price rises and shortages of oil can severely impact a country's economy, which is why many countries seek to secure their energy supply and the reason for oil's geopolitical importance. Oil's strategic importance thus pulls foreign companies to internationalise. The companies investing and participating in the Mexican oil sector will therefore have a powerful location advantage, as oil is highly immobile and needs to be extracted at its specific origin. The uneven geographical concentration of oil reserves is the main reason why Mexico will be able to attract FDI. USA and Canada may also have locational advantages considering their physical proximity to the Mexican oil sector, which may facilitate logistical opportunities for the countries' export/import flows. The foreign firms need the government's authorization to make use of the locational advantage and be granted access to oil deposits. If local companies get favourable conditions, regulations and policies this would be an advantage for the Mexican companies. However, the current plan is that local and foreign companies shall compete under the same conditions. A benefit for the foreign companies is the fact that oil is easily stored and transported and can therefore be transported/shipped to any location where there is demand. Foreign firms will enter into partnerships with local firms in order to gain access to their strategic position in the market and resource reserves. They will need to be fast when the Mexican oil sector opens up, as there exist a clear "first-mover" locational advantage in the extractive industries and many

global oil giants have their eyes on the Mexican market (UNCTAD 2007).

Internalisation advantages of the foreign companies consider their managerial skills and technological and financial resources (Dunning et. al 2004). If they choose not to share their know-how and financial support, the Mexican oil sector is not likely to benefit from cooperation with foreign companies. The foreign firms control trade through their market access and distribution channels (Kraemer and van Tulder 2009). Both Mexico and the foreign firms have a lot to gain by entering into collaborations with each other. It is important for the partners to engage in knowledge diffusion and internalize for the partnerships to be successful and to benefit from each other's comparative advantages to gain higher levels of efficiency, productivity and innovation.

The dynamic nature of the oil industry raises environmental, social and political challenges but also offers substantial economic development possibilities. The upcoming collaboration between Mexico and foreign firms in the industry will face all of these challenges and possibilities, and the management and governance of the process are crucial in order to see a sustainable development. Firstly, the exploitation of non-renewable energy resources has severe damaging effects on the environment with destruction, pollution and contribution to the climate change. Also, the risk for leakage is a constant threat. The gap between governments and companies concerning taking responsibility for clean-up costs is not sustainable. With the expected increase in oil exploration and production, it is important that the government of Mexico establishes a regulatory framework to exploit and produce in an environmentally friendly and sustainable manner that is implemented by the companies in the industry. Secondly, social challenges concerns human rights and work safety for the employees, whom are exposed to chemicals and risks of leakage and fire. Even though the oil industry is technological intensive, the jobs that do exist need to be provided under safe and healthy conditions. Another issue is the risk for lack of social cohesion as the distribution of oil revenues may continue to be uneven and enhance regional disparities (UNCTAD 2007). As there is a chance that the government of Mexico will get most of its revenues through external sources in the near future, with the inflows of FDI, it could be less dependent on the population for revenues and therefore be less accountable, less transparent and responsive to the societies' needs. In order to avoid this development, good governance is crucial with fiscal systems promoting an even spread of oil revenues leading to sustainable development. The political challenges in the oil industry stems from the geopolitical and strategic importance of

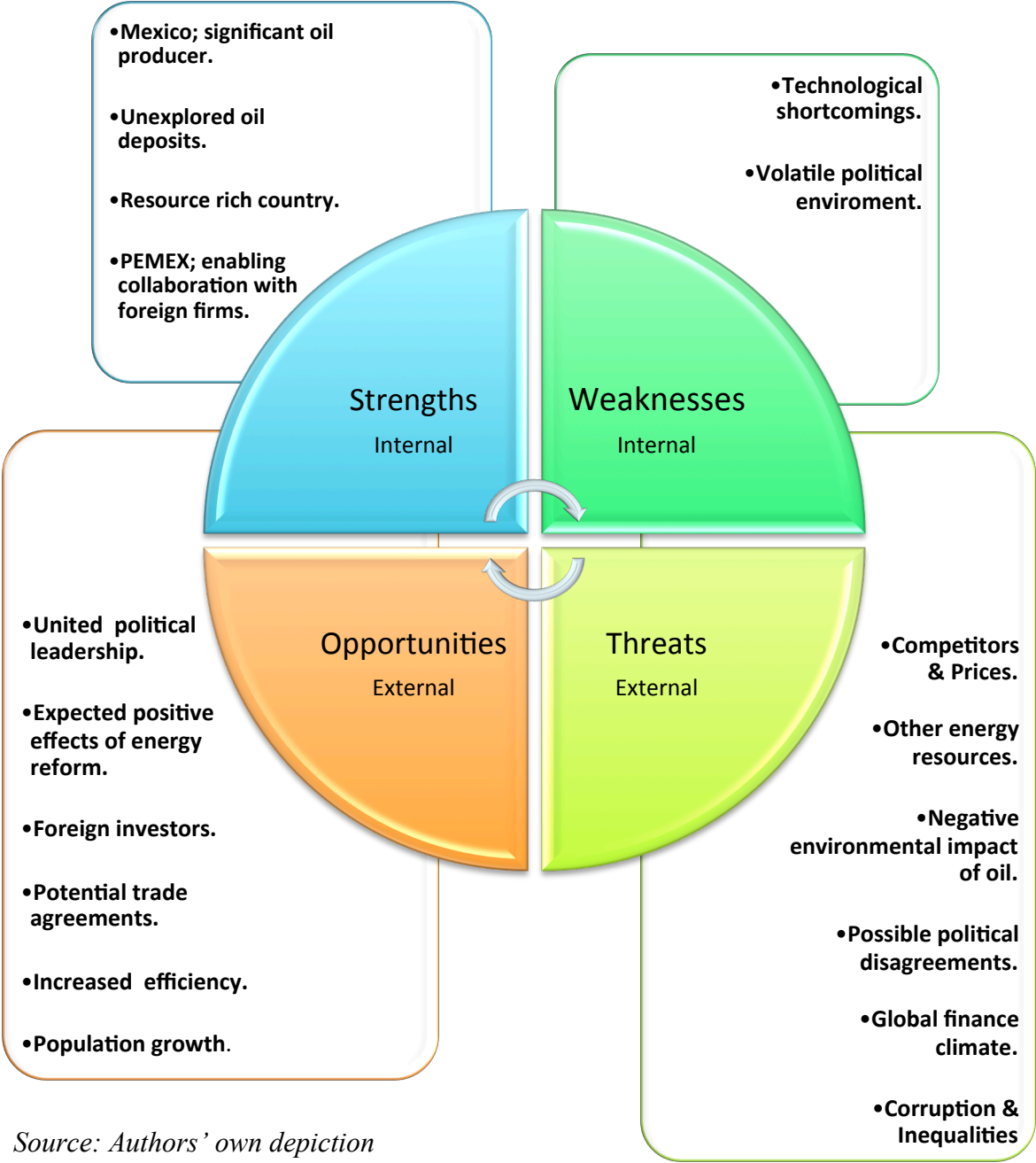
oil with regards to its non-renewable nature. Governments and populations are therefore keen to protect their resources from spilling over to the hands of foreign companies, which explains the nationalistic approach to Mexico's seven decade long state-run monopoly. Mexico's hesitation of exposing extractive industries of strategic importance to foreign ownership has to do with national pride, control over its resources and the desire to turn oil revenues into economic development in the country. The "Pacto por Mexico" and the other frameworks and regulations formulated by the current government for the opening up of the oil sector to foreign collaboration, are very precise in their description of allowed contract forms and local content requirements. This in combination with the fact that PEMEX is deemed to be strong enough to withstand a crowding out effect and handle foreign competition (despite their efficiency, technology and reduced production costs), enhances the conviction that Mexico is ready to open up to foreign companies and develop and benefit from FDI through transfer of technology, access to developed productive capacities and international networks and competitiveness. Significant external capital inflows, market access and managerial know-how from foreign companies could help Mexico transform resources into products to be used both locally and to be exported. As FDI often has a limited time horizon, Mexico has the chance to absorb the positive inflows of knowledge and technology to develop efficient domestic oil companies. Mexico may also benefit long-term from the incoming foreign firms' investments in infrastructure needed for extracting, transporting and exporting (UNCTAD 2007). FDI can hence help accelerating economic development in Mexico. With an integrated policy approach to investment, technological capacity building, educating human resources and enterprise development, Mexico might see a substantial economic development in the near future.

6.2 SWOT Analysis

Our conceptual SWOT model has been applied to fully depict the jungle of challenges and possibilities for the near future development in the Mexican oil sector. SWOT analyses cannot predict the future in an assertive way as there may be incidents and unexpected events occurring that could not be foreseen, which is why the analyses needs to be updated constantly. When using it to evaluate the area of concern, it is important to have in mind that the environment is constantly changing. However, this section uses the SWOT analysis model to determine past, present and future strengths, weaknesses, opportunities and threats of the

Mexican oil sector. The extended SWOT analysis model below sheds light on the, according to the authors, most important strengths, weaknesses, opportunities and threats.

Figure 2: Extended SWOT Analysis Model



Source: Authors' own depiction

6.2.1 Strengths

Mexico is one of the biggest oil producers in the world with significant amounts of unexplored oil deposits, which represents an internal strength of the oil sector that makes Mexico a powerful player in the global competition for energy resources. As a resource-rich country, Mexico has the potential to be more or less independent when satisfying the country's energy demand. The oil sector thus has the internal strength of having tremendous explored and unexplored deposits with the potential for large future oil production.

An identified internal strength of PEMEX is that the company is now believed to be mature and strong enough to engage in collaborations with foreign firms and gain access to new technology, without the risk of being overtaken by foreign ownership. Monopolized companies tend to be so protected from competition that they cannot cope with the sudden entrance of new actors on the market, which emphasizes the strength of PEMEX's development into a strong company.

6.2.2 Weaknesses

The technological shortcomings of the Mexican oil sector are a severe internal weakness and a hurdle for its development. Even though the oil sector has been important in the past because of its important contribution to state revenues, PEMEX's monopoly has been inefficiently managed with lacking technological expertise in especially deep-sea drilling but also in refining and infrastructure. The lack of technological knowledge has long forced Mexico to export cheap crude oil and import expensive refined oil products. This development is disappointing for a country with so much potential not utilized in the oil sector and a trend that hopefully can be turned around through technological transfers from foreign firms. Despite efforts to improve technological capabilities in the oil sector it has not improved, as R&D spending have been too low to help the oil sector develop and utilize existing reserves. The national innovation system contains major weaknesses and fails in comparison with other OECD countries. The fact is that oil production has decreased in the past decade, mainly due to lack of proper technology. As knowledge- and innovation-intensive industries are anticipated to grow in the near future, Mexico needs to step up its technological levels to develop its oil sector and not be outperformed by competitors.

A severe internal weakness is the volatile political environment that may delay or put the practical implementation of the reforms in question. A firm political consensus in the energy sector is crucial for the development of the oil sector. The legislative framework for the oil

sector needs the proposed regulations to be implemented along with further alterations for the reform to bring the expected results.

6.2.3 Opportunities

Nothing less than a paradigmatic shift can be expected in Mexico after the reform of the oil sector is implemented. Mexico's political leadership has never been as united regarding the need of an oil reform as in December 2013 when *Pacto por Mexico* made it possible to pass suggested oil sector reforms through Congress. The biggest external opportunity for the Mexican oil sector is without doubt the expected effects of the reform. Assuming that secondary legislation is properly established without political disagreements, bidding rounds will start in 2016/2017 whereafter FDI inflows are expected to start pouring in. The reform would benefit both PEMEX and private companies in a number of ways. The effects and opportunities of the reform if implemented are outlined below:

New contract forms and agreements would be possible, allowing PEMEX to partner with private and foreign companies. Foreign firms would be able to receive shares of the oil production revenues through profit-sharing contracts, and not be restricted to service-based contracts. Mexico should take advantage of the vertical integration possibilities and capture the value added opportunities. Instead of focusing on the whole spectrum with upstream and downstream activities, PEMEX would be able to focus on core activities and let other actors gain access to the remaining activities, where foreign actors may be more competitive. While PEMEX have requested areas they want to keep exploiting, private firms will be able to more efficiently exploit the rest. The companies that after the end of "Round Zero" will get to exploit the fields have been forced to show financial and technological capabilities to do so during the bidding round "Round One", which will lead to an enhanced efficiency in the oil exploitation of Mexico. Current suggestions in secondary legislation includes a prerequisite that companies use 25 per cent local content in their oil-related operations which would benefit Mexican suppliers over time.

Potential investors and FDI are likely to come from all around the world considering Mexico's vast base of FTA's. U.S. and Canada are expected to invest heavily in the oil sector because of the logistic opportunities of extraction and distribution due to the geographical proximity and the good relation through NAFTA. Increased intra-regional oil production cooperation can be expected, where the three countries are able to utilize each other's comparative advantages; oil reserves, technology, financial investments, and large markets.

But other countries are also expected to establish a strong presence in the oil sector of Mexico, as increasing trade has been seen between for example Mexico and Asia. Whether 80 percent of Mexican exports still will go to North America, or if the expected international presence in the oil sector will affect this number remains to be seen. Future potential trade agreements, such as the Trans-Pacific Partnership that is currently being processed, could also affect the origins of FDI and export destinations. More oil exports are expected to go to North America though than to Latin America, since the latter does not possess the same level of purchasing power and demand. In the 1920s when foreign firms increased competition among prospective foreign oil companies entering Mexico, it increased the potential for Mexico to strike favourable deals and to become the world's largest oil producer. The potential second round of foreign investment is expected to once again help Mexico's oil sector to grow. The interest from private and foreign firms is already demonstrated. It is in the interest of many nations to reduce dependence on the Middle East as well as all the OPEC countries regarding crude oil. The reform of Mexico's oil sector could push for a shift towards a development of a North American energy alliance that could provide energy security for the region and potentially become a net exporter of energy. North America could then serve as an alternative to investing in and relying on the Middle East and the OPEC countries for oil production.

Technological transfers from foreign firms, and increased oil production are expected, as cooperation with private and foreign companies is made possible. New technology would help Mexico explore all of its oil reserves and not just the easy accessible. PEMEX is in need of deep-sea drilling technology in order to expand its productive capacity, technology that could be obtained through partnerships with private and foreign firms. Mexico would be able to meet its growing oil demand through increasing oil production made possible by new and more advanced technology and new investments by both PEMEX, private and foreign companies. Oil production in Mexico would be able to recover from the decline of the past decade.

Increasing economic growth in Mexico and improved economic conditions would be fuelled by the large amount of FDI inflows that are expected as a result of the reform. The earliest FDI inflows are predicted to land in upstream activities with exploitation and production activities, helping Mexico's oil sector to have the financial capacity to increase its oil production. Increased oil production would create more jobs in direct and indirect businesses that in turn could create higher purchasing power of the Mexican population. Also, PEMEX

and private firms would be able to share risk associated with oil exploitation, which will increase willingness to invest in new infrastructure and technology. The large financial flows in combination with potential technological developments could create cheaper national energy production with lower energy prices, which would be beneficial for the Mexican people.

Reduction of inefficiencies could be expected as PEMEX cease to be the government's cash cow and instead could use a share of its revenues to invest in oil production technology and infrastructure. Other private and foreign companies could also be interested in investing in necessary technology to efficiently get access to and exploit oil. PEMEX's proposed new autonomy and independent regulatory authorities as well as the limited involvement of the Labor Union, would result in PEMEX becoming more market-driven and efficient as it enters into agreements with private firms. PEMEX is forced to be more competitive and efficient when competing with private firms in bidding rounds for access to oil fields as suggested by the reform.

Mexico's oil sector can benefit from the anticipated increase in oil consumption of the coming decade due to population growth and expected increase in purchasing power. A larger share of the population will be able to afford a car as economic conditions improve and the middle class grows bigger in Mexico. If the cars will be driven by oil or more environmentally friendly energy such as electricity is difficult to predict, but the majority of the cars produced today run on oil, which indicates that oil will be an important fuel for at least the coming decade. Trend forecasts suggest that oil will dominate the use of energy sources at least to 2030, to the benefit of the development of Mexico's oil sector.

6.2.4 Threats

Competitors and other energy sources affect oil demand and oil price. New competitors may enter the market, as for example the findings of shale gas in the U.S. Other innovations and other energy sources pose a threat to a future stable development of oil demand. Other oil-rich countries will try to offer more incentives to attract FDI. Mexico will have to compete for FDI with oil producing countries but also with countries having other sources of energy. Renewable energy sources and green technologies will continuously increase and challenge the predominant use of oil. The poor environmental impact of oil, the rising CO₂ levels and the threat of climate change demands a shift to more environmentally friendly energy sources. Mexico's natural gas consumption is significant and could potentially gain shares from oil

demand if greater investments in pipeline infrastructure are made. Oil is still the most consumed energy source and its consumption is expected to increase in the near future. If the reform is implemented, Mexico is likely to advance its refining capabilities through access to new technology. An external threat for the Mexican refineries to be successful is the proximity to the United States, which has long experience of refining oil and has the ability to outcompete Mexico in the field.

The overall financial climate in the world and in Mexico will affect the propensity of foreign firms to invest in the oil sector, as well as impact the economic growth and demand for oil and oil products of the Mexican population. Changes in the price of oil will also affect oil demand. However, the government of Mexico has ensured to gain revenues from the oil sector regardless of the fluctuation of the oil price, by basing royalties that foreign firms have to pay on a sliding scale depending on the current oil price.

Political disagreements about the reform and the fear of losing oil to foreign powers pose an external threat to the implementation process of the reform. Parts of the political leadership and large parts of the Mexican population defend nationalist and protectionist views stating that the natural resources and the profits they bring are not for sale and belongs to Mexico, as has been stated in the Constitution since 1917. The importance of national ownership of the natural resources is a sensitive and heavily debated issue that has been reflected in several disputes. Continued protests and demands to stop the reform is likely to be seen before the legislation is implemented, but if Mexico shall be able to see the expected inflows of FDI to the oil sector it is crucial that no political disagreements cause severe disruptions that may threaten the reform's implementation. Transparency throughout the reform process is crucial to reduce anger and risk of disputes.

If the new profit-sharing contracts are allowed as the reform legislation is implemented, some of the oil production revenues will slip through Mexico's fingers to firms based in other countries. The Mexican government will instead get revenues through the royalties and taxes that foreign firms need to pay in exchange for entering profit-sharing contracts. As PEMEX is released from the burden to pay all its revenues to the state, the government has to supplement the loss of oil revenues with other sources, which is why a broadening of the tax base is needed. This would enable increased public spending on infrastructure, education, R&D and other important pillars for the development of the country.

Security issues such as corruption and drug-related violence are the most common areas of concern when doing business in Mexico and thus an external threat for the oil sector to develop successfully. An increasing problem is oil thefts from pipelines. The Mexican government needs to concentrate its efforts on establishing a secure environment for investments. Regulatory entities of the oil sector need to show that they are efficient and can be trusted in order to attract FDI and for the oil sector to operate efficiently.

Future escalation of inequalities in Mexico is an external threat, as the expected increase in oil revenues might exacerbate regional disparities if the government fails to distribute the economic growth equally across the country. The benefits of previous trade liberalization has thus far been better captured by some regions, and the opening up of the oil sector to foreign investment is likely to benefit the Mexican northern border towns the most due to the proximity to the United States.

7. AREAS OF FURTHER RESEARCH

A planned area that demands further research is the development and outcomes of the reform in the oil sector. How will the reforms be implemented? How cooperative will the government and PEMEX be towards foreign and private firms? It will be exciting to follow the repercussions of the initiative to reform the oil sector. The development of demand for renewable energy, natural gas, shale gas, etc. in Mexico is definitely of interest. As an example of Mexico's wide spectrum of potentially successful energy sources, it is estimated that Mexico has the sixth largest amount of recoverable shale gas in the world and will be an area of future interest (Economonitor 2014).

8. CONCLUSION

This section concludes the findings of this study by answering the stated research questions. Relevant aspects considering the future of the Mexican oil sector are discussed. This section outlines the internal and external conditions for the current situation and future outlook of the oil sector. This section follows the limitations of the study and also the suggested future areas of the research agenda.

The purpose of this research was to generate a deep understanding of the possible development of the Mexican oil sector and the factors that influence this process. After analysing the current situation of the Mexican oil sector, we see that some factors have stronger influence than others with both positive and negative factors for the oil sector's potential to develop.

“What are the recent past and the current situation of the oil sector in Mexico, and the implications of this?”

Regarding our first research question, the recent past of the oil sector has been marked by the state-run monopoly of PEMEX. The Mexican government has protected PEMEX from foreign competition and investors due to political will and the power of the people wanting to keep their most significant natural resource nationalized and not risking foreign ownership. The oil sector has been dominated by inefficiencies due to lack of technology and necessary investments to optimize oil production leading to declining oil production and revenues. Using PEMEX as a cash cow, the government has mismanaged one of Mexico's most significant resources by preventing PEMEX to reinvest its profits. The government has failed to invest in R&D and raise the technology intensity of the oil sector and has instead used the oil revenues for governmental expenditures. Having corruption spread widely across the country, it is no surprise that PEMEX has had its fair share of corruption issues, which further has enhanced inefficiencies in the company.

“What is the potential near future development of the Mexican oil sector?”

With regards to the second research question, we can draw the conclusion that Mexico could benefit vastly from the proposed oil reform. If the reform is implemented and new contract forms are allowed, important technological and financial transfers are likely to improve Mexico's position on the global market as a significant supplier of “the black gold”. However,

the effect of the reforms may linger as the implementation process could be delayed. In a democracy it is crucial to listen to the voice of the people, and the population have for almost a century followed the notion that the oil belongs to Mexico. These protectionist views of the Mexican people are also reflected in parts of the political leadership, which have created tension around the debate of the reform and most likely will lead to more protests and possibly threaten the implementation of the reform.

If the reforms were to be implemented it is likely to lead to a great increase of oil production and large financial inflows to the country. Oil production would be turned around from its declining trend of the past decade. To fully take advantage of the opportunities that foreign investments bring, PEMEX needs to modernize its mind-set and strategically invest to improve its position. The interest of potential investors is a fact and the bidding rounds expected in 2016/2017 will likely attract many stakeholders to Mexico. PEMEX will have to increase its competitiveness through new technology to be able to compete with the new actors as they strive to get access to the Mexican oil fields. It is clear that the reform in the oil sector provides Mexico with a promising potential to contribute to growth and development of the country's economy. By accepting foreign financial and technological assistance through joint ventures and other agreements, Mexico could more efficiently explore and exploit its oil. The development of Mexico's oil sector will be of utmost importance and depend on the implementation of the reforms. If successfully implemented, Mexico is believed to once again be a major oil producer in the near future.

The reforms could bring great economic growth to Mexico and increase the purchasing power of the people. The government needs to distribute the wealth across the country in an effort to minimize its high rates of inequality and regional disparities. The increasing oil revenues could also be used to invest in and improve the educational system that in turn could generate high-skilled labour that could develop the oil sector further. Mexico and PEMEX could see a new era where innovation, strategic development and profitability can be present. With increased oil production in Mexico, North America has the potential of becoming a regional powerhouse able to compete with the Middle East and the OPEC countries, resulting in a potential paradigm shift of the global energy map. This study sheds light on many beneficial aspects that a future collaboration between foreign firms and the Mexican oil sector may bring, by utilizing each other's comparative advantages such as oil resources, technological

expertise and financial resources. Collaboration could help the Mexican oil sector to grow in the near future.

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