



**RESOURCE CURSE AND ECONOMIC DIVERSIFICATION  
IN RESOURCE RICH COUNTRIES: THE CASE OF  
INFRASTRUCTURE POLICY IN OMAN**

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Philosophy in Business Competitiveness and Economic Development

By:

**Juma Saleem Salim AL Musalami**

Deusto Business School

Deusto University

Spain

Supervised by: Dr. Susana Franco

Dr. Edurne Magro

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## **EXECUTIVE SUMMARY**

Logically, countries with abundance resources are blessed as the possession of the resources can help in economic growth as well as in the development. It also can increase the economy's investment and growth rates. However, this was not the case according to much of the subject literature (see for instance, Auty, 1990, 1993 and 2001; Ranis, 1991; Sachs and Warner, 1995 and 1999a; Gylfason et al., 1999; and Mehlum et al., 2006a.), which has presented evidence and shown that resource rich countries (particularly countries rich with point resources such as petroleum and minerals) are affected with the “resource curse” or “paradox of plenty”. Specifically, they found evidence that resource rich countries tend to grow more slowly than resource poor countries, as well as experiencing negative repercussions in economic, political and social outcomes.

There have been many prominent hypotheses and studies to explain the correlation between resource dependence and poor economic growth, such as Sachs and Warner (1995); Leite and Weidmann (1999); Gylfason (2001b); Auty and Gelb (2001); Atkinson and Hamilton (2003); Papyrakis and Gerlagh (2004); Boschini et al. (2007) and Crain (2010). According to Crain (2010), the results of these studies indicate that the causes for the correlation between resource dependence and poor economic growth fall into two categories: economic factors and political factors. The former includes: (1) declining terms of trade, (2) commodity price volatility, (3) low external linkages of the mineral industry, and (4) the Dutch disease. The latter comprise: (1) mismanagement of resource rents, (2) weak institutions, (3) rent-seeking and corruption, (4) regime type, and (5) social conflict. As a response to the existence of the symptoms (all or partial) that cause the resource curse in an economy, the government intervene through setting up proactive and reactive policies.

The failure of allocated the resources efficiently justify the government intervention through economic diversification policies. Which has been pointed as an effective means of counteracting the resource curse (Wiig and Kolstad, 2012) and as one of the most frequently long-term strategies for economic growth (Collier and Venables, 2008; and Gelb, 2010). Therefore, resource rich countries were routinely advised to diversify their economies (Alsharif et al., 2016) and consequently they tended to adopt and implement proactive economic diversification policies to mitigate, as much as possible, the harmful consequences of the resource curse. Even though many resource rich countries realize the importance of economic diversification for their economies, their authorities (political regimes) neglected or

delayed the economic diversification process during the temporary high-profitability periods (Abubakar, 2015). Immediately after any global decline in commodity prices (especially for oil and mineral resources) the importance of economic diversification is brought again to the fore. Therefore, most resource rich countries have faced fundamental challenges in translating resource revenues into sustainable economic growth, and have not succeeded in diversifying their economies over recent decades.

Economic diversification processes have two main forms (streams): production diversification and export diversification. Production diversification is the diversification of the productive base of the economy through the development of non-oil activities. Whereas, export diversification is the change in the composition of a country's existing export product mix or export destination (Ali et al., 1991). Institution, infrastructure, macroeconomic stability and health and primary education are among different significant determinants of export diversification that have been identified in the literature. These factors have been also identified the main factor for factor-driven countries, to globally compete during the first stage of development. For example, transport infrastructure and ports facilities that ensure that goods arrive on time, in good condition and with the least delivery time are a crucial element in any successful export diversification policy. Also, it can play a critical role in development of new areas of export activity in the private sector (Nurse and Greene, 2014). Therefore, the development in logistics and supply chain technology has created significant opportunities for economic diversification in general and export diversification at specific, as well as for job creation over the last 20 years.

Therefore, this thesis aims to assess the impact of infrastructures policy in export diversification of resource rich countries. Specifically, the case of infrastructure and logistics policy in Oman (development of roads, ports, FTZ and Industrial Estates) to make Oman a global logistics hub was used to accomplish the thesis objectives and to answer the research question "*How can the development of roads, ports, FTZ and Industrial Estates impact the economic diversification in resource rich countries*".

The justification behind the use of Oman case is that Oman is an oil rich country that started efforts to diversify its economy four decades ago, and economic diversification was acknowledged as one of the most salient policies as early as the first five-year development plan in 1976. However, it has still not succeeded in reducing its dependence on oil, just as many other resource rich countries have not. The oil sector still dominates the rest of the other productive activities, and during the period (1970-2014) it accounted for 47.2 percent of the GDP, about 70 percent of the foreign exchange earnings, an average of 85.8 percent of the

total exports, and an average of 85.2 percent of the government revenues. Export-led diversification was part of a larger diversification policy that had been adopted and implemented through the "*Vision for Oman's Economy: Oman 2020*" since 1996. To accomplish the goals of export-led diversification, plans were made to utilize the country's excellent location through the development of its transport infrastructure (e.g. roads and ports), Free Trade Zones (FTZ) and Industrial Estates to make Oman a global logistics hub.

The first part of the analysis in this thesis is dictated to examine whether the resource curse symptoms exist in the Oman economy or not. This is important because Oman and other GCC countries were not included in the empirical research on the resource-curse datasets study done by Sachs and Warner (1997a) and Gylfason (2006a), due to unavailability of data (Titulaer, 2010). Furthermore, Logical Framework (LF) and Theory of Change (TOC), have been used as analytical techniques to assess the impact of the infrastructure and logistics policy in Oman, because they facilitates the building of the component of the analytical framework. The LF identified the different components of the policy (inputs, outputs and impacts) and TOC identified the path for achieving the policy goals and through those indicators, the impacts have been measured.

Both time-series and panel data were used in the second and third parts of the analysis respectively. The time-series data cover the data of different LF and TOC indicators during the period 1996-2015, and the panel data covers the data of the values of the pillars of the factor-driven of the Global Competitiveness Index (GCI) and the values of the diversification index for twelve resource rich countries (Bahrain, Botswana, Chile, Indonesia, Kuwait, Malaysia, Norway, Oman, Qatar, Saudi Arabia, South Africa and UAE) over the period 2007 to 2015.

The results of the first empirical part in this thesis that examine the existence of the resource curse symptoms (economic and political categories) in Oman, showed the presence of three factors out of the four of the economic category (commodity price volatility, low external linkages of the petroleum industry and Dutch disease), whereas in the political category, it found that only two out of five factors existed (weak institutions and the presence of corruption).

On the other hand, the analysis of the LF and TOC (second empirical analysis) showed a good progress in many TOC indicators of the policy. For example, there was an improvement in the rank of the quality of infrastructure in the Logistics Performance Index (LPI), Global Competitiveness Index (GCI) and Global Enabling Trade Index (GEI). There was an increase in the value of investment of the FDI in general (as it increased from 1,588

million OMR in 2005 to 7,638 million OMR in 2014) and at different FTZ and Industrial Estates specifically. There was an increase of the percentage share of non-oil exports on total exports (increased from 6.1 in 1996 to 22.4 in 2015) and the non-oil exports revenues (increased from 173.3 million OMR in 1996 to 3,003.9 in 2015).

Moreover, the results also showed that the impact of the development of roads, ports, and FTZ was not enough to generate a significant change in the diversification index during the period 1996-2015, as the diversification index (that ranks values between 0 for fully diversified countries and 1 for countries that export only one commodity) is still high (0.72) and only a slight change had been happening during the past nineteen years (1996-2015). The diversification index decreased from 0.76 in 1995 to only 0.72 in 2015 with an annual decrease rate of (-0.23) percent.

Furthermore, the results of the panel regression analysis (third empirical analysis) showed that among the different pillars of the GCI, institutions were the only independent variable that was significantly correlated with the change of the diversification index for the twelve resource rich countries during the period 2007-2015. That result emphasized that, at the first stage of development of the resource rich countries, possession of good institutions is the most important factor in the diversification process, rather than the development of infrastructure, macroeconomic stability and health and primary education.

This study is among the first of its kind as it assesses the impact of a policy over a long-term period, as policy evaluation and impact assessment are usually carried out over short- or medium-term periods. The results of this thesis contribute to explain why many resource rich countries have not succeeded in diversifying their economies over the past decades. Also, it will be a point of reference for scholars interested in economic diversification policies and policy makers in many resource rich countries, particularly among the GCC, which share many common economic features with Oman. Such similarities are their high reliance on oil and gas as the main source of government revenues, their welfare systems, and their reliance on low-skilled imported labor.



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## **LIST OF ABBREVIATIONS AND ACRONYMS**

ACP	African, Caribbean and Pacific
AMCML	Al Masah Capital Management Limited
APA	American Psychological Association
ASGISA	Accelerated and Shared Growth Initiative for South Africa
B.C.	Before Christ
BEAC	Business and Economic Advisory Council
BP	British Petroleum
CARICOM	Caribbean Community and Common Market
CAP	Consortium Antwerp Port
CIDA	Canada's Foreign Aid Agency
CILT	Chartered Institute of Logistics and Transport
CIP	Competitive Industrial Performance
CORFO	Production Development Corporation
CPI	Corruption Perception Index
CSIR	Council for Scientific and Industrial Research
DCSC	Dhofar City Services Company
DEC	Darcy Exploration Company
DPAD	Development Policy and Analysis Division
DRC	Democratic Republic of the Congo
ECR	Export Concentration Ratio
EOR	Enhanced Oil Recovery
ESCWA	Economic Social Commission for Western Asia
EU	European Union
FAERC	Financial Affairs and Energy Resources Council
FDI	Foreign Direct Investment
FE	Fixed Effects models
FPI	Foreign Portfolio Investment
FTZ	Free Trade Zone
GAFTA	Greater Arab Free Trade Area
GCC	Gulf Cooperation Council

GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GEI	Global Enabling Trade Index
GICO	Government Implementation Coordination Office
GNP	Gross National Products
GSC	Global Supply Chain
GTZ	German Society for Technical Cooperation
HDI	Human Development Index
HHI	Herfindahl Hirschman Index
IBP	International Business Publications
IEA	International Energy Agency
IFI	International Financial Institutions
IMCO	Maritime College Oman
IMF	International Monetary Fund
INDAP	Agricultural and Animal Husbandry Development Institute
IPAP	Industrial Policy Action Plan
IT	Information Technology
ITHRAA	Public Authority for Investment Promotion and Export Development
KSA	Kingdom of Saudi Arabia
LF	Logical Framework
LNG	Liquid Natural Gas
LPI	Logistics Performance Index
LRN	Long-run neutrality
MIDP	Motor Industry Development Program
MOG	Ministry of Oil and Gas
MONE	Ministry of National Economy
NCIC	National Council on Innovation and Competitiveness
NCSI	National Center for Statistics and Information
NIPF	National Industrial Policy Framework
NGO	Non-Governmental Organizations
OCB	Oman Central Bank
ODB	Oman Development Bank
OECD	Organization for Economic Cooperation and Development
OFI	Other Foreign Investments



OGLG	Oman Global Logistics Group
OIF	Oman Investment Fund
OLC	Oman Logistics Center
OLNG	Oman Liquefied Natural Gas Company
OLSCA	Oman Logistics and Supply Chain Association
OMR	Omani Rial
ONTC	Oman National Transport Company
ORTA	Oman Road Transport Association
PDC	Port Duqm Company
PDO	Petroleum Development Oman
PEIE	Public Establishment for Industrial Estates
PEMANDU	Performance Management and Delivery Unit
PPP	Purchasing Power Parity
PQLA	Physical Quality of Life Approach
R&D	Research and Development
RCA	Revealed Comparative Advantage
RE	Random Effects models
RGI	Resource Governance Index
RIDS	Regional Industrial Development Strategy
RMS	Road Management System
RSEP	Review of Socio-Economic Perspectives journal
SABS	South African Bureau of Standards
SAI	State Audit Institution
SAIDC	South Africa's Industrial Development Corporation
SAOG	Salalah Port Services Company
SCM	Supply Chain Management
SCP	Supreme Council for Planning
SDI	Spatial Development Initiatives
SDP	Spatial Development Programs
SERCOTEC	Technical Cooperation Service
SEZAD	Special Economic Zone Authority at Duqm
SGRF	State General Reserve Fund
SIPC	Sohar Industrial Port Company
SMEs	Small Medium Enterprises

SMMEs	Small, Medium and Micro Enterprises
SOLS	Sultanate of Oman Logistics Strategy
TANFEEDH	National Program for Enhancing Economic Diversification
TFP	Total Factor Productivity
TOC	Theory of Change
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
UNCAC	United Nations Convention Against Corruption
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Program
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
USD	United States Dollars
USA	United States of America
USAID	United States Agency for International Development
VALS	Value-Added Logistics Services
WEF	World Economic Forum
WGI	Worldwide Governance Indicators
WHO	World Health Organization
WITS	World Integrated Trade Solutions
WTO	World Trade Organization

# **1. CHAPTER ONE:**

## **INTRODUCTION AND PROBLEM STATEMENT**

### **1.1 INTRODUCTION**

The main target of every nation (developed and developing) in the world is to have a strong, growing and sustainable economy. The discovery of natural resources in a country should be a blessing and bring in new resources to spur socio-economic development and political stability. For decades, it was believed that revenues from natural resources could help to improve the economic growth and living conditions of the citizens, finance important infrastructure projects, investments in health, education, or the development of other industries (UNDP, 2006). Additionally, natural resources are significant for economic development processes and benefit the economy by being a source of income, new investment opportunities, and potential for positive spillovers to the rest of the economy. Despite all those potential beneficial impacts of natural resource wealth on economic prosperity, the literature including Auty, 1990,1993 and 2001; Ranis, 1991; Sachs and Warner, 1995 and 1999a; Gylfason et al., 1999; and Mehlum et al., 2006a, showed that the exploitation of natural resources has often been associated with economic mismanagement, more unequal income distribution, corruption, political strife (instability), environmental destruction and higher probability of conflicts. This phenomenon is called “the paradox of abundance” or “resource curse” (Auty, 1993).

As a response to the existence of the symptoms (all or partial) that cause the resource curse in an economy, the government may intervene through setting up proactive and reactive policies. Economic diversification policies are often regarded as effective means of counteracting the resource curse. Therefore, resource rich countries tended to adopt and implement proactive economic diversification policies to mitigate, as much as possible, the harmful consequences of the resource curse. Even though economic diversification has been one of the principal government priorities in most resource rich countries, their authorities have often neglected or delayed the economic diversification process during temporary high-profitability periods. Immediately after any global slump in commodity prices (especially for oil and mineral resources) the need for economic diversification is brought again to the fore.

This situation makes economic diversification a challenge that is not easily overcome. Consequently, most of the resource rich countries have faced fundamental challenges in translating resource revenues into sustainable economic growth, and have not succeeded in diversifying their economies over the past decades. According to De Pineres and Ferrantino (1997), the literature on export-led growth in developing countries has been increasing over the last 50 years, thus encouraging the implementation of export diversification in many resource rich countries. It is intended to change the shares of commodities in the existing export basket, through introducing new products in the export mix, and/or breaking into new export destinations to diversify the export basket of the resource rich countries. Export diversification aims at mitigating the volatility and instability in export earnings, which in turn have adverse macro-economic effects on growth, employment, investment planning, export capacity, foreign exchange reserves, inflation and debt repayment.

OECD (2010) identified several key drivers in economic diversification. They include good governance, an active private sector, availability of natural resources, regional integration, broader international framework, institutional capacity and human resources development. In addition, Esanov (2011) found that the country is in a better position to diversify its production base if it has a well-developed physical infrastructure and viable institutions<sup>1</sup>. Extensive and efficient infrastructure is an essential driver of international competitiveness and trade enhancement—especially for exports— and has positive impacts on attracting Foreign Direct Investment (FDI). Transport infrastructure and port facilities that ensure that goods arrive on time, in good condition and with the least delivery cost are crucial in any successful export diversification policy. Therefore, the development in logistics and supply chain technology has created significant opportunities for economic diversification and job creation over the last 20 years.

## **1.2 PROBLEM STATEMENT**

Natural resources are an important source of national wealth around the world (Tietenberg and Lewis, 2012) and since the time of Adam Smith (1723-1790) and David Ricardo (1772-1823) there has been a belief that abundance of natural resources is a blessing, as they are a prerequisite for sustainable development and are expected to increase an economy's

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<sup>1</sup> Notteboom et al. (2013) describe institutions as the humanly devised and or socially constructed sets of rules that constrain and enable human interaction. Also, Greif (2006) argued that institutions might be defined as a set of social factors, rules, beliefs, values and organizations that jointly motivate regularity in individual and social behavior. Therefore, institutions are not organizations only, but the legal, social, normative framework in which organizations operate (Edquist, 2001).

investment and growth rates. For example, energy resources in general, and oil in-particular, are of vital importance to many countries because they depend on them as a main source of revenues, and as drivers of industry and agriculture, as well as support for human development in all its social, economic and environmental dimensions. Despite that importance, different literature (Sachs and Warner, 1995, 1997c, 1999a; Rodriguez and Sachs, 1999; Leite and Weidmann, 1999; Gylfason, 2000, 2001b; and Elsgard, 2014) found that in the long term, countries and regions with an abundance of natural resources (specifically non-renewable resources like minerals and fuels) tend to experience negative repercussions in economic, political and social outcomes than do countries with fewer or no natural resources. Therefore, the phenomenon of countries abundantly endowed with natural resources (e.g. Venezuela, Nigeria, Angola and Zambia) tending to grow more slowly than resource-poor countries (e.g. Singapore, Hong Kong and Korea) was called the “resource curse” (Sachs and Warner, 1995).

Policies are the first line of defense against different failures and they seek to achieve goals that are considered to be satisfactory to the whole society. Consequently, economic diversification is often presented as a desirable policy objective and resource rich countries are routinely advised to diversify their economies (Alsharif et al., 2016). Accordingly, they tended to implement proactive economic diversification policies to mitigate, as much as possible, the harmful consequences of the resource curse. Unfortunately, many resource rich countries lack the existence of clear and detailed policies that can lead to economic diversification. Therefore, over several decades, many such countries faced challenges to diversify their economies and reduce their dependency on certain resources as the main sources of their government revenues. Oman is a case in point; therefore, the case study of Oman has been used to address the problem of the absence of clear and detailed diversification policy, as well as to examine the existence of resource curse symptoms. Additionally, it assesses the impact of infrastructure development on export diversification, and through that, on the economic diversification process during the period 1996-2015.

Oman has a hereditary monarchy and is located in the extreme Southeast corner of the Arabian Peninsula where it is open to three seas: the Arabian Gulf, the Oman Sea and the Arabian Sea. It is one of the resource rich countries that highly depends on oil as the main source of its government revenues. During the period 1970 to 2014 the oil and gas sector accounted for 47.2 percent on Gross Domestic Product (GDP), about 70 percent of foreign exchange earnings, an average of 85.8 percent of the total exports and an average of 85.2 percent of the government revenues. The government has been aware of the risks associated

with the dependence on oil as the main source of income in Oman for a long time. Therefore, economic diversification was acknowledged as one of the most salient policies as early as the first five-year development plan in 1976. That consciousness came from the estimation of the development council in 1976, which expected the government revenue to decline due to a gradual decline of oil production by 1977, and expected Oman to have exhausted most of its oil reserves by 1987, unless there were new discoveries. In response to the downward trend of oil production and revenues, the government implemented different programs to diversify its production base, through promoting the non-oil sectors via investment in some mega-projects such as those concerning aluminum, iron, steel and petrochemicals. During the first long-term strategy for development (1976-1995) the government worked to develop new sources of government revenues to augment and eventually replace oil revenues in the future and enhance the GDP. It increased its investment in high-income returns sectors, especially in the non- oil sectors like agriculture and fishing, manufacturing, mining and quarrying. Also, it continued the enhancement of water resources, completed other basic infrastructure (roads, communications, electricity and water), supported the business activities and raised the state administration efficiency.

In 1995, after several cases of fiscal deficits due to weak revenues from oil, it was clear to Omani policy-makers that new economic patterns related to economic diversification and labor force indigenization had to be established (Ennis and Al-Jamali, 2014). Subsequently, in the same year the second long-term strategy for development named "*Vision for Oman's Economy: Oman 2020*" was launched. The vision was aimed at carrying out a substantial transformation in the structure of the national economy during the period (1996-2020). That substantial transformation will be achieved through creating a diversified economy based on renewable resources, and which is highly efficient and integrated with the world economy. Export-led diversification was part of a larger diversification policy that had been adopted and implemented through that vision since 1996. The policy aimed to achieve different objectives such as exports diversification, making Oman a regional and international services center (logistics hub); intensive national economy integration with the world economy; and promotion of foreign investment. One of "Oman 2020" objectives for economic diversification was to fully exploit the naturally available resources and utilize the country's excellent location. Therefore, the government planned to do this through the development of its transport infrastructure (e.g. roads and ports) that provide the necessary infrastructure for prospective industries (logistics). Thus, from as early as the seventeenth century, Oman served as an important maritime space in the global network.

The major gap in "*Vision for Oman's Economy: Oman 2020*" was the lack of a detailed policy for economic diversification that could be translated into an action plan with proper indicators and a monitoring and evaluation system. Therefore, this thesis is aimed to fill that gap through the identification of the Logical Framework (LF) and its Theory of Change (TOC) for a specific policy (developing the roads, ports and free trade zones to make Oman a logistic hub) that the government implemented in 1996 to increase economic diversification. Furthermore, it assesses the impacts of implementing that policy on the economic diversification process during the period 1996-2015, as the government's focus increased investment in transport infrastructure as a means to facilitate economic diversification through export diversification.

### **1.3 SIGNIFICANCE AND CONTRIBUTION**

This thesis assesses the impact of infrastructure on economic diversification from a policy analysis perspective as it first identifies a Logical Framework (LF) and Theory of Change (TOC) and their indicators. Then it assesses the impact of the policy. This constitutes a novel approach to address this issue. Therefore, this thesis is important for several reasons. First, it contributes to the understanding of the challenges economic diversification policies face in resource rich countries, which can inform decision-making on changes required to improve the implementation of diversification polices. Second, it builds up a Logical Framework (LF) for a specific diversification policy and its Theory of Change (TOC) that show the pathway to achieve the desired impacts of the policy. Third, the empirical contribution by examining the existence of resource curse symptoms, using both the economic and political factors categories, could suggest how to avoid the resource curse. Finally, it provides the policy makers with appropriate information to enable judgments related to diversification policy effectiveness and success.

Therefore, the contribution of this thesis is in different disciplines (resource curse, economic diversification and assessment of policies' impacts). First, it will contribute to the literature of empirical examination of the existence of resource curse symptoms in resource rich countries. Second, it will contribute to the economic diversification literature through the identification of the common diversification policies that have been implemented successfully in five countries from Asia, Europe, South America and Africa. Third it will contribute to the policy evaluation literature, specifically on the impact evaluation methodology and techniques, as it uses the Logical Framework (LF) and Theory of change (TOC) to assess the impacts of certain policies over long-term periods. Fourth, by studying the case of Oman, it

will contribute to the policy lessons in a specific region, and can make reliable and relevant empirical estimates possible for GCC or other Middle East resource rich countries.

## **1.4 OBJECTIVES**

The two main objectives of this thesis were: understanding the dynamics of economic diversification policies in resource rich countries and assessing the impact of infrastructure and logistics policy on economic diversification. Precisely, the thesis identifies the most common diversification policies, their determinants and their challenges. It also assesses the impacts of infrastructure and logistics policy through building up an analytical Logical framework and its Theory of Change. The case of Oman is used to implement the different analysis to achieve these objectives. The other objectives include:

- Examining the existence of the resource curse symptoms in the Omani economy.
- Identifying the barriers of economic diversification policy in Oman.
- Identifying the different diversification policies and their instruments that have been implemented since 1996 in Oman.
- Identifying a Logical Framework (LF) and its components (goal, inputs, activities, outputs and impacts) of a specific diversification policy (development of infrastructure and logistics) -to make Oman a global logistics hub.
- Identifying the Theory of Change (TOC) and the indicators to achieve such policy goals.
- Assessing the impacts of implementation of that policy on the economic diversification process during the period 1996-2015.
- Identifying the significant variable that correlated with the diversification index of resource rich countries at the first stage of development.

## **1.5 HYPOTHESES**

There are two main hypotheses in this thesis, the first one based on the resource curse theory and the second one based on the literature of the importance of the transport and logistics for economic diversification. First, based on the concept of the resource curse (chapter two), resource rich countries suffer from different economic and political effects. Whereas, blessed countries witnessed flourishing economic growth rates and development prosperity at different walks of life. Hypothetically, resource curse symptoms can occur in resource rich countries despite their good economic growth rates and development (H1).



Second, the literature reviewed in chapter 2 suggests that the development of transport infrastructure and logistics facilities that ensure the arrival of goods on time, in good condition and with the least delivery cost, are a crucial element in any successful export diversification policy. This is so because it will encourage the attraction of FDI and thus increase the level of trade in goods, services and re-export. Also, it will provide several employment opportunities. That should contribute to increasing the proportion of non-oil exports and re-exports in total exports (in other words it will reduce the proportion of the contribution of oil exports to the total exports) and reduce the diversification index. Therefore, the second hypothesis is:

- Development of transport infrastructure and logistics contribute to improve the diversification levels and the global competition scores in the quality of overall infrastructure (H2).

The following sub-hypotheses are formulated as-a result of development of transport infrastructure and logistics:

- There will be an improvement in the rank of the quality of overall infrastructure in the Logistics Performance Index (LPI), Global Competitiveness Index (GCI) and Global Enabling index (GEI).
- There will be an increase in the value of FDI.
- There will be an increase in the freight volumes at different ports as well as an increase in air passenger traffic at airports.
- There will be an increase in non-oil exports.
- There will be an increase in the share of transport and logistics sector in the GDP.
- There will be an increase in re-export activities.
- There will be an increase in employment opportunities for the national workforce in the logistics sector.
- The export diversification index will decrease.

## **1.6 RESEARCH QUESTION AND METHODOLOGY**

This thesis will answer the research question “*How can the development of roads, ports, FTZ and Industrial Estates impact the economic diversification in resource rich countries?*”. In addition, the thesis will address the following questions:

- Whether countries with good economic growth and well development scores escape the resource curse.
- Whether the policy of infrastructures and logistics (development of roads, ports and FTZ) can impact the economic diversification levels of resource rich countries.
- Whether other factors rather than the infrastructure can significantly affect the diversification index of resource rich countries.

The case study methodology will be used to accomplish the thesis objectives and to answer the research question. Three sets of empirical analyses have been conducted to test the two hypotheses. The first set aimed to examine the existence of the resource curse in Oman. The second set aimed to identify a logical framework for the policy and then assess the impact on the diversification index using both the Logical framework (LF) and Theory of Change (TOC) as analytical techniques. The third set aimed to determine the significant factors that are correlated with the change of the economic diversification at the first stage of development for different resource rich countries.

Case studies are commonly used as a research method in organizational studies and across different social science disciplines (e.g. psychology, sociology, political science and anthropology). It is known as a triangulated (mixed method) research strategy, because it can be based on a mix of quantitative and qualitative approaches. LF is a systematic planning procedure, and monitoring and evaluation tool. According to Yin (2009) Logical Framework (LF) has become an increasingly useful analytical tool in recent years especially in doing case study evaluation.

It is a schematic representation of the logical sequence and causal relationships, and is presented as diagrams connecting program inputs to processes, outputs, outcome and impact as they relate to a specific problem or situation (UN Women, 2007). TOC is a comprehensive process that describes and illustrates how and why a desired change is expected to happen. It explains how activities are used to produce a series of results that contribute to achieving the final intended impacts.

Furthermore, several diversification indexes (Diversification index, Revealed Comparative Advantage Index (RCA) and Product Concentration index (Product HHI)) are used to measure the progress of economic diversification in Oman. Furthermore, a panel regression model will be used to estimate the significant independent variables that affect the change of the export diversification index in resource rich countries.

### 1.7 THESIS CONCEPTUAL FRAMEWORK

The thesis conceptual framework presented in (Figure 1.1) built according to the literature review in chapters 2 and 3. It serves as a roadmap of the relationship between the different elements in the framework, as well as justification for the empirical analysis conducted at chapter six of this thesis.

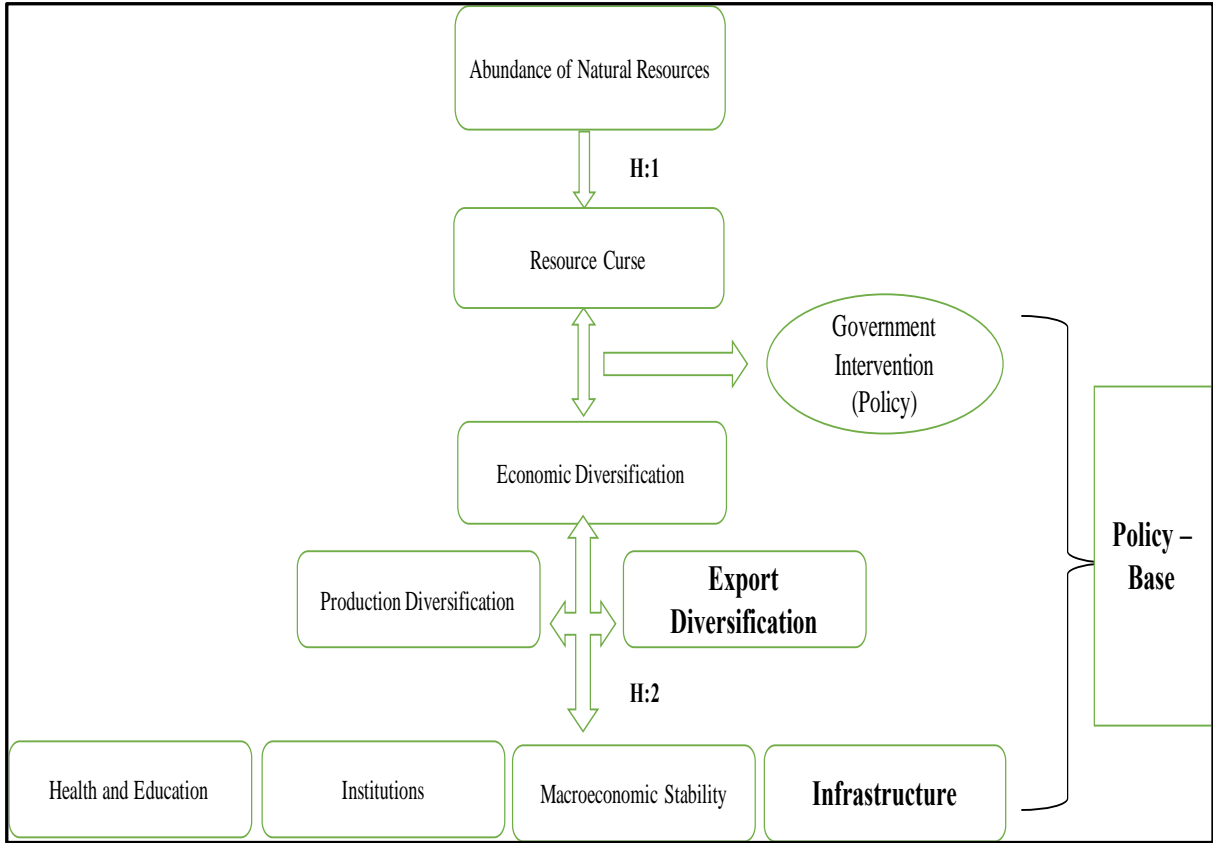


Figure 1.1 Thesis conceptual framework

The first element in the conceptual framework is the abundance of natural resource, which in one side is important for the economic growth and development and on the other side is led to resource curse phenomena at many resource rich countries. Section 2.2 at chapter two of this thesis shows that resources are important for economic growth and development of nations in different aspects such as a source of income, an accelerator for economic growth and provide opportunities for building institutional and human capitals. The second element is the resource curse and its negative effects. Section 2.3 presented the negative relationship between the abundance of resources and the existence of resource curse. It also identifies the

effects and causes of the resource curse. Examples of some negative economic and political effects that found in resource rich countries are, poor economic performance, high corruption rates, low levels of democracy, more durable authoritarian governments, and civil war and conflicts. Based on the theory of the resource curse and its effects, hypothetically, resource curse symptoms can occur in resource rich countries despite their good economic growth rates and development (H1).

Consequently, as the resources were not effectively allocated to benefit the society, the government intervene (element three) through economic diversification policies (element four) to overcome that failure. Literature at section 2.4 shows that economic diversification has been implemented to mitigate the effects of the resource curse. It can occur at different forms such as production diversification and export diversification (elements five and six).

Export diversification was used widely at different resource rich countries. Thus, Section 2.4.1 shows that exports in general and export diversification in specific was found to be important for the economy growth. Exports are a source of foreign exchange, exploit large scale economies by producing for export markets, and potentially contribute to employment and growth of national product (Samen, 2010a). Additionally, export diversification promotes economic growth (Al Marhubi, 2000). Institutions, infrastructure, macroeconomic stability, health and primary education (elements seven, eight, nine and ten) and border integration, were among different determinant of economic diversification discussed at section 2.4.3. Based on literature at section 2.4.4, development of transport infrastructure and logistics facilities encourage the attraction of FDI, increase the trade in goods, services and re-export, as well as provide jobs opportunities. Hypothetically, Development of transport infrastructure and logistics contribute to improve the diversification levels and the global competition scores in the quality of overall infrastructure (H2).

This thesis is focuses on assessing the impact of development of transport and logistics based on policy perspective. Therefore, to test the two hypotheses the case study methodology and the analytical techniques logical frame work (LF) and Theory of Change (TOC) will be used (chapter four). Specifically, the case of Oman will be used in the analysis to test the two hypotheses. Before the analysis, Chapter five will introduce the case of Oman, as it will show the importance of oil to the economy and the blessing effects it brought to economy. Then, it will show the government efforts to diversify the economy and finally the constrains of the success of economic diversification through the last forty-six years. After that the analysis at chapter five will test the two main hypotheses of this thesis. The first part of the analysis will test the first hypothesis (H1) by examine the existence of resource curse symptoms in Oman

economy. Furthermore, the second part of the analysis will test the second hypothesis (H2). The analysis at the second part will first come out with identifying a (LF) and (TOC) for infrastructure and logistics policy in Oman. Then it will use their indicators to assess the generated impact on the economic diversification index. The logical framework will be generated based on a modified model from Raines (2002) that showed at literature review at section 3.3.4 at chapter three.

## **1.8 THESIS ORGANIZATION**

This thesis is organized in seven chapters, and a brief description of each chapter is provided. Chapter One is the introductory chapter, which presents a brief introduction of the thesis, the problem statement, the significance of contribution, the objectives, thesis hypothesis, the research question and the methodology, as well as the conceptual framework.

Chapter Two presents previous research and relevant literature on the resource curse theory, the indicators of existence of the resource curse, and the two categories of factors (economic and political) that have been used to examine the existence of the resource curse. The chapter also shows the importance of economic diversification for economic development and growth and its determinants, as well as the importance of exports and export diversification. Moreover, it shows the impacts of infrastructure and logistics development in export diversification, and, finally, the different measures of economic diversification.

Chapter Three provides the literature review on policy design process and policy evaluation theories. It provides details of the policy making process and the different forms of failures (market, systemic and government failures) that justify government interventions. It also shows the types of evaluation and the different methods of evaluation. As the focus of the thesis is on policies for economic diversification, this chapter includes a summary of the experience of six countries that have succeeded in diversifying their economies by implementing different policies in order to extract conclusions about the types of policies that have worked in those cases.

Chapter Four introduces the case study as the methodology used in this study. Also, it explains the different analytical techniques used (Logical Framework (LF) and the panel regression). It presents the theory of the LF components as well as introducing Theory of Change (TOC) as a tool to explain how and why the desired impacts in the LF are expected to be achieved. Finally, it describes the sources of data and shows the sequence of the analysis that was followed in the remainder of the thesis.

Chapter Five specifically details the case of Oman. Thus, it shows the economic situation that prevailed in Oman before and after 1970. Then it reviews the progress of the economic diversification process since 1976, identifying the past and present efforts to diversify the economy, and the achievements during the first (1976-1995) and the second (1996-2015) long-term strategies for development. It also identifies the challenges (failures) that constrained the success of the diversification process in Oman.

Chapter Six presents the results and discussion of the examination of existence of the resource curse factors (economic and political) in Oman economy. Also, it presents the descriptive, the logical framework (LF) and the Theory of Change (TOC) analysis for Oman's case and the results of the panel regression analysis.

Chapter Seven concludes with the major findings of the study and its limitations, and provides recommendations and further research needed.

## **2. CHAPTER TWO:**

# **LITERATURE REVIEW ON THE RESOURCE CURSE AND ECONOMIC DIVERSIFICATION**

### **2.1 INTRODUCTION**

Economic growth is fundamental to economic development and every nation -either developed or developing- aims to have a strong, growing and sustainable economy (Sohail, 2012, p.150). Additionally, economy growth and development enhances living standards, wellbeing and a nation's prosperity by creating wealth and jobs, encouraging the development of new knowledge and technology (innovating), and helping to ensure a stable political climate. In this context, factors such as population growth, technological innovations and availability of natural resources can contribute to increased productivity and economic growth of a nation (Pritchett, 1996; and Basu et al., 2001).

For decades, it was believed that revenues from natural resources could help to improve economic growth and living conditions, finance important infrastructure projects health, education, and development of other industries (UNDP, 2006). However, literature and empirical studies found that the abundance of natural resource hinder economic growth, and countries with abundant resources were found to grow slower than those with limited or no resources (Sachs and Warner, 1995,1997c and 1999a). This phenomenon is called the "*Paradox of abundance*" or "Resource curse".

Economic diversification is a longstanding ambition for resource rich countries and is often regarded as an effective means of counteracting the resource curse effects. In addition, it increases productivity and competitiveness of different economic sectors, which in turn enhance real abilities within the framework of global competitiveness, especially the industrial sector, and increase the possibilities of foreign trade. Many resource rich countries have acknowledged the need for economic diversification but their authorities (political regimes) have neglected or delayed the process during temporary high-profitability periods. The different ways to diversify the economies include enhancing non-traditional sectors, expanding the range of products and exports (export diversification), and engaging with new

economic and development partners. The key drivers in determining the efficiency of the economic diversification include good governance, an active private sector, availability of natural resources, regional integration, broader international framework, institutional capacity and infrastructure.

This chapter explores the literature in resource curse theory and the economic diversification. First section introduces the difference between development and economic growth and their measurements. Then it introduces the importance of natural resources to economic growth and development for the resource rich countries. Section two explains the resource curse theory and its effects, as well as the indicators of existence (economic and political categories) that could cause the resource curse. Section three presents the importance of economic diversification, its definitions and its determinants. It also presents the importance of exports and export diversification, the impact of infrastructure in the export diversification process, and the different measures of economic diversification levels and export diversification. The last section provides the conclusion of the chapter.

## **2.2 IMPORTANCE OF NATURAL RESOURCES TO AN ECONOMY GROWTH AND DEVELOPMENT**

It is necessary to distinguish between development and economic growth (Hillbom, 2008). Generally, development cannot be defined precisely, as it is a multidimensional concept which refers to “*changes in living standards and welfare over time*” (Powell, 2012). UNCTAD (2014) stated that economic development is fundamentally “*a process of structural transformation whereby countries innovate and diversify from producing basic goods to increasingly more sophisticated industrial goods and services*”. Additionally, it can refer to “*the concerted actions of policy makers to promote an improved standard of living and economic health of a country*” (Fraser, 2014).

Development leads to an increase in a nation’s living standards and creation of more opportunities in the sectors of education, healthcare, employment and the conservation of the environment. It implies an increase in the per capita income of every citizen. Alkire and Sarwar (2009) declared that there are several measures (multidimensional approach) that have been used to estimate development: (1) Increase in real Gross National Products (GNP), (2) Increase in real per capita income, (3) Rise in overall wellbeing of the people, (4) Human Development Index (HDI), and basic needs approach (also called Physical Quality of Life Approach (PQLA)). PQLA uses three indicators for measuring economic development, (1) life expectancy, (2) infant mortality (3) literacy.



The first HDI report was launched by United Nations Development Program (UNDP) in 1990 and it is the most common index used to measure the overall development of a nation. It ranges from 0 (low level of development) to 1 (highest level of development). It considers the GDP per capita (measured at PPP), health (measured in terms of life expectancy), and education (measured in terms of school enrollment ratio and literacy rate), all of which affect productivity and could lead to economic growth.

Moreover, development is concerned with sustainability. According to the classical definition of the United Nations (World Commission on Environment and Development) in 1987, "*development is sustainable if it meets the needs of the present without compromising the ability of future generations to meet their own needs*". Therefore, sustainable development requires, firstly, allocation of enough resources for today's need, and secondly, enough savings for future generations. Sustainable development enhances a nation's standard of living by creating wealth and jobs, encouraging the development of new knowledge and technology (innovating), and helping to ensure a stable political climate, which is a driving factor for successful economic development in a country (Rouag and Stejskal, 2013).

On the other hand, economic growth is fundamental to a stable economy, which enhances a nation's development through the creation of revenue and employment. It is a narrower concept than economic development, as it aims to increase the GDP during certain period of time (usually in yearly bases). Whereas, the development target a comprehensive change in nations living standards at all times. Typically, economic growth measured as the change in GDP, although there were significant arguments that it does not reflect true wellbeing or welfare of a nation- (Wilson, 2008). Kuznets (1973) defined a country's economic growth as "*the long-term rise in the capacity to supply the increasingly diverse economic goods to its population*". So, it is an increase in a country's real level of national output which can be caused by an increase in the quality of resources (like education), increase in the quantity of resources and improvements in technology. In other words, it is an increase in the value of goods and services produced by every sector of the economy (World Bank Staff, 2008).

Consequently, economic growth had been regarded as a means to productivity, employment, education and better health. According to Chu (2012, p.88), factors such as investment in public infrastructures, investment in transport and telecommunications, investment in institutions, Foreign Direct Investment (FDI), government spending (expenditure), population growth or density, human capital, trade, and Research and Development (R&D) have been identified as determinants of economic growth.

Pilat (1996, p.108) argued that investment in education, R&D and infrastructure can boost productivity. Therefore, productivity is the cornerstone of economic growth and it occurs when various raw materials and other productive prerequisites, such as manpower and technology, are used to make some final product that is sold to and used by consumers. Competition promotes efficiency and productivity (Teo, 2003) and it directs resources to their most efficient use. In addition, a low degree of competition within a country is likely to lead to a high variation in efficiency and productive performance, and consequently to sub-optimal productivity. Wilson (2008) stated that competitiveness measures are in-essence a subset of measures of economic progress. He showed in Table 2.1 the example of two competitiveness measures (Global Competitiveness Index (GCI) and World Competitiveness Yearbook) that their determinants can measure economic progress.

Table 2.1. Competitiveness measures: Dimensions and Determinants.

<b>Indicator</b>	<b>Type of Approach</b>	<b>Dimension of Progress</b>	<b>Determinants</b>
<b>Global Competitiveness Index</b>	Composite Index	Competitiveness, defined in terms of the level of productivity of an economy	Institutions, Infrastructure, Macroeconomic Stability, Health and Primary Education, Higher Education and Training, Goods Market Efficiency, Labor Market Efficiency, Financial Market Sophistication, Technological Readiness, Market Size, Business Sophistication and Innovation.
<b>World Competitiveness Yearbook</b>	Composite Index	Competitiveness, defined in terms of an environment that sustains the competitiveness of enterprise	Economic Performance, Government Efficiency, Business Efficiency and Infrastructure.

*Source: Wilson (2008).*

Factors such as population growth, technological innovations, and availability of natural resources can contribute to increasing productivity and economic growth (Pritchett, 1996; and Basu et al., 2001). Population growth (measured by rate of population growth) can be the driver of economic growth through increasing the demand for all kinds of goods and services (more people will inject liquidity into the economy through buying necessities or commodities). Technology consists of the knowledge of how to transform basic inputs into final product (Howitt and Weil, 2010, p.44). So, If the country has abundant natural resources and the technology, it can support a larger population demand and different economic sectors

will grow. Technological innovation allows inventors and producers to use existing technology to produce more goods in less time with less effort, thus enabling a higher rate of production. Also, innovations with existing products help to increase demand, or even the creation of new products that capture the attention of the buying public can often reverse a downward trend in an economy by creating more jobs and improving the flow of cash throughout the entire economic system.

Many scholars have shown the importance of innovation in economic growth. For example, Cameron (1998) concluded that innovation makes a significant contribution to growth, and Fagerberg et al. (2009) found that innovation to be a powerful force of growth. In addition, Crosby (2000) employed Fisher and Seater (1993)'s long-run neutrality (LRN) test to examine the long-run effect of innovation on growth in Australia. He found a positive role for innovation as a long-run output driver. Furthermore, a more recent Taiwanese study by Yang (2006) followed a similar procedure and found that innovation played a positive role in economic growth in both the short and long run, whereas natural resources ought to be utilized for the benefits of the people in the country in which they are found. This right of the people to enjoy benefits of natural resources found in their country has been sanctioned by UN resolutions 626 (VII) of 1952 and 1803 (XVII) of 1962, which declares that states and their people have permanent sovereignty rights over natural resources found in their countries. The availability of natural resources allows a nation to produce material goods for its own use or foreign trade. In addition, it has been regarded as an advantage and plays an important role in many countries' economic growth and development.

Natural resources are an important source of national wealth around the world (Tietenberg and Lewis, 2012). The discovery of natural resources in a country should be a blessing and spur socio-economic development and political stability. It also can be used to increase the range of exports and goods a country produces (OECD, 2010). The government revenue from natural resources can be used to improve economic growth and living conditions of citizens, finance important infrastructure projects, investments in health, education, or the development of other industries (UNDP, 2006). The extent to which government revenues are used strategically for inclusive and sustainable development is an important factor in determining how much the country can benefit from these revenues.

Many economists of past and recent times emphasize the positive role of natural resources in economic growth and development. For example, Ginsberg (1957) and Auty (1993) showed that natural resources are significant for economic development, especially at the early low income stages, where they act as a means for capital accumulation and an

accelerator for economic growth. Sala-i-Martin et al. (2000, p.827) classify natural resources as one of the ten most robust variables in empirical studies on economic growth. Gylfason and Zoega (2001) also acknowledged that natural resources are considered an important source of national wealth around the world, and their large revenues can be used to reinforce macroeconomic stability of resource rich countries (Auty, 2002). Papyrakis and Gerlagh (2004) stated that resource revenues may be used for the construction of roads, modernization of telecommunication systems, health and educational programs. In addition, Ng (2005) concluded that natural resource abundance is beneficial for economic development and showed a positive relationship between resource abundance and output level.

Paltseva and Roine (2011) found that having natural resources benefit the economy by providing a source of income, new investment opportunities, and the potential for positive spillovers of new technologies and knowledge to the rest of the economy. Gelb and Grasmann (2010) and Esanov (2011) also found that revenues from abundant resources provide opportunities for building institutional and human capital. Furthermore, there are many cases in history where natural resources have played an important role in economic development. For example, Great Britain and France also gained economic prosperity more than a century ago by exploiting their colonies’ natural resources. Also, the nineteenth century resource booms in Latin America stimulated economic progress of different countries, such as Bolivia, Ecuador and Mexico (Sachs and Warner, 1999a). Some more recent examples are Norway and Botswana, that managed their natural-resource abundance well and converted it into economic prosperity (Papyrakis and Gerlagh, 2004). Table 2.2 summarized the advantages of the resource endowments.

Table 2.2. Summary of the advantages of the resource endowments.

<b>Advantages of the resource endowments</b>	
Significant for economic development process	Act as means for capital accumulation
An accelerator for economic growth	A source of income
A source for new investment opportunities	Potential for positive spillovers to the rest of the economy
Provide opportunities for building institutional and human capitals	

*Source: Author own elaboration.*

## 2.3 RESOURCE CURSE

*“I call petroleum the devil's excrement. It brings troubles... Look at this waste, corruption, consumption, and our public services falling apart and the debt, that we shall have for years.”*

*(Juan Pablo Perez Alfonso, Venezuelan Oil Minister and OPEC co-founder, 1975).*

According to the International Monetary Fund (IMF) resource rich countries are countries whose exhaustible natural resources (e.g., oil, gas and minerals) comprise at least twenty percent of total exports or twenty percent of natural resource revenues (see Table 2.3), even though most scholars consider a country “*resource rich*” only if the share of exports based on resources exceeds thirty or forty percent (Weber-Fahr, 2002). According to Fosu (2011), IMF classified one-third of sub-Saharan African countries as “resource rich countries”.

Table 2.3. Examples of some resource rich countries in 2012.

No.	Country	Type of Natural Resource	Natural Resources Exports (% of Total Exports)
1	Congo, Dem. Rep.	Minerals & Oil	94
5	Mali	Gold	75
6	Chad	Oil	89
8	Lao PDR	Copper and Gold	57
10	Zambia	Copper	72
11	Yemen	Oil	82
12	Nigeria	Oil	97
13	Cameroon	Oil	47
14	Papua New Guinea	Oil/copper/gold	77
15	Sudan	Oil	97
18	Bolivia	Gas	74
19	Mongolia	Copper	81
20	Congo, Rep. of	Oil	90
21	Iraq	Oil	99
23	Timor Leste	Oil	99
24	Syrian Arab Republic	Oil	36
25	Guyana	Gold & Bauxite	42
26	Turkmenistan	Oil	91
27	Angola	Oil	95
28	Gabon	Oil	83
29	Equatorial Guinea	Oil	99
43	Ecuador	Oil	55
45	Algeria	Oil	98

46	Iran	Oil	79
48	Azerbaijan	Oil	94
49	Botswana	Diamonds	66
50	Kazakhstan	Oil	60
53	Russia	Oil	50
54	Chile	Copper	53
55	Venezuela	Oil	93
56	Libya	Oil	97
57	Bahrain	Oil	81
58	Brunei Darussalam	Gas	96
60	Saudi Arabia	Oil	87
61	Oman	Oil	73
62	United Arab Emirates	Oil	41
63	Qatar	Gas	88
64	Norway	Oil	62

*Source: IMF (2012).*

Since the time of Adam Smith (1723-1790) and David Ricardo (1772-1823) there has been a belief that profusion of natural resources is a blessing, as they are a prerequisite for sustainable development and are expected to increase an economy's investment and growth rates. They can also overcome capital and foreign exchange constraints (Sachs and Warner, 1999a). Despite the potentially beneficial impact of natural resource wealth on economic prosperity, but different literature found the opposite. They found that over the long term, resource rich countries, specifically non-renewable resources like minerals and fuels, tend to experience more negative repercussions in economic, political and social outcomes than do countries with fewer or no natural resources (Sachs and Warner, 1995, 1997c, 1999a; Rodriguez and Sachs, 1999; Leite and Weidmann, 1999; Gylfason, 2000, 2001b; and Elsgard, 2014). This phenomenon is called the “Paradox of abundance” or “Resource curse” (Auty, 1993).

### **2.3.1 DEFINITION**

The resource curse is regarded as one of the economic phenomena linked to resource rich countries. Richard Auty was the first who used the term “resource curse” in 1993 to describe how natural resource rich countries were unable to use its wealth to boost their economies and how, counter-intuitively, these countries had lower economic growth than countries without an abundance of natural resources (Abubakar, 2015 and Tiwari, 2015). But the concern about the resource curse concept dates back to the middle of the sixteenth century, when the French

political philosopher Jean Bodin (1576) claimed that laziness is concomitant with resource abundance. Later in the eighteenth century, Adam Smith (1776) showed that projects of mining were a bad use of capital and should be discouraged (Mohammed et al., 2016). The inverse (negative) relationship between the resource endowment and economic growth appeared in the seventeenth century between Netherlands and Spain. Resource-poor Netherlands eclipsed Spain, despite the overflow of gold and silver from the Spanish colonies in the New World. Also in the nineteenth and twentieth century, Switzerland and Japan surged ahead of resource-abundant economies such as the Russian Federation (Sachs and Warner, 1997a; Stijns, 2001; and Al Dagheiri, 2008).

Different expressions like *paradox of abundance*, *economic indigestion* and even the more graphic "*devil's excrement*" have been used to interpret this strange paradox but "*resource curse*" has been the common expression used (Sachs and Warner, 2001). Humphreys et al. (2007, p.1) stated that "*the term 'resource curse' is used to describe the failure of resource rich countries to benefit from their natural wealth*". Ross (2001) and Frankel (2010) mentioned that resource curse refers to the negative political and economic repercussions that are seen to accompany the development of natural resources in certain countries. In addition, Ross (2001) acknowledged that it may seem paradoxical that abundant natural resources lead to economic distress. Also, Mayer et al. (1999) found that resource curse prevents countries from experiencing the beneficial structure change that often accompanies the development process. Titulaer (2010) agreed with them as she declared that being abundant in natural resources is something that might cause a barrier to the long-term economic growth of a country.

### **2.3.2 EFFECTS OF RESOURCE CURSE**

Examples of negative repercussions include poor economic performance, low levels of R & D, higher corruption rates, low levels of democracy, more durable authoritarian governments, and civil war and conflicts (e.g. as in the Democratic Republic of the Congo (DRC) and South Sudan which have seen deadly civil wars arising from contestation by different groups to control political power and natural resources). According to Rodriguez and Sachs (1999) resource booms lead countries to raise consumption to unsustainable levels, thus depressing saving and investment. Collier (2002) listed four severe problems that face developing countries with heavy dependence on exports of primary commodities: (1) As commodity prices are highly unstable, countries must cope with large external shocks. (2) Rents

generated by primary commodities are usually associated with poor governance. (3) Dependence on a narrow range of natural commodities increases the risk of civil war as natural resources might generate income for rebel groups, and (4) Governance becomes more autocratic because the exploitation of natural resources weakens institutions of the state through increasing the rent seeking and corruption.

### **2.3.3 CAUSES OF RESOURCE CURSE**

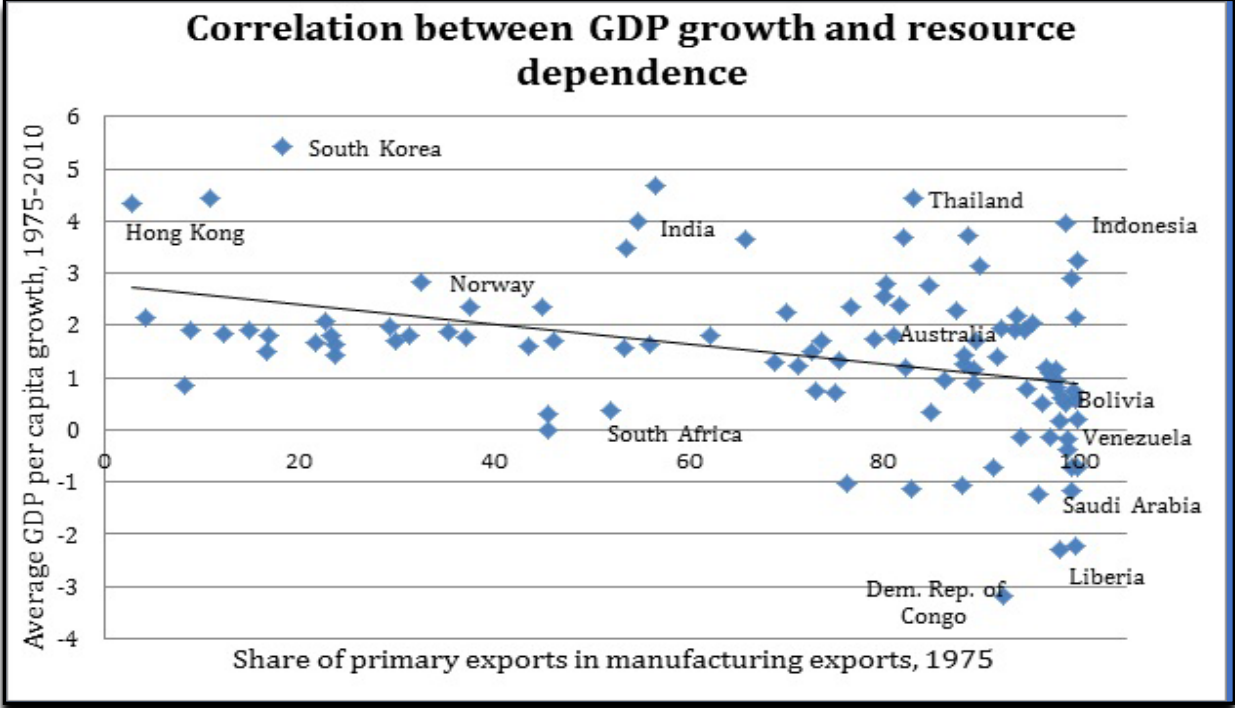
There are many prominent hypotheses arguing about what are the causes of the resource curse. Literature such as (Sachs and Warner, 1995, 1997c, 1999a and 1999b; Mikesell, 1997; Rodriguez and Sachs, 1999; Leite and Weidmann, 1999; Ross, 1999; Gylfason, 2000 and 2001b; Gylfason and Zoega, 2001; Auty and Gelb, 2001; Atkinson and Hamilton, 2003; Papyrakis and Gerlagh, 2004; Collier and Hoeffler, 2005; Mehlum et al., 2006b; Boschini et al., 2007; Arezki and Van der Ploeg, 2007; Shuai and Zhongying, 2008) found that the causes of the resource curse fell into two categories; the economic factors and the political factors. According to Crain (2010), the economic factors include: (1) Declining terms of trade, (2) Commodity price volatility, (3) Low external linkages of the mineral industry, and (4) The Dutch disease. Whereas, the political factors include: (1) Mismanagement of resource rents, (2) Weak institutions, (3) Rent-seeking and corruption, (4) Regime type, and (5) Social conflict.

There were many studies conducted by several economists and researchers have presented evidence and shown the negative link between natural resource abundance and poor economic growth. For example, Auty (2000) found that abundance of natural resources in many non-democratic developing nations affects economic policies and leads to corruption, and this compromises sound economic policies that would promote economic growth. Ahmed and Al Saqri (2012) also concluded that dependency on oil revenues impedes the ability of the economy to sustain GDP growth when oil income runs low and when oil resources are depleted. More precisely, Frankel (2012) found that resource rich countries face difficulties with the expected superior economic and social performance.

The evidence of the inverse (negative) relationship between natural resource abundance and poor economic growth was established by Jeffrey Sachs and Andrew Warner (1995) when they explored cross-country regression relationships between GDP per capita growth and the ratio of resource-based exports to GDP in 1970 (the base year) for a sample of 97 developing countries (after controlling for variables other studies have claimed to be



important in explaining cross-country growth<sup>2</sup>). They found that GDP per capita in mineral-rich countries from 1970 to 1990 increased 1.7 percent compared to 2.5-3.5 percent in mineral-poor countries. Figure 2.1 showed a negative relationship between a country's share of primary exports in GDP and its subsequent economic growth.



Source: Paltseva and Roine (2011).

Figure 2.1 Correlation between GDP growth and resource dependence

The share of primary exports in manufacturing exports appear at the horizontal axis, whereas the average GDP per capita growth appear at the vertical axis. Based on the World Bank (World Development Indicators database), primary exports consist of agricultural raw materials, fuel, ores and metals and food exports. The figure showed countries like South Korea, Hong Kong and Norway have high average GDP per capita growth and low share of primary exports in manufacturing exports. On the other hand, countries like Venezuela and Saudi Arabia have the opposite situation. Furthermore, in addition to the inverse (negative)

<sup>2</sup> According to Elsgard (2014) these control variables include the level of initial GDP in the countries analyzed, their openness policy, investment rates, human capital accumulation rates, changes in the external terms of trade, government expenditure ratios, terms of trade volatility, and the efficiency of government institutions.

correlation of resource abundance and economic growth, studies found an inverse correlation also between resource abundance and school enrollment, as well as between resource abundance and public education expenditures relative to national income (Emmerman, 2011).

#### **2.3.4 INDICATORS OF EXISTENCE OF THE RESOURCE CURSE**

Countries are not always cursed because they have extractive resources but rather because weak or/and corrupt governments have not been able to translate natural assets into prosperity for the-majority of their population (Ramdo, 2012). The most cited indicators of the existence of the resource curse are presented below:

- **INSTABILITY OF REVENUES GAINED**

Since the first commercially viable oil well was discovered in Titusville, Pennsylvania, USA in 1859, the race to find new sources of petroleum has been ongoing (Weinthal and Luong, 2006). Oil was the most important natural resource and the most precious, usable and important source of energy in the world. Despite that, it is regarded as one of the major causes of global warming and environmental degradation, but it is the valuable natural resource that has been associated with large per capita incomes. According to the International Energy Agency (IEA), in 2011 there were 115 countries producing oil around the world. It is the main source of revenue for many countries' economies. For example, oil and gas were the main sources of revenue at all Gulf Cooperation Council countries (GCC) that include Oman, the Kingdom of Saudi Arabia, the Kingdom of Bahrain, the United Arab Emirates, Qatar and Kuwait for the last four decades. Table 2.4 shows selected oil producing countries with GDP per capita and percentage of oil revenue in GDP in 2010.

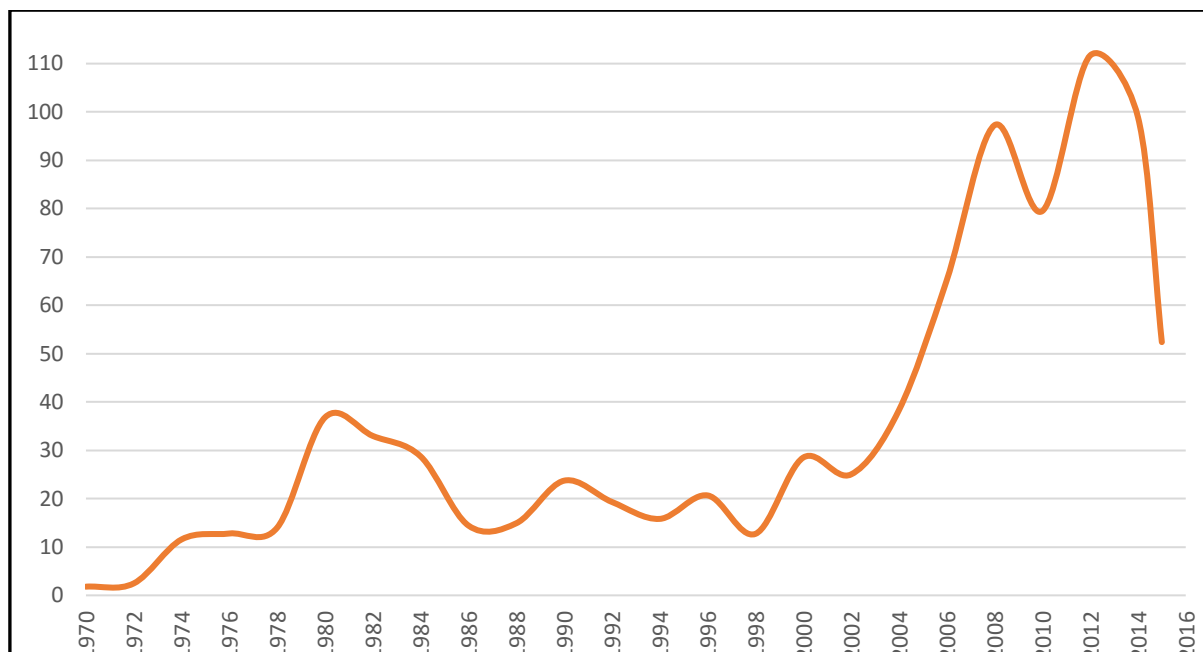
Table 2.4. Oil producing country shares of oil revenue in their GDP (2010)

Country	% of world oil production	GDP per capita (Million USD)	% of oil revenues in GDP
Russian Federation	13.28	23500	22
Saudi Arabia	12.65	31729	50
United States	9.97	49965	7.7
Venezuela	4.74	13485	20
Canada	3.90	42533	22
Mexico	3.56	16731	33
United Arab Emirates	3.32	42079	32
Kuwait	2.96	40500	45
Norway	2.79	65639	21
United Kingdom	1.78	36901	13
Qatar	1.44	83460	46
Oman	0.95	29600	41
Libya	0.85	12300	25
Bahrain	0.06	24996	24

*Source: The World Bank: World Development Indicators, Revenue Watch Institute and International Energy Agency (IEA).*

Generally, the instability of revenues from natural resources is a result of variation in the rate of extraction, variation on the payments (taxes) paid to state (government) by the extraction companies, and mainly the exposure to global commodity market swings, specifically in the prices of non-renewable resources like oil (Ramdoo, 2012). According to Emmerman (2011), world supply and demand can fluctuate quickly and unpredictably for several reasons including war, politics, technological advance, and in the case of mineral commodities, discovery of new reserves. This can be seen in the fluctuation of oil prices over different years. For example, the oil prices rose from 1.8 USD per barrel in 1970 to 11.5 USD per barrel in 1974 and it fell from 36.8 USD per barrel in 1980 to below 15 USD per barrel in 1986. In the decade from 1998 to 2008, it rose from 14.9 USD per barrel to 97.2 USD per barrel. In July 2008, the prices of made a significant decrease reaching below 60 USD. On January 2011, the Brent price hit 100 USD per barrel for the first time since October 2008 due to concerns about the ‘Arabic Spring’<sup>3</sup> in many countries (Tunisia, Egypt, Syria, Oman and Yemen). In mid 2014, the oil prices fell dramatically from around 99 USD to 52.39 USD per barrel (Figure 2.2).

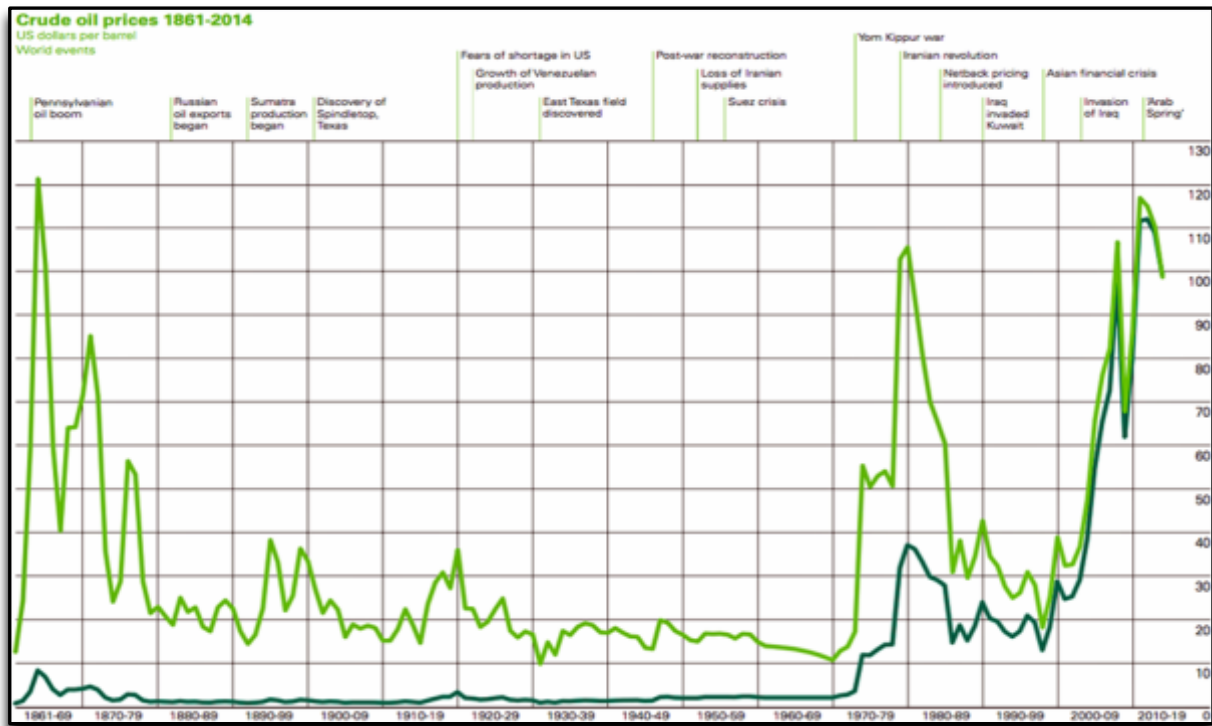
<sup>3</sup> The Arabic Spring was a series of anti-government protests, uprisings and armed rebellions that spread across the Middle East in early 2011.



**Source:** British Petroleum (BP) Statistical Review of World Energy (2015).

Figure 2.2 Instability of oil prices for the period (1970-2015).

That uncertainty of oil prices leads to volatility in government expenditure on social spending and infrastructure. It also, made most of the oil-dependent economy fail to generate stable and sufficient income for the population and made government planning difficult. Hausmann and Rigobon (2003, p.10) showed that a shock to the price of oil has a significant effect on GDP. (One standard deviation shock to the price of oil represents an income shock equivalent to 6 percent of GDP.) Figure 2.3 shows more broad instability of oil prices and its causes for the period 1861 to 2014.



*Source: British Petroleum (BP) Statistical Review of World Energy (2015). The dark green line in the chart indicates the USD today values.*

Figure 2.3 Crude oil prices (1861-2014)

- **LIMITED JOB OPPORTUNITIES**

Job opportunities are relatively few in oil-dependent countries. Although the oil sector is the world’s most capital-intensive industry (Elsgard, 2014), it is not labor-intensive, and offers only limited employment opportunities (employs only about one percent of the global workforce and less than 10 percent of a country’s total workforce). Even in countries where the sector is strong, employment figures are still low. For example, employment in the oil and gas sector is only as high as 1.5 percent in Saudi Arabia (UNCTAD, 2012). Hvidt (2011) concluded that oil-dependent countries have failed to create job opportunities for the growing number of young and well educated citizens. Usually oil, gas and mining revenues quickly become more important than revenues from any other economic activity; thus, the concern for natural capital (if not well managed) tends to undermine concern for other types of capital essential to economic development, including human and social capital (Gylfason and Nganou, 2014). So, when labor demand in the oil sector increases, labor shifts from other manufacturing sectors to the oil sector. The problem with the oil sector is that it cannot adopt

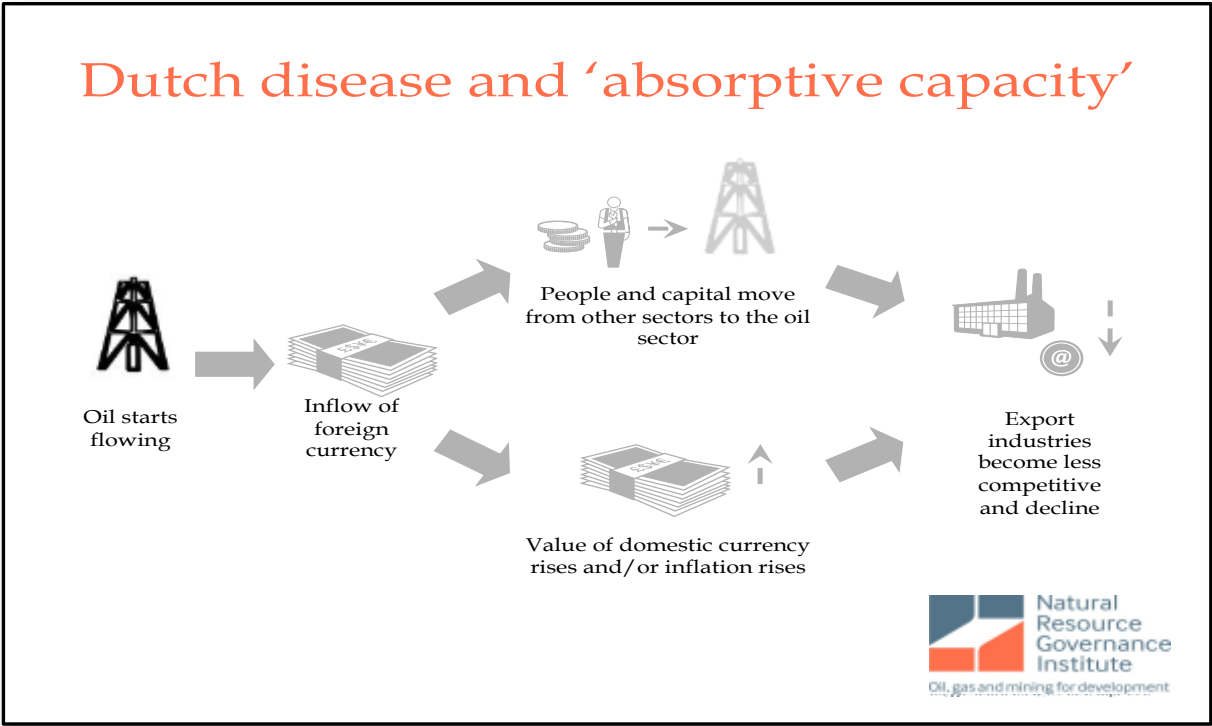
those shifts of labor because its demands for labor is limited. This will cause a decline in the manufacturing sector output in the short run and de-industrialization in the long run. In this context, Hidalgo et al. (2007) showed a comparison between job opportunities in the manufacturing of electronics, and those in the extraction of oil. They found that manufacturing of electronic products demands skills that can easily be employed in a large range of manufacturing (e.g. component assembly in a factory), whereas the extraction of oil demands skills that are more difficult to redeploy in other production areas (e.g. operation of a drilling oil rig only specific numbers of labor is required).

- **DUTCH DISEASE**

Natural resource endowment makes countries susceptible to Dutch disease. Dutch disease was the first and most common mechanism that was always linked with booms associated with the resources, especially oil and minerals. It remains the most famous explanation for poor economic performance (resource curse) found in many resource rich countries (Pegg, 2010). Dutch disease is a term originally coined to refer to the short-lived problems that the Netherlands faced in the 1960s when large natural gas discoveries in the North Sea eventually hurt the competitiveness of the Dutch manufacturing sector and created unemployment through a massive movement of workers from the manufacturing sector to the booming gas sector that payed higher wages. The term Dutch disease was used for the first time in an article in an English journal called "*The Economist*" dated November 26, 1977, that tried to describe a certain phenomenon known as the "*Hollandis Syndrome*" or simply the "*Dutch disease*" (Bature, 2013). Resource rich countries that similarly experience a decline in pre-existing domestic sectors of the economy are now said to have caught the "Dutch disease" (Ebrahim- Zadeh, 2003).

The Dutch disease theory existed long before the situation was brought to light, as Corden (1984) explained. The abundance of gold in Australia, the growth of capital in Switzerland and the growth of gold in Spain and the United States of America in the 16th century, were situations or elements that constituted Dutch disease. Stevens (2003) explained the Dutch disease simply as "*the contraction of the tradable sector*", and Al Dagheiri (2008) explained it in more detail as "*a situation where a rapid inflow of resource revenues result in high domestic absorption, thus causing appreciation of the domestic currency*". Crain (2010) also summarized the Dutch disease as "*an effect on the domestic economy in which resource*

booms generate higher revenues, currency appreciation and a higher demand for trade-able and non-tradable goods” (Figure 2.4).



Source: The Natural Resource Governance Institute.

Figure 2.4 Dutch disease theory

According to Corden and Neary (1982) and Neary and Wijnbergen (1985), Dutch disease has two different channels for spreading and affecting the economy: the resources movement effect (or resource pull effect) and the spending effect. The resources movement effect happens when the booming sector increases profitability in the resource sector and attracts the capital and labor away from the manufacturing sector. Such resource reallocation has been called "resource movement effect" and it results in a decline in the competitiveness of other economic sectors (such as agriculture and manufacturing). The labor shift into the non-tradable sector accelerates domestic inflation, which is responsible for the appreciation of the real exchange rate (Weinthal and Luong, 2006). The spending effect happens when the boom sector increase the economy’s real income, then the demand in the non-traded goods and services increase. This leads to an increase in their prices, and as labor shifts to the booming sector with higher wages, governments are able to spend more. Since the price of tradables is determined on the international markets, this extra spending raises the relative price of non-

tradable, resulting in a further appreciation of the real exchange rate. The increase in the real exchange rate happens because its real value is the function of the ratio of domestic price to international price level. As mentioned earlier, the traded goods prices are set by the international market and not by the domestic market, so an increase in the price of the non-trading sector would lead to an increase in the real value of the exchange rate. That appreciation of the exchange rate would reduce the international competitiveness of the manufacturing sector market and in consequence the manufacturing sector would decline and cause further de-industrialization. Additionally, this appreciation makes it difficult for the other sector to export because its products are at high prices so it will not be able to compete (Fardmanesh, 1991; and Humphreys et al., 2007). This situation forces imports of goods and services to rise (Boamah, 2013).

Paltseva and Roine (2011) found that having natural resources takes away incentives to develop other areas of the economy which are potentially more important for long-term growth. Al Saqri (2010) concluded that countries with abundant natural resources (minerals in-particular) suffer from four major symptoms of Dutch disease: first, increase in the exchange rate; second, decline in the manufacturing sector; third, boom in the services sector; and forth, labor shift from the manufacturing sector to the services sector and the resource extraction sector. Furthermore, Torres et al (2013) considered the disincentive for entrepreneurship, the decrease in savings and physical investment, and lower investment in education and human capital as other symptoms of the Dutch disease.

Many resource rich countries like Norway, Australia, Venezuela, Great Britain, Mexico and Nigeria have experienced the Dutch disease. Bategeka and Matovu (2011) showed the cases of Great Britain and Nigeria when they got Dutch disease in the 1970s. He stated that 1970s Great Britain had the symptoms of Dutch disease when the prices of oil quadrupled and it became economically viable to drill for North Sea oil off the coast of Scotland. By the late 1970s, Britain had become a net exporter of oil; it had previously been a net importer. The Pound soared in value, but the country fell into recession when British workers demanded higher wages and exports became uncompetitive. Nigeria also suffered catastrophically from the Dutch disease in the 1970s, when oil prices boomed, resulting in a severe contraction in Nigeria's agriculture, which was a highly trade able sector. In addition, Weinthal and Luong (2006) mentioned the case of Equatorial Guinea - one of Africa's newest oil producers - that illustrates how fast Dutch disease effects can transform the domestic economy, when the contribution of cocoa and coffee declined from approximately 60 percent of GDP in 1991 to less than 9 percent in 2001. Whereas countries like Norway, Australia and Great Britain



managed to diversify their economies to overcome the negative effects of the Dutch disease, Venezuela, Mexico and Nigeria have still not succeeded.

- **CORRUPTION AND RENT SEEKING**

There is an adage that states “Easily available windfall rents tend to create a feeding frenzy” and the governments in oil-exporter countries prove it by preferring non-transparent methods of deploying resource rents which creates opportunities for rent-seeking behavior, which is an important factor in determining a country's level of corruption that lowers economic growth (Rouag and Stejskal, 2013 and Leite and Weidmann, 1999). People are said to seek rents when they try to obtain benefits for themselves through the political arena and prevent the redistribution of the rents to their rightful owners (Gylfason, 2006b). Barro (1999) found that oil has a negative impact on democracy and increases rent seeking, which is measured by corruption levels. Torvik (2002) presented a model for explaining the mechanism by which greater natural resources increases the number of entrepreneurs engaged in rent seeking and reduces the number of entrepreneurs running productive firms. This results in lowering the degrees of welfare and income for citizens.

Corruption is an ancient problem, with which philosophers, economists, political scientists and policymakers have grappled since the 4th century BC (Bardhan, 1997). Natural resource abundance tends to foster corruption, which is the antithesis of impartial government, as it maximizes private interests at the expense of the public. There is a popular belief in the literature of political science and political economy that oil rents are associated with corruption and state instability. According to the World Bank, corruption can be defined as “*the abuse of public power for private or personal benefit*”. It may take a variety of forms including bribery, extortion and diversion of resources to the governing elite. According to Anthonsen et al. (2009) ‘*human love of reward*’ was the common denominator used to explain corruption and corrupt behavior.

The common form of corruption in resource rich countries is that ruling elites hold the direct access to oil and gas revenues and use them as means to stay in power through patronage. Barro (1999), Pendergast et al. (2011) and Isham et al. (2005) found corruption was most pronounced for point sources such as oil and some minerals rather than diffuse<sup>4</sup> resources like agriculture, because they provide enormous surpluses of revenues and their

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<sup>4</sup> Elsgard (2014) defined the point source resources as those that are extracted from a geographically concentrated location and provide revenue that is easy to control and capture, like petroleum and hard minerals. Whereas, diffuse resources are resources which are less concentrated, like agricultural products and fish.

extraction is less labor-intensive. Barbier (2007) found that in many developing countries, resource rents are not generally channeled into productive investments, but are frequently dissipated through corruption. Ugur and Dasgupta (2011) conducted a meta-analysis of the empirical findings in 72 empirical studies on the relationship between corruption and economic growth. They indicated that corruption has a negative effect on per-capita GDP growth overall. They also found that corruption retards economic growth both directly and through a decline in human capital and worsening of public finance (Espinoza et al., 2013).

Emmerman (2011) described the development of corruption behavior among individuals and government officials, saying that they become distracted by the short-term gains presented by windfall rents instead of focusing on long-term development. He also mentioned that new leaders are generally more concerned with extracting as much profit for themselves as they are able in their limited time in office than with maintaining the rule of law. According to Ades and Di Tella (1999), Teorell (2007) and Arezki and Bruckner (2009), oil rents foster corruption, and the corrupt effects are reinforced by lack of transparency in the extractive sector and become institutionalized over time. That finding was supported by Bhattacharyya and Hodler (2010) who used panel data, covering the period 1980 to 2004, and 124 countries to test the theoretical prediction that natural resources lead to an increase in corruption. They confirmed that the relationship between resource abundance and corruption depends on the quality of the democratic institutions.

Moreover, Ugur and Dasgupta (2011) concluded that corruption is a symptom and outcome of institutional deficiency. Resource abundance is positively associated with corruption only in countries that have endured non-democratic regimes, because natural resources wealth hinders democracy by enabling political elites to stay long in power (Ross, 2001 and Lam and Wantchekon, 2002). Mineral wealth impedes democratic transitions and promotes the consolidation of authoritarian regimes (Weinthal and Luong, 2006). In addition, Mauro (1998) claimed that natural resource abundance is often associated with the emergence of politically powerful interest groups that attempt to influence politicians to adopt policies that may not favor the general public interest (Papyrakis and Gerlagh, 2004).

Universally, transparency is considered one of the most important factors in enhancing the contribution of FDI in natural resource countries to inclusive and sustainable development. FDI is a crucial ingredient of the global economy, is an important driver of technology transfer (spill-over effects or Multiplier effects), and has the potential to bring important collateral benefits to the rest of the economy. It also provides a shortcut to growth by precluding the many years it takes for a country to grow its own global companies.

Therefore, good governance in this regard includes enhancing the degree of transparency and accountability in taxes and other payments made by investors, controls to prevent corruption, and measures to enforce high environmental standards (Moran, 2001).

Transparency International is an independent organization which ranks countries on Corruption Perception Index (CPI). The index was first launched in 1995 and it is the most used indicator of corruption worldwide. It ranks countries based on how corrupt their public sector is perceived to be. Additionally, it increased the awareness of the issue of corruption at the global level and provides an incentive for governments to improve their position by fighting corruption in their public institutions. A country score indicates the perceived level of public sector corruption on a scale of 0 to 100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean. The CPI for selected oil rich countries at 2016 is shown in Table 2.5.

Table 2.5. Corruption Perception Index (CPI) and the Resource Governance Index (RGI) for selected oil rich countries 2016

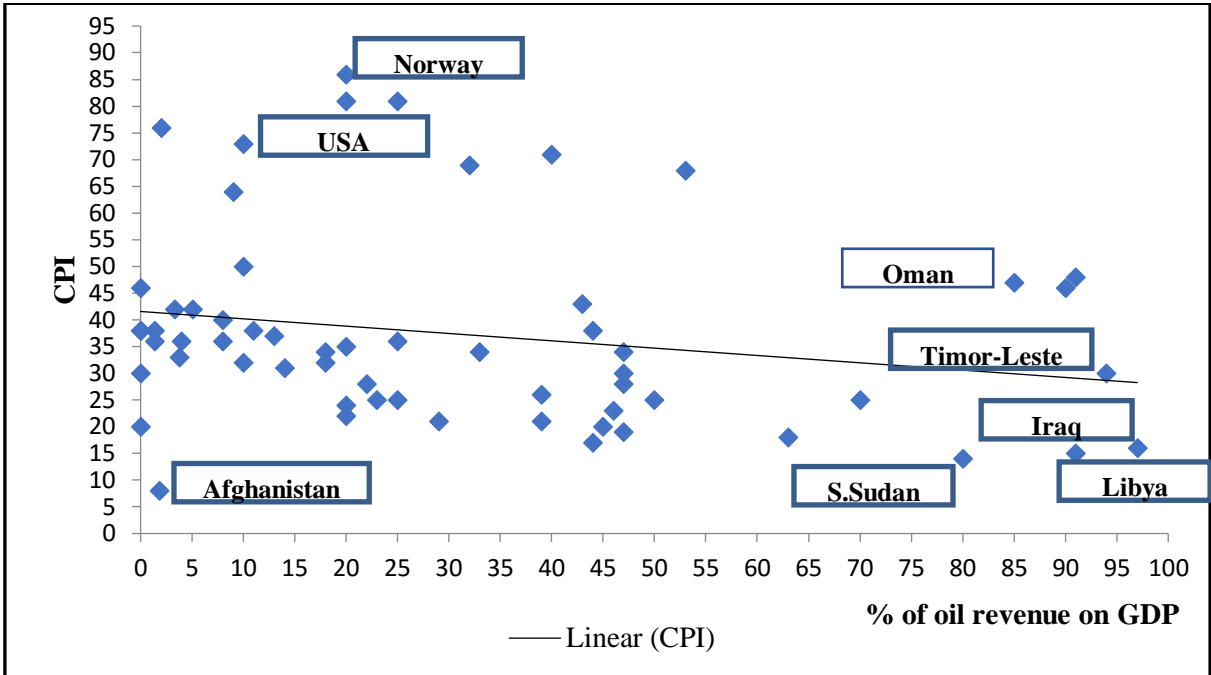
Country	CPI
Russian Federation	29
Saudi Arabia	46
United States	74
Venezuela	17
Canada	82
Mexico	30
United Arab Emirates (UAE)	66
Kuwait	41
Norway	85
United Kingdom	81
Qatar	61
Oman	45
Libya	14
Bahrain	43

Source: Transparency International, Corruption Perceptions Index (CPI) 2016

Note: The Corruption Perceptions Index (CPI) was measured on scale of 0 – 10 up to 2011. In 2012, the scale was updated to be from 0 -100.

Figure 2.5 shows a scatter plot of percentage of oil revenue on the GDP and CPI for 60 countries. Those countries produce 85 percent of the world’s petroleum, 90 percent of diamonds and 80 percent of copper, generating trillions of dollars in annual profits. Each point in the figure represents one country. The horizontal axis shows percentages of oil revenues on the GDP while the vertical axis shows the CPI. The regression line shows that the

larger proportions of oil revenues percentages on the GDP are associated with more corruption.



Source: Author own elaboration.

Figure 2.5 A scatter plot between percentage of oil revenue in GDP and CPI

- GOVERNMENT MISMANAGEMENT OF RESOURCES REVENUE AND EXISTENCE OF GOOD INSTITUTIONS**

Abundance of natural resources should accelerate economic development because it increases exports so that more revenues are generated and more capital goods can be imported to build up the economy. The level of dependence on oil revenues by government and its management has been a key indicator of prosperity (Al Abduwani, 2012), because mismanagement and corruption have many appearances and can have dire consequences (Revenue Watch Institute). Therefore, resource revenue management should aim to turn the revenues to unmitigated blessing, through converting them to finance capital for sustainable development of local communities. It also reflects the view that the resources belong to the nation (Holden, 2013, p.870). Resources mismanagement is the basis for inactive economic growth and political instability (Abubakar, 2015). Acemoglu et al. (2001) found that a ruling elite is not interested in developing institutional infrastructure to regulate and tax a productive economy

outside the resource sector. Also, Weinthal and Luong (2006) mentioned that the ease of financing state expenditures provides no incentives for government officials to build good institutions. All that brings to fore the need for improvement of the governance of natural resource investments by strengthening institutions, combating corruption and enhancing transparency.

According to McPherson and MacSearraigh (2007, p.194), good governance has several dimensions, including clear and stable laws, rule of law, competent tax administration capacity, budgetary controls and open dialogue between government and society. According to the Natural Resource Governing Institute, governments usually keep their citizens and civil society leaders in the dark regarding government contracts and resource revenues, as the Revenue Watch Index<sup>5</sup> (2010) shows that about three-quarters (29 out of 41) of the countries provide scant or partial information about their extractive sector. This means that citizens are missing essential information to know how much their governments are profiting from the exploitation of state-owned natural resources. Weinthal and Luong (2006) mentioned that International Financial Institutions (IFI) and Non-Governmental Organizations (NGO) have combined different forces to promote transparency, accountability and public involvement in the management of petroleum revenues. For example, they encourage countries to provide the public with accurate information about revenues received and spent. They have pushed for foreign extractive firms (for example, multinational oil companies) to publish what they pay to host governments. They have urged governments in mineral rich states to disclose all their transactions with foreign extractive firms and their expenditures. Finally, they have sought to increase opportunities for public involvement in deciding how revenues will be spent through advocating improved human rights protection and encouraging a free press.

The Resource Governance Index (RGI) is used to measure the quality of governance in the oil, gas and mining sectors of 58 countries. The Index assesses the quality of four key governance components: institutional and legal setting; reporting practices; safeguards and quality controls; and enabling environment. It also includes information on three special mechanisms used commonly to govern state-owned oil, gas and minerals companies, natural resource funds, and sub-national revenue transfers. The Index assigns a numerical score to each country and divides them into four performance ranges: satisfactory (71-100), partial (51-70), weak (41-50) and failing (0-40). Table 2.6 shows RGI composite score (out of 100)

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<sup>5</sup> Revenue Watch Index is a pioneering measurement of government disclosure in the management of oil, gas and minerals. It ranks transparency in 41 countries among the world's top producers of petroleum, gold, copper and diamonds. It is created by Revenue Watch Institute in partnership with Transparency International.

for selected oil rich countries from 58 countries in 2013. As can be seen, Norway has the best score of 98 in RGI compared to Libya with only 19 out of 100.

Table 2.6. RGI composite score for a selection from 58 oil rich countries in 2013

Country	RGI (out of 100)
Norway	98
United States	92
United Kingdom	88
Mexico	77
Canada	76
Russian Federation	56
Venezuela	56
Bahrain	47
Kuwait	41
Saudi Arabia	34
Qatar	26
Libya	19

*Source: Natural Resource Governing Institute. Resource Governance Index (RGI) 2013*

Investments account for 41 percent of the indirect negative impact of natural resources on growth (Papyrakis and Gerlagh, 2004) as it can bring huge inflows to governments, but such inflows, without transparent management, can lead to corruption and conflicts that exacerbate poverty rather than reduce it. Good governance of local institutions is also needed to use revenue resulting from FDI for poverty reduction, growth and development (Dasgupta, 1999). Good institutions<sup>6</sup> are extremely important for economic prosperity, because government institutions are responsible for where the country revenues come from, and how and where they are redistributed. An economy is well served by businesses that are run honestly, and in which managers abide by strong ethical practices in their dealings with the government. For example, owners of land, corporate shares, and even intellectual property are unwilling to invest in the improvement and upkeep of their property if their rights as owners are insecure. Therefore, institutional environment forms the framework within which individuals, firms, and governments interact to generate income and wealth in the economy. It has a strong bearing on competitiveness and growth and plays a central role in the ways in which societies distribute the benefits. The importance of institutions is not restricted to the legal framework (Schwab, 2015, p.35).

<sup>6</sup> According to Boschini et al. (2007) institutional quality is an average of the indexes for bureaucracy, corruption, rule of law, risk of expropriation of private investment and repudiation of contracts by government.

Institutions quality not only affect the economic prospects of nations but are also central to the distribution of income among individuals and groups in society. Recent researches showed that institutions are of great importance and vital in the process of development and economic growth of the countries. For example, cross-country regressions by Mehlum et al. (2006b) showed the effect of institutional quality on average GDP growth from 1965-1990. They concluded that when institutions have a good performance, resources play a positive role in growth. Rodrik and Subramanian (2003) found that the divergence of per capita of GDP around the world is closely linked to the difference in the quality of institutions. Quality of institutions are often measured by the extent to which governments are effective in promoting respect for the rule of law, contract enforcement, and the protection of property rights (Looney, 2009). Therefore, countries that possess good institutions encourage investment in physical capital and human capital and high technology can improve the performance of its economy and provide welfare for its residents. Acemoglu and Johnson (2003 and 2005) indicated that good institutions have three key characteristics (1) enforcement of property rights for a broad cross section of society, so that a variety of individuals have incentives to invest and take part in economic life, (2) constraints on the actions of elites, politicians, and other powerful groups, so that these people cannot expropriate the incomes and investments of others or create a highly uneven playing field (3) some degree of equal opportunity for broad segments of society, so that individuals can make investments, especially in human capital, and participate in productive economic activities. Finally, it is important that the right legal framework is put in place while institutions are strengthened to allow for transparency and accountability in the economy (Humphreys et al., 2007).

- **EXAMPLES OF CURSED COUNTRIES**

The most often cited examples of curse countries are Nigeria, Nauru and Venezuela. Nigeria (the world's seventh largest oil producer) seemed to be the prime example of the natural resource curse, because although it has enjoyed huge oil windfalls since the late 1960s, but that incredible oil wealth was wasted and has failed to generate growth. The country is seriously suffering from serious abuses of power, mismanagement of its resources and unbridled corruption that has thrown the country into political and economic quagmire since independence in 1960 (Ogundipe, 2011). Sala-i-Martin and Subramanian (2003) examined the impact of resource abundance in Nigeria and they found that corruption and wastage induced by resource abundance contributed to poor performance of the economy. According

to Mahler (2010), fifty years of substantial oil production in Nigeria have not resulted in sustainable socioeconomic development, as the national social and transport infrastructure were in a desolate condition, and the country is marked by chronic internal instability and incessant, violent conflicts over resource revenues. In addition, agriculture has degraded to the extent that the country now imports agricultural products (Abubakar, 2015) and the poverty rate is extremely high; the number of people living on less than one USD a day has increased from 30 percent before oil was discovered to 70 percent in 2001 (Gylfason, 2001b).

The Republic of Nauru- one of the smallest independent states in the world- is a single raised coral island in the western Pacific, and is an extreme example of the resource curse. In the late 19th century, commercial deposits of phosphate were discovered and its highly profitable export gave the country the second highest per capita income in the world in the late 1960s and the 1970s. The accessible phosphate on the island is now effectively exhausted, and over the past decade the island's story has been considered a history of both tragedy and farce, because of corruption and poor investment advice. The island moved from considerable affluence to poverty, and has become heavily dependent on aid. The public service salaries cannot be paid and the basic functions of the state have collapsed. The local people are left with a narrow, environmentally precarious rim of land circling a wasteland where the open-pit phosphate mine operated (Connell, 2006).

Venezuela has the largest proven petroleum resources in the world and ranked among the ten wealthiest nations at the beginning of the last century (Elsgard, 2014). Its vast oil reserves did not prevent its continuous downward spiral. It is considered to be one of the world's most significant development failures as its poverty and inequality increased (Rodriguez and Sachs, 1999 and Jones, 2002). Elsgard (2014) concluded that Venezuela ranks among the worst-governed countries in the world, particularly in its failure to control corruption, and provide regulatory quality and rule of law.

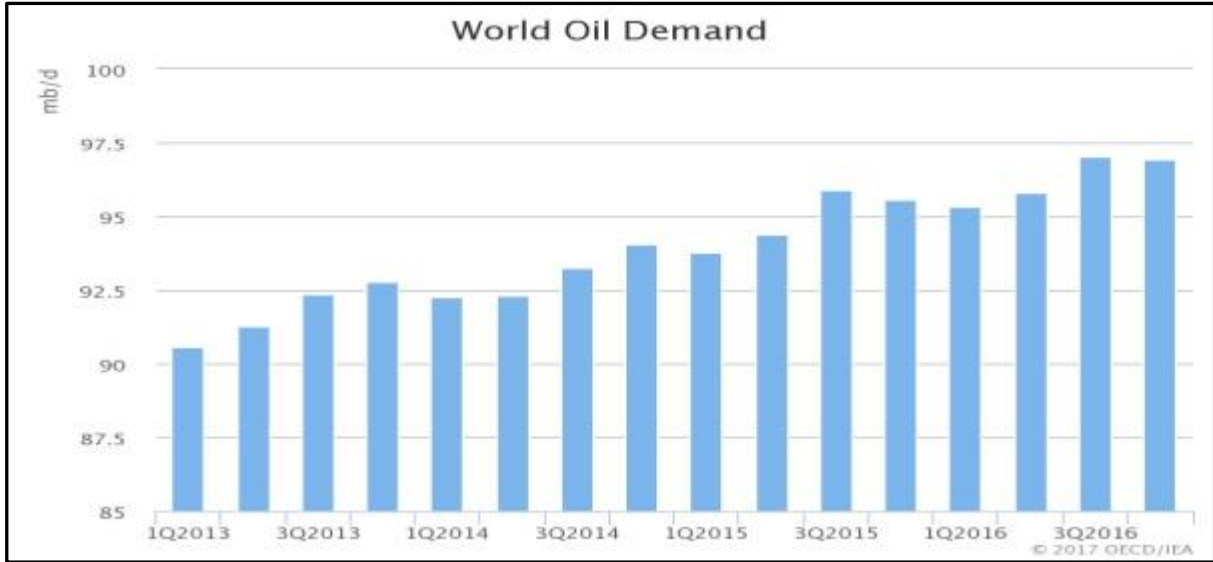
On the other hand, Limi (2006) showed the case of Botswana as an example of a country that had escaped from the resource curse. Botswana, rich in many natural resources including diamonds, has experienced stable economic growth for several decades. In 2002, Botswana exported two billion dollars' worth of diamonds, nickel, gold, and other natural resources. Through good governance policies, strong political leadership, and a sound long-term development plan, Botswana has seemingly avoided the effects of the resource curse, and provides quality public services such as education and healthcare to its citizens. The case of Botswana proved with what Elbadawi and Gelb (2010) concluded: that the existence of the curse is conditional on bad governance. Robinson et al (2006) and Bhattacharyya and Hodler



(2010) agreed with them as they found that the curse of resources is dependent on certain contextual circumstances. For example, resources can be a curse in situations when there is absence of good institutional, legal and policy frameworks.

**2.4 IMPORTANCE OF ECONOMIC DIVERSIFICATION**

Energy resources in general, and oil in-particular, are of vital importance to many countries because they depend on them as a main source of revenues, and as drivers of industry and agriculture, as well as support for human development in all its social, economic and environmental dimensions. Robust global demand and improvement in exploration technologies for natural resources (especially oil), suggest that they are likely to constitute a bigger share of many countries’ national revenues and exports, and the resources extraction (especially oil) is vastly more lucrative than other industries (Abubakar, 2015). Therefore, oil still plays a key role in satisfying energy needs for many countries, even though they try to decrease their dependence on it through finding alternative sources (solar, hydro and wind energy) to meet their energy needs and revenues. It has gained the greatest importance as the demand for energy has kept on increasing with population growth and industrial development (Al Abduwani, 2012). The world oil demand continues to increase, and reached 69.9 million barrel per day in the third quarter of 2016 (Figure 2.6).



*Source: International Energy Agency: Oil Market Report*

Figure 2.6 World oil demand (1Q2013-3Q2016)

Generally, reliance on oil revenues can lead to two types of future risks: firstly, the risks of disorder and severe fluctuation in oil prices (linked to economic factors and sometimes political); and secondly, the risk of depletion of oil resources (Al Sudairy, 2014). Commonly the negative impacts of dependence on oil are as follows:

- The income flows from oil revenues tend to diminish with the gradual decline in production levels and then it completely drops out with the depletion of the oil reserves in the future.
- Oil prices in the global market fluctuate due to external geopolitical factors which cannot be predicted or locally controlled.
- External shocks usually lead to decline in government revenues and weakening of government expenditure.
- Oil activities are capital-intensive, which provides few employment opportunities relative to the revenues it produces.
- Petroleum activities are not conducive to growth in other sectors because it has limited backward and forward relationships, especially when most of its production is directed for export.
- The growth of oil revenues and its spending locally lead to the phenomenon of Dutch disease, which leads to the flourishing of non-tradable sectors like services, and weakens the activities of tradable sectors like industry and agriculture. It also leads to the appreciation of the currency exchange rate due to the increase in local spending because of increased revenues. This decreases global competitiveness of tradable sectors.
- The acquisition of oil wealth revenues by the government - as the owner of natural resources in the country –enlarges the government role in the economy through spending on social services, provision of infrastructure and support and subsidies for the citizens and the private sector. As a consequence, the role of the private sector is narrowed and weakened, which in turn weakens the efficiency of the economy.

All preceding reasons make the diversification process difficult. Alsharif et al. (2016) found a strong negative correlation between oil dependency and economic diversification. At the same time, fluctuations of oil prices affect all countries, whether they are rich or poor, because the world markets all rely on productivity and supply of goods whose costs are consequently affected. In addition, high levels of youth unemployment, societal demands for change, and

political instability and conflicts make the need for urgent and sincere economic diversification in resource rich countries.

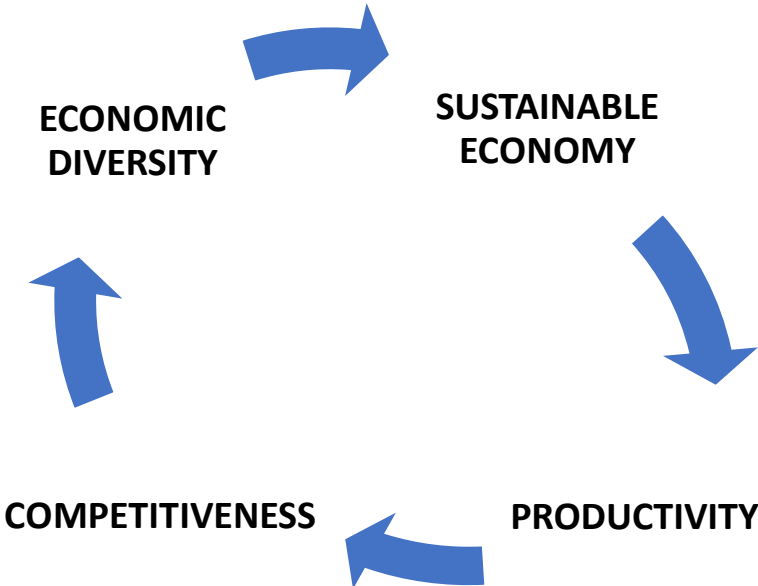
Historically the question of economic diversification dates back to 1930, when MacLaughlin exposed his pioneering work about this issue (Alaya, 2012). According to Hashim (2010), economic diversification is not an isolated process and its theory is derived from development economics which deals with the topics of development planning and policies. Economic diversification is a very broad term and several scholars have defined it over time, among them Rodgers (1957), who defined it as "*the extent to which the economic activity of a region is distributed among several categories*". The definition has been updated throughout the literature, such as in that of Attaran, (1987) who defined it as "*the presence in an area of a great number of different types of industries*". Among other updated definitions are; "*The process of becoming less dependent on one or few commodities*" and "*the process in which the economy becomes more diverse in terms of goods and services it produces*" (Vos and Koparanova, 2011).

Economic diversification is often presented as a desirable policy objective and remains a key policy agenda for many resource rich countries (Alsharif et al., 2016). According to Papageorgiou and Spatafora (2012) economic diversification is a longstanding ambition for resource rich countries and is often regarded as an effective means of counteracting the resource curse (Wiig and Kolstad, 2012). Additionally, it has been counted as one of the most frequent long-term strategies for economic growth (Collier and Venables, 2008; and Gelb, 2010) as it directs economic activity away from excessive reliance on primary production. In addition, it could bring new skills and technology to the economy with long term benefits (Alsharif et al., 2016). Furthermore, it is one of the fundamental long-term goals of development and can make growth more broad-based (Vos and Koparanova, 2011). It aims to achieve a good balance between economic growth and economic stability, reduce poverty and equity, and increase employment creation (Wagner and Deller, 1993; Khem, 2008; and Bhaskaran, 2010). Titulaer (2010) found that it is important that more than one sector drive economy growth to ensure long-term growth. Osakwe (2007), Kaulich (2012) and Fraser (2014) stated that diversification can make a country less prone to negative economic external shocks, and it is key to long term effective development.

Additionally, Imbs and Wacziarg (2003) studied the patterns of sectors concentrated across countries and found that income increases as the economy becomes more diversified. Their findings agreed with Parteka and Tamberi (2008) and De Benedictis et al. (2009) who conclude that an increase in the level of diversification is always accompanied by growth.

Economic diversification increases the productivity and competitiveness of different economic sectors, which enhances real abilities within the framework of global competitiveness, especially the industrial sector, thus increasing the chances of foreign trade.

Abouchakra et al. (2008) concluded that economic diversification can lead to sustainable economy, as they found a relationship between economic diversification, productivity and competitiveness. Thus, poor economic diversity is linked to low productivity and competitiveness, and low productivity levels translate into high costs to produce goods and services. That in turn has a direct negative effect on competitiveness, slowing economic growth and threatening a nation's long-term and sustainable economic development (Figure 2.7).



*Source: Author's own elaboration.*

Figure 2.7. Relationship between economic diversification, productivity and competitiveness

Similarly, Kenji and Mengistu (2009, p.65) suggested the following channels through which diversification may influence growth or income:

- By considering it as an input (production factor) that has an effect on improving the efficiency of other factors of production.
- Through spread of investment risks over a wider range of economic sectors.
- Through the positive contribution to Total Factor Productivity (TFP) growth.

- Through the existence of economies of scope in production that exist when the same inputs generate greater per-unit profits when spread across multiple outputs rather than dedicated to one output.
- Through forward and backward linkages (provide stimulus for the creation of new industries and expansion of existing industries elsewhere in the economy).

A study by Booz Allen Hamilton company (2014) concluded that transition from an oil-centric to a diversified economy is a complex undertaking and no single government agency or private-sector organization can carry it out on its own. It will impact cultural norms regarding entrepreneurship, competition, employee responsibility and accountability, and the respective roles of the public and private sectors. Therefore, it will require changes in regulatory policies, business structures, and education and training. Also, Esanov (2011) and OECD (2010) concluded that countries seeking to diversify their economics must have sufficient levels of human and physical capital as well as an adequate infrastructure, which help facilitate trade, productivity and innovation that support diversification policies.

Therefore, decision-makers in some oil rich countries have implemented different policies or long-term visions aimed at shifting the economy away from the oil sector. They have implemented policies based on developing and qualifying human resources and making high value-added products. The outputs of such policies will be a creation of new jobs and an increase in competitiveness.

Economic diversification processes have two main forms (streams): production diversification and export diversification. Diversification of markets for exports and the diversification of income sources away from domestic economic activities are other forms of economic diversification (Zhang, 2003). Due to higher income and employment benefits of export growth and diversification, most developing countries liberalized trade and started export-oriented policies (Tsivadze, 2011).

#### **2.4.1 IMPORTANCE OF EXPORT DIVERSIFICATION**

To start discussing the importance of export diversification, its better first to highlight the importance of exports at general. According to Dollar and Kraay (2001), exports are important for growth and development, and higher sustained economic growth is associated with export growth (expansion of exports in volume and value). Exports are important to countries because they are a source of foreign exchange, exploit large scale economies by

producing for export markets, and potentially contribute to employment and growth of national product (Samen, 2010a). In addition, exports help to expand the market size in terms of sales volume, improve technological level for production, and reduce the dependence on the local consumer's base size (JICA, 2005). Moreover, increased exports enable countries to generate more revenue and afford the buying of more imports, which expand consumer choice and lower the prices (Tshivadze, 2011). UNDP (2011) demonstrated that exports constitute a significant and growing share of GDP for most developing economies (over 66 percent of developing countries have an export share exceeding 20 percent of their GDP).

Despite all, but an increased dependence on undiversified exports results in significant fluctuations in export earnings due to the cyclical fluctuation in international commodity prices (Alemu, 2016, p.7). Consequently, significant fluctuations in export earnings result in fluctuations in economic growth, because the export revenue volatility is strongly linked to growth volatility. Therefore, export diversification aims at mitigating these risks, including the volatility and instability in export earnings—which in turn have adverse macroeconomic effects on growth, employment, investment planning, export capacity, foreign exchange reserves, inflation and debt repayment (Samen, 2010b).

Therefore, the role of export diversification that spurs economic growth in developing countries has received considerable attention in development literature over the last 50 years (Samen, 2010b). For example, Vernon (1966), Krugman (1979), Grossman and Helpman (1991), De Pineres and Ferrantino (1997) highlighted the link between export diversification and development. Ekanayake (1999) analyzed the causal relationship between export growth and economic growth using the co-integration and error-correction method, and found that correlation exists between export growth and economic growth. Al Marhubi (2000) used different measures of export diversification on a cross-country sample of 91 countries and data for the period of 1961-1988, and presented empirical evidence that export diversification promotes economic growth. Mathee and Naude (2007) provided empirical evidence on the relationship between export diversity and regional growth in South Africa.

#### • **DIMENSIONS OF EXPORT DIVERSIFICATION**

Generally, export diversification is “*the export of any goods or services other than oil*” (McNulty, 1984). More precisely, Ali et al. (1991) defined it as “*Policies intended to change the shares of commodities in the existing export basket, through introducing new products in the export mix, and/or breaking into new export destinations*”. In addition, Besedes and Prusa (2008), Cadot et al. (2011) and Brenton and Newfarmer (2007) described export

diversification as “*The export of currently exported product varieties to new markets*”. Recently the United Nations defined it as “*The creation of economic growth from multiple sources within an economy as opposed to one*” (OECD, 2010). According to Dogruel and Tekce (2011) and Samen (2010b), export diversification has several dimensions and can occur either horizontally (also called extensive margin), vertically (also called intensive margin) or diagonally (using imported goods to produce manufactured products for exports).

Horizontal diversification (extensive margin) is the increase in the number of export sectors (Matthee and Naude, 2007), and it takes place within the same sector (primary, secondary or tertiary), through finding of new opportunities for new products within the same sector, like mining and energy. Furthermore, it entails adjustment in the country’s export mix by adding new products to the existing export basket (products they export) within the same sector (e.g. production of off-season crops, as in the case of flowers exported from Kenya, Uganda and Ethiopia), in the hope of mitigating adverse economics to counter international price instability or decline and political risks (Herzer and Nowak-Lehmann, 2006 and Samen, 2010b). According to Balavac (2012), diversification of exports on the extensive margin could be achieved along the geographic dimension (when a product is exported to new markets) and along the quality dimension (by improving the quality of existing products). The problem linked with this type of diversification is that the economy heavily relies on the same sector, and the risk of uncertainty still exists.

Vertical diversification (intensive margin) entails adding more stages of processing of domestic or imported inputs (a shift from the primary to the secondary or tertiary sector). The growth of exports is in goods that are already being exported, or “old products”. In addition, it entails contriving further uses for existing products by means of increased value-added activities such as processing, marketing or other services (as in the cases of Korea, China, and Malaysia). Vertical diversification can expand market opportunities for raw materials and help enhance growth and stability since processed goods generally have greater price stability than raw commodities. Finally, the diagonal diversification entails a shift from imported inputs into the secondary and tertiary sector (e.g. using imported goods to produce manufactured products for exports).

Requirements for successful horizontal and vertical export diversification can vary considerably in terms of skills and capital investments, technology, managerial competences and marketing skills (Samen, 2010b). Sustainable long-term export growth requires both horizontal diversification (e.g. adding new products on existing ones), and vertical diversification (e.g. moving from commodity manufacturing to higher value-added

manufacturing). In other words, the Sustainable long-term export growth can be achieved either by adjusting shares of commodities in the existing export mix or by adding new products to the export mix (Herzer and Nowak-Lehmann, 2006 and Samen, 2010b). Table 2.7 presents a summary of the dimensions of export diversification.

Table 2.7. Dimensions of export diversification

<b>Horizontal (Extensive margin)</b>	<b>Vertical (Intensive margin)</b>	<b>Diagonal diversification</b>
Takes place within the same sector (increase in the number of export sectors)	Takes place in different sectors (increase in the number of export lines)	Takes place in different sectors (from imported inputs into the secondary and tertiary sector)
Aim: adding new products to existing export basket	Aim: Increased value-added activities, adding more stages of processing of domestic or imported inputs and expand market opportunities for raw materials	Aim: shifting imported goods to produce manufactured products for exports).
Economy will be heavily relying on the same sector, and the risk of uncertainty remains	Export growth is mostly explained by the growth in the intensive margin.	
Both the horizontal and vertical types are positively correlated with economic growth and are targeted at attaining three interrelated objectives (stabilizing earnings, expanding export revenues and upgrading value added (Alemu, 2016, p.4).		

*Source: Author own elaboration.*

**2.4.2 MEASURES OF EXPORT DIVERSIFICATION**

Although it is still unclear how to measure diversification success or failure (Alsharif et al., 2016), there are various ways that have been identified to measure economic diversification levels and export diversification concentration and competitiveness. In the literature, the choice of a measure usually corresponds to different definitions, dimensions, forms, and levels of diversification. The most commonly used method is the diversification index. Measures for export diversification include export concentration ratio and export competitiveness (Samen, 2010b).

- **DIVERSIFICATION INDEX**

The diversification index is computed by measuring the absolute deviation of the trade structure of a country from world structure:



$$S_j = \frac{\sum_i |h_{ij} - h_i|}{2}$$

where:

- $h_{ij}$  = share of product (i) in total exports or imports of country or country group (j)
- $h_i$  = share of product (i) in total world exports or imports.
- The diversification index takes values between 0 and 1. A value closer to 1 indicates greater divergence from the world pattern. According to UNCTAD Hand Book of Statistics (2016, p.98) this index is a modified from Finger and Kreinin index (1979).

Theil and Gini indices are also used to measure export diversification. The Theil index is based on the following formula:

$$T = \frac{1}{J} \sum_{i=1}^J \frac{x_i}{\mu} \ln\left(\frac{x_i}{\mu}\right) \text{ where } \mu = \frac{\sum_{i=1}^J x_i}{J}$$

Where, ( $J$ ) is the total number of products, ( $\mu$ ) is the mean income and ( $x_i$ ) denotes the amount of exports of ( $i$ ) product. The Theil index is inversely related to a country's diversification level: the larger the index the lower the diversification level (Theil, 1967; and Minondo, 2011). The Theil index can be calculated for groups of individuals (export lines) and decomposed additively into within-groups and between-groups components (that is, the within- and between-groups components add up to the overall index). Furthermore, it allows the distinguishing of changes in overall concentration into extensive and intensive margin changes (Cadot et al., 2011) and has decomposability properties that make it especially useful (Cadot et al., 2013).

- Gini coefficients is a measure of statistical dispersion commonly used to represent the distribution of income (Bahar and Santos, 2016). It is also a useful measure of "relative" specialization (Cadot et al., 2011).

$$G = 1 - \sum_{k=1}^n (X_k - X_{k-1})/n,$$

where  $X_k = \sum_{l=1}^k s_l$  represents the cumulative export shares.

Gini coefficient values lie between zero (perfect equality) and one (complete inequality). A potential problem with using the Gini coefficient as a measure of specialization is that it places implicit relative value on changes in the middle parts of the distribution (Cowell, 2011).

- **EXPORT CONCENTRATION**

The Herfindahl index (also known as Entropy, Herfindahl Hirschman Index or HHI) is widely used for measuring market concentration. It is a method of summarizing the degree to which an industry is oligopolistic, and the concentration of market control held by the largest firm in the industry (i.e. it measures the country specialization). Export concentration reflects the degree to which a country's exports are concentrated on a small number of products or a small number of trading partners. A country that exports one product to only one trading partner has a perfectly concentrated export portfolio. Conversely, a country whose exports are comprised of a larger number of products and that trades with a larger number of trading partners has a lower Export Concentration Ratio (ECR) (i.e. has more diversified exports). Higher degrees of export concentration are strongly correlated with greater volatility in export earnings and economic growth rates. The Herfindahl index is calculated by summing the square of the share of product (i) in the export basket of a country ( $S_i$ ) within a certain year. The formula of the index is:

$$H_j = \sum_i (S_{ij})^2$$

Where ( $S_{ij}$ ) is industry (i) share in total export of country  $j$ , it measures how different the distribution of export shares is from a uniform distribution (i.e. it is a measure of "absolute specialization"). The values of the index are normalized to range between zero and one. So, a value close to one implies almost complete specialization in one industry and a value close to zero implies a high degree of diversification (Attaran and Zwick, 1987 and Shepotylo, 2009). The strength of the HHI index is that it is useful for understanding general direction of export

diversification, and its weakness is that it is uninformative about the composition of exports or their income potential.

- **EXPORT COMPETITIVENESS**

Countries can become more industrially competitive if they develop their technological capabilities, expand their production capacity and invest in their infrastructure (UNIDO, 2014). Abdmoulah and Laabas (2010) stated that sustaining gains in export competitiveness positions in international markets depends partly on the ability of the domestic economy to rapidly adapt to structural changes in global trade. According to Samen (2010a), export competitiveness is defined as “*the ability of a country to produce goods that meet the requirements of international markets*”. It can be assessed based on the evolution of country market shares and the real effective exchange rate. Also, Balassa (1965) suggested the Revealed Comparative Advantage (RCA) to capture the degree of trade specialization of a country. The RCA index of country  $i$  for product  $j$  is often measured by the product’s share in the country’s exports in relation to its share in world trade. RCA is expressed as follow:

$$RCA = (X_{ij} / X_{it}) / (X_{wj} / X_{wt})$$

Where  $(X_{ij})$  and  $(X_{wj})$  are the values of country (i) exports of product (j) and world exports of product (j), and where  $(X_{it})$  and  $(X_{wt})$  refer to the country’s total exports and world total exports. In general, if the RCA index is greater than 1 it indicates that the country has a comparative advantage in the world market, and if it is less than 1 it indicates that the country does not have a comparative advantage (Zhou, 2012).

### **2.4.3 DETERMINANTS OF ECONOMIC DIVERSIFICATION**

OECD (2010), through analyzing the diversification profiles and strategies of five African countries identified several key drivers that play a role in determining the economic diversification, such as good governance, existence of an active private sector, availability of natural resources, regional integration, broader international framework, institutional capacity and human resources development. Good governance involves designing and implementing policies to boost fledgling sectors, and ensuring that they can be developed in a favorable environment that allows them to flourish and contribute more to the economy. In addition, the role of the government is to take some action such as reform of customs procedures and

loosening administrative burdens for trade and opening markets with transparent business practices and stable regulatory frameworks, so that it is easier for manufacturers to export their products and import goods (OECD, 2010). Another role is to establish the regulatory framework that supports economic activity to ensure a healthy business climate and make investment in non-oil sectors more attractive (Sturm et al., 2008). Table 2.8 shows export regulations in some oil producing countries in 2014.

Table 2.8 Export regulations in some oil producing countries in 2014

Country	Documents to export (#)	Time to export (days)	Cost to export (USD per container)
Russian Federation	9	22	2615
Saudi Arabia	5	13	1055
United States	3	6	1090
Venezuela	8	56	3490
Canada	3	8	1680
Mexico	4	11	1450
United Arab Emirates	3	7	655
Kuwait	7	16	1085
Norway	4	8	1225
United Kingdom	4	8	1005
Qatar	5	17	885
Oman	7	10	745
Libya	7	23	1140
Bahrain	7	11	955
<b>Average</b>	<b>5.4</b>	<b>15.4</b>	<b>1362.5</b>

*Source: Doing Business (2014).*

The private sector should follow government initiatives, drive innovation and economic activity in under-exploited sectors, and take the lead in driving the agenda for diversifying the economy. That can be achieved by privatizing services such as water, electricity and health care (Sturm et al., 2008). Regional integration is an important strategy for facilitating trade and commerce. This includes reforms implemented to facilitate the processes of doing business (Table 2.9) that enables market access and improved export competitiveness as well as reforming customs administration systems to make it easier for entrepreneurs to transport their goods freely (Fraser, 2014). It also includes Spatial Development Initiatives (SDI) or Spatial Development Programs (SDP), which are usually trans-frontier in format and have transport corridors as their main component.

Table 2.9 Ranking on the ease of doing business and reforms implemented at some oil producer's countries (2014)

Country	Rankings of ease of doing business	Reforms implemented making it easier to do business from June 2012 to June 2013.
Russian Federation	92	Abolishing the requirement to have the bank signature card notarized before opening a company bank account.
Saudi Arabia	26	No reforms
United States	4	No reforms
Venezuela	181	Improved access to credit information by starting to collect data on firms from financial institutions.
Canada	19	No reforms
Mexico	53	Made electricity supply easier by increasing the efficiency of the utility's internal processes and by enforcing a "silence is consent" rule for the approval of the feasibility study for a new connection.
United Arab Emirates	23	Made electricity supply easier by eliminating the requirement for site inspections and reducing the time required to provide new connections.
		Made transferring property easier by increasing the operating hours of the land registry and reducing transfer fees.
		Strengthened investor protections by introducing greater disclosure requirements for related-party transactions in the annual report and to the stock exchange and by making it possible to sue directors when such transactions harm the company.
Kuwait	104	Strengthened investor protections by making it possible for minority shareholders to request the appointment of an auditor to review the company's activities.
Norway	9	No reforms
United Kingdom	10	Providing model articles for use in preparing memoranda and articles of association.
Qatar	48	Made paying taxes easier for companies by eliminating certain requirements associated with the corporate income tax return.
Oman	47	No reforms
Libya	187	No reforms
Bahrain	46	Improved access to credit information by starting to collect payment information from retailers.

*Source: World Banks; Doing Business index (2014)*

The broader international framework includes partnerships that could take effect in different ways including joint business ventures, investment and trade agreements, technology transfers and capacity-building for an improved business climate. Finally, institutional capacity and

human resources development act as enablers to facilitate supply chains and help unlock potential for diversification from resource-based and other sectors (OECD, 2010).

Moreover, Cherif and Hasanov (2014) concluded that change the incentive structure for workers and firms and change social attitude towards investment in human capital, entrepreneurship and employment in the private sector are essential factors for success in the diversification process. A model by Gylfason (2006b) that explained the interaction of diversification and economic growth along with other variables indicated that factors that are good for growth (such as saving and investment, education, macroeconomic stability, trade and democracy) also encourage economic diversification. Furthermore, Esanov (2011) conducted a time trend analysis for more than one hundred countries to identify the determinants of both economic and export diversification. He found the composition of exports in resource-dependent countries was poorly diversified and less technologically sophisticated than in other countries. Also, he showed that infrastructure and the quality of institutions are significant determinants of economic diversification and the country is in a better position to diversify its production base if it has a well-developed physical infrastructure and viable institutions. Another important finding was that FDI flows facilitate economic diversification, but have negligible effects on export diversification. ESCWA (2001); Al Kawaz (2008) and Hare (2011) robust that conclusion and summarized number of critical factors that help the success of diversification:

- Availability of human capital and the potential for skill development.
- The potential for specific non-oil based sectors to compete in the local and international market.
- Investing in human capital that responds to the needs of priority economic sectors.
- Creating an enabling business environment that would provide the conditions for the growth of the private sector away from hydrocarbon-based activities.
- Developing the quality of the government institutions to aid the diversification process.
- Providing information to local producers about new export opportunities.
- Support research and development activities.

#### **2.4.4 IMPACT OF TRANSPORT INFRASTRUCTURE AND LOGISTICS ON EXPORT DIVERSIFICATION**

Transport and logistics have important roles in daily life activities and the economic systems (Rantasila and Ojala, 2012). Generally, infrastructure is the basic requirement of economic development, and it covers the whole range of structures that are essential for an economy to operate smoothly. It includes transport, telecommunications, energy supply, water supply and waste disposal. Infrastructure and the quality of institutions are important driving forces for economic development, and important determinants of economic growth and economic diversification. As described by Schwab (2015, p.35), extensive and efficient infrastructure is an essential driver of international competitiveness, as it enhances trade –especially for exports– and has positive impacts on attracting FDI. Therefore, development of ports, airports, Industrial Estates and Free Trade Zones (FTZ) are backbone services in the manufacturing and re-exporting of goods. They have a bearing on initiatives aimed at expanding and diversifying exports. Well-developed infrastructure reduces the effect of distance between regions, with the result of truly integrating the national market and connecting it to the global markets and regions (Schwab, 2009, p.4). It is critical for ensuring the effective functioning of the economy, as it is an important factor determining the location of economic activity and the kinds of activities or sectors that can develop in a particular-economy.

In addition, the quality and extensiveness of infrastructure networks significantly impact economic growth and reduce income inequalities and poverty in a variety of ways such as education and health. In this regard, a well-developed transport and communications infrastructure network enable the less-developed communities to connect to core economic activities and schools (Rothman et al., 2015). Additionally, Limao and Venables (2001) concluded that infrastructure investments are important for export-led economic growth, which also supports private sector growth and facilitates trade. It also can play a critical role in development of new areas of export activity in the private sector (Nurse and Greene, 2014).

on the other hand, as it can facilitate trade, it also can be a major constraint affecting trade, when there is a poor infrastructure. Lack of infrastructure can also be a major constraint to exports and prevent local producers from expanding production of raw materials for export (Samen, 2010b). Also, poor infrastructure will make it difficult to attract domestic and foreign investment and thus present a significant obstacle to growth and development as well as to the economic diversification (OECD, 2010). Therefore, many developing countries have invested heavily in the provision of public infrastructure in support of export and trade activities.

- **TRANSPORT INFRASTRUCTURE**

Transportation sector, has a great influence on national and international integration in the world economic markets (Dwarakish and Salim, 2015). According to UNDP (2011) efficient transport infrastructure and port facilities are important elements in any successful export diversification policy. Good transport infrastructure (roads, railroads, ports, and airports) enable the transmission of goods to market in a secure and timely manner, and facilitate the movement of workers to the most suitable jobs. Gallup et al (1999, p.179) concluded that without access to a seaport, long distance from major trading centers involves higher transaction costs and significant constraints on international trade and therefore on prosperity. Finally, a solid and extensive telecommunications network allows for a rapid and free flow of information, which increases overall economic efficiency by helping to ensure that decisions made by economic actors consider all available relevant information (Rothman et al., 2015, p.5 and Schwab, 2015).

Improvement in international transport services is one of the main features of economic globalization as concluded by Sanchez et al. (2003, p.200). Reducing transaction costs can be achieved through efficient streamlined admissions of imports/customs clearance, shipping facilities or allowing export-oriented firms to import their manufacture inputs without paying the applicable duties or taxes. These regimes are designed to remove or reduce the tariff burden to give exporters access to their inputs at world prices and make exports more competitive on foreign markets (Samen, 2010b).

Furthermore, ports play an immense role in trade, and the quality of port logistics has an enormous impact on export competitiveness as well as on the country's competitiveness (Sanchez et al., 2003; and Dwarakish and Salim, 2015). Stalinska (2014) concluded that a country's integration into the Global Supply Chain (GSC) can be achieved through its ports. According to Parola and Sciomachen (2005), ports should facilitate efficiently and effectively the multiple modes of transport interconnected, because ports serve both directions of logistics operations: receiving goods from ships and moving them to land through road or rail and inland waterway modes, and receiving cargoes arriving by road/rail and waterways and moving them to ships (Stalinska, 2014).

Moreover, port infrastructure is critical for exporters to diversify into new areas of export activity as well as allowing intra- and extra-regional trade. Elements such as "port connectivity, infrastructure, storage facilities, size of ships, cargo volumes, transit times and positioning within international shipping routes, individually and collectively influence cost and competitiveness" (CARICOM, 2013). Efficiency in these services is a key component in



reducing transaction costs and enhancing the competitiveness of exports, and can help firms expand export more quickly.

- **GEOGRAPHICAL LOCATION AND LOGISTICS**

Different literature confirms that geographical location and proximity to marine ports are a comparative advantage and a great wealth of nations. For example, Malik and Temple (2009) showed the relationship between diversification and geographical location. They argued that landlocked countries are shelved away from access to shipping routes and this natural barrier to trade negatively affects their degree of diversification and trade. They used a sample of 70 developing countries and found that countries with proximity to large water sources such as rivers, seas and oceans, are associated with higher export diversification and minimal growth volatility. This evidence is also supported by Matthee and Naude (2007) who found an inverse relationship between export diversification and distance to export hubs in South Africa. Therefore,

On the other hand, policymakers globally recognize the logistic sector as one of the key pillars in international trade and development. In addition, it can reduce the non-tariff barriers and transportation costs for both importers and exporters, can play role in the diversification process, has the potential to fill in a substantial part of the GDP, and can create numerous jobs opportunities (Guerrero et al., 2010). Therefore, logistics is increasingly recognized as a major driver for economic growth through creating both direct employment in the transport of cargo and attracting inward investments (domestic and foreign). More precisely, Chu (2012, p.90) identified several ways that logistics contribute to economic development: investment in logistics increases demand for goods and services; efficient logistics systems can reduce travel time that is manifested in inventories reduction and better response on demand; better logistics systems can attract more foreign direct investment; and lower transport and trade cost can accelerate industrial aggregation and consequently industrial productivity.

Originally, logistics grew out of the need for the military to move large quantities of food, munitions, personnel and materiel to keep an army operational a long way from home during the second World War, (SOLS, 2014). Before the 1990s, the transport and logistics industry was primarily limited in basic transportation and warehousing facilities. Due to technological advancements, infrastructure developments, existence of defined policies and regulations, the industry has grown exponentially over the past two decades (AMCML, 2015) and it constitutes a major industry sector, rather than being just a support activity to other

industries. Nowadays logistics are not limited to transportation or trade facilitation<sup>7</sup> but are also part of a broader agenda that includes services, development of facilities, infrastructure, and spatial planning.

The most cited definition of logistics is the one by the Council of Supply Chain Management Professionals “*the process of planning, implementing and controlling the efficient flow and storage of goods, services and related information from point of origin to point of consumption, to conform to customer requirements*” (SOLS, 2014). According to AMCML (2015) the transportation and logistics industry comprises companies engaged in transport, Value-Added Logistics Services (VALS), storage, and distribution of freight by road, rail, marine, and air. The transportation business entails air, road, rail, and marine transport. VALS Companies include packaging and repacking, assembly, labeling, repairing, bar-coding, tagging, warranty processing, and returns management. Warehousing business include warehousing or storage services during manufacturing and/or distribution, and freight forwarding business includes documentation, insurance, and custom clearance.

A key concept in logistics is the integration of transport modes and infrastructure, warehouses, terminals, ports, customs procedures, legal framework, finance, insurance, Information Technology (IT) and security. Logistics services are not just about hard assets (ports, airports, roads and railways), they are about how those assets work together efficiently to enable the efficient, cost-effective and reliable flow of goods and information (SOLS, 2014). The World Bank warns in its groundbreaking study accompanying the publication of its LPI in 2014, that inefficient logistics raises the costs of trading and reduces the potential for global integration. Therefore, costs must be lowered throughout the chain by driving out unnecessary expenses, movements and handling. The efficiency of the logistics chain is related to the good coordination of its different links (Parola and Sciomachen, 2005). De Wulf and Sokol (2004) found that a poorly functioning logistic environment (including cost of clearing customs, transport costs, and transit for landlocked countries, non-customs trade documentation requirement and unenforceability of legal trade documents) significantly hinder successful integration into the global market. Finally, it is important to mention that “Supply Chain Management” (SCM), was an alternative term for logistics, that coined in the 1980s. It is defined as “*total system view of the links in the chain that work together efficiently to create customer satisfaction at the end-point of delivery to the consumer*” (SOLS, 2014).

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<sup>7</sup> Trade facilitation take place when cargo meets the government customs, government approvals, the actual paperwork involved, availability of quick banking (financing) procedures, company incorporation, document certification and attestation (SOLS, 2014).

## 2.5 CONCLUSION

The availability of natural resources is significant for economic development, especially at the early low-income stages of country development (Auty, 1993) where they act as a means for capital accumulation and an accelerator for economic growth. Also, they can be used to finance important infrastructure projects, investments in health, education, or the development of other industries. For decades, it has been believed that abundant natural resources are a blessing that can lead to economic development and sustainable economic growth, but most literature shows this is not often the case in resource rich countries. They show that economies rich in natural resources tend to grow more slowly than economies without substantial natural resources, and the abundance of natural resources has an inverse (negative) relationship with the economic growth. This is known as the “resource curse”. Instability of revenues from the natural resource sector due to exposure to global commodity market swings, low job opportunities, Dutch disease, corruption and government mismanagement of resources revenue are found to be some causes of the inverse (negative) relationship between resource-endowment dependency and economic growth.

Countries can avoid the effects of the resource curse through good governance of resource revenues, long-term development policies, effective anti-corruption laws, and accountability that encourages governments to be more transparent about how they spend and distribute the country’s natural resource wealth, and to provide quality services, such as education and healthcare to their citizens.

Economic diversification is often regarded as an effective means of counteracting the resource curse, and is one of the most frequent long-term strategies for economic growth. Infrastructures and the quality of institutions are found to be significant determinants of economic diversification, along with the following critical factors:

- Availability of human capital and the potential for skill development.
- The potential for specific non-oil based sectors to compete in the local and international market.
- Building capacity of human capital that responds to the needs of priority economic sectors.
- Creating an enabling business environment that would provide the conditions for the growth of the private sector away from hydrocarbon-based activities.
- Developing quality government institutions to aid the diversification process.

Government intervention is therefore required if economic diversification is to be achieved. Hence, the policy design process and the importance of having good policies to correct different failures (e.g. market and government failures) will be discussed in Chapter Three. The review of the theoretical literature on the topic is complemented with the abstracts of the experiences of six successful resource rich countries that managed to diversify their economies.

# **3. CHAPTER THREE:**

## **LITERATURE REVIEW ON POLICY DESIGN AND POLICY EVALUATION**

### **3.1 INTRODUCTION**

The general view of the classical and neoclassical economists (from 1776 to the early 1930s) believed that an economy would move naturally towards maximum economic welfare and full employment when its markets could operate freely. During the 1930s, and in response to the great depression<sup>8</sup>, the British economists John Maynard Keynes (1883-1946) rejected the classical argument and developed the model of the macro-economy that clearly showed that an economy would not always automatically or quickly self-correct, and that the central government must manage the level of aggregate demand to achieve that objective. Therefore, government's intervention is essential through setting of policy. Generally, policies outline what a government hopes to achieve and what instruments it will use to achieve the policy goals. Policy evaluation usually tracks the policy outcomes to see if they are solving the problems identified and accomplishing their goals. So, policy design and policy evaluation have become important areas of research, because major economic policy changes have occurred in many countries, which highlights the importance of outlining the concepts of policy design and policy evaluation at this chapter.

As the literature at chapter two showed that government intervene through the economic diversification policies to overcome the resource curse. It is important to explore the policy concept at general and policy evaluation at specific as this thesis seek to assess the impact of a certain policy. Therefore, this chapter is divided into three main sections: policy design, policy evaluation and examples of economic diversification policies in different

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<sup>8</sup>The term "Great Depression" was coined to describe a severe recession. It began in 1929 at USA (after Wall Street disaster) and then quickly spread to Europe and around the world. Unemployment stood at 3.2 percent and the economy hit bottom. By 1933, the unemployment rate had risen to almost 25 percent. During the same period, the economy's output of goods and services (real GDP) fell by more than 25 percent. Moreover, ten years after the depression began (in 1939), the unemployment still exceeded 17 percent, and GDP had barely edged back to the levels achieved a decade earlier.

resource rich countries. The first section attempts to answer the following questions: what is policy and its types, what is the policy-making process and the different forms of failures (market, systemic and government failures) that justify government interventions. Then section two provides an overview of the policy evaluation, its types, and who evaluates policies. Section three presents examples of economic diversification policies in different resource rich countries. Finally, section four conclude.

## 3.2 POLICY DESIGN

### 3.2.1 PUBLIC POLICY DEFINITION

Many people think that public policy is a “black box” from which laws, regulations, and operational policy come (Hardee et al., 2004). Versluis et al. (2011, p.11) stated that Policy is a broad concept that commonly embodies several different dimensions, and refers to “*a deliberate course of in-action selected from among available alternatives to achieve a certain outcome*”. Policies are designed and implemented by policy makers (e.g. federal, provincial, territorial, and municipal levels of government).

Policy makers will not necessary take up all the available alternatives because of the restrictions they encounter in terms of financial, historical, social or institutional contexts. They will choose from the available alternatives to achieve a certain outcome in accordance with the deliberate course of in-action. In addition, the achieved outcome is considered to be in the best interest of all the public (Torjman, 2005; and Versluis et al., 2011). Therefore, the term “*public policy*” is generally used to describe policy-making by governments, and public policy itself is generally a way to achieve the goals and objectives of the political system<sup>9</sup>. Thomas Dye in 1972 (p.2) defined public policy concisely as “*what government chooses to do or not to do*”, but it was considered too simple. For example, Howlett et al. (2003, p.5) state, *this could lead to the impression that any activity by governments could be described as public policy including the purchase of paper clips*. Later Schneider and Ingram (1990, p.513) expressed that definition as “*Public polices attempts to get people to do things they otherwise would not have done or it enables them to do things they might not have done otherwise*”. Therefore, people in their daily life are affected directly and indirectly by an array of public policies (Anderson, 1997).

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<sup>9</sup> مجلة العلوم السياسية عدد خاص بالذكرى الخمسين لتدريس العلوم السياسية في العراق العددان 38-39 مفردات السياسة العامة منهجية جديدة في دراسة النظم السياسية (منى جلال عواد, 2009).

### 3.2.2 POLICY TYPES

According to Lowi (1972, p.300) and Kozak et al. (1984), there are four categories of public policies: distributive, competitive regulatory, constituent and redistributive. Each type can operate at different levels (national, state, local, or organizational). Distributive policy aims to support private activities that are beneficial to society but not undertaken by the private sector due to their high cost. It also aims to ensure proper distribution of opportunities, goods and services. The competitive regulatory policy aims to limit the provision of specific goods and services to the few who are chosen from a group of competitors, and those selected are then regulated. The constituent policy “state building” is concerned with establishing government structure (e.g. rules that distribute power and jurisdiction). Finally, redistributive policy aims to modify existing distribution or change the allocation of existing resources or benefits between social classes or radical groups. The types of policies are shown at Table 3.1.

Table 3.1. Types of policies

<b>Type of policy</b>	<b>Characteristics</b>	<b>Examples</b>
<b>Distributive policy</b>	<ul style="list-style-type: none"> <li>• Not designed to affect a wide range of people (section of people).</li> <li>• Generally effective in its aim.</li> <li>• Has low visibility.</li> </ul>	<ul style="list-style-type: none"> <li>• Certain kinds of medical research.</li> <li>• Price supports for farmers during bad seasons.</li> </ul>
<b>Competitive regulatory policy</b>	<ul style="list-style-type: none"> <li>• Achieving government's objectives using regulations and laws.</li> <li>• Specifying conditions and constraints for individual or collective behavior.</li> <li>• Strongly sanctioned and individually targeted.</li> <li>• Has low visibility.</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental protection.</li> <li>• Immigration policy.</li> <li>• Radio producing stations.</li> <li>• Television station licensing.</li> </ul>
<b>Constituent policy</b>	<ul style="list-style-type: none"> <li>• Intended to benefit the public generally.</li> <li>• Has high visibility.</li> </ul>	<ul style="list-style-type: none"> <li>• Foreign policy</li> <li>• Defense policy</li> <li>• Setting up a new agency.</li> </ul>
<b>Redistributive policy</b>	<ul style="list-style-type: none"> <li>• Seeks to make a very large change.</li> <li>• Tends to be very expensive in nature</li> <li>• Comes from the executive office or even the President.</li> <li>• Has high visibility.</li> </ul>	<ul style="list-style-type: none"> <li>• Land reform.</li> <li>• Progressive taxation.</li> <li>• Welfare policy.</li> <li>• Federal reserve control.</li> </ul>

*Source: Anderson (1997); Howlett et al. (2009); Knill and Tosun (2008); Kozak et al. (1984)*

Policy can also be categorized as proactive and reactive (Torjman, 2005). Proactive policy is designed to prevent a concern, problem, or emergency from arising (such policies include national capacity-building, learning agenda, and economic diversification policies). Reactive policy is developed in response to a concern, problem, or emergency. It is designed to remedy problems that already exist (e.g. health emergencies and environmental disasters). Proactive policies are more challenging in implication because it is often politically difficult to persuade policy makers to commit money and resources to a problem that has not yet occurred. Therefore, reactive policy development often happens more quickly than proactive policy.

### **3.2.3 POLICY MAKING PROCESS**

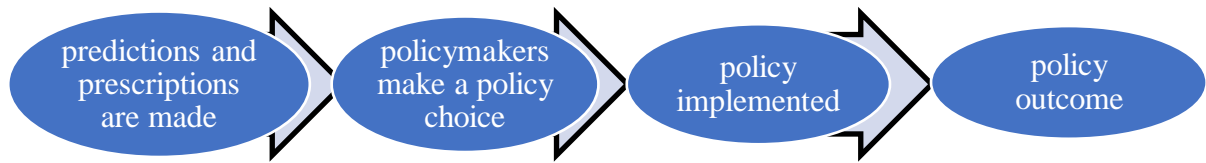
Torjman (2005) argued that it would be unrealistic and even incorrect to say that the policy making process follows a clear and consistent pathway or route. In 1956, Lasswell considered the policy-making process as a set of interrelated stages through which policy issue (problem) and deliberations flow in a sequential fashion from inputs to output. Raines (2002) added that policy making process is increasingly recognized as a set of routines stages which feed back into themselves. Therefore, many different variations of stage typology have been put forward. Some are linear, while others follow a more complex and circuitous route.

The linear model of policy-making was developed by Lasswell in 1971, in which he introduced seven stages: intelligence, promotion, prescription, invocation, application, termination and appraisal. This model has been highly successful as a basic framework for the field of policy-making, and became the starting point for a variety of typologies in the policy process. Then Meier (1991) modified the Lasswell model to include only four stages (see Figure 3.1). In the first stage the Policy stakeholders<sup>10</sup> (practitioners) make predictions/prescriptions about the issues that need to be addressed through policy; secondly, they make a policy choice; and thirdly the policy is implemented. At the fourth stage the implemented policy has an outcome. The disadvantage of this simple framework is that it has no feedback loop or opportunities for the process to move backward as well as forward (Hardee et al., 2004).

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<sup>10</sup> A stakeholder is an individual or group that makes a difference or that can affect or be affected by the achievement of the organization's objectives (Brinkerhoff and Crosby, 2002).





**Source:** Meier (1991).

Figure 3.1 Linear model of policy making process

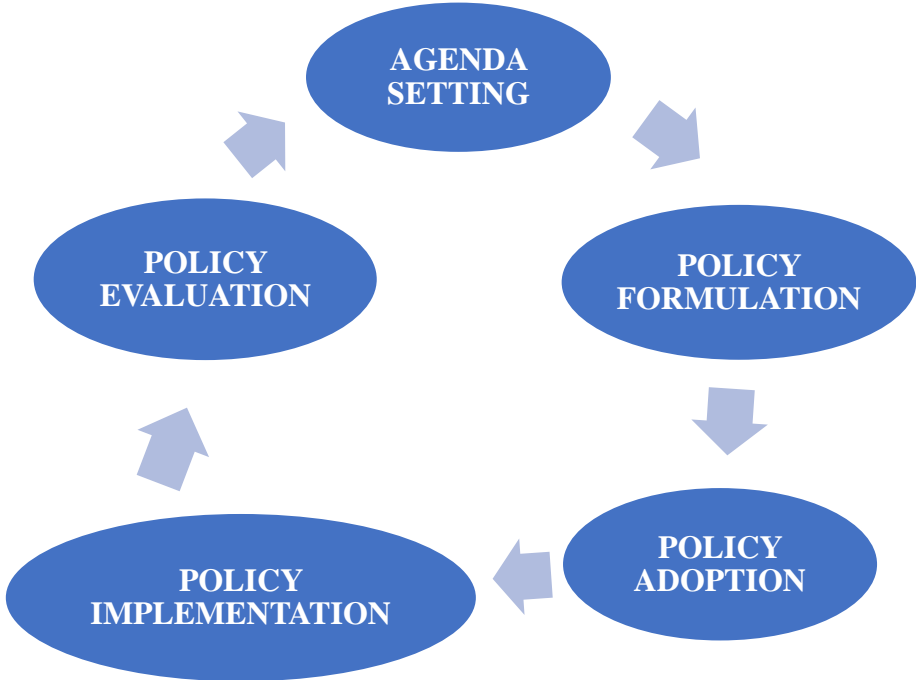
To overcome the disadvantage of the Meier model, Grindle and Thomas (1991) suggested a more complex framework (stages model) to describe the policy development that includes three phases: an agenda phase, a decision phase, and an implementation phase (Figure 3.2). The new framework suggests that a decision can be made for or against the policy at different policy phases. The advantage of this model is that, at any of the three stages (phases), a policy either continues to move towards successful implementation, or else it is derailed (Hardee et al., 2004).



**Source:** Grindle and Thomas (1991)

Figure 3.2 Stages model of policy making process

The stages perspective was transformed into a cyclical model called a policy cycle (Jann and Wegrich, 2007). The policy cycle offers a modest and flexible framework for policymakers. It considers the feedback between different elements of the policy development process. Different models of policy-making process had been developed by different scholars like Jenkins (1978), May and Wildavsky (1978), Brewer and de Leon (1983), Kingdon (1984), Hogwood (1987), Grindle and Thomas (1991), Anderson (1997) and Knill and Tosun (2008). For example, Brewer and de Leon (1983) proposed a six-stage policy process (Initiation, Estimation, Selection, Implementation, Evaluation and Termination), whereas, Kingdon (1984) suggested that policy change comes through the connection of three streams: problems, politics, and policies. Despite the variation in policy stages, the differentiation between agenda-setting, policy formulation, decision-making, implementation, and evaluation has become the conventional way to describe the chronology of a policy process. An example of the policy cycle developed by Knill and Tosun (2008) is shown in Figure 3.3 and an explanation of each stage is provided under the figure.



*Source: Knill and Tosun (2008)*

Figure 3.3 Policy Cycle

- **FIRST STAGE: AGENDA SETTING** (*Bringing the problem and objectives to the attention of the government*)

Initially the policy development needs a problem to be identified and the desired objectives of the policy to be determined. Agenda setting is the process of bringing the identified problem and objectives to the attention of government officials (policy makers) so solutions can be considered (Fischer et al., 2006).

- **SECOND STAGE: POLICY FORMULATION** (*Setting goals and outcomes*)

Policy formulation is the process by which proposed actions or solutions are articulated, debated, and drafted into language for a policy. It also refers to the process of generating options on what to do about the public problem (Howlett et al., 2009). The policy formulation includes setting goals and outcomes of the policy. The goals and objectives may be general or narrow but should articulate the relevant activities and indicators by which they will be achieved and measured (Fischer et al., 2006). The formulation stage can be subdivided into phases to clarify how various options are carried forward while others are set aside. Thomas (2001) identifies four phases: dialogue, appraisal, formulation and consolidation.

The dialogue phase seeks to facilitate communication between policy actors with different perspectives on the issue and potential solutions. Open meetings and consultations with experts and societal representatives from business and labor organizations are some forms of dialogue used in this phase. At the appraisal phase, data and evidence are identified and considered, and research reports, expert testimony, stockholder input or public consultation on the policy problem are some of the forms of dialogue used at this phase. At the formulation phase, the public officials, who weigh the evidence on various policy options, draft proposals that identify which of these options will advance to the approval stage. Such feedback can take the form of draft legislation or regulations (Howlett et al., 2009). Finally, at the consolidation phase the policy makers can reject or accept some types of options. In other words, if significant actors or policy makers believe that something is unworkable or unacceptable they can exclude it from further consideration in the policy process (Carlsson, 2000).

- **THIRD STAGE: POLICY ADOPTION** (*Determining the pathway to reach that objective or decision making*)

Formulated policies must be adopted for implementation by relevant organizations of government in order to be put into effect in the future. The policy makers discuss the options and possible solutions and adopt or decide to renew or improve the existing policy (Fischer et al., 2006).

- **FOURTH STAGE: POLICY IMPLEMENTATION** (*Moving an idea from concept to reality*)

Policy implementation is the fourth stage of the policy process in which government puts policies into effect. Usually, policy implementation is carried out by institutions other than those responsible for its formulation and adoption (Fischer et al., 2006). According to Smith (2003), governments can implement policy through policy tools or policy instruments, which are techniques the government uses to achieve policy goals (Schneider and Ingram, 1990). Howlett et al. (2009) stated that the variety of policy instruments available to policy makers is not limited. However, different scholars have made numerous attempts to identify some instruments. For example, Schneider and Ingram (1990) identified five broad categories of policy instruments: (1) authority (laws and regulations), (2) incentives (tangible payoffs), (3) capacity-building (provide information, training, education and resources), (4) symbolic and hortatory (intangible values such as justice, fairness, equality, rights and wrongs or images, symbols and labels) and (5) learning (lessons learned from experience gained from formal evaluation, hearings and interaction among targets and agencies). In addition, other policy instruments like taxation and trade permits were also identified. Table 3.2 shows different types of Policy instrument (Tools).

Table 3.2. Types of policy instruments (Tools)

Policy instrument (Tools) type	Example
<b>Authority or regulatory tools:</b> used most frequently by government to guide the behavior of agents and officials at lower levels	law, regulation, sanctions
<b>Inducement or incentive tools:</b> used to encourage utility maximizers	coupons for free public transportation, financial loans and subsidies
<b>Knowledge or capacity-building tools:</b> used to enable individuals, groups, or agencies to make decisions or carry out activities	information, training, education and resources
<b>Symbolic or hortatory tools:</b> used to gain the attention of the target population	posters, symbols and labels
<b>Learning tools:</b> used when the basis upon which target populations might be moved to take problem solving action is unknown or uncertain	Taskforce provides knowledge and insight for policy makers.

Source: Schneider and Ingram (1990) and Smart (2013)

Choosing the type of policy instruments depends on the type of policy and its objectives, also it depends on the assumptions inherent in the definition of the problem, and the amount of coercion necessary to change behavior (Schneider and Ingram, 1990). Bobrow and Dryzek (1987) added that the assumptions about the nature of human behavior help to determine policy instrument choice too. Applying one type of instrument will not tackle all the desired objectives, therefore policy instruments can be applied at different levels of intensity and it is important to develop strategies which involve a combination of policy tools.

- FIFTH STAGE: POLICY EVALUATION** (*Implementing the measures and assessing the impacts*)

Often a policy that works well on paper will not work as expected when it is implemented. Therefore, policy evaluation is an important action, undertaken by academics, governmental and non-governmental organizations and private consultancy firms who wish to influence the policy-making process. Policies should be evaluated and corrected as they unfold and fail or surpass the intended goals. Evaluation usually tracks the policy outcomes and sees if they are solving the problems identified and accomplishing their goals. In other words, the main question at this stage is whether the output of the decision-making process has attained the intended goals. In more general terms, policies should be evaluated for their efficiency (using

the least resources to the maximum effect) and effectiveness (achievement of the intended goals, (Knill and Tosun, 2008). If the policy is not successful at any level, evaluation findings can be used during a new phase of problem definition. The policy life cycle begins again and continues until an effective policy is created and successfully implemented (Fischer et al., 2006). Raines (2002) and OECD (2004) explained the policy life cycle as it is not a linear but an interactive process. That means that evaluation needs not to be considered a stage at the end of the line, but a stage that promotes discussion in the policy life cycle and consequently a review of the objectives and targets of the policy.

### **3.2.4 RATIONALES FOR GOVERNMENT INTERVENTION**

Although there is still disagreement among economists regarding the issue of government intervention, it has been found that government intervention -through setting policies- improves the overall performance of the economy. Policy design is the process by which the administration translates its vision into actions to achieve desired outcomes (Smart, 2013). Policies seek to achieve goals considered to be satisfactory to the whole society (Torjman, 2005). This could be achieved through the identification of the desired goals and implementation of a range of actions that result in promoting the realization of those goals.

According to Laranja et al. (2008), the setting of any policy is underlined by rationales, which are theories that justify the government intervention. Therefore, they represent an important input for policy design, implementation and evaluation. Policies are the first line of defense against failures. There are different forms of failures that justify or rationalize the necessity for policies, market failures, systemic failures and government failures are some forms. Government intervention can correct the market failures and facilitate a proper business environment (McWilliam, 2011).

- **MARKET FAILURES**

Theoretically, if markets worked perfectly, resource allocation would be optimal and there would be no need for government intervention. The situation differs in reality, as markets do not always function as well as we are inclined to assume, therefore they need government intervention to correct them (Rodrik, 2010). Market failure was originally presented as a normative explanation of why the need for government expenditures might arise, and was gradually employed by policy analysts to determine the exact scope and nature of government intervention (Zerbe and McCurdy, 1999).

Todaro and Smith (2011, p.128) defined the market failure as “*a market’s inability to deliver its theoretical benefits due to existence of market imperfections such as monopoly power, lack of factor mobility, significant externalities or lack of knowledge*”. In many cases, factor markets failures are likely in physical infrastructure, labor markets, capital markets, technology imports and various institutions. Products market failures can be related to lack of information and high transaction costs in marketing, oligopolistic market structures, and effects of international competition on new market entrants (Rodrik, 2010).

Borooah (2003) stated that it is not at all obvious that government will necessarily succeed where markets have failed. Therefore, not all cases of market failure will be amenable to correction through government action. Market failure is prevalent in less developed countries (Stiglitz, 1989) and it is a broad term that includes different forms in which free markets fail to allocate resources efficiently. It is a departure from Pareto optimality<sup>11</sup> which would in theory occur in a market-clearing equilibrium under conditions of perfect competition. It often provides the justification for government intervention to alter the working of the markets.

- **SYSTEMIC FAILURES**

Government intervention is justified when system failures appear. Policies involve many actors, structures and interactions that all together enable the policy to function well. If one part of the chain, or system, is weak, the whole policy can fail. Systemic failure rationale is indirectly presented as a more general approach to justify government intervention. According to Bleda and Del Rio (2013), in a systemic view, government intervention has a broader role to not only ensure the effective functioning of markets through correcting the market failure but also as a means of improving the institutional set up and opportunities for constructive non-market interactions.

- **GOVERNMENT FAILURES**

Government failure occurs when government intervention causes more inefficient allocation of resources than would occur without that intervention, and a decline in economic welfare. The risks of government failures are very high for various reasons such as lack of clarity or conflicting objectives of governments, lack of sufficient information, lack of adequate

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<sup>11</sup>Pareto optimality was developed by Vilfredo Pareto in his book “*Manual of Political Economy*”, 1906. It is a state of allocation of resources in which it is impossible to make any one individual better off without making at least one individual worse off.

technical and administrative skills, agency problems, resource constraints, poor coordination with the private sector, inflexibility of government interventions, sectional interests, corruptibility of government officials (Samen, 2010a). In addition, government failure, can be more common when institutional quality is poor (Polterovich, et al., 2010). In accordance, Tanzi (2000), Stiglitz (1998), Besley and Ghatak (2003) found the following reasons for government failure:

- Lack of incentives: in the public sector, there is limited or no profit motivation. Because workers and managers lack incentives to improve services and cut costs it can lead to inefficiency. For example, the public sector may be more prone to over-staffing. The government may be reluctant to make people redundant because of the political costs associated with unemployment.
- Poor information (bounded rationality): politicians may have poor information about the type of service to provide. Politicians may not be experts in their department, but concentrate on their political ideology.
- Political interference: politicians may take the short-term view rather than considering long-term effects.
- Administration cost of government bureaucracy in running public services.

The ability of governments to solve or mitigate failures and problems is a pre-condition for public policy intervention (Edquist, 2001; and Edquist et al., 2009). Therefore, it is important for policy makers to fully understand the policy-making process so they can plan the type of inputs needed in-order to have the desired impacts of the implemented policy. Samen (2010a) concluded that government failures could be mitigated through greater accountability (Rodrik, 2010). The challenges arising from international agreements (e.g. World Trade Organization (WTO) agreement on subsidies which prohibits the use of subsidies that take the form of fiscal expenditures conditioned on exports) could be mitigated over time in the context of the negotiations of international agreements (e.g. ongoing WTO, Doha Round negotiations or Economic Partnership Agreement between the European Union (EU) and African, Caribbean and Pacific (ACP)<sup>12</sup> countries).

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<sup>12</sup> The African, Caribbean and Pacific Group of States (ACP) is an organization created by the Georgetown Agreement in 1975. It is composed of 79 African, Caribbean and Pacific states.



### **3.3 POLICY EVALUATION**

#### **3.3.1 DEFINITION OF POLICY EVALUATION**

The previous section showed that evaluation is a step of the policy cycle and this section will provide more details on policy evaluation. Nevo and Shohamy (1986), Alkin and Ellett (1990) summarized the evaluation process as three components, first to know then to judge and finally to decide, which are the backbone of any policy evaluation process. More specifically, Papaconstantinou and Polt (1997) defined the policy evaluation as “*the process that seeks to determine as systematically and objectively as possible the relevance, efficiency and effect of an activity in terms of its objectives*”. Whereas, Valovirta (2002) elaborates further by stating that evaluation is based on collecting and analyzing evidence, and drawing conclusions and recommendations from this evidence. Later, Theodoulou and Kofinis (2004) defined the policy evaluation as “*a process by which general judgments about quality, goal attainment, program effectiveness, impact, and costs can be determined*”. It is important to clarify that besides the policy evaluation there is also policy monitoring. Policy monitoring is a follow up process by stakeholders. Both monitoring and evaluation seek the measurement and assessment of performance in order to more effectively manage the outcomes and outputs.

The policy evaluators include academic scholars, independent research institutes, consultancy firms, government organizations, non-governmental organizations and business groups (Wollmann, 2007). Each of these actors has their own interests, values and beliefs that may shape the outcomes of the evaluation process. Therefore, the selection of evaluation criteria and the perspectives of different policy actors can lead to different conclusions regarding policy outcomes (Hill, 2014).

#### **3.3.2 IMPOTENCE AND PURPOSES OF POLICY EVALUATION**

There is widespread recognition that all economic and spatial development policy makers are increasingly facing major challenges in evaluating the effects of their programs. Policy evaluation will allow policy makers to assess the extent to which policy objectives have been fulfilled and provide a basis for identifying strengths, weaknesses and making necessary adjustments. In addition, it can help an organization to extract, from past and ongoing activities, relevant information that can be subsequently used as the basis for programmatic fine-tuning, reorientation and planning.

The following reasons justify the increased importance of evaluation. Firstly, policy makers need to know the economic effectiveness of the policies that have been implemented. Secondly, the limited budgets of the government force policy makers to better allocate their resources in the most effective policies. Finally, evaluation gives transparency to the policy-making process and makes it more valuable (Bachtler et al., 2001; Raines, 2002 and Papaconstantinou and Polt, 1997). Evaluation has become a more valued part of the policy-making process due both to the need for analyzing the real effects of the policy, which is related to accountability purposes, and the need for improving the understanding of policies themselves, thus linking evaluation to policy learning purposes.

Preskill (2007) emphasized the value of viewing evaluation as a type of learning. He stated that evaluation policy could be one of the key mechanisms for such learning, because if evaluation policies were written down, they could be archived and shared. Then evaluators could see which of them seemed to work better in which situations. Consequently, there can be some cumulative knowledge about what kinds of policies appear to work under various circumstances. Policy evaluation can also be used to learn about the connection between evaluation theory and practice. The handbook on Monitoring and Evaluating for Results by the United Nations Development Program (2009) stated that without monitoring and evaluation, it would be impossible to judge if work was going in the right direction, whether progress and success could be claimed, and how future efforts might be improved.

Policy evaluations can have different purposes, and before evaluating a program the reasons for the evaluation should be clearly defined. Montero (2011) listed the following evaluation purposes:

- ***Accountability and legitimacy:*** It is directed to analyzing the program's impacts and the effectiveness of the program in terms of cost-benefit. Evaluations regarding this objective analyze the program to see if it has achieved its goals and targets.
- ***Improving planning and efficiency:*** It is directed to assure that the program's resources are efficiently assigned and used. There is 'rarely a systematic connection between evaluation and policy improvement' (Hill, 2014).
- ***Implementation:*** It aims at improving the program's implementation and the efficacy of its implementation mechanisms.
- ***Learning and knowledge production:*** It focuses on the analysis of the causes of the produced effects and impacts and it considers other program evaluations in order to extract lessons and learn from them.

- ***Institutional strengthening and empowerment:*** It aims at improving the capability of the program's participants (recipients, agencies, governments, etc.) to act in the environment.

### 3.3.3 TYPES OF POLICY EVALUATION

Governments and private firms make some effort to monitor and evaluate their own policies and programs. The most common form of policy evaluation is based on hearings and reports. Another common approach is through the analysis of citizen's complaints. Occasionally, teams of high-ranking administrators or consultants visit sites and collect impressionistic data about how policies are carried out, or government agencies themselves gather data on policy output measures. In some policy fields, governmental entities evaluate the performance of certain policies by comparing them with professional standards. However, most policy evaluations are unsystematic and do not satisfy minimal requirement formulated by scientific evaluation research, e.g. before-and-after comparison (Dye, 2005). In order to sort out the typologies of policy evaluation, two categories have been identified:

1. Based on terms of functions and timing of evaluation.
2. Based on terms of actors and organizations involved in evaluation.

#### 1. TYPES OF EVALUATION BASED ON FUNCTIONS AND TIMING

- **Ex-ante evaluation:** this is conducted before the policy implementation as part of the planning, and it pre-assesses the effects and consequences of policies. Specifically, it assesses whether (1) Development issues have been diagnosed correctly and gaps have been identified. (2) The strategy and objectives proposed are relevant to national and regional needs. (3) The approach proposed is coherent, and consistent with community policies and guidelines. (4) The assumptions concerning expected results and impacts are realistic and in line with the resources available (Wollmann, 2007).
- **Ongoing evaluation (monitoring):** has the task of identifying the interim effects during the implementation of the policy. Its essential function is to feed relevant information back into the implementation process at a point and stage when pertinent information can be used in order to adjust, correct or redirect the implementation process or even underlying key policy decisions (Wollmann, 2007). Formative evaluation is an example of ongoing evaluation. It is undertaken intermittently at all stages of the policy cycle, and particularly during policy implementation (Parsons,

1995). It is used to determine the development and improvement of the implementation process and it provides information to improve processes and learn lessons.

- **Ex-post evaluation:** conducted to assess the goal attainment and effects of policies and measures, once they have been completed. It is used to assess sustainability of project effects and impacts. In addition, it used to identify the factors of success (Wollmann, 2007). Summative evaluation is an example of ex-post evaluation. It is conducted at the end of the project. It is mainly focused on the effects of the program, and consequently evaluation results will be directed to implement a more effective scheme. Formative evaluation focuses on the analysis of how policy changes inputs into outputs, and how its conclusions can be used to improve the administration of policy.

## 2. TYPES OF EVALUATION BASED ON THOSE WHO CONDUCT IT

- **Internal evaluation/ evaluator:** is conducted and carried out “in house” by the operating organization itself.
- **External evaluation/ evaluator:** is initiated or funded by outside sources (contracted out by an agency or actor outside of the operating administrative unit).

Conley-Tyler (2005) proposes a series of measures for comparing the strengths and weaknesses of internal and external evaluators. These include cost, knowledge, flexibility, objectivity, accountability, willingness to criticize, ethics and utilization of results. In addition, Montero (2011) stated that the decision to carry out an internal or external evaluation normally depends on the evaluation purpose itself. When the evaluation’s purpose is to improve internal processes and management, evaluators are normally internal. These internal evaluators can belong to a centralized unit specialized in evaluation practices or to decentralized units, normally from the department in which the intervention is being managed.

### 3.3.4 EVALUATION METHODS

Theodoulou and Kofinis (2004) identified four generic evaluation methods (tools) that are used in policy evaluation: Process evaluation, Outcome evaluation, Impact evaluation, and Cost-Benefit evaluation. Process evaluation analyzes how well a policy or program is being

administered. It is employed more often by program managers to determine what can be done to improve the implementation and the aspects of service delivery of a certain program. It does not directly address whether the policy or program is achieving the desired outcomes or impacts on the targeted population. Outcome evaluation is used to measure a policy results. It provides information on how well the policy is accomplishing its goals. Impact evaluations are tools for dynamic learning that allow policy makers to improve ongoing policies and ultimately better allocate funds across them. It is aimed to provide feedback to help improve the design of programs and policies, and it also improves accountability. The central impact evaluation question is ‘What would have happened to those receiving the intervention if they had not received it?’ Finally, the cost-benefit evaluation is the comparison of the costs associated with a policy or program to the benefits generated by the policy or the program. Usually it assesses the effectiveness of a policy's costs, benefits and outcomes. Table 3.3 shows the combination of the evaluation types with the possible evaluation methods.

Table 3.3. Combination of the evaluation types and methods

Evaluation Type	Evaluation Method
Ex-ante	Process
Ongoing	Process
Ex-post	Outcome, Impact and Cost-benefit

*Source: Author’s own elaboration.*

Since the 1960s, the topic of output and impact measurement has been discussed with increasing intensity in the context of evaluation research (Stufflebeam and Shinkfield, 2008). Raines (2002) summarized the multiple purposes of policy evaluation in economic development policy making as a series of linear transformations linking inputs, outputs and impacts as shown at Figure 3.4.



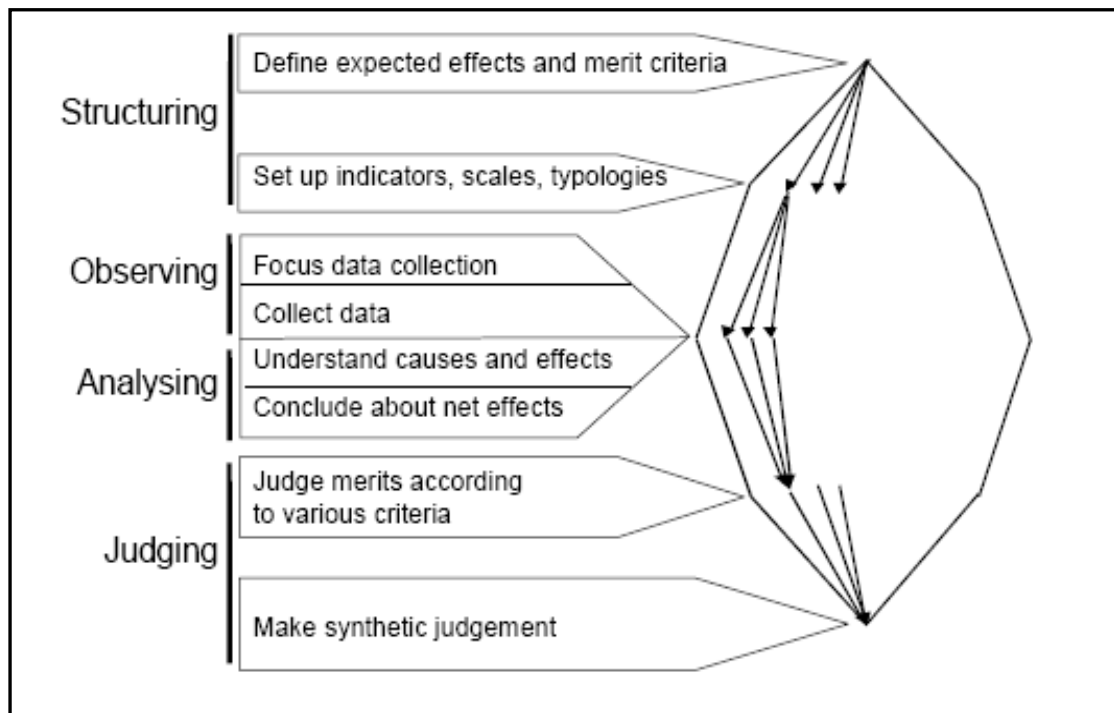
*Source: Adopted from Raines (2002)*

Figure 3.4. Policy evaluation process transformation linking

The evaluator should take into consideration the right meaning of inputs, output and impact definition as used in the evaluation process (more details will be presented in chapter five).

### **3.3.5 STAGES OF POLICY EVALUATION PROCESS**

Most models of policy evaluation ground their analytical perspective in the logical process used to determine the disparity between what was conceptualized by the initial policy goals and what has been accomplished by the policy or program as implemented. However, many other models focus their analysis on different objectives such as what is the true purpose of the evaluation, what is the role of the evaluator in the process, how broad or narrow should the scope of the evaluation be, and finally, how should the evaluation be organized and conducted. Williams (1999) stated that evaluation can be broken down into four key phases: structuring, observing, analyzing and judging. Each one of these phases can be undertaken with the help of standard evaluation tools and techniques. These phases can be further broken down into eight individual steps which are summarized in Figure 3.5.



*Source: Williams (1999)*

Figure 3.5. Four key stages and eight steps of evaluation

The first stage defines the evaluation questions and methodology. The next step is to translate those evaluation questions into indicators and scales that are employed during the evaluation. At the third stage, the field of observation is defined and then primary data are collected in the field. Collected data is then analyzed, and finally a synthetic judgment is made.

### 3.4 DIFFERENT POLICIES FOR ECONOMIC DIVERSIFICATION

Fosu (2013) has identified different policies for economic diversification, among them are:

- **Attracting FDI:** (Used in Bahrain, Costa Rica, the Dominican Republic, Malaysia, Mauritius, Oman, Tunisia and Vietnam).
- **Export-Led Diversification Strategy (*Export promotion*):** (used in Malaysia, Korea and GCC).
- **Intensification of National Economy's Integration with the World Economy** (used in South Africa and GCC).

- **Developing and Qualifying Human Resources** (used in most resource rich countries).
- **Using domestic saving for investment** (used in Thailand, Korea and Malaysia).
- **Using natural resource revenues to finance diversification efforts** (used in Malaysia, Bahrain, Botswana, Oman and UAE).

Although different resource rich countries have implemented some of those policies, but only relatively slow progress has been observed in their diversification index. Bhaskaran (2010) concluded that this was due to the country's enabling framework that facilitate the implementation of those policies. Sekwati (2010) concluded that without political commitment, any economic diversification efforts are doomed to fail. The political commitments include government intervention that provides an enabling environment or a supporting framework for the policies adopted to have any meaningful impact (actions that a government may take to alter the economy). Several key drivers of an enabling framework have already been identified by Botswana Excellence (2009), Bhaskaran (2010):

- ***Population awareness and open mind toward diversification:*** the population of the resource rich countries (especially the decision makers) must be aware of the importance of diversification. Also, there must be public knowledge of the rate of depletion of resources reserves in the country and how urgent economic diversification is. In addition, the entire nation should accept diversification as an essential, and be open mind toward the acceptance of the significant changes that must be made to several obstructing and unsuccessful policies.
- ***Existence of effective Parastatal (semi-government) institutions:*** for optimization of the efficacy of enterprise development, technical support, investment promotion, and human capacity development.
- ***Existence of coordination mechanism:*** effective coordination and management of the roles and contributions of the numerous different parties in both public and private sector. Good examples are the Government Implementation Coordination Office (GICO) that was established in May 2007 in Botswana and Performance Management and Delivery Unit (PEMANDU) that was established in 2009 in Malaysia.
- **Utilize the comparative advantage:** focusing efforts in areas where countries have created comparative advantage or niche opportunities; boosting non-traditional sectors and expanding their range of products and exports.



- ***Government acts as a Proactive builder of competitive advantage:*** government should establish the regulatory framework that supports economic activity to ensure a healthy business climate. In addition, the government should consider innovative ways of achieving scale through engaging with new economic and development partners. Such partnerships could take effect in several ways including joint business ventures, investment and trade agreements, technology transfers and capacity-building for an improved business climate (e.g. a company registered in one country could operate freely in the other without the need to re-register or go through involved procedures to set up a branch office).

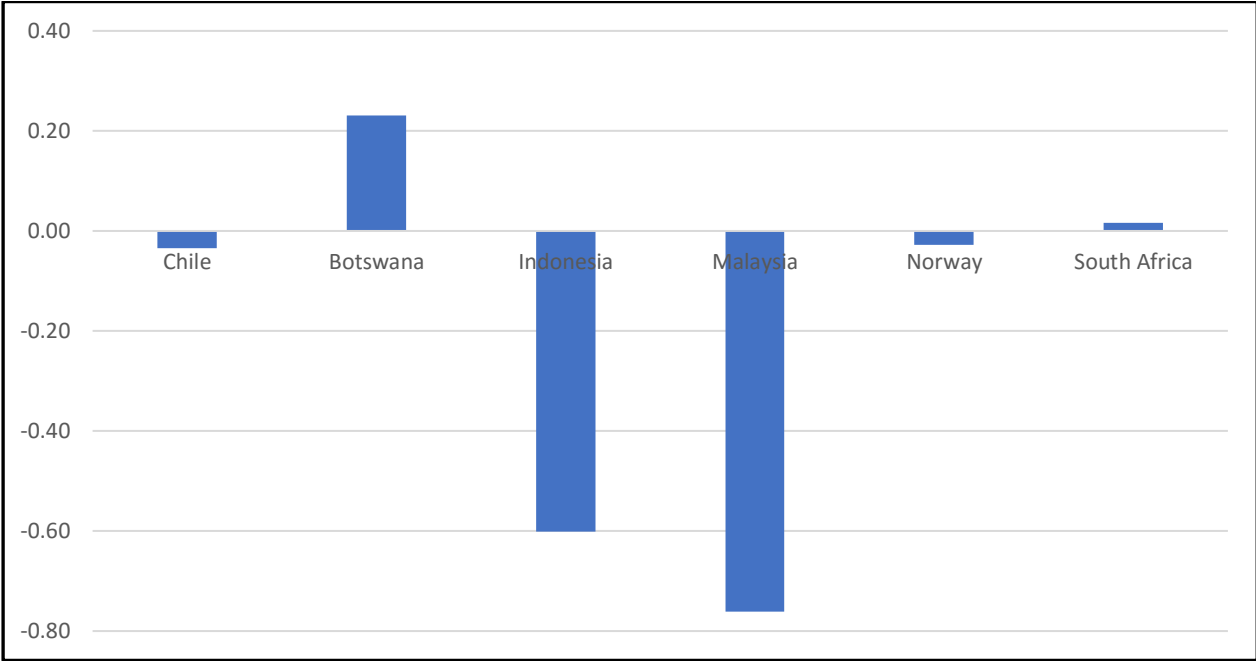
Additionally, creating an enabling environment involves ensuring political stability, internal security and shaping a strong education system that reflects the changing needs of the economy. Therefore, the economic diversification strategies would only succeed once the right kind of enabling framework or environment was put in place (Botswana Excellence, 2009). The successful diversification enhanced by the existing of good governance (which is a prerequisite in building an enabling environment for economic diversification), significant investment in human resources and good infrastructure.

- **EXPERIENCES OF SUCCESSFUL COUNTRIES**

Many countries in Africa, the Middle East, Latin America and the Gulf have abundant supplies of oil, minerals, or other natural resources, and yet have experienced much less satisfactory economic performance than countries with no natural resources (Frankel, 2012). There are some resource rich countries that have succeeded in diversifying their economies through the implementation of different policies. Countries like Malaysia, Tunisia, Chile, United States (USA), Kenya, Botswana, Benin, Norway, South Africa, Australia, Angola, Mexico and Indonesia have been identified in the literature (*Coxhead, 2007; Nambiar, 2010; OECD, 2010; Cherif and Hasanov, 2014; Wright and Czelusta, 2003; Varas, 2012; Yusof, 2012; Esanov, 2011; Zen, 2012; Sekwati, 2010; Siphambe et al., 2005, Acemoglu et al., 2001; and Wicken, 2009*) as countries that have succeeded in diversifying their economies.

The experiences of Botswana, Chile, Indonesia, Malaysia, Norway and South Africa show that each has used a combination of policies to achieve success (*More details about these countries are presented at Appendix 2*). Furthermore, comparison of the annual decrease rate of their diversification index during the period 1995-2015 showed a variation among those countries. The annual decrease rate gave an indication of the country efforts and

achievements in the diversification process. As shown in Figure 3.6 Malaysia had the best annual decrease rate, followed by Indonesia and Chile; whereas, Botswana and South Africa showed increases during the period.



*Source: Author's own elaboration*

Figure 3.6. Decrease of diversification index of the six countries (1995-2015)

Additionally, diversification took a long time of preparatory work to develop non-oil tradable sectors (Callen et al., 2014). Good management of resource revenues (good governance), good monetary policies, saving for investment, and export promotion are the most efficient and successful policies that have been followed by most of the six countries to achieve diversification. Nevertheless, it is necessary to deepen in the understanding of the relationship between policy and diversification results so conclusions can be made. For that purpose, policy evaluation is a useful tool and will be employed when analyzing the case of Oman.

### 3.5 CONCLUSION

The developed Keynes' model in the 1930s showed that an economy would not move naturally towards maximum economic wellbeing and full employment without government intervention. Governments intervene through their policies in a bid to achieve certain policy

objectives and improve the overall performance of the economy. Policies are the first line of defense against different failures and they seek to achieve goals that are considered to be satisfactory to the whole society. These goals can be achieved through the policy-making process. The governments can implement policy and achieve goals through policy tools or policy instruments.

Policy-making processes are involved and sometimes disorganized processes that differ widely in their number of stages due to the different concerns they address. Sometimes it is a long and winding road with lots of detours and stops along the way. Therefore, many different variations of stage typology have been put forward. Some are linear, while others follow a more complex and circuitous route. Despite the variation in policy stages, the differentiation between agenda-setting, policy formulation, decision-making, implementation, and evaluation has become the conventional way to describe the chronology of a policy process. Often a policy that works well on paper will not work as expected when it is implemented. Therefore, policies should be evaluated and corrected as they unfold and fail or surpass the intended goals. Policy evaluation allows policy makers to assess the extent to which policy objectives have been fulfilled, and provide a basis for identifying strengths, weaknesses and making necessary adjustments. In addition, it can help an organization to extract, from past and ongoing activities, relevant information that it can subsequently use as the basis for programmatic fine-tuning, reorientation and planning. Two categories have been identified to sort out the typologies of the policy evaluation:

1. In terms of different temporal and functional linkages with the policy cycle. This category includes ex-ante evaluation, ongoing evaluation and ex-post evaluation.
2. In terms of actors and organizations involved in evaluation. This category includes internal and external evaluation.

The purposes of policy evaluations include accountability, improving planning and efficiency, implementation and learning and knowledge production. Therefore, before evaluating a program the reasons for the evaluation should be clearly defined. The implementation of an effective evaluation framework needs a systematic approach. Thus, four key phases have been identified: structuring, observing, analyzing and judging. These phases are further broken down into eight individual steps.

Economic diversification efforts in Malaysia have taken different directions in more recent years. The shift from primary products is a consequence of the successful industrial policies that Malaysia implemented. The Government of South Africa has played a strong role in shaping the economy and in spearheading economic diversification. In-particular it has

supported new sectors such as automobile assembly for driving growth across the economy (OECD, 2010). Indonesia successfully started a complex technology industry including aircraft maintenance and aircraft parts manufacturing (Cherif and Hasanov, 2014). Although the share of oil in the GDP was relatively small in Norway, the good management of its revenues benefits the economy. In addition, employment of innovation and technology helped to enhance the roles of different sectors in the economy. Chile saved revenues stemming from natural resources and implemented policies that enabled it to develop competitive agriculture and fishing industries. It also encouraged FDI in specific sectors where the country had potential comparative advantage (Agosin and Bravo-Ortega, 2009). Finally, Botswana has done well in managing its resource wealth (Pegg, 2010) and identified areas -or- “hubs” to focus on for enhanced economic growth and diversification.

Policy evaluation is key in this thesis to assess whether government’s efforts to correct failures and overcome the resource curse have been successful or not. Chapter Four describes the methodology used in this thesis and the type and sources of data, as well as the sequence of analysis that will be carried to test the hypothesis.

## **4. CHAPTER FOUR:**

### **METHODOLOGY**

#### **4.1 INTRODUCTION**

The overall objective of this thesis was to assess the impact of infrastructure development on export diversification, and through that, on economic diversification, competitiveness and prosperity. Precisely, it assesses the impacts of development of roads, ports, Free Trade Zones (FTZ) -to make Oman a regional and international services center (global logistics hub)) in the economic diversification process during the period 1996-2015. That policy was a part of the second long-term development plan "*Vision for Oman's Economy: Oman 2020*" that has been implemented since 1996 and aims to enhance the economic diversification process in Oman economy. Specifically, this thesis will answer the research question "*How can the development of roads, ports, FTZ and Industrial Estates impact the economic diversification in resource rich countries*". As the thesis is focused only on the case of Oman to obtain a holistic view of the real achievements of the logistics sector, the case study methodology will be used to accomplish the thesis objectives and to answer the research question, using both the Logical Framework (LF) and Theory of Change (TOC). Several diversification indexes (Diversification index, Revealed Comparative Advantage (RCA) index and Product Concentration index (Product HHI)) are also used to measure the progress of economic diversification in Oman. Furthermore, a panel regression model is used to estimate the impact of several variables (including the quality of infrastructures) on the diversification index in resource rich countries in the first stage of development.

This chapter is structured as follows: the second section introduces the case study methodology and its different sources of data collection. Section three explains the analytical technique LF and its components as well as introducing TOC as a tool to explain how and why the desired impacts in the LF are expected to be achieved. Section four identifies the different sources used to collect the data of this thesis. Finally, section five describes the sequence of the analysis followed in this thesis.

## 4.2 CASE STUDY

Case study is one of several methods (e.g. surveys, histories, experiments) of doing social science (Yin, 2009). It is a valuable method of research that allows the exploration and understanding of complex issues (Zainal, 2007). It is widely used in organizational studies and across the social sciences (specifically in sociological studies, but increasingly, in instruction). Case studies are widely used because they may offer insights not achieved with other approaches (Rowley, 2002). Neale et al. (2006) stated that case study allows presentation of more detailed information than is available through other methods. Therefore, it is an ideal and preferred methodology that supports deeper and more detailed investigation, especially when “how” and “why” questions are posed (Orum et al., 1991; and Yin, 1994; and 2009). Yin (1984, p.23) defined the case study research method as “*an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly-evident and in which multiple sources of evidence are used*”. Bromley (1990, p.302) defined case study research as “*systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest*”.

Case studies are commonly used as a research method in organizational studies and across different social science disciplines (e.g. psychology, sociology, political science and anthropology). According to Johansson (2003) the first generation of case studies appeared around 1900 and initially appeared within the discipline of anthropology. The earliest use of this form of research can be traced to Europe, predominantly to France. In the United States, the first generation of case studies methodology culminated in the Chicago School of Sociology at the University of Chicago in which the anthropologist’s field study method was practiced on contemporary society in the university surroundings (Van Maanen, 1988; and Platt, 1992). In the late 1960s a second generation of case study methodology aiming to make methods explicit began to emerge. Yin (1984 and 1994) transferred experimental logic into the field of naturalistic inquiry and combined it with qualitative methods (Johansson, 2003). Case study research uses different types of evidence from multiple data sources. Yin (1994) identified six sources of evidence for case study research; documentation, archival records, interviews, direct observation, participant observation and physical artifacts.

- Documents could be letters, memoranda, agendas, administrative documents, newspaper articles, study reports, or any items that could add to the data base.

- Archival records refer to information that already exists in someone else's files. It is generated for reporting or research purposes. It is often kept because of legal requirements, for reference, or as an internal record. In general, it is not subject to change because it is the result of completed activities, and is therefore sometimes known as fixed data. They include service records, maps, organizational records, charts, lists of names, survey data, and even personal records such as diaries.
- Interview is a direct face-to-face conversation between the participant and the researcher that attempts to obtain reliable and valid measures in the form of verbal responses from one or more respondents (Gubrium and Holstein, 2002). It is one of the most important sources of case study information. It has also been used extensively for data collection across all the disciplines of the social sciences and in educational research. Interview could take one of several forms: open-ended, focused and structured, or survey. In an open-ended interview, the researcher could ask for a respondent's opinions and comments about certain events or facts. In a focused interview, the respondent is interviewed for only a short time, usually to answer a set of questions. The structured interview is like a survey, and questions are detailed and developed in advance, much as they are in a survey.
- Direct observation in a case study occurs when the investigator makes a site visit to gather data and it is useful for providing additional information about the topic being studied. It could be as simple as causal data collection activities, or formal protocols to measure and record behaviors. The reliability of the observation is the main concern; therefore, the reliability can be enhanced when more than one observer is involved in the task.
- Participant observation is a unique mode of observation in which the researcher may participate in the events being studied. The technique provides some unusual opportunities for collecting data.
- Physical artifacts could be any physical evidence that might be gathered during a site visit. That might include instruments, tools, art works, notebooks, computer output, or some other physical evidence that may be collected during the study as part of a field visit. The perspective of the researcher can be broadened because of the discovery. Table 4.1 summarized the strengths and weaknesses of each type of the sources of evidence. It showed that no single source has a complete advantage over the others; rather, they might be complementary and could be used in tandem (Tellis, 1997).

Table 4.1. Types of evidence and their strengths and weaknesses

Source of Evidence	Strengths	Weaknesses
Documentation	<ul style="list-style-type: none"> <li>• stable - repeated review</li> <li>• unobtrusive - exist prior to case study</li> <li>• exact - names etc.</li> <li>• broad coverage - extended time span</li> </ul>	<ul style="list-style-type: none"> <li>• retrievability - difficult</li> <li>• biased selectivity</li> <li>• reporting bias – reflects author bias</li> <li>• access - may be blocked</li> </ul>
Archival Records	<ul style="list-style-type: none"> <li>• Same as those for documentation</li> <li>• precise and quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Same as those for documentation</li> <li>• privacy might inhibit access</li> </ul>
Interviews	<ul style="list-style-type: none"> <li>• targeted - focuses on case study topic</li> <li>• insightful – provides perceived causal inferences</li> </ul>	<ul style="list-style-type: none"> <li>• bias due to poor questions</li> <li>• response bias</li> <li>• incomplete recollection</li> <li>• reflexivity - interviewee expresses what interviewer wants to hear</li> </ul>
Direct Observation	<ul style="list-style-type: none"> <li>• reality - covers events in real time</li> <li>• contextual - covers event context</li> </ul>	<ul style="list-style-type: none"> <li>• time-consuming</li> <li>• selectivity - might miss facts</li> <li>• reflexivity - observer's presence might cause change</li> <li>• cost - observers need time</li> </ul>
Participant Observation	<ul style="list-style-type: none"> <li>• Same as those for direct observation</li> <li>• insightful into interpersonal behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Same as those for direct observation</li> <li>• bias due to investigator's actions</li> </ul>
Physical Artifacts	<ul style="list-style-type: none"> <li>• insightful into cultural features</li> <li>• insightful into technical operations</li> </ul>	<ul style="list-style-type: none"> <li>• selectivity</li> <li>• availability</li> </ul>

*Source: Tellis, 1997*

Data analysis in case study research is one of the least developed aspects of the case study methodology (Tellis, 1997). Case study is known as a triangulated (mixed method) research strategy, because it can be based on a mix of quantitative and qualitative approaches. Triangulation provides an important way of ensuring (confirming) the validity of case study research. According to Yin (1984) this could be done by using multiple sources of data in case studies. It also allows a degree of cross checking as the researcher gets lots of data that can provide different views (Kennedy, 2009; and Yin, 2009).

Statistical analysis is not necessarily used in all case studies, so the researcher needs to rely on experience and the literature to present the evidence in various ways, using various interpretations. The analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence to address the initial propositions of a study (Yin, 1994). Miles and Huberman (1984) suggested analytic techniques such as rearranging the arrays to display the data, placing the evidence in a matrix of categories, creating flowcharts or data displays,



tabulating the frequency of different events, using means, variances and cross tabulations to examine the relationships between variables, and other such techniques to facilitate analysis.

### **4.3 ANALYTICAL FRAME WORK USED IN THIS THESIS**

#### **4.3.1 FRAMEWORK ANALYSIS OR LOGICAL FRAMEWORK (LF)**

Logical Framework (LF) has become an increasingly useful analytical tool in recent years especially in doing case study evaluation (Yin, 2009). Initially it was developed in the late 1960s to assist the United States Agency for International Development (USAID) to improve its project planning and evaluation system. Afterwards, the German Society for Technical Cooperation (GTZ) brought it to Europe and put it into practice. Furthermore, in 1974, Canada's Foreign Aid Agency (CIDA) tested the LF and decided to apply it worldwide. In the 1980s it was used by social policy researchers at the National Centre for Social Research as a method to manage and analyze qualitative data in applied policy research.

LF is a systematic planning procedure and a monitoring and evaluation tool that helps to conceptualize a project and strengthen its design, implementation and evaluation, and analyze the assumptions behind it. It aims to present information about the key components of a project in a clear coherent way, logically and systematically. It also allows information to be analyzed and organized in a structured way. It is a series of interconnected stages that enables the researcher to move back and forth across the data until a coherent account emerges. Therefore, it is an iterative process, in which outputs from one activity become the input to another (Hills, 2010). It is developed to report the poor planning and monitoring of development projects (Jensen, 2010).

Specifically, it was designed to remedy several recurring difficulties that USAID faced in 1970 (such as unclear planning, unclear management responsibility and changing the focus of the evaluation from being an adversary process to a more realistic process) that were seriously hindering not only the meaningful evaluation of projects but also their implementation. The planning problem arises when the program or policy plan is too imprecise, without clearly defined objectives and indicators that can be used to objectively monitor and evaluate the success or failure of the policy or the project, and when there is no clear picture of what the project will look like if it is successful. The unclear management responsibility problem is when a project manager is reluctant to be considered responsible for development impacts and there are too many important factors outside their control, thus leaving them with difficulty in articulating what they should be responsible for. Finally, the problem of changing the focus of the evaluation process from finding “who to blame” to a

more realistic process that answers “what is the most realistic plan in the future?” (Practical Concepts Incorporated, 1979). The advantages of the LF are: the statements of all key components of the program are joined together in one place; it is helpful in the evaluation of complex interventions (i.e. those in which several different actions are taking place at the same time); it increases the understanding of the program goals and objectives and is useful when the objectives are likely to take some years to achieve (Hills, 2010).

Although there is no standardized template of LF and a wide range of formats exist, all LFs are similar in principle (Levine, 2007; and Hills, 2010). It is normally shown as a matrix, called a log frame; sometimes it is represented in a flowchart or a logic model, which can be organized vertically or horizontally; or it may be a table or even in a circular sequence. Logical frameworks outline the specific inputs needed to carry out the activities to produce specific outputs which will result in specific outcomes and impacts (see Figure 4.1). Although LF is not an entirely accurate and detailed representation of reality, it is a schematic representation of the logical sequence and causal relationships, and is presented as diagrams connecting program inputs to processes, outputs, outcome and impact as they relate to a specific problem or situation (UN Women, 2007). South Africa National Treasury Communications Directorate (2007) defined the inputs, activates, outputs, outcomes and impacts as:

- **Inputs** (What is invested):

Inputs are all the resources that must be invested in order for the activities to take place and contribute to the production and delivery of outputs. They are "what we use to do the work", and include finances, personnel, equipment and buildings, as well as money, technical expertise, relationships and personnel.

- **Activities** (what we do):

Activities are the processes or actions that use a range of inputs to produce the desired outputs and ultimately the intended outcomes. Example activities include hiring staff, purchasing equipment, constructing prisons or other facilities, commissioning legal guidelines, and providing other forms of technical assistance.

- **Outputs** (What has been produced):

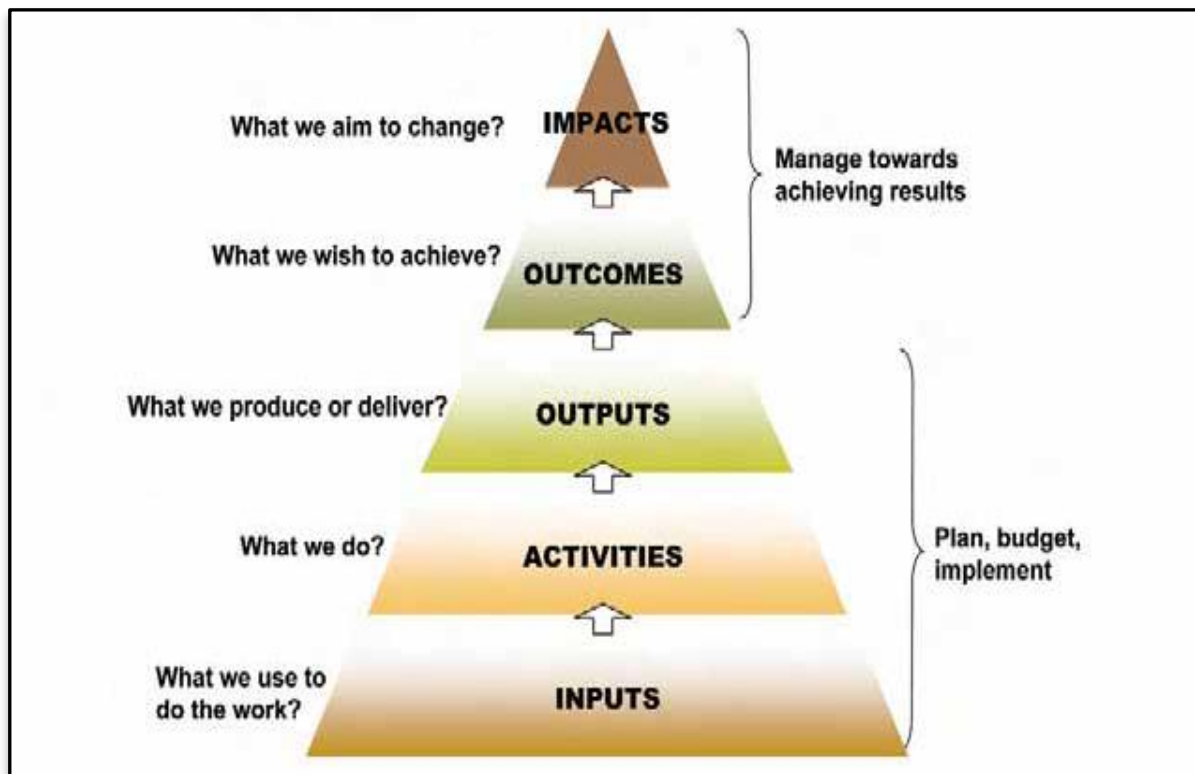
Outputs are the final products, or goods and services produced to be delivered to achieve the expected outcomes. They may be defined as "what we produce or deliver" or the changes in beneficiary behavior because of policy activities. They are the tangible and intangible products that result from project activities.

- **Outcomes** (what we wish to achieve):

Outcomes are the intended or achieved short-term and medium-term effects generated by the outputs. They are also the benefits that a project or intervention is designed to deliver, or the medium-term results for specific beneficiaries that are the consequence of achieving specific outputs. Outcomes should relate clearly to an institution's strategic goals and objectives set out in its plans.

- **Impacts** (Long- term outcomes):

Impacts are the higher-level goals to which the policy will contribute. They are also the results of achieving specific outcomes, such as reducing poverty and creating jobs. In addition, they refer to the effects of the intervention in both the beneficiary and the wider economy, which are basically long-term and socio-economic (Fahrenkrog et al., 2002).

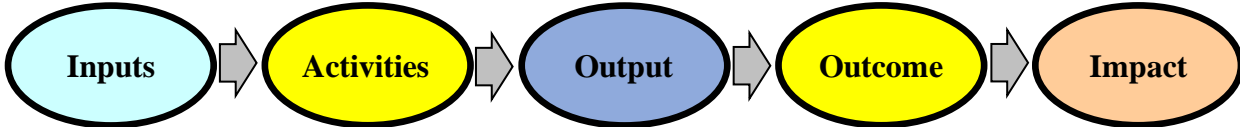


*Source: South Africa National Treasury Communications Directorate (2007).*

Figure 4.1. Logical Framework

To demonstrate the causal relationship between the LF components, certain assumptions (hypotheses) must be made. Therefore, the logic of “*IF and THEN*” is used; for example, if the assumptions relate to the activities to be implemented prove correct, then the next higher

levels, expected outputs, are achieved. Similarly, if the assumptions corresponding to expected outputs prove correct, then the specific objective will be achieved. Finally, if the assumptions corresponding to the specific objective are correct, then the final goal will be achieved. In the case of the assumptions corresponding to the goal, these, when achieved, will sustain the goal over the long term (Figure 4.2).



If the input assumptions hold true, then the activity will be able to be implemented.

If the necessary inputs are used effectively and certain assumptions hold true, then the activity will yield the expected products.

If the outputs from all the planned activities are achieved as expected and certain assumptions hold true, the outputs will converge to bring about the expected short- or medium-term results, the outcomes.

If the outcomes from different programs are achieved and certain assumptions hold true, then certain changes in a population's wellbeing, institutions or systems might be expected to occur.

*Source: Adapted by UNICEF from: Kellogg Foundation Logic Model Development guide (WWKF, 2001)*

Figure 4.2. The causal relationship among the logical framework components

**4.3.2 THEORY OF CHANGE (TOC)**

The TOC approach first emerged in the United States in the 1990s, in the context of improving evaluation theory and practice in the field of community initiatives. It is a comprehensive process that describes and illustrates how and why a desired change is expected to happen in a particular context. It explains how activities are used to produce a series of results that contribute to achieving the final intended impacts. It can be developed for any level of intervention such as an event, a project, a program, a policy, a strategy or an organization (Rogers, 2014). More precisely, Anderson (2004) described it as “a way to describe the set of assumptions that explain both the mini-steps that lead to a long-term goal and the connections between these activities and the outcomes of an intervention or program”.

TOC links outcomes and activities of the LF to explain how and why the desired impacts are expected to come (Clark and Anderson, 2004). In other words, it shows the core elements for change to take effect. To articulate anticipated impacts, it is necessary to be clear about the

changes we expect to see and the pathway for getting there. Therefore, articulating the TOC helps to do that because it tries to explain why and how certain actions will produce the desired changes in a given context at a given time. It also helps the evaluator to work out how progress has been made along an anticipated path towards the final impacts.

A main difference between the LF and TOC is the identification of indicators. LF identifies the different components (inputs activities, outputs and impacts) and does not identify evidence to measure whether outcomes are met or not, whereas TOC requires justifications at each step to articulate the hypothesis about why something will cause something else (Clark and Anderson, 2004). TOC explains why we think certain actions will produce desired change in a given context (Stein and Valters, 2012) and provides a basis for developing indicators of the inputs, activities, outputs, outcomes and impacts. Indicators track the various components of TOC and enable testing of whether the theorized relationships between inputs, activities, outputs, outcomes and impacts hold true in practice or not (Parsons et al., 2013). Indicators allow policy makers to assess the extent to which policy objectives have been fulfilled. Because indicators are analytical tools used commonly in monitoring and assessment and since the mid-1980s, it has been increasingly suggested as a possible means to evaluate the effectiveness of various policy mechanisms (Wilson and Buller, 2001).

Pinter et al. (2004) defined indicators as quantitative measures that express the status and trends of complex phenomena based on monitoring data, and that resonate with the interests of relevant audiences. They have the capacity to provide stakeholders at all levels with valuable information about policies, programs and activities (Gallopín, 1997). According to Horsch (1997) indicators can measure inputs, process, outputs, and outcomes and can provide clear answers to questions about the policy goals, outcomes and monitoring progress which can lead to better decisions. In addition, they have the ability to point to an issue or condition and show how well a system is working, and if there is a problem it will help to determine what decisions to make in order to address that problem (UNECE EG, 2005).

Both quantitative and qualitative data can be used to define an indicator to assess the degree to which policy outputs and impact have been achieved, and it depends on the availability and quality of data. Combinations of different indicators are necessary to assess the impacts of a certain policy (UNEP, 2014) and choice of the combination of indicators should be based on available data, the information needed by policy makers, and policy priorities (Pinter et al., 2001). For example, Hvidt (2013) found that there are different types of measurements, which can provide a detailed picture of impacts that stem from the diversification process. He was able to identify some indicators that can be used to measure

the change or progress in economic diversification policy in the Gulf Cooperation Council countries (GCC), like:

- Percentage contribution of oil sector versus non-oil sectors to GDP, which will provide an indication of the economic structural change.
- Percentage contribution of oil revenues as a proportion of total government revenues, which will indicate whether dependence on oil revenues is being reduced or not.
- Percentage contribution of non-oil export to total export earnings, since rising non-oil exports are an indication of diversification.

A clear logic framework is essential to guide monitoring and evaluation processes and enable planners to establish a hierarchy of objective or result statements. It shows the causal relationship between available resources (inputs), planned activities, outputs, outcomes and desired changes or impacts. TOC is the core of logical flow of causal outcomes between achievement of a policy activity targets and the delivery of intended results. Furthermore, the process to identify the LF and the TOC and their analysis and results is presented in chapter seven.

### **4.3.3 PANEL REGRESSION ANALYSIS**

Apart from analyzing whether Omani policies related to infrastructures (development of roads, ports and FTZ) have had an impact on the economic diversification of the country using LF and TOC analysis, the thesis also tests whether other competitiveness factors affect diversification of resource rich countries and whether infrastructures are still a significant variable when those other dimensions are taken into consideration. This is done using panel regression analysis. Generally, regression analysis is a methodology for studying relations between variables, where the relations are approximated by functions (Cheng, 2006). This thesis uses panel data regression to estimate the impact of several variables (including the quality of infrastructures) on the diversification index in resource rich countries. The selection of indicators has been based on the model that underlies the Global Competitiveness Index (Schwab, 2016) using a general- to-specific approach that starts with the inclusion of the variables that are considered to be more relevant for resource rich countries and discarding one by one the least significant variables in order to reach the most parsimonious model.

Panel data, also called longitudinal data or cross-sectional time series data, refers to a dataset containing time series observations of several individuals or entities over multiple time periods (Hsiao, 2005; and Torres-Reyna, 2007). Panel data are more suitable to identify

and measure effects that are simply not detectable in pure cross-sectional or pure time series data (Kenji and Mengistu, 2009, p.69). The panel data series involve two dimensions: the cross-sectional component shown by the (i) subscript, and the time series dimension indicated by the (t) subscript (Munongo, 2015). Hatz II (2011) states that panel data are considered to be balanced if there are no missing values and all individuals are observed an equal number of times, and unbalanced if they contain any missing values. He also described the differences between the Fixed Effects (FE) models and the Random Effects (RE) models that are among the various types of analysis available with panel data. A FE model attempts to control the biasing effects of time-invariant variables in order to better assess the impact of the changing variables. The general equation for the FE model is:

$$y_{it} = \beta X_{it} + \alpha_i + u_{it}$$

where (y) is the dependent variable with (i) individuals and (t) time periods; 'X<sub>it</sub>' is an independent variable which varies over time; (α) is the unknown intercept for each-individual; and (u<sub>it</sub>) is the error term associated with the model. The general equation for the RE model is:

$$y_{it} = \beta X_{it} + \alpha_i + u_{it} + \varepsilon_{it}$$

There are two key differences in the equation for the RE model and the equation for the FE model. The first difference is the inclusion of (ε<sub>it</sub>) which is the error term associated with the variables within each-individual; and the second difference is the error term (u<sub>it</sub>), that only represents the errors associated with variables that occur between the individuals. To choose between the two models a Hausman test is used. It looks to see if there is a correlation between the unique errors and the predictor variables in the model. The null hypothesis (H<sub>0</sub>) of the test is that the random effects model would be consistent and preferred, where the alternative hypothesis (H<sub>1</sub>) is that the fixed effects model would be inconsistent. If the p-value of the test is less than (0.05), the null hypothesis is rejected and the fixed effect model is to be chosen.

#### 4.4 DATA AND ITS SOURCES OF COLLECTION

According to Yin (1994) it is important to keep in mind that not all sources of data are relevant for all case studies. In this thesis, only documentation and archival records were used to collect the time series data for the period of nineteen years (1996-2015). Documentation and archival records officially published by different government institutions in Oman such as the document of the "*Vision for Oman's Economy: Oman 2020*", different issues of the five-year development plans, the annual statistical year book and many other government archive records will be used. Both the time-series and panel data will be used for the descriptive analysis, LF and TOC analysis and the panel regression analysis. They have been obtained from different national institutions in Oman, as well as from different international institutions and organizations as shown in Table 4.2.

Table 4.2. The national and international institutions of data sources

<b>National institutions</b>	<b>International institutions and organizations</b>
Ministry of Commerce and Industry	Data center of United Nations Conference on Trade and Development (UNCTAD STAT)
Public Establishment for Industrial Estates (PEIE)	World Integrated Trade Solutions (WITS World Bank)
National Center for Statistical and Information (NCSI)	World Bank Database
Oman Global Logistics Group (OGLG)	World Economic Forum.
Ministry of Transport and Communication	IMF Diversification Toolkit: Export Diversification and Quality Databases.
Ministry of manpower	
International Maritime College Oman (IMCO)	
Public Authority for Investment Promotion and Export Development ( <i>Ithraa</i> )	
Supreme Council for Planning (SCP)	
Salalah port	
Sohar port and free trade zone	
Salalah free trade zone	
Al Mazyunah free trade zone	
Special Economic Zone in Duqm (SEZAD)	
Ministry of Higher education	
Directorate General of Customs	

*Source: Author's own elaboration*



The time-series data covers the data of different LF and TOC indicators during the period 1996-2015<sup>13</sup>. Whereas, the panel data covers the data of the value of the four pillars of the GCI (INS1+INF2+MAC3+HEAL4) at the first stage of development and the diversification index for twelve resource rich countries (Bahrain, Botswana, Chile, Indonesia, Kuwait, Malaysia, Norway, Oman, Qatar, Saudi Arabia, South Africa and United Arab Emirates (UAE) over the period 2007 to 2015<sup>14</sup>. Both data sets used to assess the impact of infrastructure development on export diversification and through that, on economic diversification, competitiveness and prosperity. The data of dependent variable (diversification index) in the panel regression analysis was gathered from United Nations Conference on Trade and Development (UNCTAD STAT). The data of the independent variables, presented in Table 4.3 were gathered from the GCI database. They are composite indices constructed from several sources.

Table 4.3. List of the independent variables used in the panel regression analysis

<b>Independent variables</b>	<b>Explanation</b>
INS1	1st pillar: Institutions
INF2	2nd pillar: Infrastructure
MAC3	3rd pillar: Macroeconomic environment
HEAL4	4th pillar: Health and primary education
GDP*	GDP (PPP\$ billions)
EXP*	Exports as a percentage of GDP

*Source:* Author’s own elaboration.

*Note:* \*Control Variables.

### 4.5 SEQUENCE OF ANALYSIS

First, it is essential to describe the justification for the analyses. The main justification for conducting the examination of the existence of the resource curse in Oman economy is to test the first hypothesis of this thesis, that is” resource curse symptoms can occur in resources rich countries despite their good economic growth rates and development”. (at section 6.2 in chapter six). The second part of analysis firstly will test the second hypothesis” Development of transport infrastructure and logistics contribute to improve the diversification levels and the global competition scores in the quality of overall infrastructure” through identify a LF and

<sup>13</sup> This period has been chosen because the implementation of the vision Oman 2020 started in 1996.

<sup>14</sup> This period has been chosen because Oman data on the Global Competitiveness Index (GCI) only became available in 2007.

TOC (at section 6.4 in chapter six) for the targeted policy in this thesis as the second long-term development strategy for development "*Vision for Oman's Economy: Oman 2020*" did not include detailed policies for economic diversification that can be translated into an action plan with proper indicators and a monitoring and evaluation system (Mansour, 2013). Secondly, it will assess the impact of the policy in economic diversification based on the different LF and TOC indicators (section 6.5 in chapter six).

Different diversification measures will be used to test the change in the diversification index of Oman. Second, the panel regression analysis will be used to find the significant variable that correlated with the change of the diversification index. The process to identify the LF started with the identification and tabulation of the different policies that were described in the long-term development plan "*Vision for Oman's Economy: Oman 2020*" documents to achieve the economic diversification. Then the different objectives and different instruments of each policy were identified based on literature of public policy in Chapter Three in this thesis. As this thesis focuses on the export-led diversification policy, the government programs (sub-policies) that were implemented were identified from the "*Vision for Oman's Economy: Oman 2020*", the five-year development plans documents and different government archive records. After that, the different programs were identified and classified into different LF components (activities, outputs, impacts and the goal). TOC was used to identify different indicators for the LF components in addition to identification of their sources of verification. Finally, panel regression analysis was carried to determine the most significant independent variables among the pillars of the GCI indicators that have a relationship with the dependent variable (diversification index). Chapter five reveals the case of Oman's economy at general and the different efforts to achieve the economic diversification throughout the period 1976-2015.

## 5. CHAPTER FIVE:

### CASE OF OMAN<sup>15</sup>

#### 5.1 INTRODUCTION

Oman before the discovery of oil in 1962, was poor and undeveloped, with a GDP of 44.2 million USD and an annual GDP per capita of 80.1 USD in 1960. Although the first commercial discovery of oil was in 1962, the modern economic development and social development (Renaissance<sup>16</sup>) in Oman was only initiated in 1970, when the oil<sup>17</sup> revenues were involved in financing the state-building enterprise (De Bel-Air, 2015). In the past forty-six years, Oman has undergone a massive change, as the Renaissance efforts have been astonishing. Nowadays, Oman is a middle-income country and among the rich Arab oil producers with a current oil production of 942 thousand barrels (equivalent to 1.1 percent of the world total production) and has proven recoverable oil reserves of 5.5 billion barrels (or 16 years of supply at current production levels).

During the period 1970 to 2015, the oil and gas sector accounted for an average of 50.9 percent of the GDP, about 70 percent of foreign exchange earnings, an average of 85.1 percent of the total exports, and an average of 85.2 percent of the government revenues (Table 5.1). The rest government revenues from the non-oil sectors include those from agriculture and fisheries, mining and quarrying, manufacture, constructions and services (NCSI). Due to the high ration of oil exports to total exports, and the high share of oil in the GDP, Oman is still considered an oil-dependent country, despite the development achieved by the non-oil sector.

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<sup>15</sup> Part of this chapter was presented at the 2<sup>nd</sup> International Conference on Social Issues and Economic Studies (2<sup>nd</sup> RSEP Multidisciplinary Conference) at Madrid, Spain in 2-4 November 2016, and subsequently submitted for consideration at the Review of Socio-Economic Perspectives (RSEP) Journal.

<sup>16</sup> In Oman, the word “*Renaissance*” is used to represent the period of (1970 - present).

<sup>17</sup> The Oil and gas industry in Oman is owned by the state. It is administrated by the Ministry of Oil and Gas (MOG) and powered by the government company Petroleum Development Oman (PDO), which is responsible for more than 70 percent of the operations and explorations of the oil and gas in Oman.

Table 5.1. Oman dependence on oil and gas (1970-2015)

Year	Ratio of oil & gas in GDP	Ratio of oil & gas revenues to the government revenues	Ratio of oil & gas exports to the total exports
1970	68.4	97.8	99.0
1975	67.2	93.3	99.8
1980	60.5	92.0	97.5
1985	49.0	85.4	93.2
1990	46.4	84.6	89.2
1995	38.2	77.4	78.4
2000	49.9	78.4	82.8
2005	49.2	78.8	84.1
2010	46.1	80.8	68.9
2015	34.1	78.7	58.4
<b>Average</b>	<b>50.9</b>	<b>84.7</b>	<b>85.1</b>

*Source:* Statistical year books (NCSI, various issues) and Oman Annual Reports (various issues).

The continued increased in its crude oil production (from 104 million in 1980 to 344.4 million barrels per year in 2014) and the attractive high crude oil prices in the global market -before the decrease of oil prices on June 2014- maintained the high contribution of this sector to the aggregate GDP and reinforced the dominance of the public sector (as a consequence of public ownership of the oil) as the main employer and service provider, and created a limited and noncompetitive private sector that relied on government revenues. Hence the economy has become almost entirely dependent on the oil and gas industry, which is highly capital-intensive and not a large employer, especially for the Omani workforce.

As Oman's oil reserves are neither infinite nor the biggest in the region, and because of previous oil price fluctuations, the government recognized the needs to diversify the economy. Additionally, the frequent decline in oil prices since June 2014, has come to represent a challenge to the development process and provide a spur to making structural changes to the Omani economy. The efforts for more than forty years- through eight five-year development plans- to develop non-oil sectors have resulted in reduction of the contribution of oil revenues from 97.8 percent in 1970 to 78.7 percent in 2015. The diversification index<sup>18</sup> in 2015 was 0.72 (UNCTAD STAT), which indicates that Oman's economy is still specialized and not sufficiently diversified.

<sup>18</sup> The diversification index indicates whether the structure of exports or imports, by product, of a given country or group of countries differs from the structure of products of the world. This index, which ranges from 0 to 1, reveals the extent of the differences between the structure of trade of the country or country group and the world average. An index value closer to 1 indicates a bigger difference from the world average (UNCTAD, 2014).

This chapter and chapter Five are an implementation of the argument in this thesis, as it will show the importance of the natural resource (oil) for the economy and then display the efforts for the government to diversify the economy after realizing the hazards of depending on oil. The analysis in chapter Five will test the hypothesis and determine the impact of the analyzed policy. This chapter reviews the progress of economic diversification since 1976 by identifying the past and present efforts to diversify the economy. It identifies the challenges (obstacles) that constrained the success of the diversification process.

Section one provides an introduction to country location. Section two shows the development of population and main features of the economy. To partly explain the significant economic transformation that happened after the discovery of oil in Oman during the last 46 years (1970-2015), section three demonstrates the economic conditions that prevailed in the country before and after 1970. Section four presents the past (1970-1995) and present (1996-2015) governmental efforts towards economic diversification. In addition, section five identifies the hindrances that constrained the success of the economic diversification process. Finally, section six provides the conclusion.

## **5.2 LOCATION**

Oman's history dates back to almost the 3<sup>rd</sup> millennium B.C. It has a hereditary monarchy, whose current ruler is His Majesty Sultan Qaboos bin Said, the incumbent since 23 July 1970. It is the oldest independent state in the Arab world after the expulsion of the Portuguese in 1650, who gained control of parts of the coast in 1508. Oman is located in the Middle East and occupies a vital geo-strategic location- at the mouth of the Gulf- in the extreme southeast corner of the Arabian Peninsula, and is open to three seas: the Arabian Gulf, Oman Sea and Arabian Sea, which have enabled it since ancient times as a bridge between the old and new worlds and an active commercial passageway. Its 3,165-km shoreline extends from the Strait of Hormuz (which is a gateway for crude oil ships coming from the Indian Ocean and Arabian Sea) in the north to the Republic of Yemen in the south (Ministry of Information, 2014). It shares borders with the Kingdom of Saudi Arabia (KSA) to the west, the United Arab Emirates (UAE) to the north, and the Republic of Yemen to the south (Figure 5.1). Its total area is about 309.50 thousand square kilometers, ranking it as the third largest country in the Arabian Peninsula after KSA (2,149,690 million square kilometers), and Yemen (527.96 thousand square kilometers). The climate varies between hot and humid in the coastal areas, hot and dry in the desert interiors (temperature reaching 50° Celsius in June and July), modest and cold in the mountains, and a summer Monsoon in the far south from June to September.



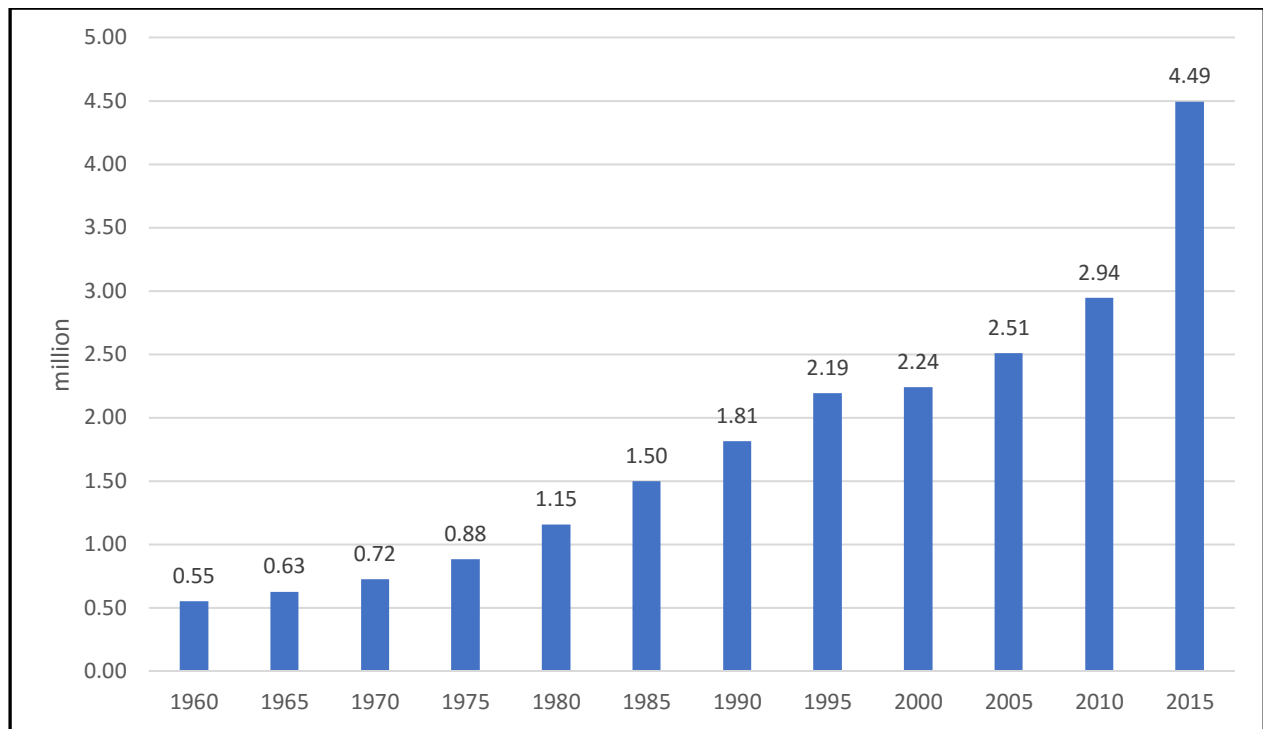
Source: World Atlas

Figure 5.1. Location of Oman

### 5.3 POPULATION AND ECONOMY

#### • POPULATION

Since 1960, estimates of Oman's population have increased from 550,000 to 4.1 million in 2015 with an average annual growth rate of 3.7 percent (World Bank Database). According to NCSI (2016), Omanis represent 56.4 percent and foreign nationals represented 43.6 percent of the total population. There is a significant South Asian population, originating from India, Pakistan, Sri Lanka, and Bangladesh, and there are small numbers of Africans and Europeans (Coleman, 2015). Most non-Omanis are foreign workers from the Asian subcontinent, Egypt, Jordan and Philippines. Figure 5.2 shows the development of Oman's population through the period 1960-2015.



Source: World Bank Data Base

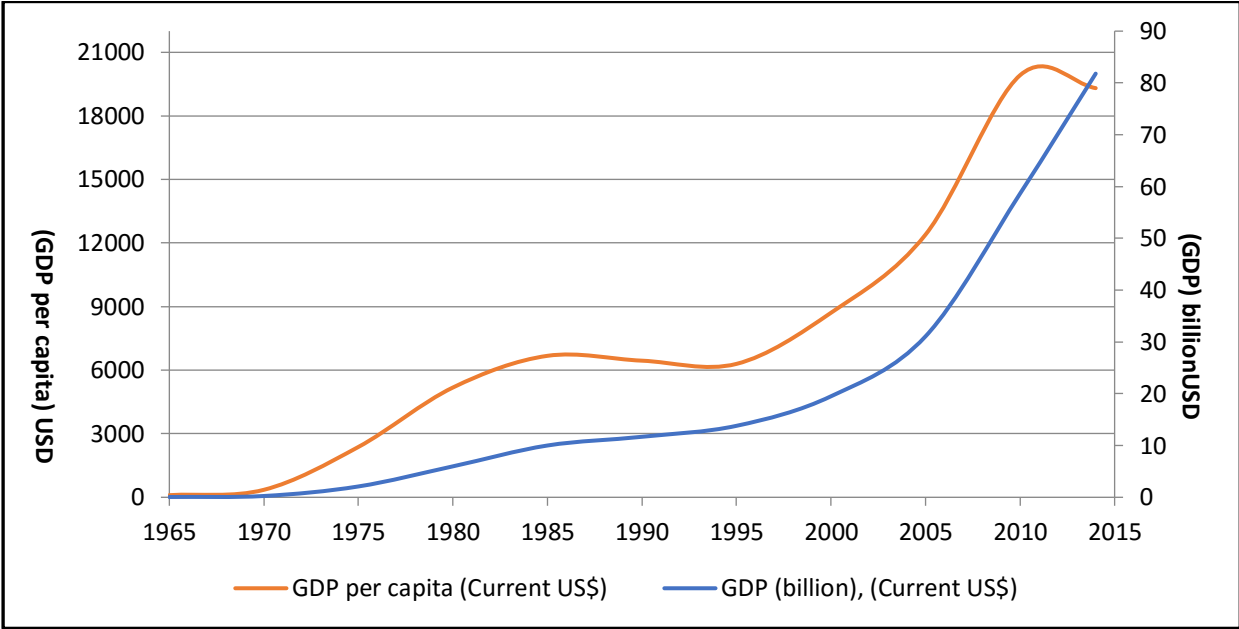
Figure 5.2. Oman's population from 1960-2015

### • **ECONOMY**

Historically, Oman's treasury was entirely dependent on customs revenues, the zakat (Islamic tax) collected on agricultural produce, and loans and subsidies from the British government (Allen, 1987). In addition, the agriculture and fisheries sector was the mainstay of the economy, as it was one of the oldest economic sectors in Oman and accounted for 75 percent of the GDP in 1960 (Helem, 1993). It also played a vital role in securing employment for around 80 percent of Omanis who were involved in farming and fishing. Their livelihood depended on these sectors (Al Oufi, 1999), as well as grazing, traditional handicrafts works and internal trade. Therefore, Oman's exports were largely composed of dates, wet and dry limes, fish, tobacco and fresh vegetables and fruits. Furthermore, the country depended on imports for its consumer needs and producer goods such as rice, tea, cotton fabrics, furniture, machinery, cement, pharmaceutical products, and a variety of other capital goods<sup>19</sup> and services.

<sup>19</sup> Capital goods are goods that an organization uses to produce consumer goods (e.g. machinery, equipment and vehicles).

Oil was discovered in 1956 in small quantities, but the exploitable oil fields were discovered in the west, central and north of Oman (Yibal, Natih and Fahud fields) in 1962. In August 1967, commercial production began and the first oil shipment was. Since then, oil has had positive effects on the economy and become its most important pillar. It is the main driving force of the economy and the dominant economic sector, while agriculture and fishing remain a significant part of the Omani traditional way of living. Oil has become the main contributor to the GDP and has dramatically increased the values of GDP, from 44.2 million USD in 1960 to 107.1 million USD in 1967. Moreover, Oman is blessed with other natural resources aside from oil and gas such as gypsum, limestone, copper, marble and chromium. The increase in oil production and oil prices led to GDP growth through time, and in 2014 it reached 81.8 billion USD (constant 2010 prices) with an average annual growth rate of 9.1 percent from (1967-2014). According to House (2008), this positive-growth can be attributed to the increase in oil price towards the latter half of 2002. Oil has also had positive effects on the per capita income, as the annual GDP per capita doubled from 80.1 USD in 1960 to 162.3 USD in 1967 and reached 19309.6 USD in 2014, which placed Oman among the high-income countries based on World Bank classification. Figure 5.3 shows the progress of both GDP and GDP per capita (current USD) from (1965-2014).



Source: World Bank database.

Figure 5.3. Progress of both GDP and GDP per capita (current USD) from 1965-2014



The productive sectoral structures of the economy have not changed much since 1970, and the oil sector still dominates the other productive activities. The sectoral composition and its contribution share of the GDP from 1970-2015 are shown in Table 5.2. The oil and gas sector contributed the most to the GDP over the period 1970-2015 and its slight deterioration over the years was due to the international price fall of crude oil, especially in 1986. Then again it returned to dominate in contribution to the GDP in response to an increase in global prices. The instability of the international oil prices that followed and the government's efforts to diversify the economy and reduce its dependency on oil caused the share of oil and gas to reach 34 percent in 2015. Overall, the economy made progress across the non-oil and service sectors. The growth of non-oil activities was at varied rates, as activities linked with government spending (construction, electricity, trade and transport and other services) grow at faster rates than other sectors.

Table 5.2. Percentage of sector shares in GDP of Oman (1970-2015)

Sectors and their Share of GDP (%)	Years									
	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015
<b>Oil &amp; gas</b>	68.4	67.2	60.5	49.0	46.4	38.2	49.9	49.2	46.1	34.1
<b>Mining &amp; quarrying</b>	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.2	0.4	0.5
<b>Agriculture &amp; fishing</b>	15.8	2.8	2.1	2.3	2.6	2.9	2.2	1.6	1.4	1.6
<b>Manufacturing</b>	0.2	0.3	0.6	2.2	2.9	4.6	5.8	8.6	10.6	9.7
<b>Electricity &amp; water</b>	0.09	0.2	0.5	0.8	0.9	0.9	1.0	1.7	1.2	1.9
<b>Constructions</b>	8.1	9.8	5.2	6.2	2.3	2.6	2.1	3.8	5.8	7.7
<b>Services*</b>	7.5	19.7	31.1	39.3	44.6	50.5	38.7	34.9	34.5	44.5
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

*Source: Annual Reports of Central Bank of Oman (various issues), Statistical Year Book (NCSI, various issues) and Oman development plans reports (various issues).*

\* *Services sector includes Government services, wholesale and retail trade, Hotels and Restaurants, transportation, Storage and communication, real estate and Business Activities, financial intermediation, Public Administration and Defense and other services.*

The construction sector share grew dramatically in the first five years (1970-1975) due to the increase in population and the increased need for development of the basic infrastructure (roads, schools, port facilities and airports). Later it started to decline to reach 7.7 percent in 2015, as most of those infrastructures were ready. The service sectors accounted for the second largest sector after oil and gas with an increase from 19.7 percent in 1975 to 44.5 percent in 2015 when finance, logistics, trade, and tourism started to develop. Although agriculture and fishery sectors had been the main economic activity before oil discovery, their

contribution to GDP relatively tumbled at a rate of 2.1 percent over the period 1970-2015 and its share was only 1.6 percent in 2015 compared with 15.8 percent in 1970. That was due to limited available natural resources like land, water and fish stocks, along with the use of traditional production methods.

The manufacturing sector did not exist before 1970 (Looney, 1991), then it started experiencing a steady growth due to the huge investments that guided the development of petrochemical industries with high capital intensity and export-oriented activities. The sector began establishing small scale units that only focused on consumer products that led to replacing its imports. Its contribution grew from 0.02 percent in 1970 to 9.7 percent in 2015, and around 50 percent in the growth of the manufacturing sector was attributed to downstream petroleum activities (Mansour, 2013). The importance of the tourism sector has been clearly acknowledged in the development strategies and plans (Baporikar, 2011). It was considered one of the main activities at the center of the diversification process and essential for economic development, as well as a source of employment and foreign exchange earning in Oman. Therefore, the efforts to promote tourism have made significant progress over time, and its contribution grew from 1.6 percent in 1980 to 2.2 percent in 2014, with an ambition to increase it to 3.0 percent by the year 2020. In addition, development of the sector was based on mega projects (development of ports and airports, more hotels) which raised the prestige of Oman as an international tourist destination.

The government encourages industrial productions that are export-oriented to replace imported products (Ernst and Young, 2008). The merchandise imports share in GDP decreased from 64.2 percent in 1971 to reach 42.5 percent in 2015, whereas the share of merchandise exports in GDP increased from 11.4 percent to 49.9 percent for the same period. In 2015, the primary export commodities included crude oil (50.0 percent), liquefied natural gas (7.0 percent), refined oil (1.0 percent), cyclic hydrocarbons (1.2 percent), and Nitrogenous fertilizers (1.9 percent). These were mainly exported to the country's major export partners as follows: China (30.3 percent), India (19.5 percent), Pakistan (9.9 percent), Malaysia (6.4 percent), Iran (6.2 percent), South Korea (5.7 percent) and Singapore (4.6 percent (NCSI, 2016). The main imports were transport equipment, electrical machinery, mechanical appliances, mineral products, manufactured goods, food, livestock and lubricants. The main trading partners are the United Arab Emirates (11 percent of total exports and 27 percent of imports) and Japan (10.5 percent of exports and 13 percent of imports). Other partners include China, India and the United States of America (NCSI, 2016).

## 5.4 ECONOMIC CONDITIONS IN OMAN BEFORE AND AFTER 1970

- **ECONOMIC CONDITIONS BEFORE 1970**

Due to his apprehension of the impacts of oil wealth on moral values and the rush to prosperity that happened in other GCC countries (Allen and Rigsbee II, 2000), Sultan Said bin Taimur (1932-1970), hesitated to spend oil revenues on development. Although the beginning of Oman’s exports in 1967 provided the necessary financial resources for the development process, oil revenue was not being used to its full potential (McWilliam, 2011). Sultan Said applied a stranglehold policy of political isolation (closed doors) and did not join international organizations during his rule of Oman (Peterson, 2004). Consequently, the economic and social situations of the country deteriorated and different human-development indicators such as life expectancy, infant mortality, and school enrollment worsened. Al Yousef (1996) described the conditions of the society as medieval, wherein the majority of the population lived with no general education, no health services, poor internal communications and repressive petty restrictions on personal freedom.

That deprived the country of opportunities to develop and modernize production methods, and to utilize modern technologies and provide the necessary infrastructure for the exploitation of natural resources, including oil. Oil revenues were used on a limited small scale to develop the country, which amounted to a couple of schools and some government office buildings and a few paved roads. All those circumstances delayed the country’s progress and it lagged behind the development process that prevailed in neighboring GCC countries, especially after the discovery of oil on them (Table 5.3). The discovery of oil was the mainstay of the economies of neighboring GCC countries and promoted their economic development, raised their living standards and transformed them from being essentially subsistence economies in the 1960s to wealthy countries (Sturm et al., 2008).

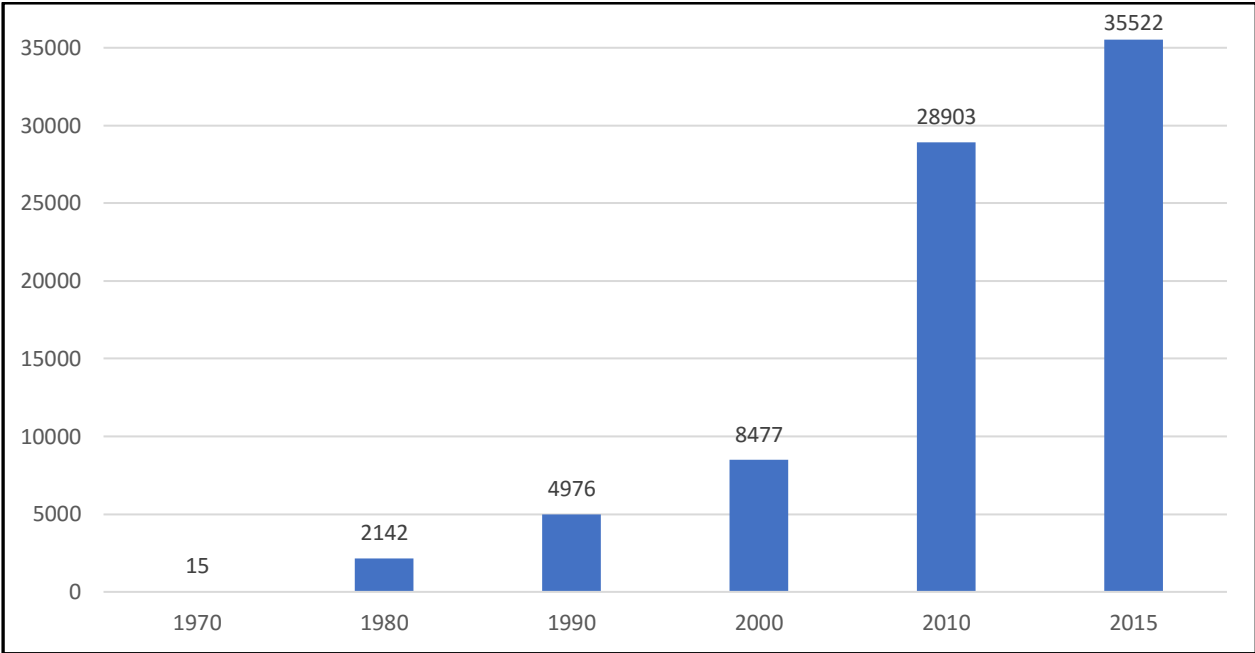
Table 5.3. Year when oil was first commercially produced in GCC and Yemen

Country	Year when oil first commercially produced
Oman	1962
Bahrain	1932
Saudi Arabia	1938
Qatar	1949
Kuwait	1953
United Arab Emirates	1958
Yemen	1984

*Source: Callen et al. (2014) and Morton (2012)*

Consequently, the country lacked a skilled labor force and nearly all the basic infrastructure and public services like modern ports, roads, facilitated hospitals, schools, safe drinking water, electricity services, housing, internal communications and employment opportunities. According to the World Bank database, Oman GDP during 1970 was 0.27 billion USD and ranked 126th in the world and the GDP per capita was 413.3 USD. This led a majority of educated, low-skilled and non-educated citizens to migrate to seek employment in the neighboring Gulf countries such as the UAE, Kuwait and Saudi Arabia, which had been enjoying a higher level of GDP per capita (4550, 3828 and 927 USD respectively).

The infrastructure and public services were scarce and limited to the capital Muscat. For example, there was only one un-asphalted airport (Bait Al Falaj) for civilian planes, but it was used mainly for military purposes. There were few paved roads connecting the different regions sprawling across the country (only 15 Km) and only one small port (Al Fahal port in Muscat) with limited capacity (Figure 5.4).

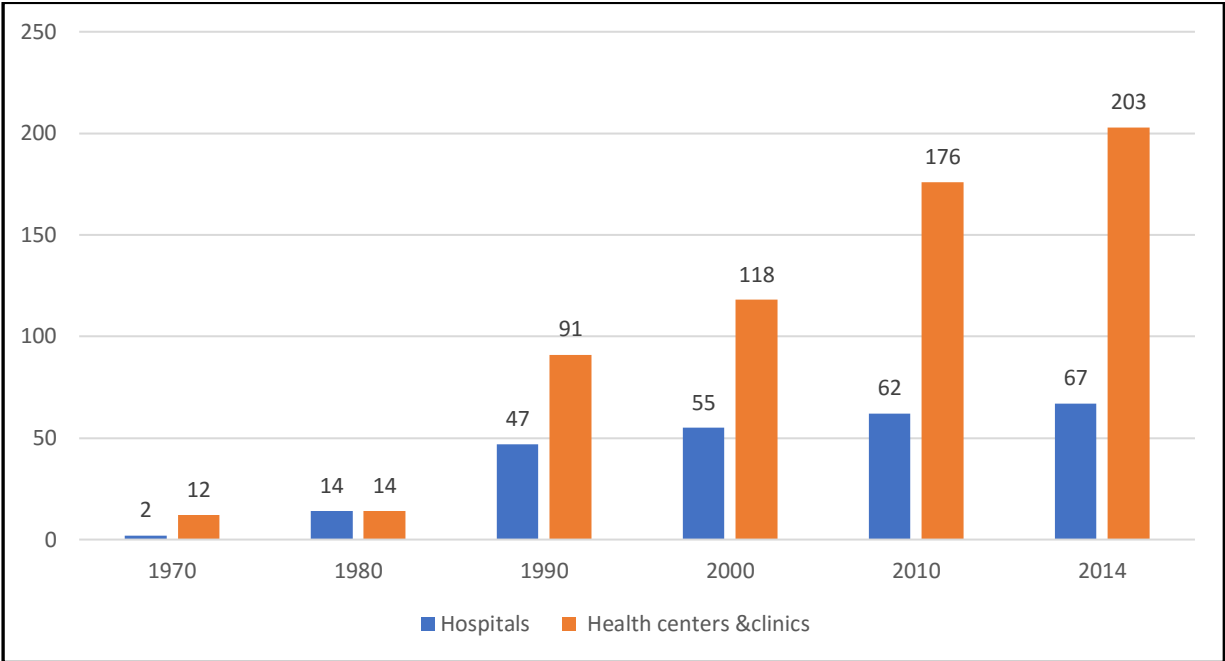


**Source:** Statistical Year Book (various issues)

Figure 5.4. Infrastructure: lengths of paved roads

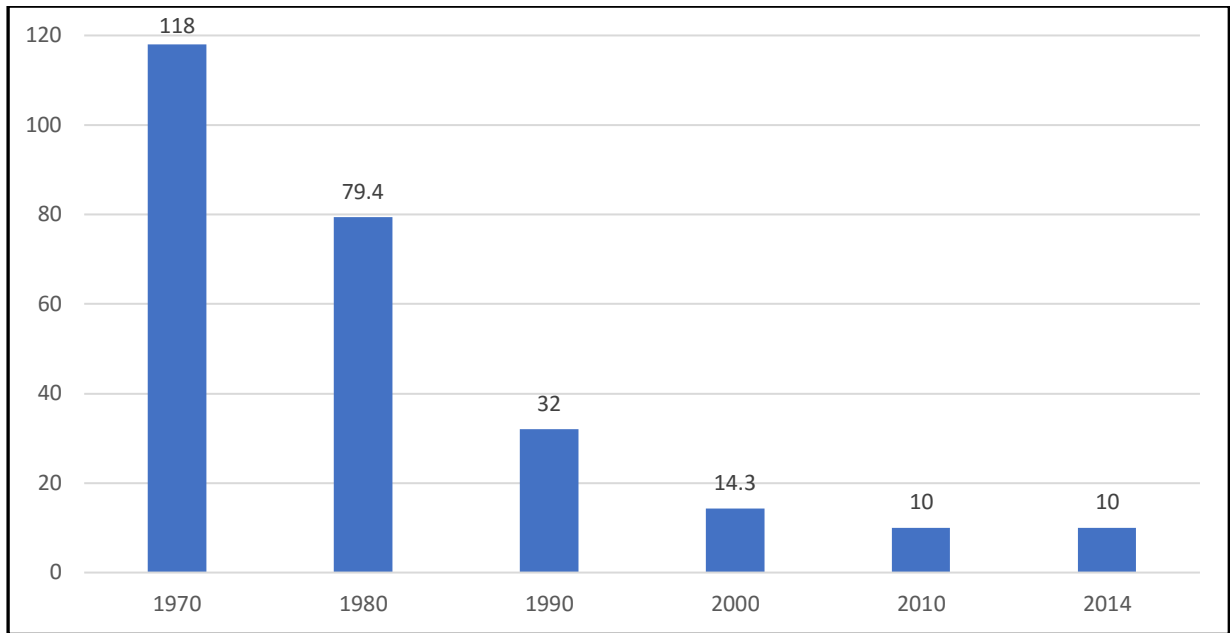
There were two small hospitals; one was opened in 1935 by the American Arabian Mission and the other one was established in 1948. Therefore, healthcare output indicators were very poor (as shown in Figure 5.5, Figure 5.6 and Figure 5.7); for example, life expectancy was

less than fifty years during 1970, and the rates of morbidity from communicable diseases such as hepatitis, diphtheria, tuberculosis, pertussis, tetanus, polio and measles were very high. For every one thousand new births, there were one hundred and eighteen deaths, and out of every eight infants born alive, one infant died before reaching the first birthday; out of every five children born, one died before reaching the age of five years (Alshishtawy, 2010). Although the formal education system began in Oman in 1930, it was only with a very limited number of schools.



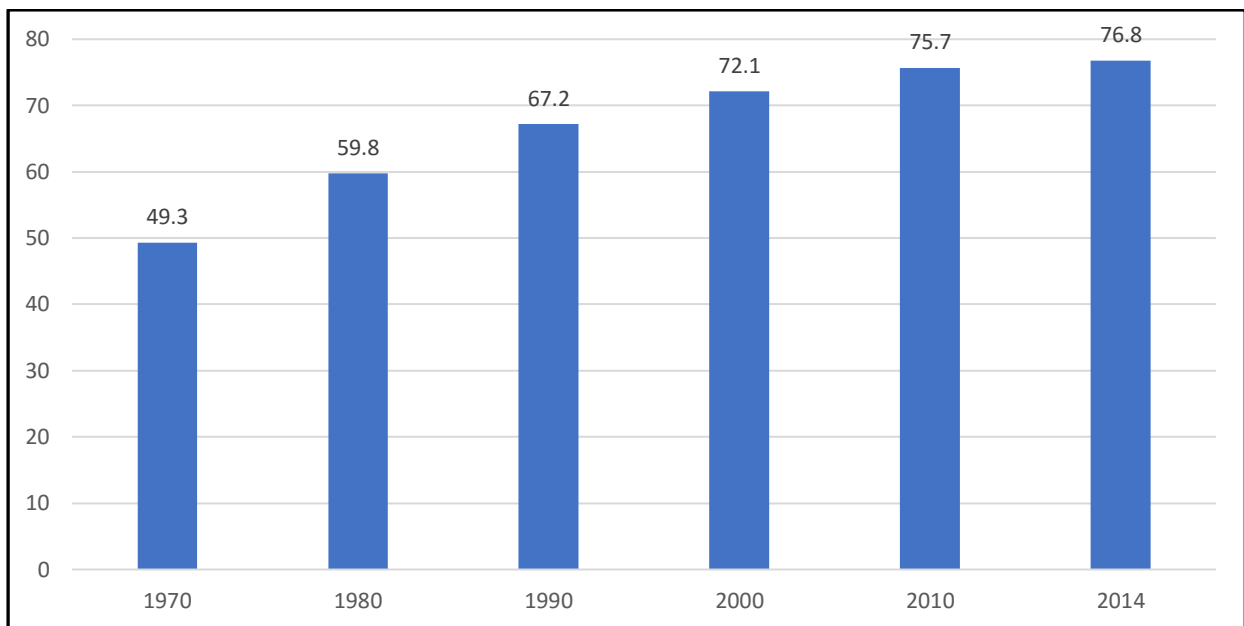
*Source: Statistical Year Book (various issues)*

Figure 5.5. Health care: numbers of hospitals, health centers and clinics (1970-2014)



*Source: Statistical Year Book (various issues)*

Figure 5.6. Health care: infant mortalities (per 1000)



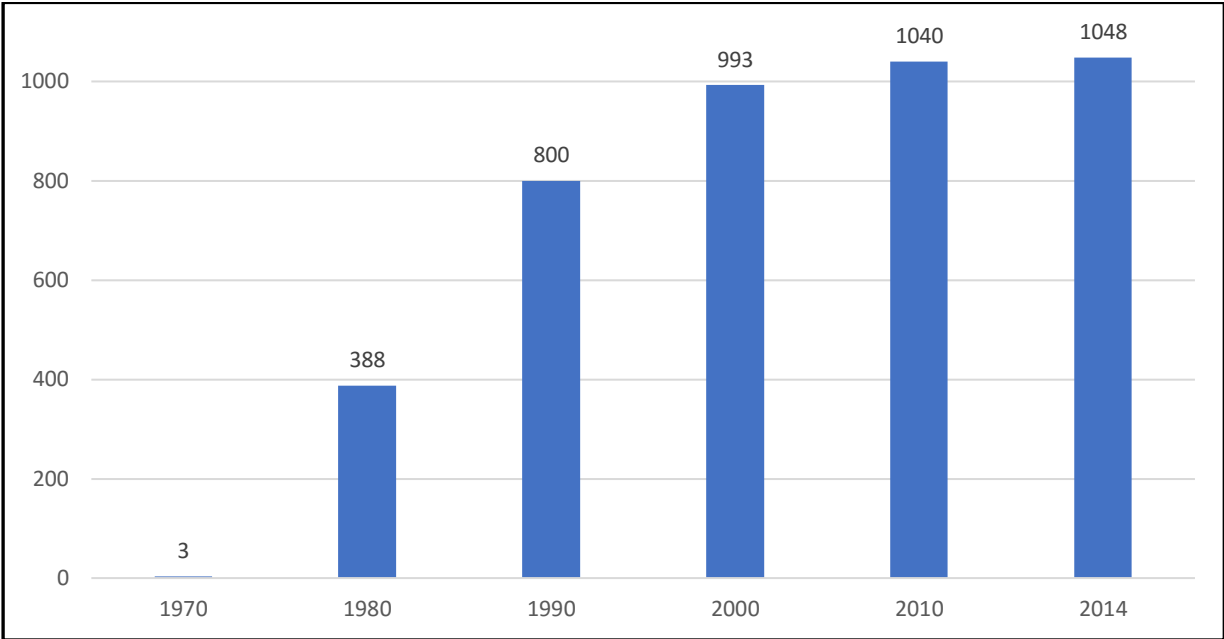
*Source: Statistical Year Book (various issues)*

Figure 5.7. Health care: life expectancy

During the school year (1969/1970) there were only three government primary male schools (grades 1-6 in Muscat, Matrah, and Salalah) with a total enrollment of 900 male students

(Figure 5.8). In addition, there was one American missionary school for girls with an enrollment of about fifty students, three small private schools for the Hyderabad (Indian) community and one technical trade school run by the petroleum development company (UNESCO, 1972). Furthermore, there was no formal higher education and there were no colleges or universities (Al Bandy, 2005; and Al Shmeli, 2009), so the only opportunities for higher education were found abroad.

In 1970, Oman depended exclusively on oil exports and imported food stuffs due to its small industrial and agricultural sectors. The total import value in 1976 was 466 million OMR, which then decreased to 308 million OMR in 1980. The total export value was 526 million OMR and 487 million OMR respectively for the same years.



Source: Statistical Year Book (various issues)

Figure 5.8. Education: number of schools

- ECONOMIC CONDITIONS AFTER 1970**

Economic development in Oman was at a standstill until the day His Majesty Sultan Qaboos ascended to the throne on 23 July 1970 after the restrictive rule of his father. His Majesty

found himself confronted with insurgency at Dhofar<sup>20</sup> and a country plagued by widespread diseases, illiteracy and poverty. Simply, he inherited a country without the minimum components of a modern state, such as ministries or councils, or modern administrative institutions. In addition, there were very limited and scarce public services and infrastructure. Sweeping changes were made to the way oil revenue was being invested by his father (McWilliam, 2011). Immediately he embarked on a comprehensive Renaissance to erase sectarian affiliations and weaken the influence of the tribes.

He opened the country to the outside world, embarked on economic reforms, and boosted spending on health, education and welfare for all regions of Oman. He summarized all the tasks in his first inspiring speech to the nation on the day of his accession in 1970 when he said *“I promise you to proceed forthwith in the process of creating a modern government. My first act will be the immediate abolition of all the unnecessary restrictions on your lives and activities. I will proceed as quickly as possible to transform your life into a prosperous one with a bright future”* (Ministry of Information, 2010).

The first five years (1970-1975) of His Majesty’s rule can be considered as the stage that paved the way for the comprehensive renaissance. During this period, a complex structure of government and public institutions was developed. The emphasis was on the structure of the government administrative body that was capable of planning and implementing economic development, economic expansion and social infrastructures to fill the gap that existed in 1970. According to the development council (1976), more than 93 percent of the government revenues were directed to infrastructure building during that period. As a result, communication systems and other infrastructures have been modernized, and a great number of schools and hospitals have been built. Afterward, the government directed the development of the economy through five-year development plans, in which the priorities are coordinated and the amount and allocation of development expenditures are specified (Al Talib, 1990).

Oman embarked on ambitious modernization through five-year development plans from 1976 (Al Yousef, 1997). The first five-year development plan in 1976 made remarkable strides in development and growth- although it faced multiple tasks and challenges- but its priority was given to the establishment of modern government that could continue to promote

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<sup>20</sup> In 1964, a separatist revolt began in the Dhofar Province. Aided by communist and leftist governments such as the former South Yemen (People's Democratic Republic of Yemen), the rebels formed the Dhofar Liberation Front, which later merged with the Marxist-dominated Popular Front for the Liberation of Oman and the Arab Gulf (Coleman, 2015).



development and economic growth in the country. It started to create ministries for social services, such as education, housing, health and other administrative institutions. By good fortune, the first five-year development plan encountered the oil boom phase, in which oil financed the development of Oman. Modern and expensive infrastructures were built, which included electrical units, telephone services, public education and medical services (Ernst and Young, 2008). Oil windfall from the oil price boom, especially from the first<sup>21</sup> oil embargo in 1974 when the oil prices increased from 2.5 USD on 1972 to 11.6 USD, were directed to improve the life style of citizens, building infrastructure facilities, advancement of education and health sectors and reducing the illiteracy rate.

The European Commission stated that “*good quality infrastructure is a key ingredient for sustainable development and all countries need efficient transport, sanitation, energy and communications systems if they are to prosper and provide a decent standard of living for their populations*”. In addition, Al Saqri (2010) stated that building basic infrastructure and providing social services was seen as an important prerequisite for inducing and stimulating the necessary linkages for any industrial and agricultural sector growth, and ultimately economic development. Therefore, the government developed a widespread network of modern infrastructure such as road networks, airports, sea ports and communications services as well as expanding basic education and health care systems (MONE, 2010). Road networks have impressively developed to become one of the most modern networks in the region in terms of coverage and world-class specifications. The road network has played a positive role in socio-economic development and the achievement of the planned objectives (MONE, 2010), due to its facilitation of domestic trade, which in turn encourages agricultural and industrial investment.

Human development requires upgrading and mobilizing of human capabilities and efficiency in its scientific, practical, technical, professional and attitudinal aspects for meeting the community and labor market needs (MONE, 2010). To accomplish that, the government introduced a heavy investment that radically altered and improved spectacularly the education infrastructures and accommodated the growing population of young nationals (Baporikar and Shah, 2012). Therefore, the number of primary and secondary schools and the numbers of students enrolled expanded dramatically after 1970. According to Al Saqri (2010) and

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<sup>21</sup> The second oil price boom happened during (1979-1981), when the *Shah of Iran* was overthrown, and the *Ayatollah AL Khomeini* came to power. He cut Iran's oil production, which reduced shipments of crude oil to the United States. The oil prices increased from 14 USD in 1978 to 31.6 USD in 1979.

UNICEF statistics (2014), the progress is also reflected in an improvement in adult literacy rates in Oman, which increased from less than 30 percent in 1967 to 94.8 percent in 2015.

Furthermore, the government believed that higher education plays an important role in the development of human resources and in supplying societies with a professional labor force that is highly specialized to work in occupations requiring a high degree of practical and theoretical skills and knowledge (Baporikar and Shah, 2012). Thus, Oman's first university - Sultan Qaboos University- was opened in 1986 and later, other post-secondary institutions included a technical college, banking institute, teacher training college and health sciences institute. Consequently, the total number of higher education institutions increased to more than 55 in 2014 (one government university, 27 private universities and colleges, and 27 different higher education institutes).

These achievements in the field of education have led the United Nations to upgrade Oman's position to the high human development group of countries in its Annual Human Development Report since 2006. The position clearly reflects development in the three main indicators of the Human Development Index (HDI): per capita income, education and life expectancy at birth (MONE, 2010), as Table 5.4 shows.

Table 5.4. Oman GNI per capita and HDI Value (1980-2014)

Year	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (2011 PPP\$)	HDI value
1980	59.8	3.5	NA	19,191	0.482
1985	63.9	5.9	NA	26,555	0.588
1990	67.2	7.9	NA	28,079	0.658
1995	69.8	9.7	NA	31,404	0.717
2000	72.1	10.9	NA	35,728	0.748
2005	74.2	11.2	6.5	38,097	0.733
2010	75.7	13.4	6.8	46,516	0.714
2011 <sup>22</sup>	76.0	13.6	6.8	43,228	0.780
2012	76.3	13.6	6.8	41,435	0.781
2013	76.6	13.6	6.8	42,191	0.783
2014	76.8	13.7	8.0	34,858	0.793

*Source: Human Development Report (UNDP, 2015)*

<sup>22</sup> From 2011, the long and healthy life is measured by life expectancy. Access to knowledge is measured by: (1) mean years of schooling for the adult population, which is the average number of years of education received in a life-time by people aged 25 years and older; and (2) expected years of schooling for children of school-entrance age, which is the total number of years of schooling a child of school-entrance age can expect to receive if prevailing patterns of age-specific enrolment rates stay the same throughout the child's life. Standard of living is measured by Gross National Income (GNI) per capita expressed in constant 2005 international dollars converted using purchasing power parity (PPP) rates.

As can be seen from Table 5.4, Oman's HDI value developed very well, as it increased from 0.482 in 1980 to 0.793 in 2014 (that progress moved Oman from a low to a high human-development category at a rank of 52 out of 188 countries and territories). Therefore, the Human Development Report of 2010 entitled "The Real Wealth of Nations" ranked Oman as the fastest HDI mover globally over the past forty years (De Bel-Air, 2015). Oman's life expectancy at birth increased by 17 years and expected years of schooling increased by 10.2 years between 1980 and 2014. The mean years of schooling was based on educational attainment data from UNESCO Institute for Statistics for 2008 and it increased by 1.5 years. GNI per capita increased by about 81.6 percent for the same period (UNDP, 2015). Oman was ranked first in the Economic Freedom Index of the Arab world prepared by the International Research Foundation from 2002 until 2005, with an average score of 8 out of 10 points. Additionally, a report of the World Bank Prestigious Commission on Growth and Development (*The Growth Report: Strategies for Sustained Growth and Inclusive Development*) in 2008 hailed the economic progress in Oman and classified it as the only Arab "success story". The report also classified Oman as one of only 13 economies<sup>23</sup> around the world that grew at a rate of 7 percent a year (*in constant USD of 2000*) or more for 25 years (1960-1999) or longer after the Second World War, and demonstrated fast and sustained economic growth. In addition, the political risk Map 2007 described Oman as the least politically risky country in the Middle East and North Africa (MENA) region.

Developments in the health sector paralleled those in education. For example, the number of hospitals increased from 14 in 1980 to 42 in 1990 (Figure 5.5). The government also stressed the importance of delivering maternal and child health care at the village level to decrease the infant mortality rate (Helem, 1993) and increase life expectancy, as shown in Figure 5.6 and Figure 5.7 respectively. Therefore, the quality and coverage of the health system was greatly commended by the World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF), and the United Nations Development Program (UNDP), (MONE, 2010). The WHO study in the late 1990s and early 2000s classified Oman as having the most efficient health system in the world. Oman's top ranking was mainly attributed to the country's enormous reduction of infant mortality from 310 per 1000 births to just 18 per 1000 over the last four decades (Coleman, 2015). The progress of different indicators of economic growth and development like GDP and GDP per capita, HDI,

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<sup>23</sup> The other economies include Botswana (1960-2005), Brazil (1950-1980), China (1961-2005), Hong Kong (China) (1960-1997), Indonesia (1966-1997), Japan (1950-1983), the Republic of Korea (1960-2001), Malaysia (1967-1997), Malta (1963-1994), Singapore (1967-2002), Taiwan Province of China (1965-2002) and Thailand (1960-1997).

life expectancy, GNI per capita, infant mortality and literacy rate are evidence of the economic progress and development that occurred in Oman.

Continuously the intensive efforts combined at all levels to create stable and appropriate climate conditions for the development of economic sectors that already existed and contributed to the GDP, and for the introduction of new sectors that did not exist before 1970. The government applied low taxation, low custom duties and fewer fees in order to stimulate the growth of non-oil sectors. So, the comprehensive renaissance efforts led to remarkable achievements on all fronts and began to bear fruit in economic growth and development; thus, the country had been transformed from a less developed to a developing country DPAD (2012), or from a medieval country (a tribal governed system) to a modern state (Budhwar et al., 2002, 199) where the education enrolment reached 100 percent and the citizens enjoyed comprehensive and free health services.

## **5.5 PROGRESS OF ECONOMIC DIVERSIFICATION EFFORTS IN FIRST AND SECOND STRATEGIES FOR DEVELOPMENT**

The efforts to diversify the economy can be divided into two main periods: the first period started with the first long-term strategy for development plan (1970-1995), and the second period started with the second long-term strategy for development (1996-2020).

- **PROGRESS IN THE FIRST STRATEGY FOR DEVELOPMENT (1970-1995)**

The first long-term strategy for development was extended for a quarter of a century (1970-1995). As early as the start of the renaissance in 1970, the priorities were given to infrastructure and creation of government state and institutions to facilitate the development process. The first five years (1970-1975) were mainly aimed at the completion of infrastructure, increase in absorptive capacity of the economy, and the completion of the elements of a free national economy. The economic diversification and the awareness of risks in dependence on oil were presented from the first five-year development plan (1976-1980). That consciousness also came from the expectation of the development council in 1976, when it expected government revenue to decline due to a gradual decline of oil production by 1977 and Oman would have exhausted most of its oil reserves by 1987, unless there were new discoveries.

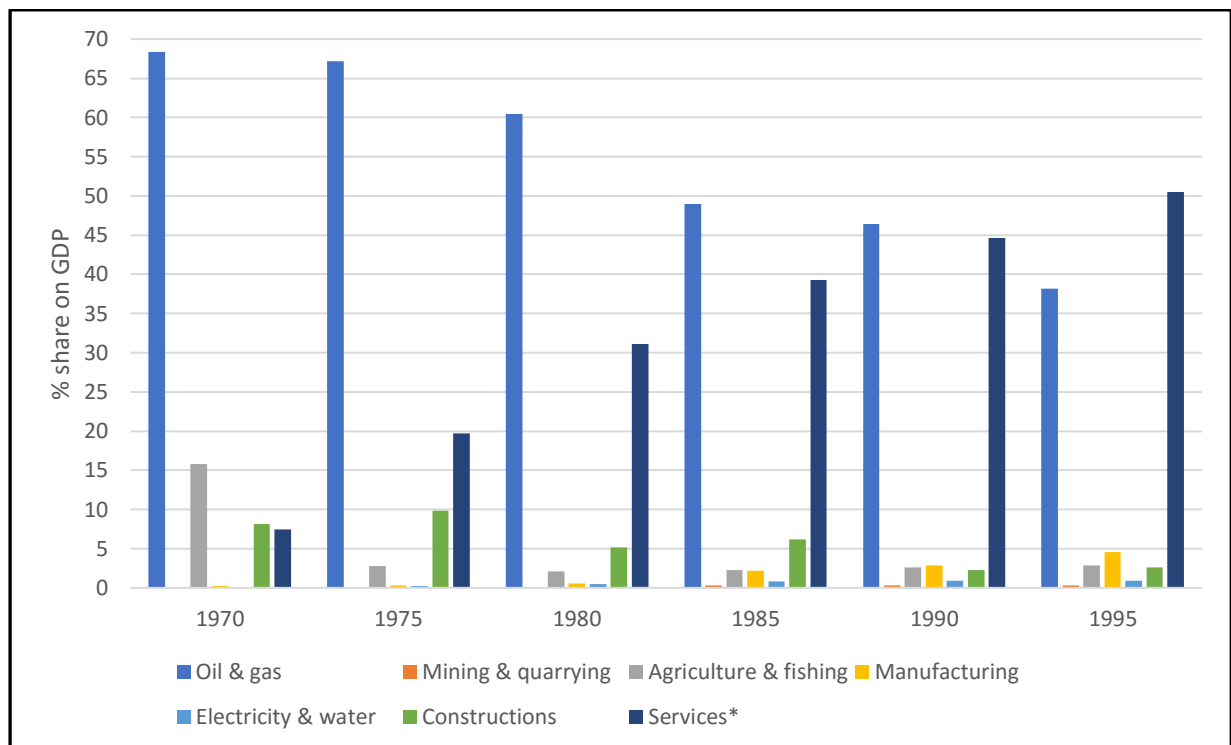
That situation poses a challenge to the sustainability of the economy. In response to the downward trend of oil production and revenues, the government implemented different five-year plans to steer the country's economic diversification with import substitution as the main policy tool, and to diversify the production base, through promoting the non-oil sectors by investment in some mega-projects such as aluminum, iron, steel and petrochemicals. In summary of follow up of different government official reports, as well as different documentations of five-years development plans, it found that during the first long-term strategy for development (1970-1995) there were three shared objectives that mainly aimed to enhance the diversification process. Those were:

1. Working on development of new sources of government revenues to augment and eventually replace oil revenues in future and enhance the GDP.
2. Increase the government investment to high-income returns sectors, especially in the non-oil sectors like agriculture and fishing, manufacturing, mining and quarrying.
3. Enhancement of water resources, completion of basic infrastructure (roads, communications, electricity and water), support for business activities and raising the state administration efficiency.

The most prominent achievements of the government efforts to diversify the economy during the period 1976-1995 were:

- The government alone, or in conjunction with the private sector creates many high-income returns projects, such as grain mills, dates factories and the Oman Fish company.
- Establishment of the oil refinery at Al Fahal port, the Oman Cement factory and copper mining and smelting factory in Sohar.
- Establishment of the Authority for Rusayl Industrial Estate in 1985, which then changed to the Public Establishment for Industrial Estates (PEIE) in 1993 as a response to the expanding Industrial Estates in different regions in Oman.
- Establishment of Oman Development Bank (ODB) in 1977 as an institution to help and encourage the diversification process. ODB was designed to provide loans to entrepreneurs looking to start a business in a sector other than the petroleum industry (McWilliam, 2011).

- Establishment of Oman bank for Agriculture and Fisheries in 1981. It extends loans at concessionary rates to individuals for whom farming or fishing is the principal activity (Helem, 1993).
- Completion of many basic infrastructure projects such as schools, new deep-water port, roads, an international airport, hospitals, electricity-generating plants, communications and desalination plants.
- The government increased investment in different sectors like tourism, agriculture and fishing (the investment increased from 1.0 percent in 1976 to 11.8 percent in 1980), manufacturing and mining and quarrying (the investment increased from 1.0 percent in 1976 to 14.2 percent in 1980), which led to an increase in the share of those sectors in the GDP and a decrease of the oil and gas share (as shown in Figure 5.9).



*Source: Annual Reports of Central Bank of Oman (various issues), Statistical Year Book (NCSI, various issues) and Oman Development Plans Reports (various issues)*

\* Services sector includes government services, wholesale and retail trade, hotels and restaurants, transportation, storage and communication, real estate and business activities, financial intermediation, public administration and defense and other services.

Figure 5.9. Development of sectors shares in GDP (1970-1995)

The contribution of the annual average of non-oil activities in GDP increased from 43.5 percent during the first five-year development plan (1976-1980) to reach 62.4 percent during the fourth five-year development plan (1991-1995). Also, the annual average share of the non-oil revenues increased from 7.8 percent to 18.9 percent for the same period. Finally, the annual average share of the non-oil exports in the total exports increased from 3.8 percent to 19.2 percent during the same period (Table 5.5).

Table 5.5. Diversification indicators during first strategy for development (1976-1995)

Statement	Achievement by the end of the first five-year development plan (1976-1980)	Achievement by the end of the second five-year development plan (1981-1985)	Achievement by the end of the third five-year development plan (1986-1990)	Achievement by the end of the fourth five-year development plan (1991-1995)
Annual average share of non-oil activities in GDP	43.5	48.6	58.1	62.4
Annual average share of the non-oil revenues	7.8	11.5	13.3	18.9
Annual average share of the non-oil exports in the total exports	3.8	7.4	9.9	19.2

Source: Statistical Year Book (various issues).

**• PROGRESS IN SECOND STRATEGY FOR DEVELOPMENT (1996-2015)**

Economic diversification was broadly expressed in the fifth five-year development plan (1996-2000) as a forward strategic vision for the second long-term strategy for development named "Vision for Oman's Economy: Oman 2020". The fifth five-year plan (1996-2000) represented crossroads between two phases (1970-1995 and 1996-2020) in the crucial stages of the economic and social development of Oman. This plan started after the first long-term strategy for development (1970-1995) which enabled Oman to lay the foundations for economic and social transformation successfully. (During that period, the government took responsibility for creating a big range of essential services and was a shareholder in different government companies, and provided generous support to the private sector to enable it to compete internally and externally). The possibility of depletion of oil reserves within the next

two decades combined with a predominantly young and rapidly growing population puts the Omani government under great pressure to pursue a policy of economic diversification with great urgency and with a view to minimizing dependence on the oil industry and at the same time maximizing employment opportunities for the Omani population (Oman, 2020). Similarly, it was clear to Omani policy makers that new economic patterns related to economic diversification and labor force indigenization had to be established after several cases of fiscal deficits due to weak revenues returns from oil (Ennis and Al-Jamali, 2014). The examples are the cases of oil prices decreasing during the third five-year development plan (1986-1990) from 27.6 USD in 1985 to 13.4 USD in 1986); and the case in 1990 when prices decreased from 23.7 USD to an average of 17.8 USD during the fourth five-year development plan (1991-1995).

Subsequently, a major shift in development planning occurred, as on 3<sup>rd</sup> and 4<sup>th</sup> June 1995, a development conference called the “*Vision Conference: Oman 2020*” was held in Muscat to establish the economic policies for the next 25 years. That conference represents the first step in Oman’s building a vision through the second long-term strategy for development (1996-2020). The vision conference examined past achievements, identified the challenges facing future development, and formulated policies and measures to move the Omani economy to a higher level of growth and prosperity. “*Oman 2020*” was ratified in January 1996 as per Royal Decree No. 1/96 (JICA, 2005), and since then, a major shift in development planning has occurred from short- and medium-term planning to set of long-term visions to achieve the economic balance and sustainable growth of the economy. Oman was the first GCC country to develop a long-term development vision for the national economy. The future vision for Oman’s economy (Oman, 2020) aimed to ensure that the per capita income remains at its 1995 level<sup>24</sup> as a minimum, and that it would double by 2020, providing suitable conditions for economic progress. According to Oman (2020) documents, the basic themes of the future Vision “Oman 2020” include:

- Development of human resources capabilities and competencies to keep abreast with technological progress.
- Creation of a stable holistic economic climate aimed at development of a private sector capable of optimizing the use of human and natural resources of Oman through efficient methods and maintaining environment integrity.

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<sup>24</sup> The level of per capita income in 1995 was 27,870 USD.



- Encouraging the establishment of an effective and competitive private sector and strengthening the mechanisms and institutions that promote the vision and common policies between it and the government.
- Providing appropriate conditions for the realization of economic diversification, and working towards optimal exploitation of the natural resources of the Sultanate while managing the changes therein with high efficiency to face the ever-changing domestic and global conditions.
- Enhancing the standard of living of the people, reducing inequality among regions and among various income groups, and ensuring that the fruits of development are shared by all citizens.
- Preserving the past achievements during the 25 years since the beginning of the Renaissance in 1970 and safeguarding and developing them.

In addition, the future Vision “Oman 2020” is aimed at transforming the national economy to an economy based on highly competitive sectors and on advanced technology production and a skilled workforce, as well as on private sector initiatives linked to the global economy as they are export-oriented, not as was the case in the first long-term strategy for development. The government intends to achieve these objectives through three main pillars: human resources development, economic diversification, and private sector development. The economic diversification policy aims to carry out a substantial transformation in the structure of the national economy during the period 1996-2020. That will be achieved through creating a diversified economy based on renewable resources, which is highly efficient and integrated with the world economy. It is expected that there will be a gradual decrease in the contribution of the oil sector to the GDP (oil’s share of total GDP is expected to drop to 9 percent in 2020 as compared to 41 percent in 2009) while the contribution of the non-oil sectors to GDP will increase gradually (*Oman, 2020*). The comparative structure of GDP in *Vision for Oman's Economy: Oman 2020* is presented in Table 5.6.

Table 5.6. Comparative structure of GDP in Vision for Oman's Economy: "Oman 2020"

% of GDP	1995	2000	2005	2009	2020
Oil & Gas	38.10	48.70	48.70	41.00	19.00
Oil	37.20	47.30	45.10	37.00	9.00
Gas	00.90	01.40	03.60	04.00	10.00
Non-Oil	63.50	53.50	52.70	61.40	81.00
Agriculture & Fishing	02.80	02.00	01.60	01.40	5.100
Industry	08.40	08.60	12.10	18.60	29.00
Services	52.30	42.90	39.00	41.40	46.90
Gross Domestic Investment	15.00	11.90	17.90	N/A	34.00

Source: Vision for Oman's Economy (Oman, 2020)

However, due to centralization of development in the capital (Muscat) there is a prevalence of regional inequalities in government investment, as the share of the investment in the other Governorates was lower than in Muscat (Table 5.7).

Table 5.7. Regional costs of new projects in last two Development Plans

Total of Seventh Five - Year Plan 2006-2010			Governorate / Region	Total of Eighth Five - Year Plan (2011-2015)		
Actual Investments O.R Million*	Region Share from total cost of Investments %	Region Share from regional Investment cost (After Excluding cost of National Projects %)		Cost of new projects O.R Million	Region Share from cost of new projects %	Region Share from regional Investment cost (After Excluding cost of National Projects %)
143.8	2.5	3.3	1- AL-Buraymi	64.8	1.2	2.2
1160.9	20.1	26.7	2- Muscat	904.5	16.2	30.9
942.4	16.3	21.6	3- Al - Batinah	589.6	10.6	20.2
45.5	0.8	1.0	4- Musandam	45.3	0.8	1.5
80.3	1.4	1.8	5- Ad Dahirah	31.6	0.6	1.1
316.0	5.5	7.3	6- Ad Dakhliyah	138.4	2.5	4.7
363.5	6.3	8.3	7- Ash Sharqiyah	207.1	3.7	7.1
705.4	12.2	16.2	8- Al Wusta	429.1	7.7	14.7
509.4	8.8	11.7	9- Dhofar	498.7	9.0	17.1
86.8	1.5	2.0	10-Outside Sultanate	15.8	0.3	0.5
4354.0	75.3	100.0	11- Total Investments allocated for the Regions	2924.9	52.5	100.0
1431.4	24.7		12- National Projects	2646.7**	47.5	
5785.4	100.0		13- Total cost of new projects	5571.6	100.0	

Source: Supreme Council for Planning (SCP)

Accordingly, the government has planned to reduce the inequality among regions through achieving much more equitable and sustainable economic balance between them (Oman, 2016) and ensuring that the fruits of development are shared by all citizens (JICA, 2005).

During the elapsed period (1996-2015) of the future Vision 2020, several programs and initiatives were implemented to support the economic diversification process; among them are:

- Sohar refinery and methanol and propylene factories as well as aluminum and steel factories.
- Establishment of many important petrochemical industries such as Oman Liquefied Natural Gas (OLNG) company and many fertilizer factories.
- Development of commercial ports such as Salalah container port<sup>25</sup> and the port of Duqm, in addition to many fishing ports.
- Establishment of different Industrial Estates and Free Trade Zones.
- In 2006 Oman Investment Fund (OIF) was established with the objective of building a diversified portfolio in the production and services sectors, projects and other related fields that does not contradict the objectives of other government funds of Oman and is fully funded by the Ministry of Finance.
- The development of Sohar Industrial Port and free trade zones.
- Development of many integrated tourism complexes and resorts such as Barr Al Jassah Resort, Yitty Resort, Shinas tourist resort and the Wave in Muscat.

It is expected that by the completion of all planned programs and once they start to bear fruit there will be product and market diversity in both non-oil and re-exports, which augurs well for the economy. It is also expected there will be significant positive effects not only at the local level, but also at regional and international levels, and multi-heavy industries will enter the market, creating many job opportunities for Omani youth, and providing some of the commodities needed by both local and international markets. The actual performance of some economic diversification indicators during the elapsed period (1996-2015) of the future Vision 2020 are presented in Table 5.8. The data shows that there is good progress in all three indicators, even though the share of oil in the GDP is still far from the targeted percentage. The share of non-oil activities in the GDP is approaching the target of 91.0 percent by 2020,

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<sup>25</sup> Salalah Container Port began operation in November 1998. By 2015, it was ranked 61 among the top 100 world container ports in the world with an annual throughput volume of 2.56 million twenty-foot equivalency units (TEU), (World Shipping Council, 2016).

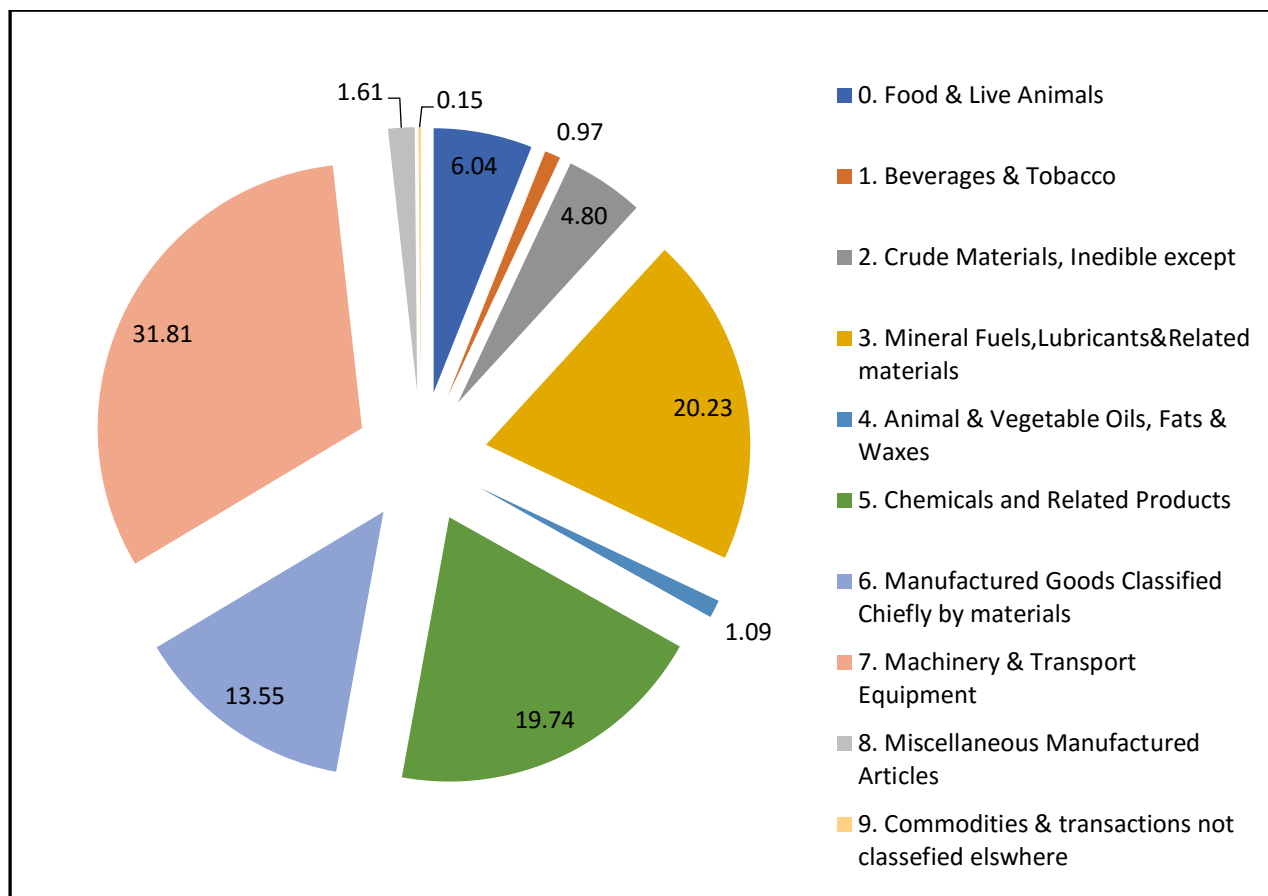
whereas the share of the non-oil exports in the GDP overcame the targeted percentage by the end of 2015 and its contribution was 20.8 percent (of which 9.6 percent is from re-exports).

Table 5.8. Economic diversification indicators during (1996-2015)

Target by "Oman 2020"	Statement	Achievement by the end of the fifth five-year development plan (1996-2000)	Achievement by the end of the sixth five-year development plan (2001-2005)	Achievement by the end of the seventh five-year development plan (2006-2010)	Achievement by the end of the eighth five-year development plan (2011-2015)
Decrease the contribution from 37% in 1995 to 9% in 2020	The share of oil sector in the GDP	48.7	47.2	45.8	34.1
Increase the contribution from 63% in 1995 to 91% by 2020	The share of non-oil activities in GDP	51.3	52.8	54.2	71.4
Increase the share from 9.4% in 1995, to about 13% in 2020	The share of the non-oil exports in the GDP	10.0	9.5	19.4	20.8

*Source: Statistical Year Book (various issues)*

Despite all efforts, Oman is still facing difficulties in diversifying its economy (oil still accounted for 34.1 percent of the GDP in 2015). Different empirical researches conducted by Sturm et al. (2008), Coury and Dave (2010) and Titulaer (2010) showed that Oman was not able to diversify its economy and the oil sector is still leading economic growth. Moreover, data for Standard International Trade Classification, (*STIC Rev.4*) of the merchandise exports and re-exports of Oman gathered from United Nations Comtrade (UN Comtrade) database, showed that mineral fuel, lubricants and related materials, chemical and related materials are still the dominant products of the Oman export basket, representing 40 percent of the total exports and re-exports in 2014 (Figure 5.10).



*Source: Author's own elaboration based on data from the United Nations Comtrade Database*

Figure 5.10. Percentage shares of products categories exported in 2014

## 5.6 CHALLENGES IN THE DIVERSIFICATION PROCESS

Since 1967 the oil sector has dominated Oman's GDP. At the same time, oil revenues worked as the enhancer of the diversification efforts, therefore the government pursues Enhanced Oil Recovery (EOR) techniques to maintain high production volume in addition to accelerating exploration efforts for new fields. Continuing increase in oil prices have always created temptations to increase government spending as well as investment in oil development projects that make the diversification process more difficult (Al Abduwani, 2012). This leads to an increase in the role of oil in the national economy, but the growth associated with the increment of government spending is characterized only by its ability to sustain the economy during fluctuations in oil prices. Oman's government policy is not to utilize the windfall

revenues of oil (revenues from oil that occur suddenly due to unexpected circumstances) and to transfer it to the State General Reserve Fund (SGRF). A set of the challenges that faced the diversification process of Oman economy since the first five years' development plan (1976-1980) can be summarized as:

- Fulcrum of economic diversification to unsustainable activities: that is most of the non-oil activities depend on gas and petrochemicals as their input factors for production. In addition to activities and sectors like trade and constructions that depend on the government spending.
- Aa high percentage of the population is in the non-production age groups (children (0-14) and old people (60-80)). In 2007, the sum percentage of those two groups was 40 percent of the total population.
- Weak linkage between oil and non-oil sectors and the decreased contribution of the non-oil sector to GDP compared with the oil and gas sector and the non-tradable services sector.
- The dramatic expansion of government spending in periods of prosperity (when oil prices rise) affected the implementation of economic diversification programs.
- Export development also relies on unsustainable activities, as the increase in non-oil exports was associated mainly with the increase of exports of liquefied natural gas and refined oil products.
- Diversification efforts were dispersed among more than one sector as the development plans were targeting the development of all sectors at the same time.
- Gradual decline in the production of the tradable commodities compared with the services sector.
- Dominance of government role (the government is the main employer, the main investor in the domestic economy, and the main purchaser of goods and services), which leads to minimizing the size of the private sector and weakens its contribution to the GDP (its share on the GDP did not exceed 6 percent on average and 50 percent of its investment concentrated on the oil sector). Furthermore, the government budget to support the private sector did not exceed 9 percent of total expenditures in 2010 (Oman Annual Report, 2010).
- Lack of consistency between economic diversification policies and national employment policies. Despite the high growth rates of the national economy in the last period of the 'Oman 2020' vision, job vacancies made available for the national

workforce could not be filled due to the lack of consistency between the outputs of the education system and the actual needs of the labor market (educational mismatch between nationals' qualifications and private sector needs). It is also due to the fulcrum of economic diversification activities with high capital-intensive industries (gas and petrochemicals) and high work-intensive activities (trade and construction) but with low wages that do not match the ambitions of Omani youth.

- Significant expansion in low-skill labor recruitment that leads to reduction in the efficiency of the production and services sectors and their weak competitiveness in global markets.
- Most -if not all- previous five-year development plans were characterized by the existence of a weak relationship between planning and implementation, which affects the implementation process. The problem was in the implementation of each five-year development plan, as the distribution of the planned five-year development plan budget at most times was different from the distribution of the approved annual government budget (weak relationship between planning and implementation). Table 5.9 shows examples of planned budget and actual expenses during the seventh and the eighth five-year plans.

Table 5.9. Planned and actual expenses during the seventh and the eighth five-year plans

	<b>Estimated planned expenses (million OMR)</b>	<b>Actual expenditures (million OMR)</b>	<b>Percentage change from the planned (%)</b>
Seventh five-year plan (2006 -2010)	20896	31284	49.71
Eighth Five-Year Plan (2011 -2015)	42710	52127	22.05

**Source:** *Statistical Year Book (various issues)*.

Therefore, the diversification process was inefficient after the implementation of eight five-year development plans during the period 1976-2015. Booz Allen Hamilton Company (2014) recommended that the government design and implement a successful long-term plan for enhancing the economic diversification process in Oman. Also, Mansour (2013) suggested several factors that are critical to the success of diversification process in Oman like:

- Designing an economic diversification strategy that takes into consideration the available human capital and the potential for skill development.

- Creating the potential for specific non-oil based sectors to compete in the local and international market.
- Investing in human capital that responds to the needs of priority economic sectors.
- Creating an enabling business environment that would provide the conditions for the growth of the private sector away from hydrocarbon-based activities.
- Developing quality government institutions to aid the diversification process.
- Building adequate physical and sub-set infrastructures (social infrastructures) such as schools, hospitals and Universities.

## 5.7 CONCLUSION

Compared to the poor economic and social conditions that prevailed before 1970, oil has been considered a blessing (especially in the early stages of the development process), as the country has seen a wide economic development based mainly on oil revenues, which led to deriving the GDP growth and marked improvement in development indicators such as health, education and infrastructure. Oman has been able to achieve undoubted achievements in all sectors and dimensions of the overall development. Additionally, economic growth was accompanied by improvement in social welfare. The political stability influenced by good leadership and wisdom of His Majesty Sultan Qaboos, enabled him to utilize the flow of oil revenues to make great changes in the country. Over the past forty-four years of the Renaissance, it is evident that oil rents (revenues) have led to an enormous improvement in standards of living for Omanis, leading to unprecedented levels of economic growth. They generated an increase in average annual growth rate of the GDP of not less than 5 percent and enabled successful infrastructure projects to greatly increase social and economic development. Because of the risks of depending on oil as the main source of income, such as distortion of governments spending during low oil-price periods, the policy -makers have been forced to act on economic diversification as a priority. Therefore, different policies have been implemented to diversify the economy from as early as the first five-year development plan in 1976, along with a long-term development strategy (Oman, 2020).

Although Oman exerted serious efforts to diversify -which reflected positively on the GDP slipping share of petroleum activities from 66 percent in 2000 to 44 percent in 2014- different evidence and indicators show that Oman is still facing difficulties in diversifying its economy, and oil is still the dominant sector, because diversification policies have often not been complemented with the required reform in private, financial and labor markets (Basher,



2010). Chapter six presents the results and discussion of the different analyses (examine of resource curse symptoms, LF and TOC and the panel regression analysis) to test the two hypotheses of this thesis.

## **6. CHAPTER SIX:**

### **RESULTS AND DISCUSSION**

#### **6.1 INTRODUCTION**

After presented the good economic growth and development progress in case of Oman at chapter five, the first part of analysis at this chapter is dictated to test the first hypothesis “*Resource curse symptoms can occur in resources rich countries despite their good economic growth rates and development*”. To do that, the analysis examine whether the resource curse symptoms exist in the Oman economy or not. This is important because first, Oman and other GCC countries were not included in the empirical research on the resource-curse datasets study done by Sachs and Warner (1997a) and Gylfason (2006a), due to unavailability of data (Titulaer, 2010). Second, the results of this analysis can determine if there are some resource curse symptoms that the government should intervene to reform them. Third, the results can justify the importance and the urgency of economic diversification to the economy.

Moreover, the second part of the analysis tests the second hypothesis “*Development of transport infrastructure and logistics contribute to improve the diversification levels and the global competition scores in the quality of overall infrastructure*”. It presents the results and discussion of the descriptive, the logical framework (LF) and the Theory of Change (TOC) analysis. Whereas, the third part presents the panel regression analysis. The logical framework (LF) and the Theory of Change (TOC) analysis assesses the expected impacts of developing ports and Free Trade zones (FTZ) on the economic diversification process in Oman during the period 1996-2015. The analysis is categorized into descriptive analysis, construction of policy LF and TOC, quantitative analysis of diversification indexes and panel regression analysis.

This chapter contains six sections. After the analysis of existence of resource curse in Oman economy at section one, section two contains the rationale behind the policy of making Oman a logistics hub. Section three presents the descriptive analysis, which provides a general description of the total value of the government investment in different primary and

sub-primary sectors of the economy, and the quality score of the infrastructure in Oman. Then, section four shows the results of construction the policy LF and TOC. Section five shows the verification results of different indicators and the results of the quantitative analysis of diversification indexes. Section six presents the panel regression results used to estimate the significant independent variable that is correlated with the change of the diversification index in resource rich countries. Finally, the main findings of the different analysis are presented.

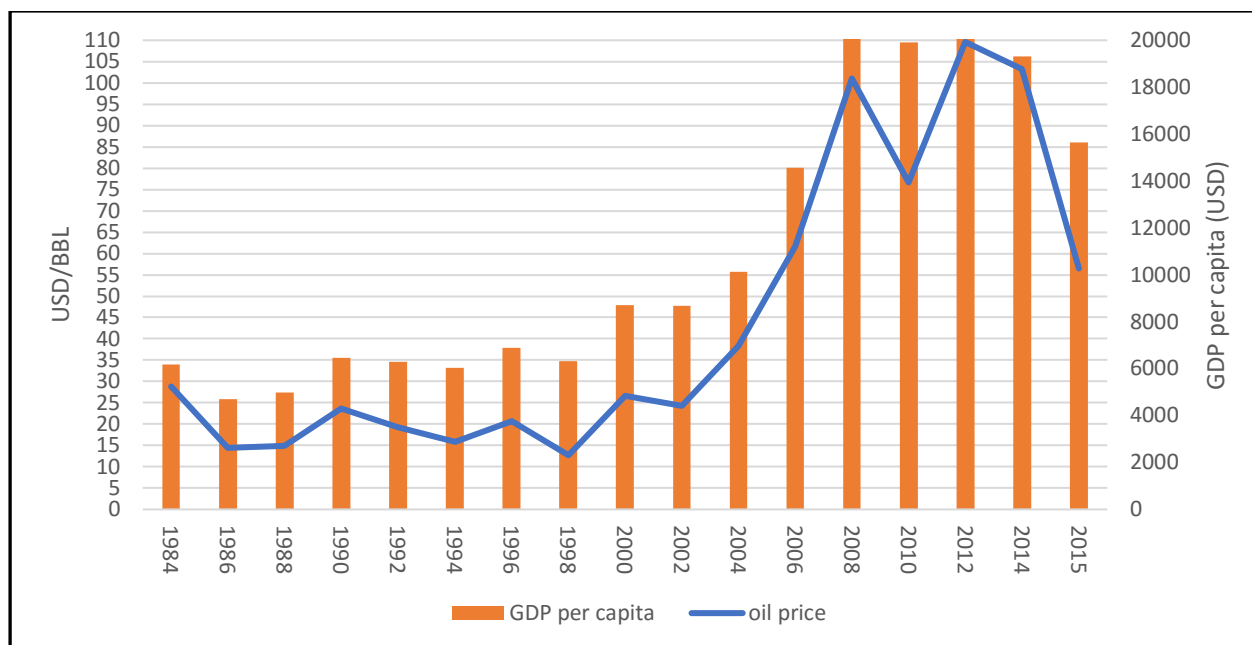
## **6.2 ANALYSIS OF EXISTENCE OF THE RESOURCE CURSE SYMPTOMS IN OMAN'S ECONOMY**

In order to discern the existence of the resource curse in Oman's economy, the two categories of causal mechanisms of the resource curse (economic and political factors) mentioned in Chapter Two will be considered for the analysis. Due to the absence of a unique (agreed) method in the literature of examining the existence of the resource curse symptoms in resource rich countries (economic and political), the analytical procedure used here is followed the Crain (2010) analytical framework. As his method examined the existence of both the economic and political symptoms.

### **ECONOMIC CATEGORY**

- **DECLINING TERMS OF TRADE OF PRIMARY PRODUCTS**

The theory of declining terms of trade was stated by the development economists Raul Prebisch and Hans Singer in the 1950s. They argued that primary-product exports experience falling prices relative to the prices of manufactured goods, causing the slow economic growth of primary-product exporters (Crain, 2010). Also, Blattman et al. (2004) suggested that developing countries are more prone to export instability and terms of trade decline than developed countries, and that such international fluctuation in demand and prices have a negative impact on the developing countries and their abilities to grow. Demand for manufacturing products is growing at a higher rate than that of natural resources. However, the overall price trends of oil tend to fluctuate rather than experience an overall declining trend. In Oman, the oil prices have not suffered from an overall negative price trend through the period 1984-2015, and the data for GDP per capita through the same period does not reveal a negative decline in the economic growth, as Figure 6.1 shows.



*Source: World Bank Data Base*

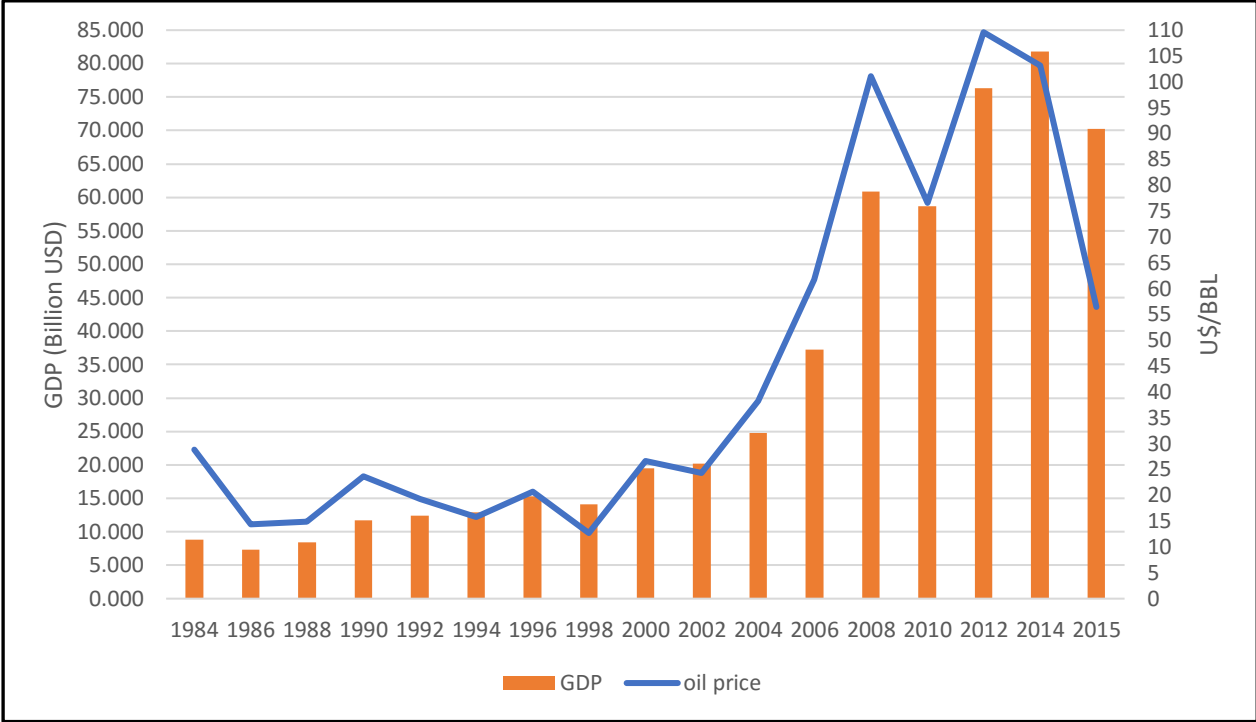
Figure 6.1. GDP per capita (current USD) and oil prices (USD/BBL) from (1984-2015)

Oil remains the dominant sector in the economy and represents 65.5 percent of the total exports in 2014, while the manufacturing sector is still quite small (7.7 percent of GDP in 2015), despite the government efforts to promote the sector and other non-oil sectors to substitute imported goods (as shown at chapter five in Table 5.1). Both Titulaer (2010) and Al Saqri (2010) concluded that the manufacturing sector is not of importance at all for economic growth in Oman, because overall, Oman primary exports have not suffered from declining terms of trade.

- **PRICE VOLATILITY**

Oil is one of the most important pillars of economic and industrial development in the world. Mineral prices often oscillate and the global oil market is arguably the world's most volatile market, thus it is difficult for governments and policy makers to predict price changes and revenues (Daniel, 1992). In addition, Price volatility exerts a strong negative effect on control of public finance, budgetary discipline, and on government planning efforts (Karl, 2005; and Ramdoo, 2012). Thus, Oman's fiscal and current account balances are exposed to fluctuations too, which makes it difficult for governments to manage oil revenues and government expenditure. Expenditure on infrastructure and development programs are also affected, as

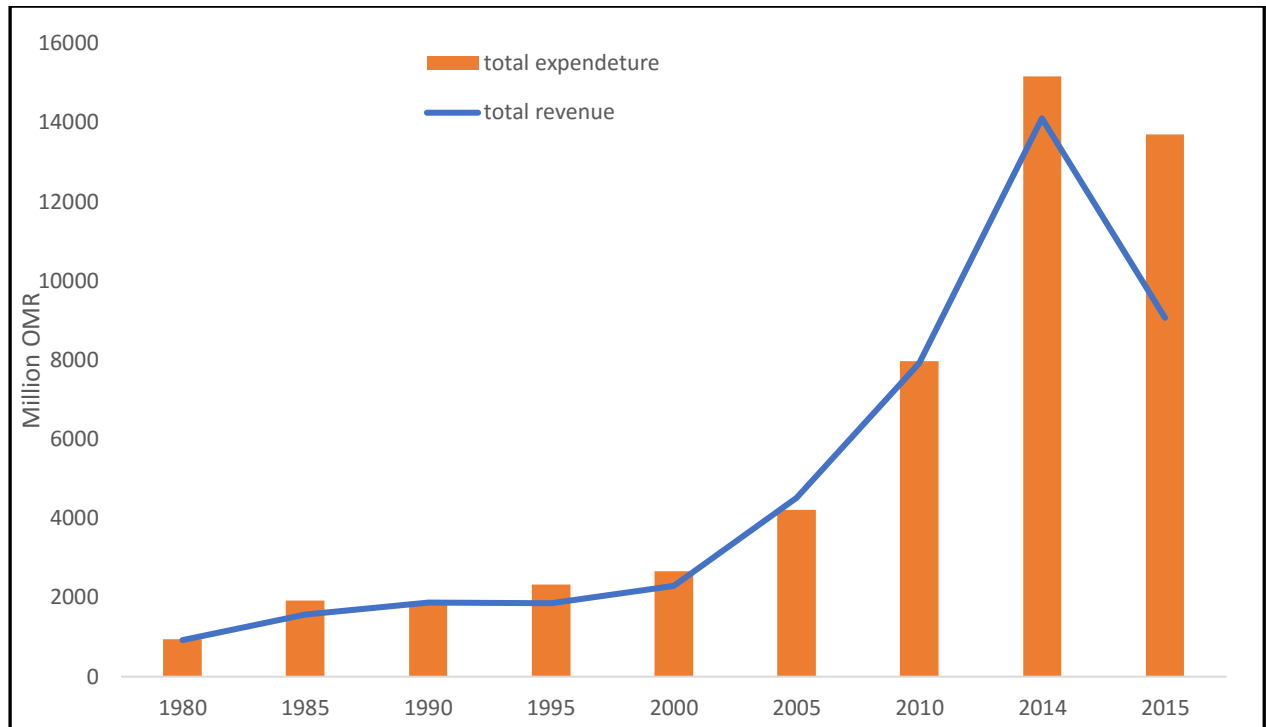
happened in the 1986 (oil glut) when oil prices decreased to less than 10 USD and the Omani government banned expenditure to all development projects except health and education. More recently, in 2016, the government took several measures to reduce the effects of lower oil prices, such as reducing government spending, increasing government services fees and lifting fuel subsidies. Although the overall stream of GDP growth, shows increase, declines in oil prices caused contractions of the GDP in 1986, 1998, 2009 and 2015, as Figure 6.2 shows.



Source: World Bank Data Base.

Figure 6.2. GDP (current USD) and oil prices (1984-2015)

Additionally, the data in Figure 6.3 shows instability of Oman total revenues and expenditure for the period of 1980-2015. Government spending has not been entirely driven by revenue availability, as although total revenues increased, it noticed that at most times the government expenditure always more than revenues. Therefore, government insists on the importance of diversification and finding different alternatives to substitute the decrease of the revenue resulted from the instability of the oil prices.



*Source: Statistical Year Book (various issues).*

Figure 6.3. Oman total revenues and expenditure for the period of 1980-2015

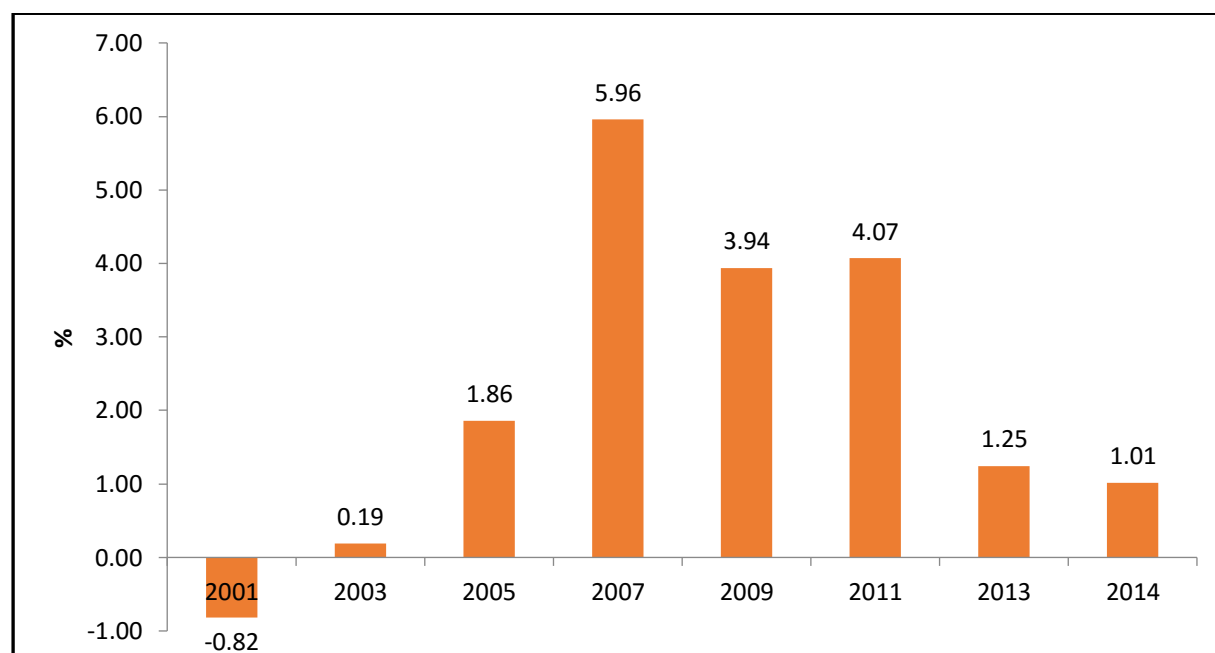
- **LOW EXTERNAL LINKAGES OF THE PETROLEUM INDUSTRIES**

Petroleum industries do not stimulate other sectors of the economy with spin-off (spill-over effect) growth in other sectors. In Oman, oil industries do not lead to the growth of other sectors, especially because almost 95 percent of the oil produced in Oman is exported as crude oil. Al Saqri (2010) used a time series framework to investigate the linkages and interdependencies<sup>26</sup> between the oil sector and the agriculture and fisheries, manufacturing and services sectors in Oman from 1967-2006. He concluded that the productive structure was still dependent on oil sector activities and had not diversified away from oil dependency, and the mineral industries do not create strong linkages in the economy. Also, the dominance of the public sector (because of public ownership of the oil) as the main employer and service provider limited the role of the private sector.

<sup>26</sup> Interdependency is the level of economic dependency running from the oil sector to the non-oil sectors, whereas the linkages indicate the extent to which different sectors benefited from the oil export boom (Al Saqri, 2010).

- **DUTCH DISEASE**

As mentioned in chapter two, countries with Dutch disease suffer from four symptoms: appreciation of the exchange rate of the currency, boom in the services sector, contraction of the tradable sector (manufacturing sector) and the labor shift from the manufacturing sector to the services sector and the resource extraction sector. Assessment of the existence of those symptoms in the Oman economy shows that policy makers have been concerned about Dutch disease, therefore they realized the significant importance of pegging the national currency (OMR) to the (US) dollar which dominates the world foreign exchange transactions and can reduce foreign exchange risks. Moreover, it can provide domestic currency stability and ensure the stability of export earnings and government revenues. Thus, the Omani Rial (OMR) has been pegged to the exchange rate of 1 USD = 0.3845 OMR since 1986<sup>27</sup> to avoid the revaluation that the economy faced in the period from 1973-1986 (Al Kholifey and Al Reshan, 2010). The other contributing factor to the stability of the exchange rate was the country's very low inflation rates that reduced the risk of appreciation of the exchange rate (inverse relationship, as inflation level increases, purchasing power of money decreases) as Figure 6.4 shows. For those reasons, conventional measures of real exchange-rate overvaluation did not happen in Oman's economy.



*Source: World Bank Data Base*

Figure 6.4. Oman inflation rate (2001-2014)

<sup>27</sup> From 1974-1985, 1 USD= 0.3457 OMR (Al Saqri, 2010).

In terms of the boom in the services sector, in 2014 the productive sectoral composition of Oman showed an increased share of the service sector, which possessed the second largest share of 33.4 percent of the total sectors' contribution to the GDP after oil. But most of those services are non-tradable (Construction, Public services and Finance & real estate). Titulaer (2010) performed a panel data regression, employing a two-way fixed-effects error component model to estimate the influence of the growth of different sectors on the growth of GDP per capita in GCC countries, and she found that in Oman, besides the oil sector, the services sector is more important for the economic growth and the manufacturing sector is not of importance at all. Her results agreed with those found by Al Saqri (2010).

Regarding the contraction of the tradable sector (manufacturing sector), the market size (Table 6.1) and the market foreign competition indexes (Table 6.2) (values and ranks for the period 2007-2014) gathered from the Global<sup>28</sup> Competitiveness Index (GCI), provide an indication of the size of industries and their ability to compete internationally. This is because the market size affects productivity since large markets allow firms to exploit economies of scale, so, they can compete in international markets, which become a substitute for domestic markets, especially for small countries (Schwab, 2015).

Table 6.1. Oman's market size, ranks and values (2007-2014)

<b>Year</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Value*</b>	3.1	3.4	3.5	3.6	3.5	3.5	3.6	3.7
<b>Rank</b>	79	75	75	73	73	72	73	73
<b>Countries covered</b>	131	134	133	139	142	144	148	144

*Source: Global Competitiveness Index (GCI) database*

*Note: the values are on a scale of 1-7, where 7 is the best.*

Table 6.2. Oman's foreign competition ranks and values (2007-2014)

<b>Year</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Value*</b>	4.1	4.5	4.6	5.1	5.1	5.1	5.1	4.9
<b>Rank</b>	71	56	42	37	34	35	28	34
<b>Countries covered</b>	131	134	133	139	142	144	148	144

*Source: Global Competitiveness Index (GCI) database*

*Note: the values are on a scale of 1-7, where 7 is the best.*

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<sup>28</sup> Global Competitiveness Index (GCI) has been produced by the World Economic Forum (WEF) since 2005 and provides an insight into the drivers of countries' productivity and prosperity. It is the most comprehensive assessment of national competitiveness worldwide. It is defined by the World Economic Forum as a set of institutions, policies, and factors that determine the level of productivity of a country.



As can be seen from both Table 6.1 and Table 6.2 values are low and the ranks are high over the period of 2007-2014, which give an indication that the manufacturing sector is small and is still facing difficulties in competing in the international markets. In order to promote foreign investment and exports, and enhance competitiveness of the manufacturing sector, the government established the Public Authority for Investment Promotion and Export Development (*ITHRAA*) in 1996. Overall, *ITHRAA* aimed to provide prospective foreign investors with information on the regulatory system and to support the government efforts to create new and deeper business ties with dynamic and fast-growing economies and businesses across the world. It has also been the custodian for the non-oil export strategy since its inception. On the other hand, the Oman Competitive Industrial Performance (CIP) index<sup>29</sup> in 2012 was 0.455, which showed a substantial progress in the Industrial competitiveness over the previous 22 years. The country rank developed from lower-middle in 1990 to the middle category in 2014. Table 6.3 shows Oman’s CIP index during the period 1990-2012.

Table 6.3. Competitive Industrial Performance (CIP) index during the period 1990-2012

Year	Rank
1990	103
1992	95
1994	88
1996	87
1998	86
2000	74
2002	67
2004	92
2006	81
2008	71
2010	68
2012	64

*Source: Competitive Industrial Performance Report 2014 (UNIDO, 2014).*

<sup>29</sup> Industrial competitiveness is defined as the capacity of countries to increase their presence in international and domestic markets whilst simultaneously developing industrial sectors and activities with higher value added and technological content. It is composed of 8 indicators: Manufacturing Value Added per capita (MVApc), Manufactured Exports per capita (MXpc), Medium- and High-tech MVA share in total manufacturing value added (MHVAsh), MVA share in total GDP (MVAsh), Medium- and High-tech Manufactured Exports share in total manufactured exports (MHXsh), Manufactured Exports share in total exports (MXsh), Country’s Impact on World Manufacturing Value Added (ImWMVA), and Country’s Impact on World Manufacturing Trade (ImWMT). Each indicator is weighted on a scale of 0 to 1 (UNIDO, 2014).

Finally, in accordance with the labor shift from the manufacturing sector to the services sector and the resource extraction sector, it is known that the oil sector is capital-intensive and not labor-intensive, and offers only limited employment opportunities (Hidalgo et al., 2007). This is because the extraction of oil demands limited numbers of specific skills and assets not required by other sectors (e.g. to master the operation of a drilling rig). To test the proposition of labor shift, the data of the total numbers of workers in the oil and gas, manufacturing and services sectors for the period 2006-2015 were used (Table 6.4).

Table 6.4. Total Number of workers in different sectors

Year	Total No. Of Workers at Different Sectors		
	Oil & Gas	Manufacture	Services*
2006	7516	38680	9197
2007	8292	46302	14968
2008	9260	51212	21316
2009	9115	57536	22858
2010	9569	61274	23753
2011	25834	62833	24488
2012	30427	71334	24018
2013	33537	207375	26156
2014	37154	213483	27634
2015	40441	233007	28466

*Source: Statistical Year Book (various issues).*

\* Services sector include Government services, wholesale and retail trade, Hotels and Restaurants, transportation, Storage and communication, real estate and Business Activities, financial intermediation, Public Administration and Defense and other services.

Although, the total number of workers in the oil sector increased from 7,516 workers in 2006 to 40,441 workers in 2015, the number of workers in the manufacture sector also increased dramatically (from 38,664 to 23,3007) for the same period (NCSI, 2016). The same trend was in the service sectors, where the shift of labor from non-tradable sectors to the oil sector was weak. These results agreed with Al Saqri (2010), who found that the number of expatriate employees in the private sector distributed among the four economic sectors (agriculture and fisheries, mining and quarrying, manufacturing and construction) did not suggest any labor movement from the manufacturing sector to the booming sector or to the non-tradable sector.

The main factors that reduced the shift of labor to the oil and other resource extraction sectors is the dramatic increase in the numbers of employees (especially nationals) in the government sector, with its high wages and benefits compared to those in the private sector during the period 1990-2014. For example, the percentage of Omani employees in the

government sector increased from 63.4 percent in 1990 to 84.5 percent in 2014. Table 6.5 shows the increase in percentage of Omani employees in the government sector for the period of 1990-2014. The other factor that reduced the shift of labor was the Omanization<sup>30</sup> policy, which made the hiring of Omani national's mandatory in every business.

Table 6.5. Omanis and expatriates employed in the government sector (1990-2014)

<b>Employees</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2014</b>
<b>Total Government employees</b>	84311	110529	110498	132414	163982	232980
<b>No. of Omani</b>	53453	75712	81769	109374	140369	196868
<b>No. of Expatriates</b>	30858	34817	28729	23040	23613	36112
<b>Percentage of Omani</b>	63.4	68.5	74.0	82.6	85.6	84.5
<b>Percentage of Expatriate</b>	36.6	31.5	26.0	17.4	14.4	14.4

*Source: Statistical Year Book (NCSI, various issues)*

The boom in oil does not affect the manufacturing sector in Oman because of its small size and small contribution to the GDP. The agriculture and fisheries sector was the sector most affected by the oil boom in Oman. Overall the analysis found that some of the Dutch disease symptoms were exist in the Oman economy such as; the boom in the services sector and low competitiveness of exports at the international markets, although Oman currency exchange rate has not appreciated.

**POLITICAL CATEGORY:**

- **THE IMPLEMENTATION OF POOR RESOURCE RENTS MANAGEMENT POLICIES**

Oman's case does not support this assumption because the oil revenues were channeled to the most useful and desirable purposes through increased government expenditure to promoting economic development and social welfare, increased ability to import capital goods, and to higher levels of savings. As mentioned earlier in this chapter, oil revenues were utilized to develop basic infrastructure, increased the ability to import capital goods and provide social services that raised the living standards of the citizens. In addition, the policy of saving for investment was implemented, which directed the surplus of the state's budget and part of the

<sup>30</sup> Omanization is an ongoing policy first implemented by the government in 1988. It aims to provide various opportunities to increase participation of Omani labor in Oman's economy and to reduce dependence on expatriate labor. The Omanization percentage requirements are imposed on the private sector only.

oil revenues for domestic and international investment. Therefore, the government established different forms of reserve funds such as State General Reserve Fund (SGRF) in 1980, the Contingency Reserve Fund in 1990 (replaced by Oil Fund in 1993 and then replaced with Oman Oil Company in 1996), Oman investment fund (OIF) in 2006, and different pension funds for government employees to invest in inside the country. The objectives of establishment of the State General Reserve Fund (SGRF) in 1980 were to help combat the effects of Dutch disease in periods of upswing and to offset dwindling oil revenues.

It acts as a stabilization fund and provides liquidity to government when required (e.g. the financing of a deficit in the state budget). It aimed to save and manage the surplus of the state's budgetary and part of the oil revenues (15 percent of each sum received from oil revenues should be transferred to the Fund). SGRF is regulated and supervised by the Financial Affairs and Energy Resources Council (FAERC) that manage the reserves to achieve best possible long-term returns with acceptable risks, through investing in a diversified portfolio of asset classes in more than 25 countries worldwide to build assets for future generations. Some portions of the reserves are held as foreign currency deposits mainly with the central bank of Oman (Fasano-Filho, 2000, p.17). Additionally, the total transfers from oil revenues to SGRF since its establishment up until 2014 was 7 billion OMR. These efforts have led to increase the investments in different non-oil sectors that enhanced economic diversification indicators.

- **THE PRESENCE OF WEAK STATE INSTITUTIONS**

Several organizations, such as the Political Risk Services Group, the World Bank, and the World Economic Forum, have developed surveys to measure over time the effectiveness of government institutions (Looney, 2009). Tupy and Rohac (2014) indicated that poor governance, inefficient bureaucracies, corruption, political stability, transparency and an effective government administration are essential in achieving credible improvements in policies and government institutions. The Worldwide Governance<sup>31</sup> Indicators (WGI) developed by the World Bank provide the government effectiveness index, which reflects the perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Its

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<sup>31</sup> Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them.

values range from approximately -2.5 (weak or lowest quality institute) to 2.5 (strong or high quality institute).

The voice and accountability indicator measures various aspects of the political process, civil liberties, and political rights. It reflects the perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. The political stability and lack of violence indicator combines several indicators that measure the perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. The government effectiveness indicator reflects the perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The regulatory quality indicator focuses on the economic policies themselves. It reflects the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

The rule of law indicator reflects the perceptions of the extent to which agents have confidence in and abide by the rules of society, and in-particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Finally, the control of corruption indicator reflects the perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Oman governance indicator data for the period 1996-2015 in all six indicators (Voice and Accountability, Political Stability and Lack of Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption) are shown on Table 6.6.

Table 6.6. Oman Governance Indicator for the period 1996-2015

Year	Control of Corruption	Government Effectiveness	Political Stability and Absence of Violence/Terrorism	Regulatory Quality	Rule of Law	Voice and Accountability
1996	0.04	0.55	0.80	-0.07	0.69	-0.51
1998	0.68	0.48	0.76	-0.12	0.63	-0.66
2000	0.76	0.33	1.03	0.02	0.63	-0.64
2002	0.83	0.40	0.82	0.71	0.55	-0.71
2003	0.44	0.47	1.01	0.67	0.56	-0.85
2004	0.57	0.45	1.07	0.66	0.60	-0.63
2005	0.29	0.30	0.92	0.53	0.40	-0.96
2006	0.19	0.27	0.81	0.59	0.37	-1.12
2007	0.27	0.35	0.90	0.62	0.51	-1.01
2008	0.46	0.44	0.92	0.71	0.71	-1.02
2009	0.29	0.41	0.80	0.54	0.66	-1.03
2010	0.28	0.42	0.59	0.46	0.64	-1.00
2011	0.00	0.27	0.42	0.34	0.54	-1.02
2012	0.08	0.27	0.45	0.48	0.59	-0.98
2013	0.08	0.22	0.45	0.48	0.57	-1.00
2014	0.25	0.29	0.71	0.69	0.58	-1.05
2015	0.20	0.09	0.69	0.58	0.46	-1.03

*Source: Worldwide Governance Indicators Database (WGI)*

*Notes: The value for each measure is standardized on a scale of -2.5 (lowest quality institute) to 2.5 (highest quality institute), with the world mean of 0.0.*

In general, the analysis of Oman institutional quality demonstrates a low quality of institutions, as the values of all six government effectiveness indicators were less than one through the whole period of 1996-2015. The worst performance was in voice and accountability where its values were negative during the whole period. There is a slight improvement in the Control of Corruption from 0.04 in 1996 to 0.20 in 2015. The same trend was found in the Regulatory Quality indicator which increased from -0.07 in 1996 to 0.58 in 2015. Overall, the governance indicators are still far from the classification of high quality. These results support the finding of Mehrara et al. (2008) who tested the effect of oil revenues on the economic growth of 42 oil rich countries over the period 1965-2005. They found that Oman was among 35 oil rich countries<sup>32</sup> that had bad institutional structure, which can lead to poor economic performance in the long run.

<sup>32</sup> Countries with bad institutions include Algeria, Argentina, Azerbaijan, Bahrain, Brunei, Cameroon, China, Colombia, Congo, Ecuador, Egypt, Gabon, India, Indonesia, Iran, Kazakhstan, Kuwait, Mexico, Nigeria, Oman, Peru, Romania, Russian Federation, Saudi Arabia, Sudan, Syrian Arab Republic, Thailand, Trinidad and Tobago, Turkmenistan, United Arab Emirates, Uzbekistan, Venezuela, Vietnam and Yemen.

- **THE PRESENCE OF RENT-SEEKING AND CORRUPTION**

According to Stoddard (2012), the resource curse is closely related to the much broader trend of rentierism. Rentierism refers to the tendency of elites in closed political and economic systems to capture excess profits (rents) from highly profitable and easily controlled industries (minerals, hydrocarbons, tourism etc.) and then use to pay-off supporters and repress detractors (Ross, 1999; and Franke et al., 2009). Mehrara et al. (2008) expressed the same as they declared that rents from natural resources cause economic and political power to be concentrated among some elites who would use them to satisfy their supporting politicians and thereby retain their power. This can undermine democracy and decelerate economic growth. According to Transparency International, the Corruption Perceptions Index (CPI) is used to measure the perceived corruption in countries. It was first launched in 1995 and is the most widely used indicator of corruption. It uses a scale of 0 to 100, where 0 means highly corrupt and 100 means very clean. CPI provided by the Worldwide Governance Indicators (WGI) reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Oman appears on the CPI reports only from 2003. Table 6.7 summarizes Oman CPI scores and rank from 2003-2014.

Table 6.7. Oman Corruption Perceptions Index (CPI) from (2003-2014)

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013	2014
Rank	26	29	28	39	53	41	39	41	50	61	61	64
Score	6.3	6.1	6.3	5.4	4.7	5.5	5.5	5.3	4.8	47	47	45
Total countries assessed	133	145	158	163	179	180	180	178	183	176	177	175

*Source: Transparency International*

*\*Note: The Corruption Perceptions Index (CPI) was initially measured on a scale of 0 – 10 until 2011. In 2012, the scale was updated from 0 -100.*

Both the rank and the scores on Table 6.7 show that Oman got worse ranking since 2003 (A noticeable declined in rank from 26 in 2003 to 64 in 2014. This seems to suggest that the country is still corrupted and the government needs to put more efforts to improve its rank position by fighting corruption in the public institutions. The establishment of the State Audit Institution (SAI) in November 2011 helped to uncover corruption crimes, and in recent years

several high-profile corruption cases involving government officials and executives from Oman's oil industry have been prosecuted. Furthermore, in 2013 Oman joined the United Nations Convention Against Corruption (UNCAC) through the Royal Decree No (64/2013) and ratified the Arab convention against corruption in May 2014; this is evidence of the measures taken by the government to move forward in the fight against corruption, which represents an obstacle to development in the country.

- **THE DEVELOPMENT OF AUTHORITARIAN REGIMES AND THE PRESENCE OF SOCIAL CONFLICTS**

Although Oman has been ruled by the royal family Al Said since 1744, authoritarian regimes does not exist, especially after His Majesty Sultan Qaboos ascended to the throne after his father, Sultan Said bin Taimur in 1970. The state, the governing system and the rights of the Sultan (The Ruler) were detailed in the official constitution of the country (The White Book, 1996) which was issued by Royal Decree in 1996. In addition, no case of conflicts or ambitions over power or resources has been recorded since the Omani renaissance. During the development of democratic practices, a State Consultative Council was established in 1981 to give Omanis greater participation in decision-making in the planning and development of the country's economy and social services.

As an effort to systematize and broaden public participation in government, Majlis A'Shura substituted the 10-year-old State Consultative Council in November 1991, to which the members are publically elected and not appointed by the government. As part of the government's efforts to decentralize authority and allow greater citizen participation in local governance, in December 1997 Oman's first Parliament, The Council of Oman, (Majlis Oman) was established, consisting of members of the State Council (including both Majlis A'Dawla and Majlis A'Shura). It assists the government in drawing up the general policies of the state. The Council meets at the request of His Majesty, to study and discuss matters raised by him, taking all its decisions based on a majority vote (as laid down in The White Book, 1996, which holds the basic law of the Sultanate). Moreover, the government conducted the first municipal council elections in December 2012.



- **SUMMARY OF THE MAIN FINDINGS OF THE ANALYSIS OF THE EXISTENCE OF RESOURCE CURSE SYMPTOMS:**

The first hypothesis is accepted as the results of the examination for the resource curse (using economic and political categories) in Oman showed that despite the economic growth and development progress in Oman, resource curse symptoms were presented in the economy. More precisely the results showed the presence of three factors out of four in the economic category (commodity price volatility, low external linkages of the petroleum industry and Dutch disease), whereas from the political category only two of the five factors existed (weak institution and the presence of corruption). This indicates that the resource curse exists in the Oman economy and has constrained the economic diversification process. Furthermore, the country has failed to overcome these effects, even after the completion of most of the country infrastructure and developments.

### **6.3 POLICY RATIONALE AND DESCRIPTIVE ANALYSIS**

The faster rates of population growth in the world and booming trade, created a major demand for all kinds of goods and services, as well as for a transportation and logistics sector to deliver them (Oman, 2015). Thus, development in logistics<sup>33</sup> and supply chain technology has created significant opportunities for economic and industrial diversification and job creation over the last 20 years.

Due to high dependence on oil for its exports, Oman was among the countries that worked on developing and diversifying exports. Export diversification was considered as one of the main pillars for the achievement of the second long-term vision for Oman's economy "*Oman 2020*" aimed at carrying out a substantial transformation in the structure of the national economy during the period 1996-2020. Export-led diversification was a part of a larger diversification policy that had been adopted and implemented through that vision since 1996. The policy aimed to achieve different objectives: exports diversification; making Oman a regional and international services center (logistics hub); intensive national economy integration with world economy; and promotion of foreign investment.

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<sup>33</sup> Logistics encompasses a very wide range of activities that are needed to move goods between the point of origin and the point of consumption, quickly and efficiently with the minimum of delay or cost. The entire process includes integration of information flow, shipping, packaging, aviation, rail, roads, ports, warehousing, inventory, planning, organization and management (Ecorys and TCI, 2015; and AMCML, 2015).

One of the “*Oman 2020*” objectives for economic diversification was to fully exploit the naturally available resources and utilize the country’s excellent location. Hence, development of its ports should promote the diversification policy by providing necessary infrastructure for prospective industries. They also provide access to foreign markets to which products can be exported with reasonable cost (JICA, 2005). From the standpoint of Oman’s economic diversification policy and the importance of development of new industries to promote private sector development, the five-year plans aimed to achieve economic balance and sustainable development through government investment in different sectors. Hence, the economic growth driven from those plans to diversify the economy and to reduce the economy’s dependence on oil generates growth in the demand for goods and services. In response to that growth, the demand for logistics, transport and warehousing services increased to empower the supply chain for raw materials, components, sub-assemblies and finished products for both domestic and international consumption.

Hence the government has focused on infrastructure investment as a means to facilitate economic diversification as a key to increase the inward investment, non-oil exports and the nation’s competitiveness. Such recognition of the importance of port development as an impetus for export, as well as the consideration of the importance of connectivity with the outside world as the first step to diversify sectors, endowed the transport and logistics sector with the potential to complement the hydrocarbon sector. Therefore, the government invested heavily in development of transport and logistics, especially during the past ten years. The government used the instrument of developing ports, free trade zones, airports and Industrial Estates to achieve the goal of making Oman a regional and international logistics services center. The development of ports, free trade zones, airports and Industrial Estates will encourage the attraction of the commercial, industrial and foreign direct investment (FDI) and thus increase the level of trade in goods, services and re-export.

Hypothetically, that will contribute to an increase in the proportion of non-oil exports and re-exports to total exports (in other words it will reduce the proportion of the contribution of oil exports to the total exports). The basic objective to develop the roads, ports and FTZ was to enhance the national development strategy as instructed in the second long-term vision for Oman’s economy “*Oman 2020*” to promote the economic diversification in Oman.

There are a range of elements that can assist Oman to achieve that goal. First is its location (in the extreme southeast corner of the Arabian Peninsula and open to three seas: The Arabian Gulf, Oman Sea and Arabian Sea), near the centers of growth in emerging Asian economies, which make it a major trans-shipment hub on the East-West trade route.

Furthermore, it is situated outside the Strait of Hormuz, which is a pivot point for shipments across the Indian Ocean. Consequently, foreign investment businesses -especially those targeting access to Asian, GCC and African markets (Selway, 1997) -are expected to be encouraged and to set up operations in the country (Ministry of Transport and Communications).

Second, there is the existence of good basic infrastructure, the outstanding growth in recent years in government investment in the transport and logistics infrastructure, the stable political climate in an unstable and high-risk region, and the improvements in the ease of doing business.

Thirdly, Oman's importance in international maritime supremacy has been recognized since the 16<sup>th</sup> century, when the Portuguese invaded in a bid to open their trade route to India (SOLS, 2014). Throughout the centuries, Oman has been the center of a maritime empire that included much of the East African coast (including the island of Zanzibar), and a bridge for communication between the region and the world. Its ports were involved in trade between countries on the Red Sea, Gulf and Indian Ocean, as well as transcontinental trade between Europe, Africa, the Gulf, India, Malaysia, Indonesia and China. As the global trade or the import of global exports or raw materials movements cannot be conducted without the support of a logistics professional, it is expected that investment in transport and the logistics sector will continue.

#### **6.4 IDENTIFYING THE LOGICAL FRAMEWORK AND THEORY OF CHANGE**

As mentioned before, this thesis is generally focused on the Export-Led Diversification policy and more specifically on the government goal to make Oman a regional and international services center (global logistics hub) through applying the policy instrument of developing the roads, ports and FTZ. Hence, before starting the descriptive analysis, it is essential to explore the process followed to identify the LF, as it is important first to identify the objectives and instruments of the economic diversification policies in general. The second long-term development strategy "*Vision for Oman's Economy: Oman 2020*" did not identify the objectives and instruments of the diversification policy clearly. The process started by exploring the "*Oman 2020*" documents and all four five-year development plans (1996-2015) to identify the main policies that targeted economic diversification. Then, the objectives of each policy were identified and also the instruments that were planned to be used to

accomplish the policies' goals. Consequently, a set of different policies, their objectives and the instruments that were planned to accomplish the economic diversification goal were identified and the results are presented in Table 6.8.

Table 6.8. Policies, objectives and instruments planned to achieve diversification

<b>Policy</b>	<b>Objectives</b>	<b>Instruments</b>
<p><b>1. High Value Added industries:</b>  (Concentrate on industries that are capital-intensive; dependent on highly advanced technology, research and development; and are operated by trained national human resources in the engineering and administrative fields)</p>	<p>Development of the private sector to enhance its role in the national economy</p>	<p>Soft loans, tax incentives, modest procurement preferences, and subsidies, mostly to industrial and agricultural ventures.</p>
	<p>Developing industries that depend on domestic resources</p>	<p>Capital grants for industries that depend on highly advanced technology and scientific research and development</p>
	<p>Developing human resources</p>	<p>Advance training for national human resources, in the engineering and administrative fields</p>
	<p>Exports expand</p>	<p>Studies on potential oriented export markets and products</p>
<p><b>2. Export-Led Diversification</b>  (focus on industries that are oriented towards external markets (exports))</p>	<p>Making Oman a regional and international services center</p>	<p>Funding and financial incentives programs for exporters</p>
	<p>Intensive national economy integration with world economy</p>	<p>Direct investment (Developing ports, free trade zones and Industrial Estates)</p>
		<p>Increase bilateral and multilateral trade agreements through good diplomatic relations with other countries</p>

	Development of Export Credit Guarantee	Export funding services, credit guarantee and financial incentives programs for exporters
	Promote export and foreign investment	Promotion campaigns to encourage foreign investors to invest in Oman (social media, local and international exhibition) Establishment of the Public Authority for Investment Promotion & Export Development ( <i>ITHRAA</i> ) in 1996 *
<p align="center"><b>3. Small and Medium Scale Enterprises</b></p>	Setting up and support the business environment for SMEs	Financial subsidies for entrepreneurs
		Facilitating procedures and upgrading information systems, particularly those related to foreign markets (Establishment of the National Business Centre in 2013)
		Establishment of public authority for small and medium enterprises development ( <i>Riyada</i> ) in 2013 Capital and soft loans to facilitate access to necessary finance for entrepreneurs

<p style="text-align: center;"><b>4. Intensification of National Economy's Integration with scale World Economy</b></p>	<p style="text-align: center;">Achieve the maximum benefit of the country's comparative advantages of location and good international political relations</p>	<p style="text-align: center;">Joint venture agreements in terms of exporting goods and financial services</p>
		<p style="text-align: center;">Intra-national and international trade agreements</p>
	<p style="text-align: center;">Encourage the flow of commodities and production factors</p>	<p style="text-align: center;">Joint investment projects and exchanging expertise with companies that export modern technologies</p>
		<p style="text-align: center;">Establishment of GCC Free Trade Area to strengthen and enhancing economic relations with the GCC states</p>
		<p style="text-align: center;">Bilateral and multilateral economic and commercial relations</p>
		<p style="text-align: center;">Establishment of the Telecommunications Regulatory Authority (2002)</p>
<p style="text-align: center;"><b>5. Transfer technology:</b> (formulate the telecommunications and information technology sector)</p>	<p style="text-align: center;">Expand the efficiency of the telecommunication sector</p>	<p style="text-align: center;">Establishment of Information Technology Authority (2006)</p>

		<p>Raise the level of knowledge and understanding of modern technologies</p> <p>Provide licenses for several global communications companies to provide their services</p> <p>Develop an information network and connect it to international networks</p>
	<p>Development of the performance of scientific research output</p>	<p>Grants for scientific research</p> <p>Establishment of the Research council (2005)</p> <p>Introduce, research methodology and information technology courses in the education curriculum</p> <p>Funding for capacity-building from national budget</p>
<p><b>6. Developing and Qualifying of Human Resources</b></p>	<p>Developing and qualifying the capabilities of national human resources</p>	<p>Subsides for private education sector</p> <p>Enhancement programs for the educational systems (particularly at the basic and higher educational stages)</p>



Training and qualification of the national labor force		
Building nationals' capabilities in modern technologies		
Expanding the institutions and specializations in higher education in accordance with labor market requirements.		
Strengthening the role of women in the labor market		
Establishment of General Authority for Manpower Record (2011)		

*Source: Author's own elaboration from "Oman 2020" documents*

Next, the objectives and the main programs (strategies) and their planned budget in all the four five-year development plans (1996-2015) in the Export-Led Diversification policy were identified. The results are presented in Table 6.9.

Table 6.9. Export-led diversification from last two Development Plans (1996-2015)

Policy	Objective	Main program	Year	Planned budget (Million R.O)
<p><b>Export-led Diversification:</b> focuses on industries that are oriented towards external markets</p>	<p><b>Exports expand through export-oriented projects and funding and financial incentives programs</b></p>	Extension of existing and building of new Industrial Estates*	(1996-2000)	11.894
		Liquefied natural gas project (LNG)	1996	1894
		Youth fund program	1998	6.37
		Aluminum smelter factory	1998	925
		Polyolefin factory	1999	275
		Chemical fertilizer factory	2000	431
		National project for date palm development	2001	1.0
		Self-employment and National Autonomous Development (SANAD)	2001	NA
		Upgrading the traditional fishing fleet and quality improvement	2001	1.500
		Establishment of aquaculture center	2003	0.500
		Increasing and development of fisheries production	2011	1.6
		Improvement and development of aquaculture	2011	0.98
Oman Aluminium rolling company	2012	135.5		



	Establishment of FTZ area in Duqm *****	2011	NA	
		Adam regional airport	36.5	
		Sohar regional airport	56.4	
		Duqm regional airport	58.2	
		Ras Al Had regional airport	32.6	
		Construction of cargo building at Muscat and Salalah airports	2011	70.0
		Salalah new airport	2011	294.1
		Construction of Dry Dock at Duqm	2011	63.0
		Improve the export credit guarantee agency*****	1996	NA
		<b>Development of Export Credit Guarantee</b>	Establishment of public authority for investment promotion and export development	1996
Industrial promotion projects	2011		52.824	
<b>Promote export and foreign investment</b>	Accession to GCC Free-Trade Area	1983		
	Accession to the World Trade Organization (WTO)	2000		
<b>Intensive national economy integration with world economy</b>	Join the Gulf custom union	2003		
	Accession to Greater Arab Free Trade Zone (GAFTA)	2005		

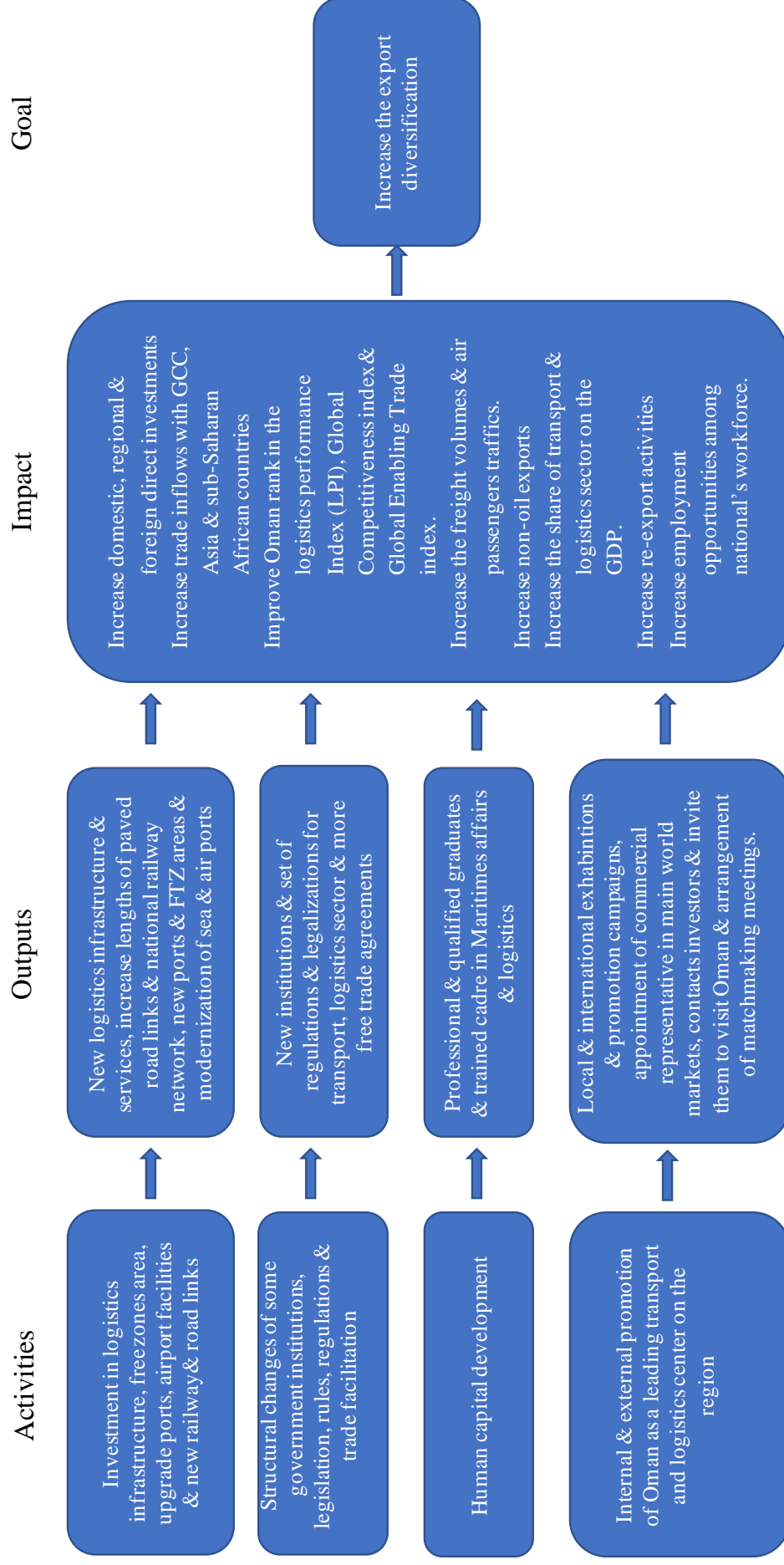
	Join GCC common Market	2008	NA
	Accession to free trade agreement with Singapore	2008	
	Accession to free trade agreement with USA	2009	
	European Free Trade Agreement (EFTA) & GCC Free Trade Agreement	2014	

**Source:** Author's own elaboration from eight five-year development plans (1996-2015) documents

**Notes:**

- \* Currently there are seven Industrial Estates operated by the Public Establishment for Industrial Estates (PEIE) which was established in 1993.
- \*\* Al Raffid Fund was recently established in 2013 and it gathered all funds programs.
- \*\*\* In 2012, the Free Trade Zones Authority announced that it would invest \$450 million in extending the country's free trade zones. This includes expanding land plots, constructing warehouses, offices, roads and staff accommodation, and providing space for storage units.
- \*\*\*\* Duqm FTZ area has a unique location and has been developing as an international trans-shipment hub and logistics center (Stalinska, 2014).
- \*\*\*\*\*The export credit guarantee agency was established in 1991.

As this thesis assesses the impact of infrastructure on export diversification, and through that, on economic diversification, competitiveness and prosperity, the focus is directed to the policy of making Oman a regional and international services center (global logistics hub). The Oman Logistics Strategy (SOLS 2040) has been used as a guide to identify the different LF components (inputs, activities, outputs, outcomes, impacts and goal). The constructed LF for developing roads, ports and FTZ to make Oman a regional and international services center (global logistics hub) is presented in Figure 6.5.



**Source:** Author's own elaboration

Figure 6.5. Logical framework (LF) of making Oman a Global Logistics Hub

The next step was to use TOC to identify the indicators for each LF component. After that, the sources of verification of each indicator were identified. In addition, this set the assumptions (hypothesis) regarding the causal relationship between the LF components. The results of this step are presented in Table 6.10.

Table 6.10. Theory of change of inputs, activities, outputs, outcomes and impacts

Summary of Objectives	Measurable indicators	Means / sources of verification	Assumptions
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Increase investment in new ports, FTZ &amp; modernization of various sea &amp; airports &amp; new road links.</li> </ol>	<ol style="list-style-type: none"> <li>Value of investments in new ports, FTZ &amp; modernization of various sea &amp; air ports &amp; new road links.</li> </ol>	<ol style="list-style-type: none"> <li>Data on investment budget of new ports, FTZ &amp; modernization of various sea &amp; air ports &amp; new road links from Supreme Council for Planning (SCP).</li> </ol>	<p>Oil price will remain at favorable levels.</p>
<ol style="list-style-type: none"> <li>Make structural changes to some government institutions, legislation, rules, regulations &amp; trade facilitation.</li> </ol>	<ol style="list-style-type: none"> <li>List of efforts to set new institution and development of regulations.</li> </ol>	<ol style="list-style-type: none"> <li>Data on efforts to set new institution and development of regulations from Supreme Council for Planning (SCP), Ministry of Transport &amp; Communication and Ministry of Commerce and Industry.</li> </ol>	<p>Government investment budgets and programs will not be affected by the oil price decrease in the world markets. All key prerequisites are executed.</p>
<ol style="list-style-type: none"> <li>Establish government programs on human capital development in transport and logistics</li> </ol>	<ol style="list-style-type: none"> <li>Name &amp; values of government programs on human development in transport and logistics.</li> </ol>	<ol style="list-style-type: none"> <li>Data on names &amp; values of government programs on human development in transport and logistics from Ministry of Manpower &amp; Ministry of Transport &amp; Communication and ministry of higher education.</li> </ol>	
<ol style="list-style-type: none"> <li>Programs for promoting Oman as a leading transport and logistics center in the region.</li> </ol>	<ol style="list-style-type: none"> <li>Name of promotion campaigns &amp; exhibitions.</li> </ol>	<ol style="list-style-type: none"> <li>Data on names of promotion campaigns &amp; exhibitions from Public Authority for Investment Promotion and Export Development (ITHRAA).</li> </ol>	

<p><b>Expected outputs:</b></p> <ol style="list-style-type: none"> <li>1. Increased lengths of paved roads.</li> <li>2. New national railway network.</li> <li>3. New ports, FTZ &amp; modernization &amp; development of various ports &amp; new road links.</li> <li>4. New institutions &amp; set of regulations &amp; legalizations for transport &amp; logistics sector.</li> <li>5. Professional, qualified graduates &amp; trained cadre in maritimes affairs &amp; logistics sector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lengths of paved roads.</li> <li>2. Lengths of railways constructed.</li> <li>3. Names of New ports &amp; FTZ &amp; number of modernization &amp; development projects at various ports &amp; new road links.</li> <li>4. Name of new institutions &amp; set of regulations &amp; legalizations established for transport &amp; logistics sector &amp; more free trade agreements.</li> <li>5. Number of professional &amp; trained cadre in maritimes affairs &amp; logistics sector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Data on lengths of paved roads from Ministry of Transport and Communication.</li> <li>2. Data on construction phases of Oman railway from Oman railway company.</li> <li>3. Data of names of new ports, FTZ and numbers renewed ports &amp; length of road links from Ministry of Transport and Communication.</li> <li>4. Data on names of new institutions &amp; set of regulations &amp; legalizations established for transport &amp; logistics sector &amp; name and number of free trade agreements from Ministry of Transport &amp; Communication &amp; Industry.</li> <li>5. Data on number of Professional, qualified graduates &amp; trained cadre in maritimes affairs &amp; logistics sector from International Maritime College Oman (IMCO) &amp; National Center for Statistics and Information (NCSI), Ministry of Manpower &amp; Ministry of</li> </ol>	<ol style="list-style-type: none"> <li>1. International logistics enterprises will utilize the transport and logistics infrastructure.</li> <li>2. The private sector will be more involved in investment in the transport and logistics sector.</li> <li>3. International logistics enterprises will utilize the transport and logistics infrastructure.</li> <li>4. More national's youth will join the human development and capacity-building programs in the transport and logistics sector.</li> <li>5. More foreign and domestic investment attracted to invest in ports and FTZ.</li> </ol>
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<p>6. Local &amp; international exhibitions &amp; promotion campaigns.</p> <p>7. Appointment of commercial representatives in main world markets.</p> <p>8. Arrangement of bilateral match meetings.</p>	<p>6. Names &amp; numbers of local &amp; international exhibitions &amp; promotion campaigns.</p> <p>7. Names &amp; locations of commercial representatives appointed in main world markets.</p> <p>8. Numbers of bilateral match meetings conducted.</p>	<p>Higher Education.</p> <p>6. Data on numbers and names of local &amp; international exhibitions &amp; promotion campaigns from Public Authority for Investment Promotion and Export Development (<i>ITHRAA</i>).</p> <p>7. Data on the names &amp; locations of the commercial representatives appointed in main world markets from Public Authority for Investment Promotion and Export Development (<i>ITHRAA</i>).</p> <p>8. Data of numbers of bilateral match meetings conducted from Public Authority for Investment Promotion and Export Development (<i>ITHRAA</i>).</p>	
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<p><b>Expected impacts:</b></p> <ol style="list-style-type: none"> <li>1. Increased domestic, regional &amp; foreign investments.</li> </ol>	<ol style="list-style-type: none"> <li>1. Value of domestic &amp; foreign investments in different ports, FTZ &amp; Industrial Estates.</li> </ol>	<ol style="list-style-type: none"> <li>1. Data of values of domestic &amp; foreign investments from Ministry of Commerce and Industry, Public Establishment for Industrial Estates (PEIE) and the National Center for Statistics and Information (NCSI).</li> </ol>	<ol style="list-style-type: none"> <li>1. Political stability in region will remain.</li> </ol>
<ol style="list-style-type: none"> <li>2. New logistics companies established.</li> </ol>	<ol style="list-style-type: none"> <li>2. Numbers and names of the new logistics companies established.</li> </ol>	<ol style="list-style-type: none"> <li>2. Data of numbers and names of the new logistics companies established from Ministry of Manpower.</li> </ol>	<ol style="list-style-type: none"> <li>2. Transport and logistics sector will be more efficient.</li> </ol>
<ol style="list-style-type: none"> <li>3. Increased trade inflows with GCC, Asia &amp; sub-Saharan African countries.</li> </ol>	<ol style="list-style-type: none"> <li>3. Market share of goods exported and imported to &amp; from GCC, Asia &amp; sub-Saharan African countries.</li> </ol>	<ol style="list-style-type: none"> <li>3. Foreign trade data from National Center for Statistics and Information (NCSI).</li> </ol>	<ol style="list-style-type: none"> <li>3. All planned projects of the transport &amp; logistics sector will be completed as planned.</li> </ol>
<ol style="list-style-type: none"> <li>4. Improved Oman's rank in the Logistics Performance Index (LPI), Global Competitiveness Index &amp; Global Enabling Trade Index.</li> </ol>	<ol style="list-style-type: none"> <li>4. Oman's rank in the logistics performance Index (LPI), Global Competitiveness Index &amp; Global Enabling Trade Index.</li> </ol>	<ol style="list-style-type: none"> <li>4. Logistics Performance Index (LPI) data from World Bank database, Global Competitiveness Index from World Economic Forum &amp; Global Enabling Trade Index from World Economic Forum.</li> </ol>	<ol style="list-style-type: none"> <li>4. All promotional campaigns will be conducted successfully.</li> </ol>
<ol style="list-style-type: none"> <li>5. Increased freight volumes at ports &amp; air passenger traffic at airports.</li> </ol>	<ol style="list-style-type: none"> <li>5. Freight volumes at ports &amp; air passenger traffic at airports.</li> </ol>	<ol style="list-style-type: none"> <li>5. Container port throughput (TEU) data &amp; air passenger traffic from National Center for Statistics and Information (NCSI).</li> </ol>	<ol style="list-style-type: none"> <li>5. More incentives and facilities will be offered to foreign investment in ports and free trade zones.</li> </ol>

<p>6. Increased non-oil exports.</p> <p>7. Increased share of transport &amp; logistics sector in the GDP.</p> <p>8. Increased re-export activities.</p> <p>9. Increased employment opportunities among national's workforce.</p> <p><b>Goal:</b></p> <p>1. Increased export diversification.</p>	<p>6. Share of non-oil exports on total exports.</p> <p>7. Share of transport &amp; logistics sector in the GDP.</p> <p>8. Share of re-export in total exports.</p> <p>9. Numbers and percentage of national employees in transport and logistics sector.</p>	<p>6. Data on the share of non-oil exports in total exports from National Center for Statistics and Information (NCSI).</p> <p>7. Data on the share of transport &amp; logistics sector in the GDP from National Center for Statistics and Information (NCSI).</p> <p>8. Data on the share of re-export in total exports from National Center for Statistical and Information (NCSI).</p> <p>9. Data on numbers and percentage of national employees in transport and logistics sector from Ministry of Manpower and National Center for Statistics and Information (NCSI).</p>	
	<p>1. Diversification index.</p> <p>2. Revealed Comparative Advantage Index.</p> <p>3. Product Concentration index (Product HHI).</p> <p>4. Extensive and intensive margins.</p>	<p>1. Data center of UNCTAD STAT.</p> <p>2. Data from World Integrated Trade Solutions (WITS World Bank).</p> <p>3. Data center of UNCTAD STAT.</p> <p>4. IMF Diversification Toolkit: Export Diversification and Quality Databases.</p>	<p>Oil price will remain at favorable levels and not increase dramatically.</p>

*Source: Author's own elaboration.*

To carry on the analysis, a brief description about the current situation of transport and logistics in Oman is provided. Currently there are seven commercial sea ports, two international airports, three domestic airports, ten land ports and two industry-specific ports (Table 6.11).

Table 6.11. Types of different ports existing in Oman (2016).

Type of Port	No. of Ports	Name of Port
Sea ports	7	Sultan Qaboos port <sup>34</sup> , Salalah port <sup>35</sup> , Sohar port, Khasab port, Shinas port, Duqm port and Bayah port
International airports	2	Muscat international airport and Salalah <sup>36</sup> airport
Domestic airports	3	Sohar airport, Duqm airport and Khasab airport
Land ports	10	Khatmat Milaha, Al Wajaja, Wadi Al-Jizzi, Hafeet, Wadi Saa, Taybaat, Al Mazyoona, Al Buraimi, Shinas and Sarfait
Industry-specific- ports	2	Al Fahal port which is oil terminal and Sur port which is Qalhat liquid Natural Gas terminal

*Source: Statistical Year Book (2016) and JICA (2005)*

A recent strategic analysis study of Oman's logistics sector (explored transportation, warehousing, freight forwarding and value-added logistics services) by Frost and Sullivan company<sup>37</sup> concluded that Oman will be particularly attractive for logistics providers that have a significant presence in the global freight forwarding business (CLN, 2012). Moreover, a benchmarking port study on consolidation in the container shipping industry, commissioned by Ministry of Transport and Communications in 2014, estimates that the annual cost of diverting a direct run benchmark voyage of a container ship from Singapore to Suez Canal, to Khor-Fakkan port (in Iran) or Jabal Ali port (in Dubai) is very high and considerably less for diversion to Omani ports. Additionally, Oman is rated as having higher quality freight infrastructure, even much better than the world average score (AMCML, 2015). Oman's ports and harbors system comprises common-user ports that cater to various industries and commercial shipping under one

<sup>34</sup> Sultan Qaboos port was converted into a tourist port through the Royal directive of His Majesty *Sultan Qaboos* in 2011, and Sohar port has been earmarked to handle the sea cargo as an alternative.

<sup>35</sup> Salalah port is one of the largest container ports in the Middle East region, and is the only port between Europe and Singapore that can handle the biggest international containers.

<sup>36</sup> Salalah airport opened in 1977 as the second airport in Oman. Initially, it handled only domestic flights from Muscat. In 2003, it acquired the status of an international airport.

<sup>37</sup> The Frost and Sullivan company is a consulting firm that provides market research and analysis, growth strategy consulting, and corporate training services across multiple industries.

management, and industry-specific ports which are constructed for a specific industrial use (JICA, 2005).

The statistics from NCSI for quantities imported and exported through different customs ports (sea, land and air) showed that the higher percentage of import and export quantities passed through the sea ports. The data on the transport sector (roads length, sea ports and airports transport of passengers and cargo) published by (NCSI) at Statistical Year Book (2016) showed that the total length of the asphalted carriageway in 2015 was 35,522 kilometers (Km). Whereas, the total quantity of imported goods (thousands Ton) received by different customs ports (sea, lands and air) in 2015 was (24993.9), (10521.2) and (55.2) respectively. Sea transport is the predominant mode of freight transportation and accounted for 70.3 percent of the total quantity of imported goods, followed by land transport (29.6 percent) and air transport with only (0.1 percent). On the other hand, the percentage of the total quantity of exported goods through different customs ports related to sea, land and air was 77.9, 22.0 and 0.02 respectively in 2015. Most sea freight is handled by Sohar and Salalah Ports.

The government initiated large-scale infrastructure development projects, including Al Mazyunah FTZ, Sohar FTZ, Salalah FTZ and a special economic zone in Duqm (to fulfill the needs of the logistics industry and consolidate the nation's position as a premier logistics and trans-shipment hub (Manda, 2014). Besides those projects, the geo-strategic advantages of Oman, the good quality scores of existing roads, ports and air transport infrastructure (Table 6.12) the investment in Oman Railway and ongoing government investment in the ports, airports and roads, endow the logistics sector with the potential to contribute substantially to the GDP and create numerous jobs.

Table 6.12. Scores of qualities of infrastructure in Oman from 2007-2015

Year	Country rank	Quality of overall infrastructure (1-7) *	Quality of ports infrastructure (1-7) *	Quality of air transport infrastructure (1-7) *	Quality of roads infrastructure (1-7) *
2007**	42	4.5	4.8	4.9	5.0
2008	32	5.1	5.1	5.0	5.6
2009	29	5.6	5.2	5.1	5.9
2010	33	5.8	5.5	5.3	6.2
2011	28	5.9	5.4	5.5	6.4
2012	33	5.8	5.4	5.5	6.4
2013	32	5.8	5.5	5.5	6.4
2014	33	5.4	5.2	5.1	6.0
2015	38	4.9	4.6	4.7	5.5
<b>Average</b>	<b>32.3</b>	<b>5.5</b>	<b>5.2</b>	<b>5.2</b>	<b>6.1</b>

*Source: The Global Competitiveness Index (GCI database)*

*Note: \* 1 = extremely underdeveloped and 7 = well developed and efficient by international standards.*

*\*\* Data starts from 2007 because Oman data was not included in GCI reports before 2007.*

From the standpoint of Oman’s economic diversification policy, a logistics sector is the hallmarks at the heart of the Omani government’s vision to create the underpinnings of a new logistics industry that has the potential to supplant the oil sector as the nation’s economic mainstay and promises to evolve into a full-fledged economic sector (GCC supply chain and logistics conference, 2015). Precisely, it is expected to contribute in decrease the export diversification index.

## 6.5 INDICATORS VERIFICATION ANALYSIS

As mentioned in Chapter Six of this thesis, the data of indicators verification was collected from different national and international sources. More details on the units of the measureable indicators are presented in Table A2.1 *at Appendix 1*. The TOC identified different indicators of the activities, outputs, impacts and the goal of the policy. The four main activities that have been planned and then implemented are presented below.

### 6.5.1 ACTIVITIES:

#### 1. INCREASING INVESTMENT IN NEW PORTS, FTZ & MODERNIZATION OF VARIOUS SEA & AIRPORTS & NEW ROAD LINKS

The Supreme Council for Planning (SCP) categorized the economic sectors into four primary sectors and about thirty-eight sub-sectors, according to the nature of the projects of each sector, (i.e. its dominant activity), as shown below:

- **Commodity production sector:** crude oil, natural gas, mining and quarries, agriculture, fisheries, manufacturing and contracting.
- **Service production sector:** housing, trade, electricity, water, post-telegram-telephone, transportation, tourism, and financial and banking establishments.
- **Social structures sector:** education, vocational training, health, information –culture and Islamic affairs, social centers and youth centers.
- **Infrastructure sector:** roads, airports, ports, irrigation and water resources, town planning and municipality services, government administration, environment and pollution control.

Table 6.13 shows the percentage of government investment in different sectors during the eight five-year development plans (1976-2015).

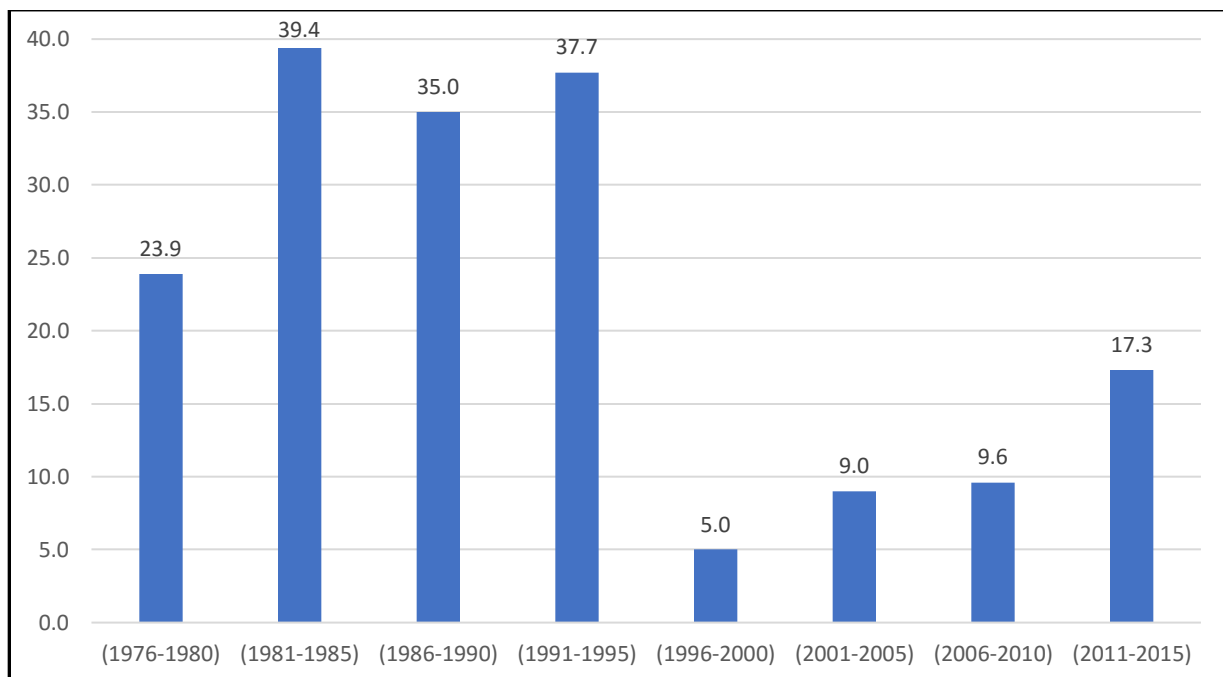
Table 6.13. Percentages of government investment in different sectors (1976-2015)

Sector	(1976-1980)	(1981-1985)	(1986-1990)	(1991-1995)	(1996-2000)	(2001-2005)	(2006-2010)	(2011-2015)
<b>Commodity production</b>	14.4	23.0	23.0	15.6	68.4	59.0	68.3	55.8
<b>Service production</b>	20.6	31.1	27.0	24.5	20.7	24.4	18.2	23.5
<b>Social structures</b>	14.1	6.5	15.0	22.2	5.9	7.6	3.9	3.4
<b>Infrastructure</b>	23.9	39.4	35.0	37.7	5.0	9.0	9.6	17.3
<b>Total</b>	100	100	100	100	100	100	100	100

*Source: five-year development books (various issues)*

The sectoral distribution of government investment is linked to the economic diversification process closely, because it reflects the size of the desired structural changes that were planned to be achieved during the five-year plans. The percentage of government investment in commodity production was the highest among the sectors during the period of nineteen years (1996-2015). A large share of the investment in the commodity production sector was directed to the oil and gas

sector, which aimed to make natural gas a new source of income as well as maintaining the oil fields and increasing their production to finance the economic diversification projects. According to the European Commission, transport infrastructure forms the backbone of most economic and social processes. The construction of roads, tunnels and bridges can radically improve the lives and livelihoods of poor communities and create new opportunities across entire regions. The investment in hard infrastructure was the core element in achieving the goal of making Oman a global logistics hub, and several activities (including government investment programs) have been planned and applied to achieve that goal. Therefore, the government invested heavily in hard infrastructure (roads, bridges, ports, airports and runways). For example, in October 2013, the government announced that it would spend over 50bn USD in infrastructure projects over the next 15 years, 20bn USD of which is earmarked for the transport sector. That was reflected in the increase of investment in the infrastructure sector, especially after the huge decrease from 37.7 percent during the end of the first long-term strategy for development (1991-1995). The share of infrastructure investment in the total investment increased from 5.0 percent to 17.3 percent during the period 1996-2015, as Figure 6.6 shows.

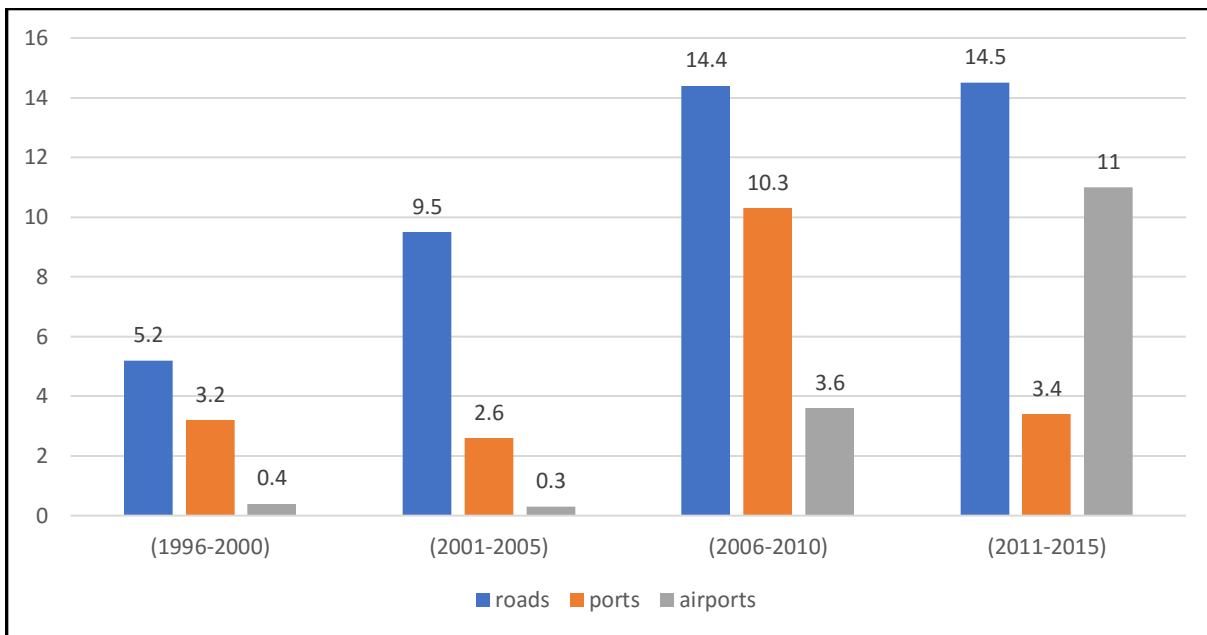


**Source:** Supreme Council for Planning (SCP)

Figure 6.6. Percentages of government investment in infrastructure (1976-2015)



Specifically, that increase was due to the intensive investment in constructing and enhancing of the transport and logistics infrastructure such as roads, ports, runways and airports, which increased their total value of investment from 472.5 million OMR during the fifth development plan (1996-2000) to 5967.1 billion OMR during the eighth development plan (2011-2015). Figure 6.7 shows that the share of investment in roads development has increased from 5.2 percent during the fifth development plan (1996-2000) to almost three-fold during the eighth development plan (2011-2015).



**Source:** Supreme Council for Planning (SCP)

Figure 6.7. Share of government investment in roads, ports and airports during 1996-2015

That trend was also noticed in the share of investment in airports development. The share of investment in ports increased significantly until the seventh development plan (2006-2010) when it decreased during the period 2011-2015. Moreover, the government invested in modernization of Muscat airport, development of a national railway network, establishment of the new Salalah and Duqm airports, as well as huge developments of logistics services at Sohar port, Salalah port and Duqm port (one of the GCC’s most promising mega ports). In addition, a new airport in the

fast-growing industrial estate of Sohar has been established to enhance existing airports and enable better connectivity to inland logistics. In addition, improving the road networks and establishment of the new railway network was also among the government-driven projects. More details of the name and values of different government investment programs that have been implemented in hard infrastructure during the period 1996-2015 are presented in Table A2.2 at Appendix 1. The data of the value of infrastructure investment and the quality of overall infrastructure in the GCI for Oman during the period 2007-2015 indicates a highly positive correlation (0.83) between them, as Table 6.14 shows.

Table 6.14. Correlation result of investment with quality of infrastructure (2007-2015)

	<b>Value of investment in infrastructure</b>	<b>Overall quality of infrastructure</b>
<b>Value of investment in infrastructure</b>	1	
<b>Overall quality of infrastructure</b>	0.830133205	1

*Source: Author's own elaboration based on the investment values from SCP and GCI*

## **2. STRUCTURAL CHANGES OF SOME GOVERNMENT INSTITUTIONS, LEGISLATION, RULES, REGULATIONS AND TRADE FACILITATION:**

The Supreme Council for Planning (SCP) developed a long-term strategy called “*Sultanate of Oman Logistics Strategy 2040*” (SOLS 2040) in 2013. It is designed to elevate Oman to the league of Top 10 logistics-centric nations of the world by the year 2040. It aims to spells out a coherent road map for eventually transforming Oman into a regional logistics powerhouse, through improved infrastructure required for the development of major hubs for handling international cargo, an improved regulatory environment, and supportive mechanisms and institutions. SOLS 2040, suggested that trade implies moving goods, services, and people from place to place (Lobo-Guerrero, 2008), and trade facilitation is the principal key to revealing underlying logistics potential in any economy.

Trade facilitation includes facilitation of customs and legislation, and according to WTO (2015, p.4), trade facilitation in its narrow scope focuses on improving administrative procedures at borders (simplification, harmonization and transparency), while its broad scope includes changes to behind-the-border measures, such as non-tariff barriers. Elimination of unnecessary

obstacles that delay the clearance of goods and restraining their free movement is the most important aspect of customs facilitation. On the other hand, legislation can be a block to the development of an economy. Therefore, the legal system and regulations need reforms to enable trade facilitation, and some examples of reforms are improved flow, speed, reliability and transactions, and ameliorate any duplication of unnecessary or consistent processes that prevent, lock, or delay the movement of goods or data relating to goods across and within the borders of Oman. Further reforms must improve the flow speed, reliability and consistency of transactions that govern, or directly impact the attractiveness and speed of establishing, registering, licensing an entity, company, or organization with logistics operations within Oman (whether local or foreign-owned, and including free trade zones, government and municipality permits and utilities).

On the other hand, the government recognizes that one of the keys of successful growth of its logistics industry lies in having global strategic partners to give it a leapfrog opportunity. Thus, all three main ports, Sohar, Salalah and Duqm have global strategic partners. In 2003, the government made a joint 50:50 venture agreement with the Port of Rotterdam (in the Netherlands) through the Sohar Industrial Port Company (SIPC) to develop Sohar port. In addition, APM<sup>38</sup> Terminals, (one of the world's biggest terminal operators) signed a 30-year concession agreement with the government in 1996 through Salalah Port Services Company (SAOG) to build and manage a world-class container facility at Salalah port. The Port of Salalah is recognized as one of the fastest growing ports in the world, offering a reduction in sailing time for ships coming from Europe and traveling to the Far East. Based on World Shipping Council data, it is the 5th largest container port in the Middle East and the 39th largest container port in the world. In 2010, the Belgium Consortium Antwerp Port (CAP) signed a 28 years' concession agreement with the government through Port Duqm Company (PDC) to co-invest, operate, manage and market Duqm Port and the associated industrial estate. To strengthen and increase the freight handling capacity, Oman Air (the national carrier of Oman) partnered with Luxembourg-based Cargolux (one of Europe's largest scheduled all-cargo airlines) in 2015. Later in 2016, it also partnered with Singapore-based ground-handling,

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<sup>38</sup> APM Terminals' core expertise is in the design, construction, management and operation of ports, terminals and inland services, with a Global Terminal Network covering more than 63 port facilities spanning 40 countries, and with over 160 Inland Services locations in 47 countries.

warehousing and freight specialist (SATS) to create a new joint venture company for cargo handling at the airline's Muscat hub. Other strategic partnerships include US-based BDP International's joint venture with Oman's Mustafa Sultan Enterprise to offer international logistics and supply chain solutions, and Dubai's Aramex's venture with Oman's Zubair Corporation to build an integrated logistics center.

### **3. GOVERNMENT PROGRAMS ON HUMAN CAPITAL DEVELOPMENT IN TRANSPORT AND LOGISTICS:**

Human capital forms one of the key pillars of the logistics industry. The current high level of expatriates (87.5) percent in the logistics sector reflects the lack of qualifications and training opportunities for Omanis. Therefore, the government set different programs for human development in transport and logistics during the period 1996-2015. The details of the names and the budgets of those programs are presented in Table A2.3 *at Appendix 1*. The programs aimed to build a cadre of professional and highly competent nationals to take-on current and future challenges facing the logistics and supply chain industries. This can be achieved through:

- Promoting logistics as a preferred profession among young Omanis and encouraging them to be attracted to the industry. Institutes such as Sultan Qaboos University, Fisheries Institutes Training, Sohar University are taking a leading role in building the right curricula in logistics and skills training and Ship building and repair engineering.
- Enabling industry professionals and members to advance their professional development.
- Developing professional standards for logistics and supply chain management in Oman.
- Establishment of the International Maritime College Oman (IMCO) in 2005.
- Increasing the number of international scholarships to study maritime affairs, port management, shipping and marine transportation and marine engineering.
- Agreement with UK's Chartered Institute of Logistics and Transport (CILT) to train and provide Omani employees with knowledge and skills in logistics and transport.

#### **4. PROMOTING OMAN AS A LEADING TRANSPORT AND LOGISTICS CENTER IN THE REGION**

Despite the substantial investment in infrastructure, there is a need to promote Oman as a leading transport and logistics center to foreign investors. The promotion efforts include:

- Establishment of a public authority for investment promotion and export development in 1996.
- Participation in internal and external promotion exhibitions to promote investment in the transport and logistics sector as well as other economic sectors in Oman.
- Arrangement of different conferences, seminars and symposiums (internal and external) about investment opportunities in Oman.
- Introduction of the Industrial promotion project in 2011 and the export marketing strategy during the period 2011-2015.

Moreover, the flow of foreign investment depends mainly on the suitability of the investment climate to embrace foreign investment projects; therefore, the following must be considered:

- The availability of natural resources within the state.
- The extent and suitability of infrastructure development.
- Internal and external markets outlets and the degree of freedom of access to market.
- The availability of trained and skilled labor.
- Flexible tax policies.
- The degree of clarity and stability of investment laws and restrictions on the amount of capital invested.
- The degree of protection for investors in the country in terms of ensuring the rights of investors in the transfer of capital, production and profits possible for foreigners.

The main legislation related to foreign investment was the foreign business and investment law which was established in 1974 and also made changes to income tax rules. Furthermore, the government offered several incentives in a bid to lure foreign investment and create a friendly legal framework for foreign investors such as (UNIDO, 2015):

- Competitive government services' prices (land rents, water, electricity and communication).

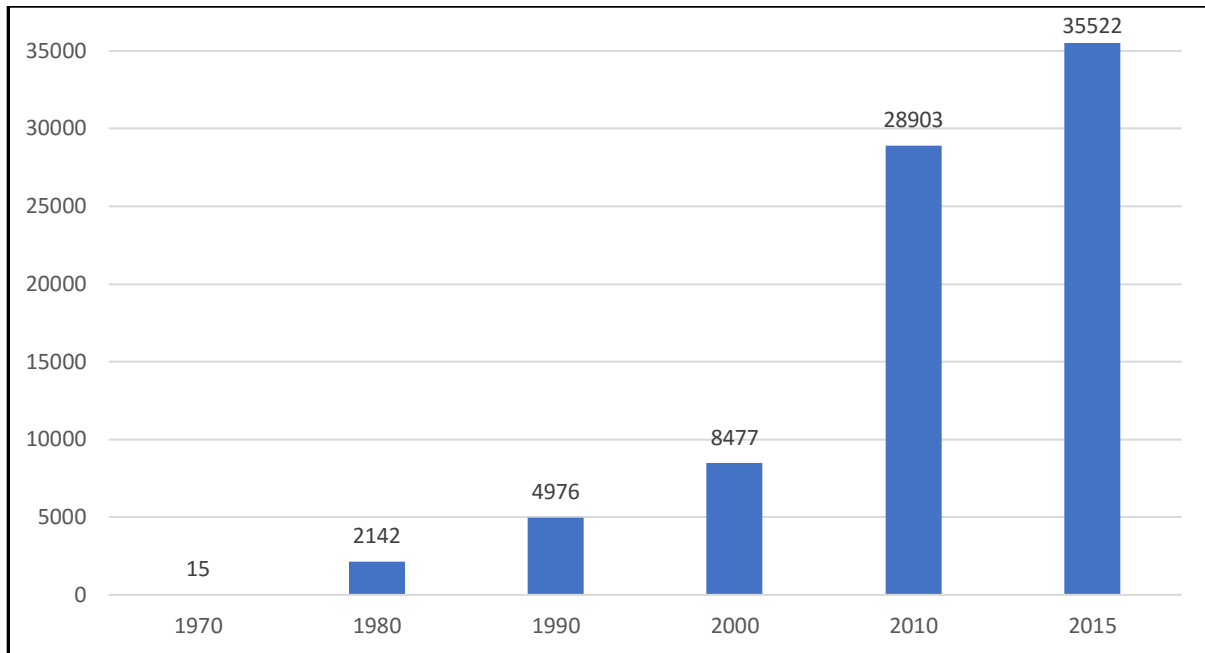
- Tax exemption (tax holidays) for five years on profits of foreign investment, and it could be extended for another five years under certain conditions.
- 100 percent foreign property ownership in many free trade zones and 70 percent foreign property ownership in most sectors.
- Corporate income tax at the flat rate of 12 percent (is among the lowest in the region and the world) and no income tax for individuals.
- Providing interest-free long-term loans to partly foreign-owned industrial and tourism projects.
- Repatriation of capital and profits is not restricted and there is freedom of exchanging foreign currency with a fixed exchange rate.
- One stop station for investment services that helps investors to make all the inquiries and transactions they need as soon as possible.
- Offering loans from Oman Development Bank at reduced rates.
- Opening new offices or representative offices for foreign companies in Oman: companies that run their businesses with the government are allowed to open new offices or commercial representative offices in Oman.
- Giving products duty-free access to markets of the GCC.
- Investors in various forms of businesses can form more than one legal entity to organize their businesses. Such entities are public joint stock companies, public closed cooperation, limited liability companies, and holding companies.
- Introducing export credit insurance.
- Tariff rate is very low (2 percent) so that foreign investment projects can use capital goods and raw materials at competitive prices.
- Expropriation or confiscation of foreign investment is prohibited except in case of public interest but only against fair compensation.

## **6.5.2 OUTPUTS:**

According to the LF theory, the implementation of the above-mentioned activities will lead to different outputs:

### **1. INCREASING LENGTHS OF PAVED ROADS LINKS**

According to Schwab (2015), well-developed infrastructure reduces the effect of distance between regions, with the result of truly integrating the national market and connecting it to markets in other countries and regions. Specifically, existence of a sufficient road and railway network can play a vital role in reducing transport cost and attracting FDI. Since 1970, the government has accorded great care to roads development and there has been an impressive progress on the road network in general and paved road lengths especially. The paved road network built in the past forty-six years became the backbone of the distribution system in Oman. Since 2011, the government has spent 8 billion OMR in infrastructure development. Consequently, the existing sophisticated road network linking ports, free trade zones, airports and Industrial Estates is generally sufficient to handle the freight volumes that are driven by domestic economic activities to meet local demand and land-based trade with other GCC countries (SOLS, 2014). The length of paved roads in a country is often used as an index to assess the extent of its development (Al Dagheiri, 2008). Paved road lengths, has been increased dramatically from 15 km in 1970 to 35,522 km in 2015 (Figure 6.8), spread over the different regions of Oman to connect its towns and villages internally as well as those of its neighboring states. Furthermore, the construction of a new link of a 680-km road between Oman and the KSA in 2016 provided a more direct route between the two countries, cutting the distance by more than half as well as reducing the number of border crossings. As mentioned before, the railway network project has not yet been initiated and current railway length is still zero kilometers.



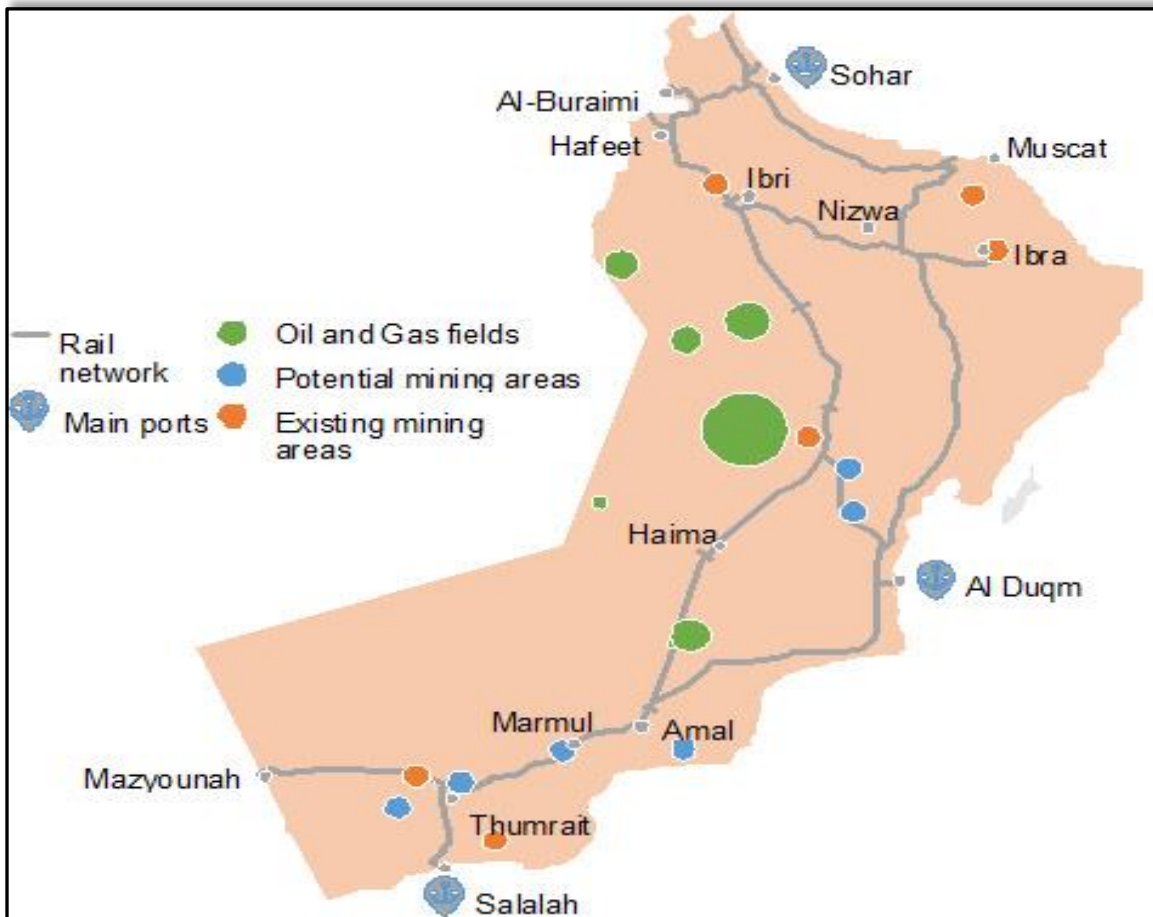
*Source: Statistical Year Book (various issues)*

Figure 6.8. Paved road lengths (1970-2015)

## 2. ESTABLISHMENT OF NEW NATIONAL RAILWAY NETWORK

Establishment of a railway link will have significant importance, particularly in the north of Oman where mineral resource and oil development areas, Sohar Port, FTZ and Industrial Estates exist. It will facilitate the link between those areas with the population centers of the country as well as with the GCC markets. Earlier in June 2014 the government established a national railway company (Oman Rail) to implement the national railway project. According to Oman Rail company, the estimated total length of the Oman national railway network is 2,135 km. It is divided into several segments linking Oman's borders with the UAE to Muscat, as part of the GCC Railway Network, and to the southern parts of the country - Port of Al Duqm, the Port of Salalah and the Yemen border. The planned railway network is expected to create a linkage between Industrial Estates, free trade zones, mining and logistics services at the ports as the map shows in Figure 6.9. Unfortunately, the decline in oil prices in mid 2014 delayed the implementation plans for the railway network. Therefore, the length of railways established was zero.





*Source: Oman Global Logistics Group (OGLG)*

Figure 6.9. Map of planned routes of national rail network

### **3. NEW PORTS, FREE TRADE ZONES, INDUSTRIAL ESTATES AND MODERNIZATION & DEVELOPMENT OF VARIOUS PORTS AND NEW ROAD LINKS:**

During the period 2012-2014 the government invested more than USD 20 billion in the expansion of its logistics infrastructure, resulting in the enhancement and establishment of:

- Three major ports (Sohar port, Salah port and Duqm port)
- 2,500 km of new asphalted roads

- Oman national Rail development strategy
- Development of container port berths to receive a large volume (18,000) container ships at Sohar port
- Continuing modernization and expansion of Muscat international airport
- Development of high-tech automated gates for entry and exit of trucks at Sohar port
- Opening of bulk liquids berth at Salalah port
- Opening of the totally new Salalah international airport (replacing the old local one)
- Extending fiber optic and expansion projects to provide telecommunications and broadband services
- Opening of Sohar airport (the biggest commercial port after Sultan Qaboos port was converted to a tourism port)
- Development of berth for bulk materials to export rocks and minerals at Sohar port
- Implementation of services corridor at Salalah port that leads to the Industrial Estates and FTZ
- Establishment of cargo related to gas and oil, petrochemicals, mining and other heavy industries at Duqm port
- Development of Road Management System (RMS)
- Opening of Duqm airport
- Modernization of Oman National Transport Company (ONTC)
- Establishment of the four FTZ (Al Mazunah, Salalah, Special Economic Zone Authority (SEZAD) and Sohar

## **FREE TRADE ZONES (FTZ)**

- **AL MAZUNAH FTZ**

It is the first FTZ in Oman that was established in 1999 at Al Mazunah in the south-west, 4 km from the Yemeni border. It aims to attract investors in trading, light industry, assistant services sectors, and industrial vehicle trade. It offers a set of business-friendly incentives like income tax exemptions, available for up to 30 years. Full foreign ownership is permitted and customs

exemptions are available. There is no minimum capital required to set up a company located in this free trade zone and there are relaxed Omanization rates applicable to such companies. Additionally, Yemeni nationals are permitted to work in the zone without visas or work permits.

### **SALALAH FTZ**

It was established in 2001 in the Dhofar Governorate in the south of the country. It offers competitive labor and infrastructure costs to attract investors in the chemical and material processing, manufacturing, assembly and logistics sectors. Currently, there are different companies established at the FTZ, such as Octal Petrochemicals, Salalah Methanol, and Dunes Oman, ABI Showatech (casting, machining and assembly of light engine products) and SAGA (operating and leasing of stores and warehouses) and Sapphire Marine who manufacture yachts and commercial fishing boats. The business-friendly incentives include income tax exemptions, available for up to 30 years. Full foreign ownership is permitted and customs exemptions are available. There is no minimum capital required to set up a company located in this free trade zone and there are relaxed Omanization rates applicable to such companies.

### **SPECIAL ECONOMIC ZONE AUTHORITY AT DUQM (SEZAD)**

It was established in 2011 with an area of 1,777 square km bordered by an 80km Arabian Sea coastline. It is strategically placed as a gateway to and key hub for the Middle East, North and East Africa, and South Asia. The SEZAD is made up of several areas: port and dry dock, fishing port and fisheries industries, industrial and logistics areas, tourism and educational areas, filters and petrochemicals complex, New Duqm town and Duqm airport. Incentives offered to investors in the special economic zone include competitive land lease rates, a 30-years income tax exemption and full customs exemptions, and 100 percent foreign ownership of businesses.

### **SOHAR FTZ**

It is the latest FTZ that was established in 2012, close to the Port of Sohar and Sohar Industrial Estate area. It aimed at attracting investment in the metal and steel, food and logistics sectors. It is offered a set of business-friendly incentives such as full exemption from customs duties on goods imported into the free trade zone, one-stop service, businesses may be 100 percent foreign-owned and tax exemptions are allowed for up to 25 years. It is also offered relaxed Omanization rates (only 10 percent) and no customs on imports and exports.

## PORTS AND INDUSTRIAL ESTATES

With the ambition to diversify the economy through development of the manufacturing sector and attract domestic and foreign capital, the government established the first flagship industrial estate (Rusayl) 45 Km from Muscat Governorate in 1983. It provides investors with the infrastructure needs within the industrial estate such as roads networks, postal office, telecommunication services, electricity power, and water and gas supplies (McWilliam, 2011). It also provides facility management services such as banks, restaurants, commercial shops and medical clinics. Since the early 1990s the government has invested heavily in industrial infrastructure, particularly in the form of Industrial Estates (UNIDO, 2015); consequently, the number of Industrial Estates has increase from only 3 (Rusayl, Raysut –Salalah- and Sohar), and no FTZ in 1992, to seven Industrial Estates and four FTZ in 2015, that were established near the different ports and contain different manufacturing units such as plastic materials, steel products, marble, building materials, light industries and warehouses. The increase in numbers of Industrial Estates and the free trade zones was parallel with the establishment of the different ports and airports (see Table 6.15), that play a vital role in facilities and attract local and foreign export-oriented investment.

Table 6.15. Names of different ports and their establishment years

<b>Name of the Port</b>	<b>Establishment Year</b>
Muscat International Airport	1973
Sultan Qaboos port	1974
Salalah airport	1977
Salalah port	1998
Sohar port	2002
Duqm port	2013
Sohar airport	2014
Duqm airport	2014

*Source: Author's own elaboration*

The distances of Industrial Estates and FTZ from the nearest port are shown in Table 6.16.

Table 6.16. Location of Industrial Estates and FTZ and distance to the nearest port

<b>Name of the Industrial Estate &amp; FTZ</b>	<b>Location</b>	<b>Name of the nearest port</b>	<b>Distance to port (km)</b>
Buraimi industrial estate (established in 1998)	Buraimi Governorate	Dubai International Airport & Sohar port	To the airport: 120 To Sohar port: 120
Duqm FTZ (established in 2011)	Al Wusta Governorate	Duqm airport & Duqm port	To the airport: 24.9 To Duqm port: 0
Mazunah FTZ (established in 1999)	Dhofar Governorate	Salalah airport & Salalah port	To the airport: 260 To Sohar port: 275
Nizwa industrial estate (established in 1994)	Al Dakhiliyah Governorate	Muscat International Airport & Sohar port	To the airport: 140 To Sohar port: 354
Raysut –Salalah- industrial estate (established in 1992)	Dhofar Governorate	Salalah airport & Salalah port	To the airport: 15 To Salalah port: 4
Rusayl industrial estate (established in 1983)	Muscat Governorate	Muscat International Airport & Sohar port	To the airport: 10 To Sohar port: 205
Salalah FTZ (established in 2001)	Dhofar Governorate	Salalah airport & Salalah port	To the airport: 18.9 To Salalah port: 9.6
Sohar industrial estate (established in 1992)	Al Batinah North Governorate	Sohar airport & Sohar port	To the airport: 3.6 To Sohar port: 6
Sohar FTZ (established in 2010)	Al Batinah North Governorate	Sohar airport & Sohar port	To the airport: 28.5 To Sohar port: 0
Smail industrial estate (established in 2010)	Al Dakhiliyah Governorate	Muscat International Airport & Sohar port	To the airport: 50 To Sohar port: 271
Sur industrial estate (established in 1999)	Al Sharqiyah South Governorate	Muscat International Airport (new airport at Sur under construction) & Sohar port	To the airport: 200 (distance to the new Sur airport will be 60) To Sohar port: 447

*Source: Public Establishment for Industrial Estates (PEIE)*

#### **4. NEW INSTITUTIONS & SET OF REGULATIONS & LEGALIZATIONS FOR TRANSPORT & LOGISTICS SECTOR**

The following new institutions and set of regulations and legalizations were established:

- Oman Logistics Center (OLC): established in 2015 to help manage and coordinate the development of the logistics strategy (SOLS 2040). Also, it will focus its efforts on four key areas of “soft infrastructure”. These include trade facilitation, technology, education and markets.
- Establishment of Special Economic Zone Authority at Duqm (SEZAD) in 2011.
- Establishment of Oman Road Transport Association (ORTA) in 2012.
- Develop a set of regulations and legalizations that organize land transport (e.g. transportation planning and project management, and control systems and the system of geographic databases).
- Establishment of Oman Rail company in 2014.
- Application of Bayan system (online single window/one-stop service that facilitates seamless, convenient and fast clearance of goods for trading communities & various stakeholders) in 2015.
- Application of TIR<sup>39</sup> system (international transit system of customs control that facilitates trade and transport).
- The Public Authority for Investment Promotion and Export Development (*ITHRAA*) was established in 1997. It aimed to provide prospective foreign investors with information on the regulatory system and support government efforts to create new and deeper business ties with dynamic and fast-growing economies and businesses across the world. It has also been the custodian of the non-oil export strategy since its inception.
- Oman Logistics and Supply Chain Association (OLSCA, under formation): a non-profit grouping of professionals hailing from all disciplines of the logistics and supply chain industry in Oman.
- Establishment of Oman Global Logistics Group (OGLG) in 2016.

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<sup>39</sup> TIR is an international transit system based on a United Nations convention implemented at global level in Public-Private Partnership.

## **5. PROFESSIONAL, QUALIFIED GRADUATES AND TRAINED CADRE IN MARITIME AFFAIRS AND LOGISTICS SECTOR**

Recognizing the fact that a successful logistics industry required professional cadre with specific skill sets, training and a degree of qualification, Oman started different efforts to rehabilitate the Omani youth in the field of the logistics industry. The statistics of qualified graduates in maritime affairs and the logistics sector in 2015 showed that the number of qualified people with different degrees (Diploma, high Diploma, Bachelor, Master and Doctorate) in different specializations has increased since more nationals were offered scholarships at home and abroad. For example, the total number of Diploma degrees reached 447, Bachelor degrees were 884 and Master degrees were 35. More details on the number of qualified graduates in the maritime affairs & logistics sector in 2015 are presented in Table A2.4 at *Appendix 1*.

## **6. INTERNATIONAL EXHIBITIONS & PROMOTION CAMPAIGNS**

The Public Authority for Investment Promotion and Export Development (*ITHRAA*) has participated in 22 international exhibitions & promotion campaigns during the period 1998-2013 to promote Oman as a logistics hub. More details of the names and numbers of international exhibitions and promotion campaigns during the period 1998-2013 are available in Table A2.5 at *Appendix 1*.

## **7. LOCATIONS OF COMMERCIAL REPRESENTATIVE APPOINTED IN MAIN WORLD MARKETS**

Allocation of commercial representatives in the main or targeted world markets plays a role in promoting and facilitating foreign investment in Oman. Therefore, the Public Authority for Investment Promotion and Export Development (*ITHRAA*) has appointed 27 commercial representatives in the main world markets such as USA, Denmark, Iran, Spain, China, Singapore and India to facilitate the communicate with interested companies to invest at Oman. More details of the names and locations of the international representatives are available in Table A2.6 at *Appendix 1*.

## **8. BILATERAL MATCHMAKING MEETINGS**

Furthermore, the Public Authority for Investment Promotion and Export Development (*ITHRAA*) organized more than 30 match meetings to invite potential foreign investors to visit Oman and explore the investment opportunities. More details of the match meetings during the period 1998-2013 are available in Table A2.7 at *Appendix 1*.

### **6.5.3 IMPACTS**

The previous activities and their outcomes have impacts on several dimensions of the transport and logistics sector. Their indicators are addressed through:

- The value of local and foreign investment at different ports, FTZ and Industrial Estates.
- The market share of goods exported and imported to and from GCC, Asia & sub-Saharan African countries.
- International rank in the Logistics Performance Index (LPI), Global Competitiveness Index (GCI) and the Global Enabling Trade Index.
- Lengths of railways and roads.
- Logistics contribution to GDP.

#### **1. INCREASING DOMESTIC, REGIONAL & FOREIGN INVESTMENTS:**

The government has given high importance to encouraging, facilitating and attracting investment, both local and foreign in view of its role in technology transfer allowance and accelerating socio-economic development and activating its sustainability. Additionally, encouraging foreign direct investment (FDI) is crucial to building the private sector, brings capital into a country, invests in regional production facilities and in hiring local labors (McWilliam, 2011). Therefore, appropriate and conducive laws and procedures together with establishing the proper institutional framework have gradually been put into place and revised and updated on a regular basis. The value of total foreign investment<sup>40</sup> increased from 4006.7 million OMR in 2005 to 15406.4 million OMR in 2014 (Table 6.17) and provided 98,700 jobs to Omani citizens (36.2 percent of the total employment in foreign investment, as shown in Table 6.18).

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<sup>40</sup> According to NCSI, the total foreign investment includes Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Other Foreign Investments (OFI), such as commercial credit, loans and deposits.



Table 6.17. Foreign investment and foreign direct investment (2005-2013)

Year	Value of Total Foreign Investment (million OMR)	Value of Foreign Direct Investment (million OMR)	% of FDI
2005	4006.7	1588.9	39.7
2006	6167.7	1855.4	30.1
2007	9912.8	3518.8	35.5
2008	11315.7	4491.0	39.7
2009	11346.0	5053.1	44.5
2010	11518.7	5505.7	47.8
2011	12717.2	6090.6	47.9
2012	13629.8	6396.9	46.9
2013	14423.9	6688.4	46.4
2014	15406.4	7638.7	49.6

Source: NCSI.

Moreover, the number of Omani employees in Foreign Investment Enterprises increased by 13 percent in 2014 from 87,334 in 2013, while expatriate employees increased by 5.4 percent. Expatriates represented 62.3 percent and the Omanis represented 37.7 percent of the total employment in Foreign Investment Enterprises in 2014 (Table 6.18).

Table 6.18. Omani employment in Foreign Investment Enterprises (2006-2013)

Year	No. of Omani	No. of non-Omani	Total	% of Omani	% of non-Omani	Total percentage
2006	54467	78838	133305	40.9	59.1	100
2007	68027	114514	182541	37.3	62.7	100
2008	75790	135740	211530	35.8	64.2	100
2009	71654	132088	203742	35.2	64.8	100
2010	76476	140151	216627	35.3	64.7	100
2011	80339	144194	224533	35.8	64.2	100
2012	82524	147387	229911	35.9	64.1	100
2013	87334	154483	241817	36.1	63.9	100
2014	98700	162781	261481	37.7	62.3	100

Source: NCSI.

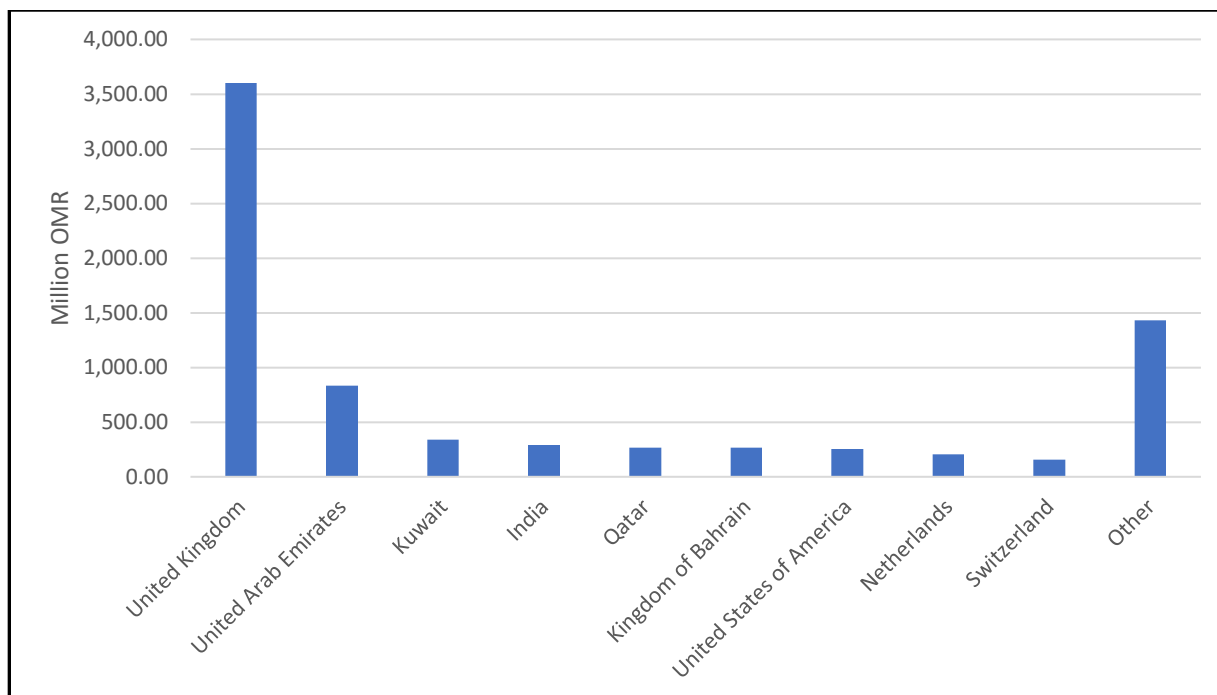
The foreign investment concentrated in the oil and gas exploration sector was 44.2 percent of the total investment in 2015, followed by the Financial Intermediation and Manufacturing sectors with 19.7 percent and 12.7 percent respectively (Table 6.19).

Table 6.19. Foreign Direct Investment by sectors (Relative Share %)

Sector	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Oil &amp; Gas Exploration</b>	47.9	45.0	42.8	46.4	41.0	47.0	52.6	49.9	46.0	47.2	49.0	53.4	44.2
<b>Financial Intermediation</b>	13.1	15.3	18.0	19.1	18.2	14.6	14.0	14.6	13.6	15.0	16.6	15.5	19.7
<b>Manufacturing</b>	20.0	15.3	17.8	2.1	17.9	17.0	16.0	17.4	20.6	18.5	15.2	12.1	12.7
<b>Real estate - Renting &amp; Business activities</b>	1.8	2.7	4.3	10.2	8.8	3.9	6.0	5.7	6.6	6.5	6.9	6.6	8.5
<b>Trade</b>	4.5	4.3	5.9	6.8	4.0	3.6	3.1	3.1	3.3	3.6	3.6	3.4	4.1
<b>Construction</b>	8.4	10.0	4.8	8.6	4.8	1.5	2.7	3.0	3.6	3.2	2.9	2.5	2.7
<b>Transport - Storage &amp; Communications</b>	0.0	0.0	1.2	1.9	1.8	8.4	2.4	3.0	3.0	2.7	2.7	2.7	3.7
<b>Hotels &amp; Restaurants</b>	0.0	0.0	0.9	1.0	1.4	1.5	1.3	1.3	1.5	1.4	1.3	2.2	2.5
<b>Electricity &amp; Water</b>	0.0	0.0	3.7	3.1	1.5	1.9	1.2	1.2	1.1	1.2	1.1	0.0	0.0
<b>Other</b>	4.2	7.4	0.7	0.9	0.6	0.6	0.7	0.6	0.6	0.7	0.7	1.6	2.0
<b>Total</b>	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: NCSI.

Therefore, there is a need to encourage the investment in other productive sectors that increase the contribution in gross domestic product (GDP) and provide more job opportunities for Omani citizens. The UK was the major source of FDI by country of origin in 2014 with 3,599.3 million OMR, followed by UAE with 831.7 million OMR. Kuwait is the third largest FDI source by country of origin (341.3 million OMR) followed by India and Qatar with 291.3 and 265.0 million OMR respectively (Figure 6.10).



*Source: NCSI.*

Figure 6.10. Foreign Direct Investment by Country of Origin (2014)

As the different Industrial Estates and FTZ produce a wide spectrum of goods, there is an increase in the values of local and foreign investment during the period 2011-2015. In terms of the value of local investment, Sohar industrial estate is leading the list with a total value of 977.8 million OMR in 2015, followed by both Sur and Rusayl Industrial Estates with a value of 400.8 and 323.8 million OMR respectively in the same year. In terms of the value of the foreign investment in 2015, data shows that Sur had the highest value (900.0 million OMR) followed by Sohar and Rusayl (878.0 and 60.3 million OMR respectively). Despite the high progress at Salalah port development, the data shows that Raysut (Salalah) Industrial Estates still attracts low values of foreign investment (30.4 million OMR) compared with other estates that are located near the ports, such as Sur and Sohar. Foreign investment at Rusayl industrial estate has been affected by the government decision to convert the nearest port to the estate (Sultan Qaboos port) to a tourism port only (investment decreased from 99.0 million OMR in 2011 to 60.3 in 2015). Unfortunately, the data on the investment values for the FTZ were not available, except for Mazunah FTZ area which showed a low value of both local and foreign investment during the

period 2011-2015. The details of the value of local and foreign investment at different Industrial Estates and FTZ are presented in Table A2.8 at Appendix 1.

## **2. ESTABLISHMENT OF NEW LOGISTICS COMPANIES**

As the government has developed the logistics sector, the numbers of companies establishing offices or relocating to Oman for logistics or geographical reasons has increased, which gives an indication of the good progress in making Oman a logistic hub. Currently, there are thirty-five new transport and logistics companies in different ports and FTZ, with more than 30,000 people working in logistics sector in Oman. The names of the new logistics companies established in Oman are presented in Table A2.9 at Appendix 1.

## **2. INCREASING TRADE INFLOWS FROM GCC, ASIA AND SUB-SAHARAN AFRICAN COUNTRIES**

The geo-strategic advantages of Oman's location offer comparative advantages to industries and investors targeting markets in the GCC, Asia and East Africa (Figure 6.11). Therefore, the Market share indicator has been chosen in terms of imports and non-oil exports and re-exports from GCC, Asia and Sub-Saharan African countries during the period 2005-2015.



*Source: Public Authority for Investment Promotion and Export Development (ITHRAA)*

Figure 6.11. Strategic location of Oman

The data shows that imports have increased from 31.6 to 39.3 percent from GCC; from 32.4 to 33.9 percent from Asia; and from 0.3 percent to 0.5 percent from Sub Saharan countries during the same period (Table 6.20).

Table 6.20 Trade flow (imports) from GCC, Asia and Sub-Saharan African countries

Year	Share of imports		
	GCC	Asia	Sub Saharan
2005	31.6	32.4	0.3
2006	30.7	37.3	0.6
2007	30.2	36.5	0.4
2008	31.3	38.4	0.4
2009	29.9	39	0.2
2010	34.4	37.9	0.3
2011	36.3	34.2	0.4
2012	33	35.9	0.4
2013	40.6	33.4	0.3
2014	39.3	33.9	0.5

*Source: Statistical Year Book (various issues)*

The market shares of non-oil exports and re-exports to the same countries for the same period showed a decrease in exports to GCC from 59 percent to 45 percent and an increase from 19.6 percent to 32.5 to Asia, and an increase 1.9 to 4.8 percent to Sub Saharan countries for the same period (Table 6.21).

Table 6.21 Non-oil exports and re-exports with GCC, Asia and Sub-Saharan

Year	Share of non-oil exports & re-exports		
	GCC	Asia	Sub Saharan
2005	58.0	19.6	1.9
2006	57.4	22.9	2.1
2007	55.2	27.9	1.4
2008	55.4	27.3	1.6
2009	46.0	33.6	2.6
2010	45.7	35.8	2.2
2011	36.3	42.2	5.2
2012	36.6	39.8	5.9
2013	43.7	33.5	7.3
2014	45.7	33.5	4.8

*Source: Statistical Year Book (various issues)*

### **3. IMPROVING OMAN’S RANK IN THE LOGISTICS PERFORMANCE INDEX (LPI), GLOBAL COMPETITIVENESS INDEX (GCI) & GLOBAL ENABLING TRADE INDEX (GEI):**

There are three key sub-indices related to logistics performance on macro level (the World Bank Logistics Performance Index (LPI), World Economic Forum Global Competitiveness Index (GCI) and the World Economic Forum’s Global Enabling Trade Index (GEI). The government aims to raise Oman’s ranking to the top 30 of both LPI and GCI and to the top 20 of the Global Enabling Trade Index by the year 2020. According to Dujak et al. (2016), the Logistics Performance Index (LPI) consists of both qualitative (worldwide survey on the logistics “friendliness” of the countries in which logistics operators operate and those with which they trade) and quantitative measures (data on the performance of key components of the logistics chain in the country of work). It measures and ranks countries based on six key measures of logistics efficiency: customs performance (efficiency of the customs clearance process), infrastructure (quality of trade and transport-related infrastructure), logistics quality and competence, timeliness (frequency with which shipments reach the consignee within the scheduled or expected time), international shipments (ease of arranging competitively priced shipments), and tracking and tracing (ability to track and trace consignments).

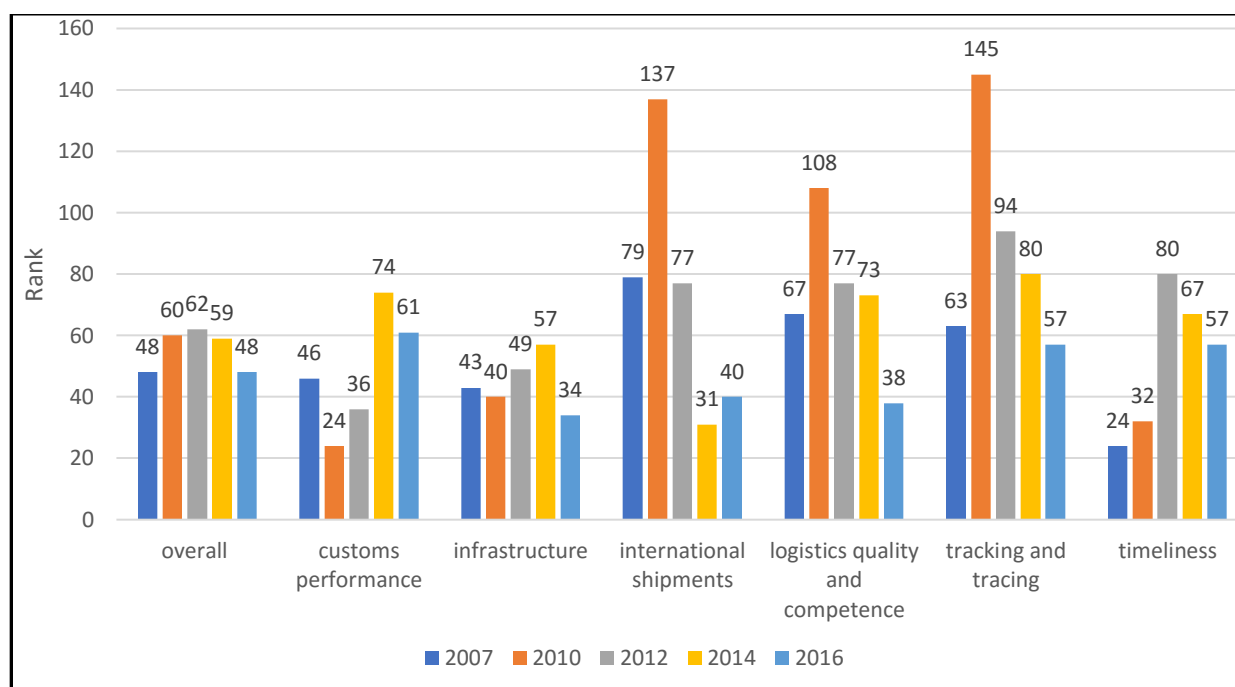
The World Bank LPI Index has ranked and compared 160 countries on the above parameters every two years since 2007. Its key measures of logistics efficiency are given on a scale from 1 (worst) to 5 (best). Oman’s rank in 2007 was 48 out of 150 countries and then it slipped down 12 places to 60 in 2010 (Table 6.22). In 2012, Oman performed better than the averages of the Middle East and North Africa regions in all data measured, and significantly better in terms of efficiency of the customs clearance process and in the quality of trade and transport-related infrastructure (ITC, 2014). Since 2012, Oman has improved its rank by 3 places (from 62 to 59 in 2014). Again, in 2016 it improved its position by 11 places and reached 48 among 160 world nations, reflecting major improvements in logistics quality, customs, infrastructure and competence.

Table 6.22. Oman Logistics Performance Index (LPI) during (2007-2014)

Year	Rank	No. of countries
2007	48	150
2010	60	155
2012	62	155
2014	59	160
2016	48	160

Source: World Bank Logistics Performance Index (LPI)

As can be seen from Figure 6.12, Oman made a distinguish progress in ranking of different measures between 2007 and 2016, especially in infrastructure (the rank decreased from 57 in 2014 to 34 in 2016) and logistics quality and competence (the rank decreased from 73 to 38) as well as at tracking and tracing (the rank decreased from 80 to 57) for the same period.



Source: World Bank Logistics Performance Index (LPI)

Figure 6.12. Oman LPI ranking (2007-2016)

The second index is the Global Competitiveness Index (GCI) released by the World Economic Forum in 2005, which became the most authoritative and comprehensive study of its type. It



measures the countries' potentials for sustained economic growth and a wider range of criteria that impact competitiveness. It has 12 pillars of competitiveness (institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication and innovation). Data in Table 6.23 show that between 2014 and 2016, Oman's overall position fell from 46 to 66. The deterioration was in criteria that would most directly affect the logistics hub, namely higher education and training, business sophistication, innovation and labor market efficiency.

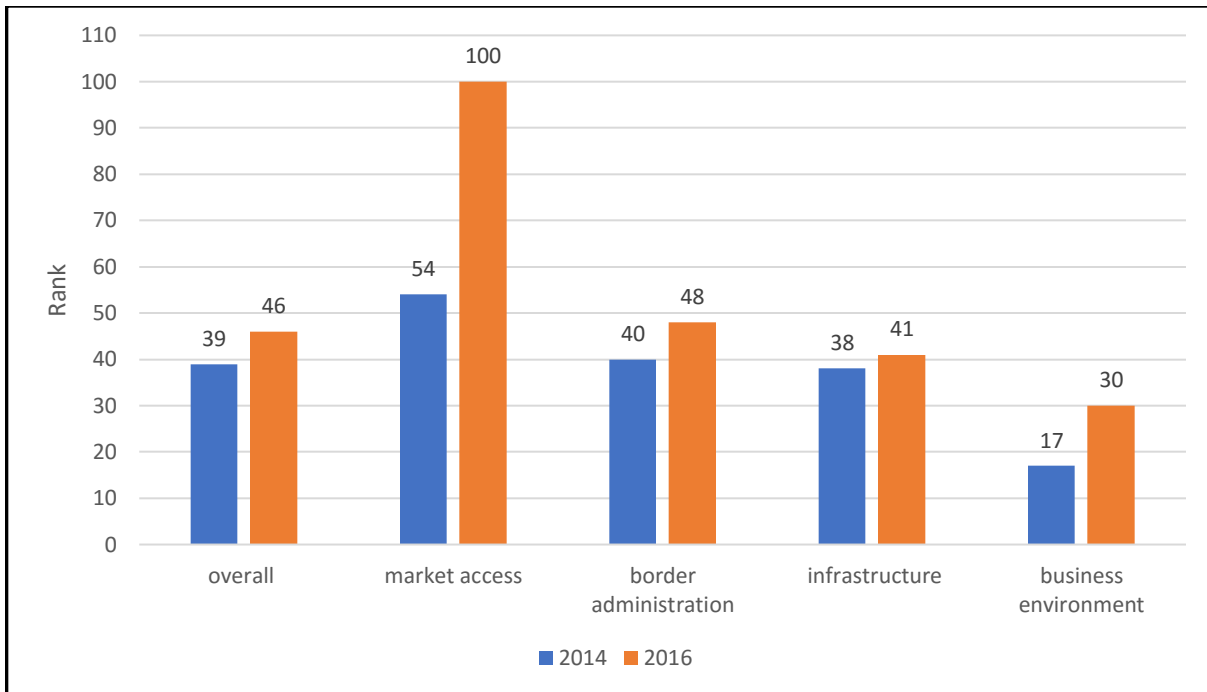
Table 6.23. Oman's ranking in Global Competitiveness Index (2008-2016)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Overall</b>	38	41	34	32	32	33	46	62	66
<b>Institutions</b>	19	18	16	16	17	13	24	31	28
<b>Infrastructure</b>	32	29	33	28	33	32	33	36	38
<b>Macroeconomic environment</b>	13	10	3	3	5	5	6	19	81
<b>Health and primary education</b>	80	92	99	81	52	48	54	66	69
<b>Higher education and training</b>	66	67	63	63	61	57	79	88	85
<b>Goods market efficiency</b>	39	32	25	23	25	18	28	52	51
<b>Labor market efficiency</b>	44	33	36	40	36	28	48	89	82
<b>Financial market development</b>	50	43	30	30	26	21	28	45	55
<b>Technological readiness</b>	68	64	59	51	54	56	57	62	57
<b>Market size</b>	75	75	73	73	72	73	73	64	68
<b>Business sophistication</b>	54	57	45	40	37	32	56	71	66
<b>Innovation</b>	44	55	47	47	47	45	64	103	76

*Source: Global Competitiveness Index (different issues)*

The third index is the Global Enabling Trade Index (GEI), which measures the factors, policies and services that facilitate trade in goods across borders and to destinations. It is based on four key parameters that include market access, border administration, transport and communication

infrastructure, and business (operating) environment. Between 2014 and 2016, Oman’s overall rank increased 7 ranks from 39 to 46. The rank also increased in all the other four key parameters (Figure 6.13). This trend indicates that Oman should improve the enabling trade environment to attract more foreign investments.



*Source: Global Enabling Trade Index (different issues)*

Figure 6.13. Oman ranking in Global Enabling Trade Index (2014 vs 2016)

Moreover, the Global Enabling Trade Index (2016) considered the following reasons as the most problematic factors for exporting in Oman:

- Inappropriate production technology and skills.
- Identifying potential markets and buyers.
- Access to imported inputs at competitive prices.
- Difficulties in meeting quality/quantity requirements of buyers.
- High cost or delays caused by domestic transportation.
- High cost or delays caused by international transportation.

- Technical requirements and standards abroad.
- Burdensome procedures at foreign borders.
- Access to trade finance.
- Tariff barriers abroad.
- Rules of origin requirements abroad.
- Corruption at foreign borders.

#### **4. INCREASING FREIGHT VOLUMES AT PORTS & AIR PASSENGER TRAFFIC AT AIRPORTS:**

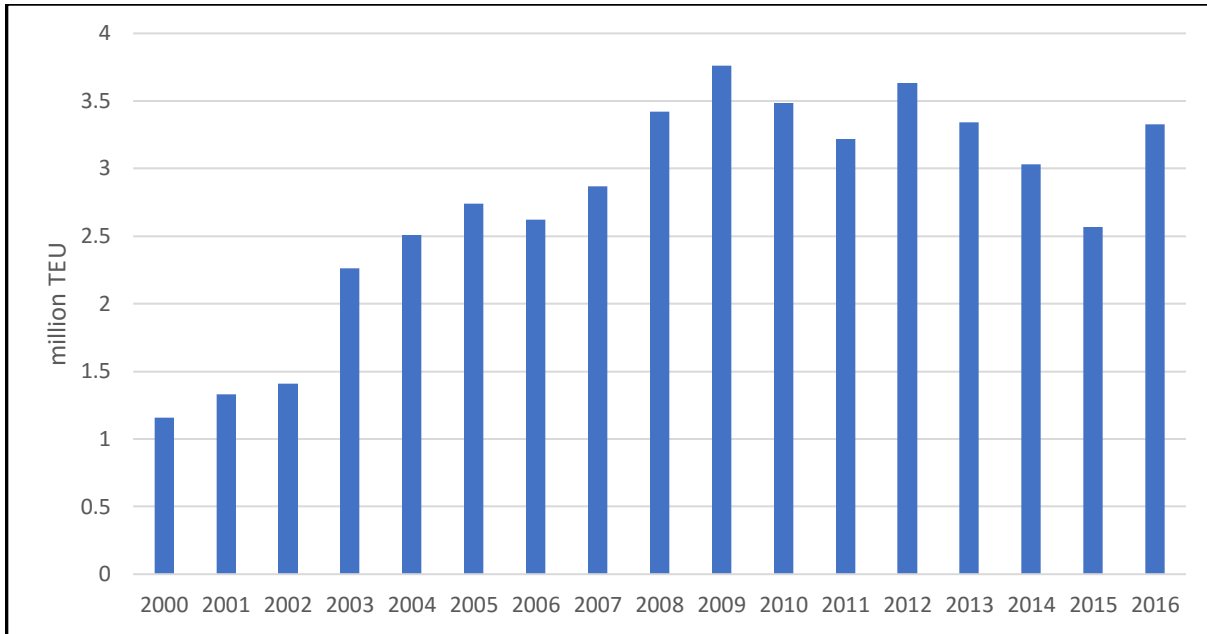
Seaborne transport is vital for international trade, and ports are one of the primary components of the general transportation sector, and more precisely, the key components of the logistics chain. In Oman, the data from NCSI (2015) showed that sea ports were the highest customs outlets for import, export and re-export activities, representing 70.3 percent of the total merchandise imports and 77.9 percent of the total merchandise exports in 2015. Due to improvement in maritime operation, an increased focus on ports development, and establishment and improvements of various roads and ports led to enhancement in international shipment services. Ocean container transportation has revolutionized the seaborne transport of international trade. Approximately 9.5 billion tons of goods are transported over the world oceans annually, with dry bulk (more than 2.15 million tons) representing the largest cargo group (Grote et al., 2016, p. 511).

The port performance is measured by throughput volume of goods, and the cargo volumes handled through the ports are generally measured by TEU<sup>41</sup> throughput of freight (Talley, 2009). According to Chou et al. (2008), cargo throughput at ports has a high correlation with economic activities. Figure 6.14, shows the development in numbers of container port throughput (TEU) of freight at Salalah port during the period 2000-2016. Its container throughput (TEU) increased from 1.16 million TEU of freight in 2000 to 3.32 million TEU of freight in 2016. That good progress of the container port throughput was linked to the development and modernization<sup>42</sup> of Salalah port as a trans-shipment port.

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<sup>41</sup> Twenty-foot equivalency units (TEU)

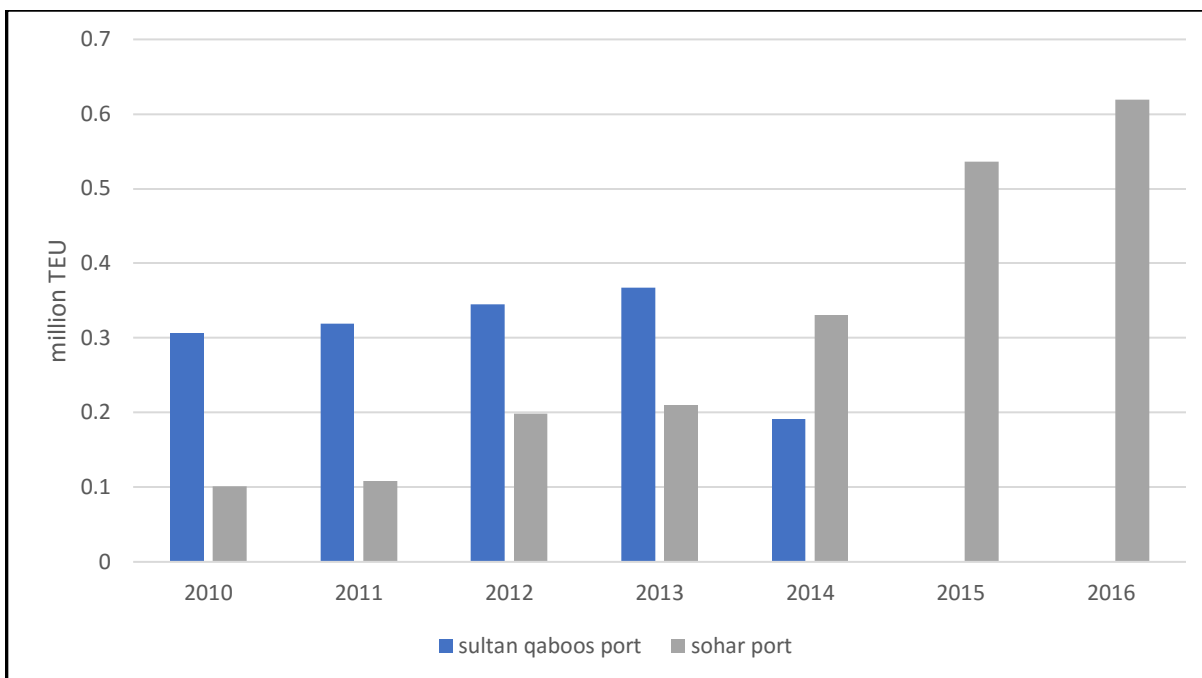
<sup>42</sup> Examples of the development and modernization at the port are the development of efficient electronic exchange systems in container stations, new deep-water General Cargo, updated errors system, liquid bulk terminal, and increased electrical points for refrigerated containers.



*Source: World Bank Database and Ministry of Transport and Communication*

Figure 6.14. Salalah port container throughput (2000-2016)

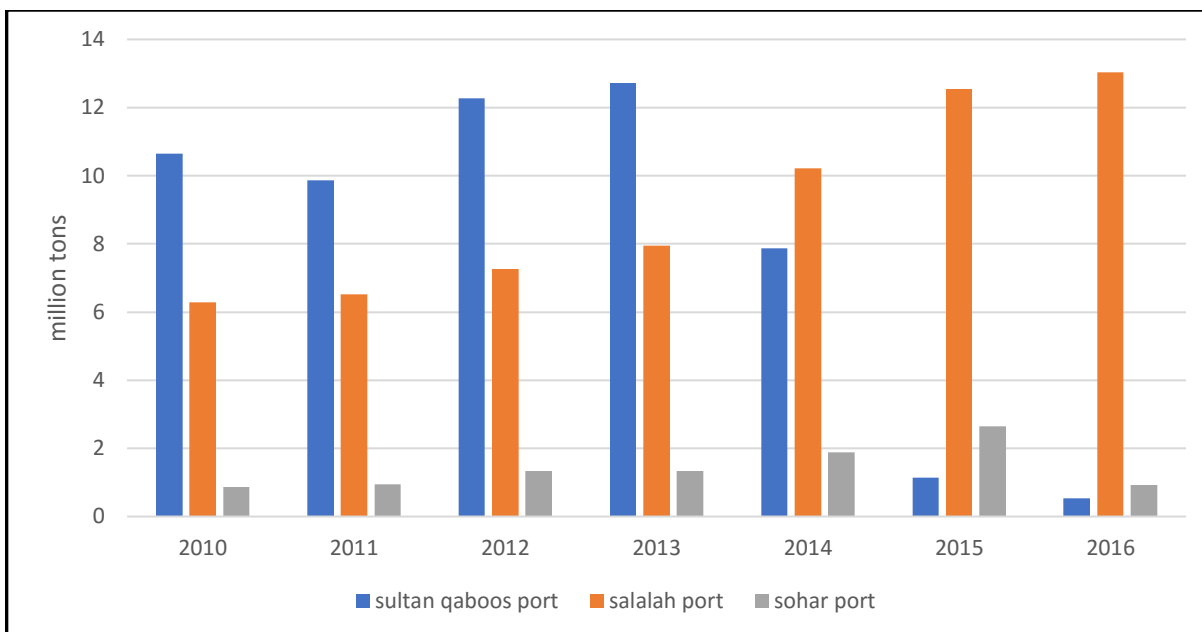
On the other hand, the container port throughput (million TEU) at Sultan Qaboos port and Sohar port during the period 2000-2016 showed an increase in quantity, especially at Sohar port (increased from 0.07 in 2010 to 0.61 million TEU in 2016), due to development of operations at the port. Furthermore, the government decision to convert Sultan Qaboos port and stop all the cargo shipments explains the zero amounts of container port throughput during 2015 and 2016 (Figure 6.15).



*Source: Ministry of Transport and Communication*

Figure 6.15. Sultan Qaboos and Sohar ports container throughput (2010-2016)

The quantities of goods exchanged at the three ports also support the validity of that decision, as the quantities decreased at Sultan Qaboos port from 7.87 million tons in 2014 to 0.53 million tons in 2016 (Figure 6.16) as well as the data of the quantities of the liquid bulk at the three ports (Table 6.24). More precisely, the container traffic at Sohar port increased by over 60 percent in the following year, and the general cargo increased by 46 percent.



*Source: Ministry of Transport and Communication*

Figure 6.16. Quantities handled at Sultan Qaboos, Salalah and Sohar ports (2000-2016)

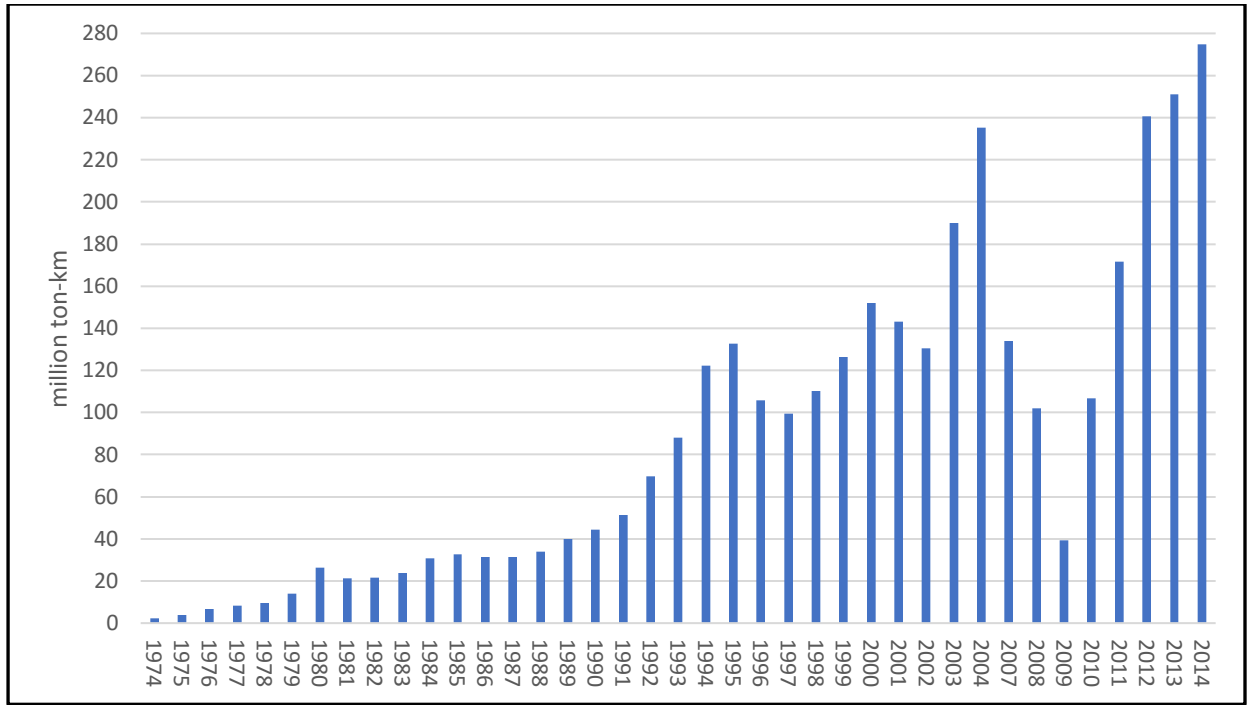
Table 6.24. Liquid bulk (m tones) at ports of Sultan Qaboos, Salalah, Sohar (2000-2016)

Name of port	2010	2011	2012	2013	2014	2015	2016
<b>Sultan Qaboos</b>	1.50	1.16	2.24	1.09	1.08	1.13	0.53
<b>Salalah</b>	6.28	6.51	7.25	7.94	10.22	12.54	7.14
<b>Sohar</b>	7.69	12.75	14.85	16.79	14.83	16.93	5.16

*Source: Ministry of Transport and Communication*

Although airports handled 8 percent of total merchandise imports and 0.02 percent of total merchandise exports, air freight volume<sup>43</sup> in Oman developed in parallel with sea freight as its growth almost doubled in the period 1996-2014, as shown in Figure 6.17. The airports handled 274.7 million ton-km in 2014 due to the improvement and development of air ports and cargo services.

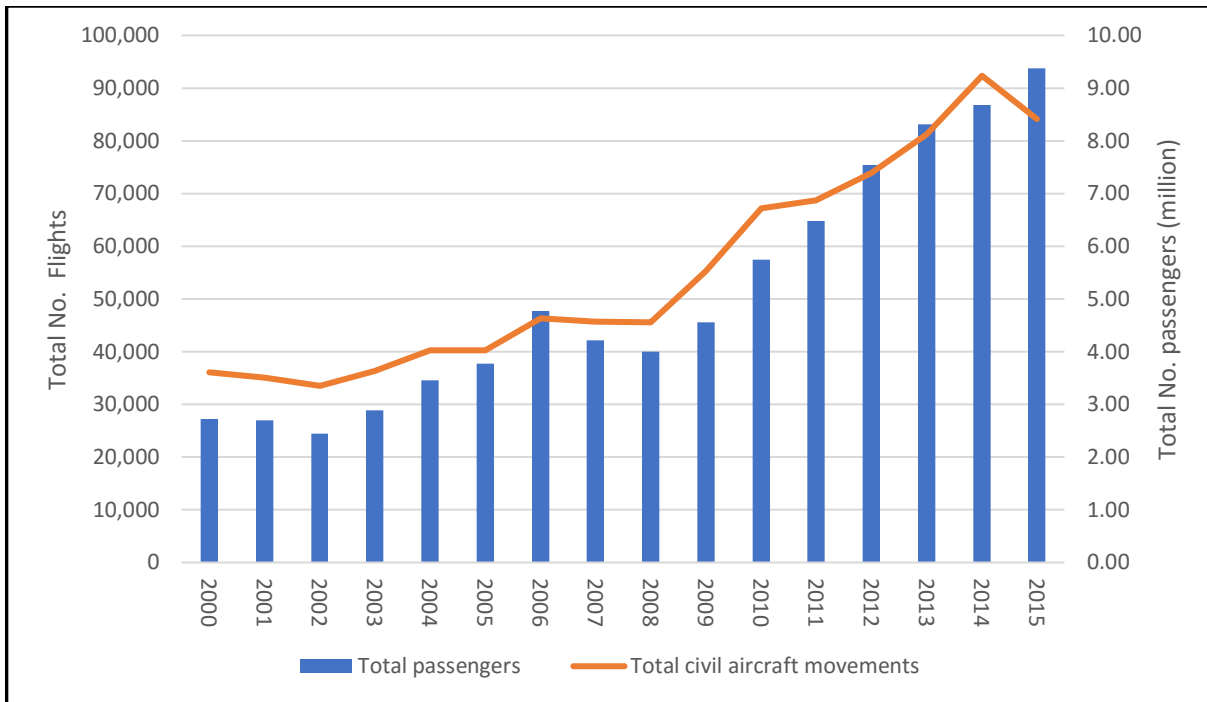
<sup>43</sup> According to the World Bank, air freight is the volume of freight, express, and diplomatic bags carried on each flight stage (operation of aircraft from takeoff to next landing), measured in metric tons multiplied by kilometers traveled.



*Source: World Bank Database.*

Figure 6.17. Air transport freight (million ton-km) during 1974-2014

The traffic statistics at Muscat airport showed that total civil aircraft movement grew at an average rate of 6.2 percent during the period 2000-2015. At the same time the total number of passengers have increased from 2.7 million in 2000 to 9.3 million in 2015, scoring an increase in average growth rate of 9.2 percent for the same period (Figure 6.18).

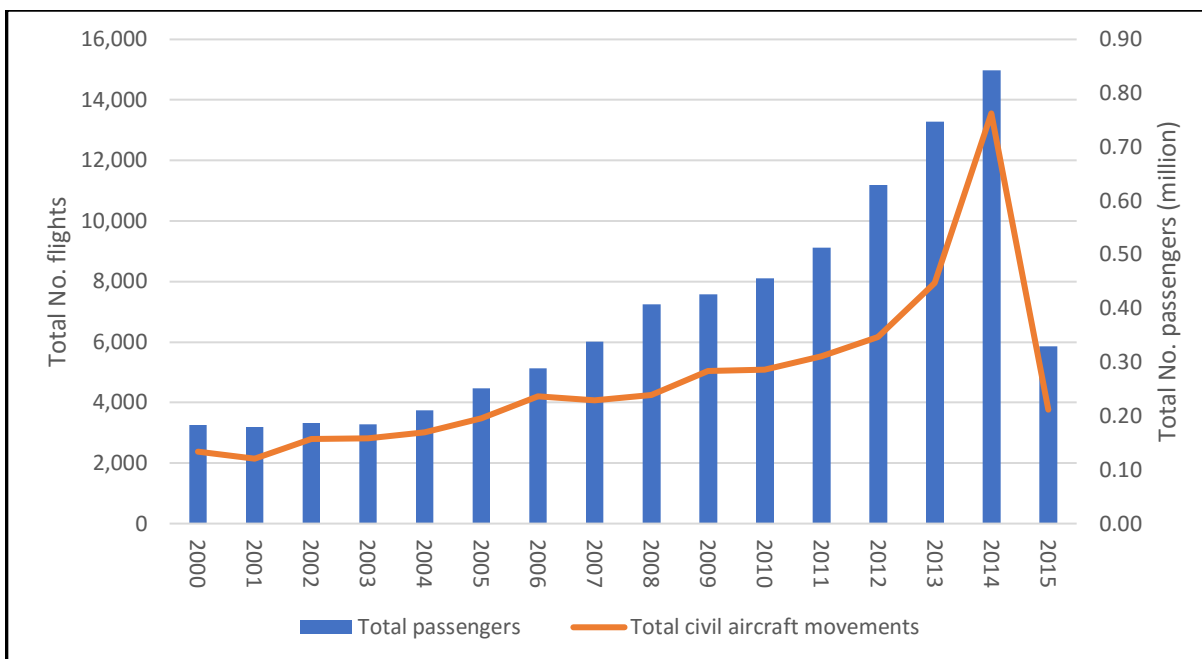


*Source: Oman Airports Management Company SAOC and Statistical Year Book (various issues)*

Figure 6.18. Air traffic and passengers at Muscat airport

The traffic statistics at Salalah airport (Figure 6.19) also show an increase in total passengers (from 0.18 in 2000 to 0.84 in 2014) as well as an increase in the total number of civil aircraft from 2,385 to 13,555 flights for the same period. The dramatic decline in both the total number of passengers and the number of civil aircraft movement in 2015 (from 0.84 million passengers and 13,555 flights in 2014 to 0.33 million passengers and 3,744 flights in 2015) was due to the transfer of total operations to the new Salalah airport which was opened in June 15, 2015.





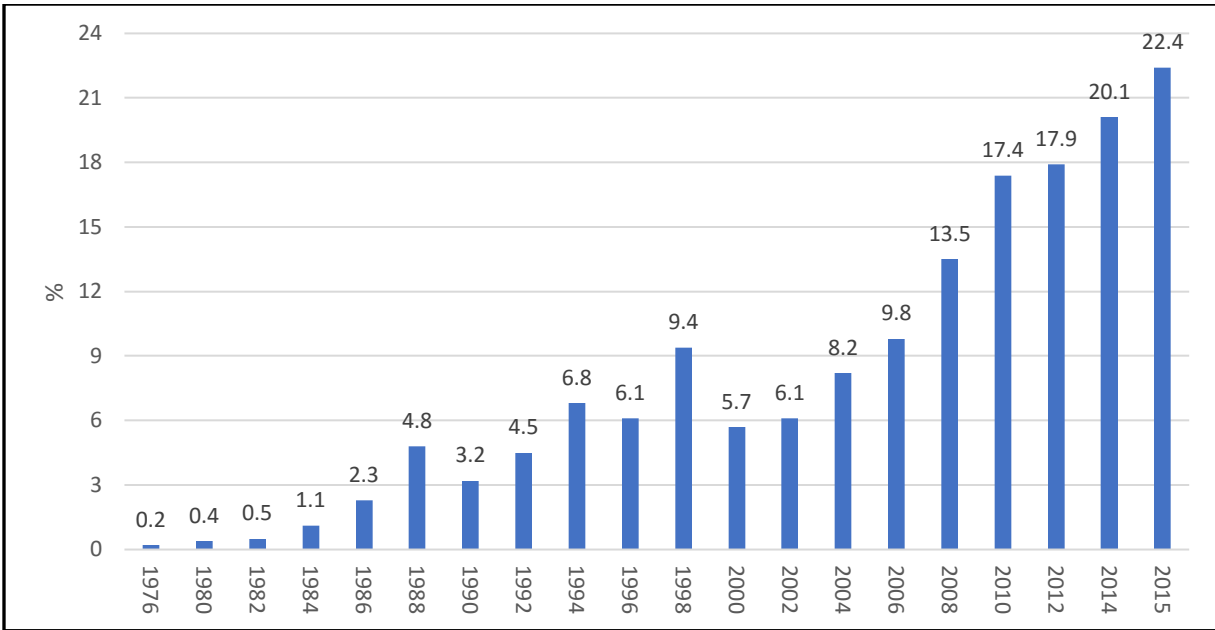
*Source: Oman Airports Management Company SAOC and Statistical Year Book (various issues)*

Figure 6.19. Air traffic and passengers at Salalah airport

## 5. INCREASING NON-OIL EXPORTS

### • Share of non-oil exports on total exports and their values

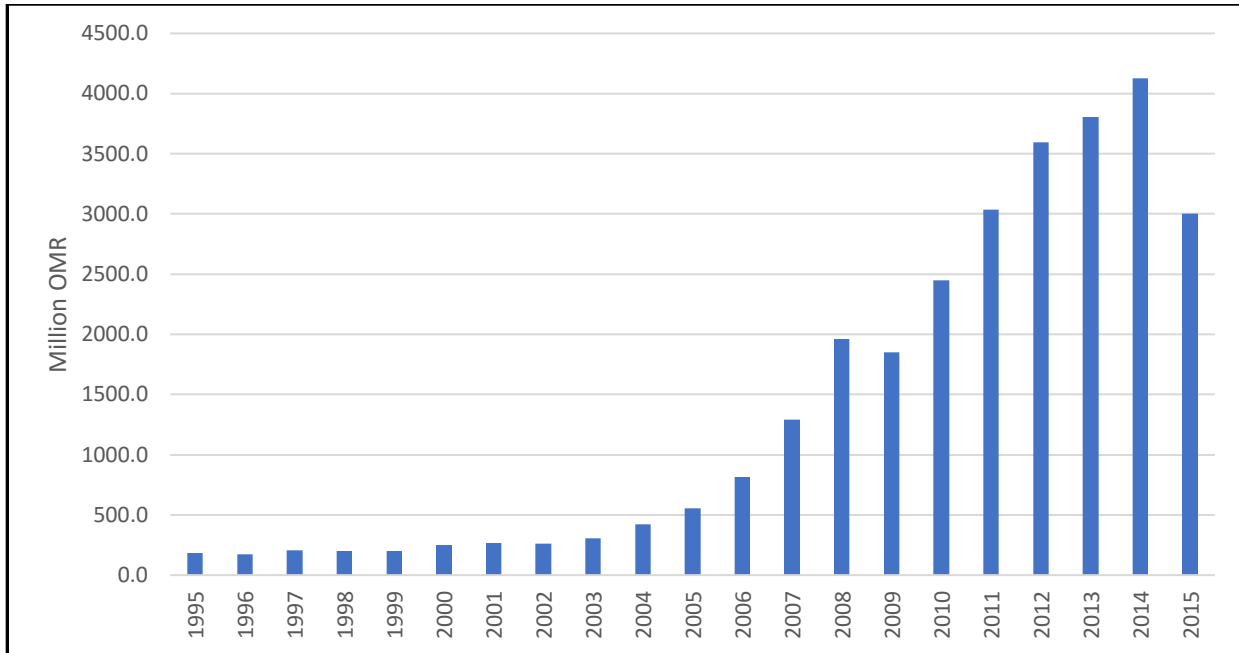
Non-oil sectors are important for diversification of the economy and more particularly so during lower oil price periods. The non-oil sector's contribution to GDP increased during the period 1976-2015. The sector accounted for about 53.6 percent of GDP in 1990 compared with 39.5 percent in 1980. During the fifth five-year plan (1996-2000) the sector's share accounted for 61.2 percent, whereas, its average annual share during the seventh five-year plan (2011-2015) was 59.5 percent. Furthermore, the share of non-oil exports on total exports has steadily increased from less than 1 percent in 1976 to 22.4 percent in 2015 (Figure 6.20).



*Source: Statistical Year Book (various issues)*

Figure 6.20. Percentage share of non- oil exports on total exports (1976-2015)

The increase was associated with the increase in government investments in the export-oriented petrochemical industries. According to Oman Central Bank (OCB) annual report (2014), the non-oil export growth during 2014 was led by “products of chemicals and allied industries” at 18.2 percent, followed by “Plastic, rubber, and articles thereof” at 23.4 percent. Exports of “Base metals and articles thereof” increased by 5.7 percent, while “live animals and animal products” also recorded an annual growth of 19.3 percent in 2014. That increase reflected a good evolution of the non-oil sectors, especially the petrochemicals. Additionally, Figure 6.21 shows that the revenues of non-oil exports in total government revenues also increased significantly during the period 1995-2014 from 182 to 4,125.5 million OMR. In 2015, their values decreased due to the decrease in oil price as the petrochemicals industry is related to crude oil.



*Source: Statistical Year Book (various issues)*

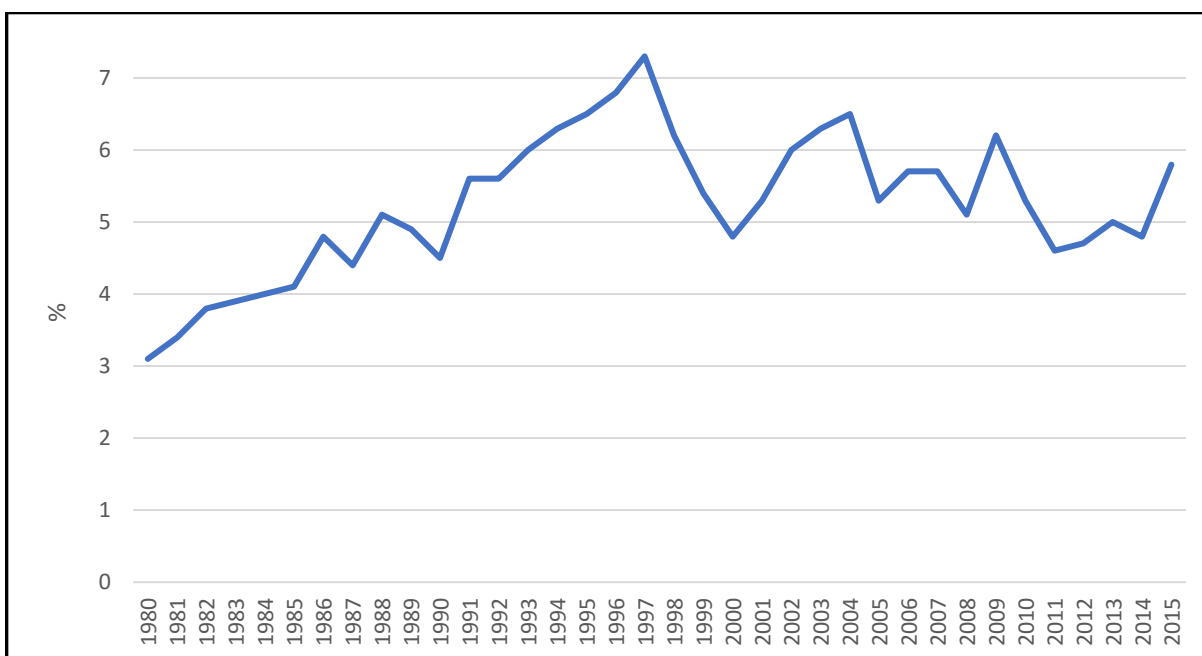
Figure 6.21. Non-oil exports revenues (1995-2015)

## 6. INCREASING THE SHARE OF TRANSPORT & LOGISTICS SECTOR IN THE GDP

- **Share of transport and logistics sector in the GDP**

Generally, the share of sectors in the GDP is used as a measurement of their performance. The most frequently used metric of logistics significance on a macro level is the share of logistics costs in GDP. The low percentage of logistics costs in GDP indicates higher level of logistics efficiency and consequently more efficient production and distribution activity in the domestic market (Dujak et al., (2016). Many countries now include the transport, communication and warehousing sector in their national accounts of the GDP. That sector does not represent all activities of logistics (value-added logistics services (VALS), storage, and distribution of freight) and therefore there is no standard measure that allows the comparison between different economies. In the case of Oman, the statistical basis on which to base such measurement (the share of logistics costs in GDP) is not identified, therefore the share of transport, storage and communication is used to track the progress of the transport and logistics sector in the GDP.

As an expected impact of this policy, the share of the transport and logistics services sector has gradually ramp up in the GDP. Data for the period 1980-2015 showed that its share increased steeply from 3.1percent in 1980 to a peak of 7.3 percent in 1997. Then it decreased to 4.8 percent in 2000. From 2001, it started again to increase slowly and then fluctuated before reaching 5.8 percent in 2015, as Figure 6.22 shows. According to the Frost and Sullivan company, the logistics industry in Oman is likely to grow at a Compound Annual Growth Rate (CAGR) of 6.9 percent between 2015 and 2020.



*Source: Statistical Year Book (various issues).*

Figure 6.22. Share of transport, storage and communication sector in GDP (1980-2015)

## 7. INCREASING RE-EXPORT ACTIVITIES

- **Share of re-export on total exports**

As a result of the government attention provided to the export-led diversification policy and as a result (output) of all above programs that had been applied, it can be seen from Figure 6.21, that although the share of oil exports still represented 58.4 percent of the total exports in 2015, the share of non-oil and re-exports also increased gradually from 7.8 percent and 13.8 percent to 22.4

percent and 19.2 percent respectively during a period of twenty years from 1995-2015, which is more than the targeted rate in the Oman Vision 2020, where the target was 13 percent by the year 2020 (Table 6.25). The growth can be attributed mainly to export of downstream and value-added petroleum products such as the products of chemicals and allied industries, plastic, rubber and articles thereof (Oman Annual Report, 2014).

Table 6.25. The evolution of Oman exports during the period 1989-2015

Year	SHARE OF EXPORTS ON GDP			Total
	Oil & Gas	Non- Oil	Re-export	
1989	91.6	4.2	4.2	100
1990	91.7	3.3	5.0	100
1991	87.0	4.2	8.8	100
1992	83.6	4.5	11.9	100
1993	78.6	5.9	15.5	100
1994	76.3	6.8	16.9	100
1995	78.4	7.8	13.8	100
1996	80.2	6.1	13.7	100
1998	67.4	9.4	23.2	100
2000	82.8	5.7	11.5	100
2002	77.0	6.1	16.9	100
2004	81.4	8.2	10.4	100
2006	81.0	9.8	9.2	100
2008	76.1	13.5	10.4	100
2010	68.9	17.4	13.7	100
2012	69.7	17.9	12.4	100
2014	65.5	20.1	14.4	100
2015	58.4	22.4	19.2	100

*Source: Statistical Year Book (NCSI, various issues) and five-year development plans books (various issues)*

## 8. INCREASING EMPLOYMENT OPPORTUNITIES AMONG THE NATIONAL'S WORKFORCE

Data of related to the national workforce in the transport and logistics sector (Table 6.26) shows an increase in the number of Omanis employed since 2011. The growth rate increased from 6.1 percent to 23.0 percent in 2015. That progress as an outcome of the training and qualifications programs that Omani youth received in the field of the logistics industry.

Table 6.26. Numbers of national workforce in the transport and logistics sector

<b>Nationality</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Omani</b>	3703	3930	4617	5145	6369
<b>Non-Omanis</b>	17041	21756	25666	32360	44656
<b>Total</b>	20744	25686	30283	37505	51025
<b>% of Omani</b>	<b>17.8</b>	<b>15.3</b>	<b>15.2</b>	<b>13.7</b>	<b>12.5</b>
<b>% of non-Omanis</b>	<b>82.2</b>	<b>84.7</b>	<b>84.8</b>	<b>86.3</b>	<b>87.5</b>

*Source: Ministry of Manpower*

#### **6.5.4 GOAL INDICATORS**

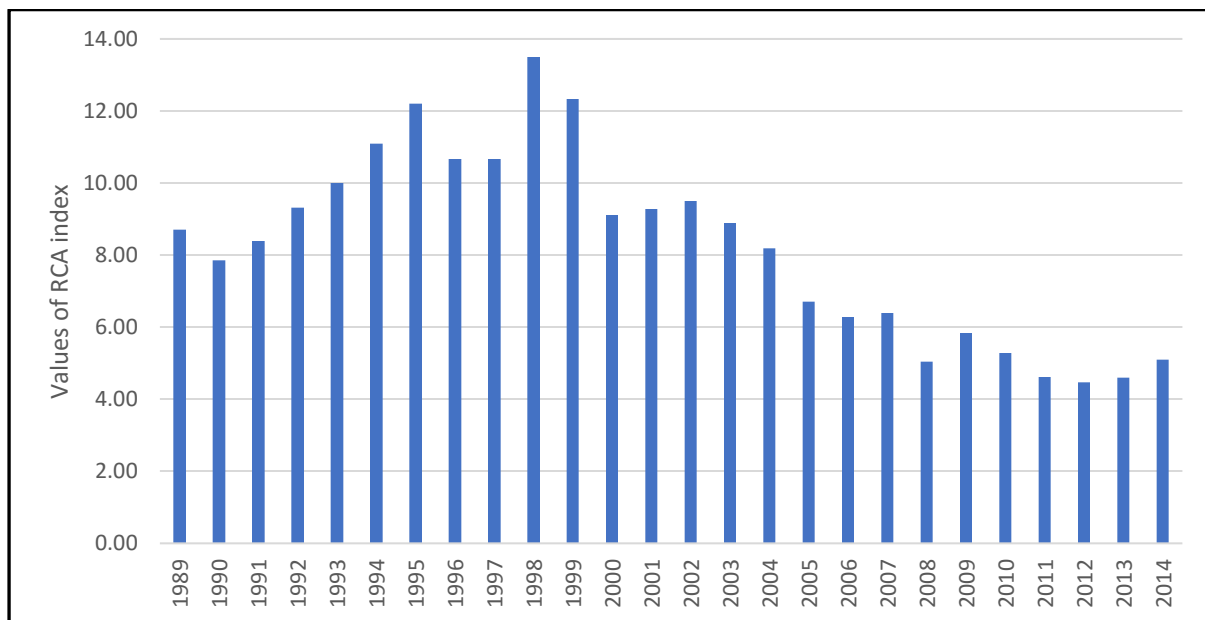
There are different measures that can indicate whether the exports of a country are specialized (concentrated) or more homogeneously distributed among a series of products (diversified). Among them are Revealed Comparative Advantage Index (RCA), Export Concentration (Herfindahl Hirschmann Index (HHI)), extensive and intensives margins and the diversification index). This section presents the results of the analysis of those indexes, and whether the development of transport infrastructure has any effect on the economic diversification process in Oman.

##### **1. EXPORT COMPETITIVENESS (REVEALED COMPARATIVE ADVANTAGE (RCA))**

The first index is the Revealed Comparative Advantage Index (RCA). RCA measurements have been used to help assess a country's export potential. The RCA indicates whether a country is in the process of extending the range of products in which it has trade potential, as opposed to situations in which the number of products that can be competitively exported is static. It can also provide useful information about potential trade prospects with new partners. Countries with similar RCA profiles are unlikely to have high bilateral trade intensities unless intra-industry trade is involved. RCA measures, if estimated at high levels of product disaggregation, can focus attention on other non-traditional products that might be successfully exported. According to Utkulu and Seymen (2004), the RCA index formula of country (i) for product (j) is represented as:

$$RCA = (X_{ij} / X_{it}) / (X_{wnj} / X_{wnt})$$

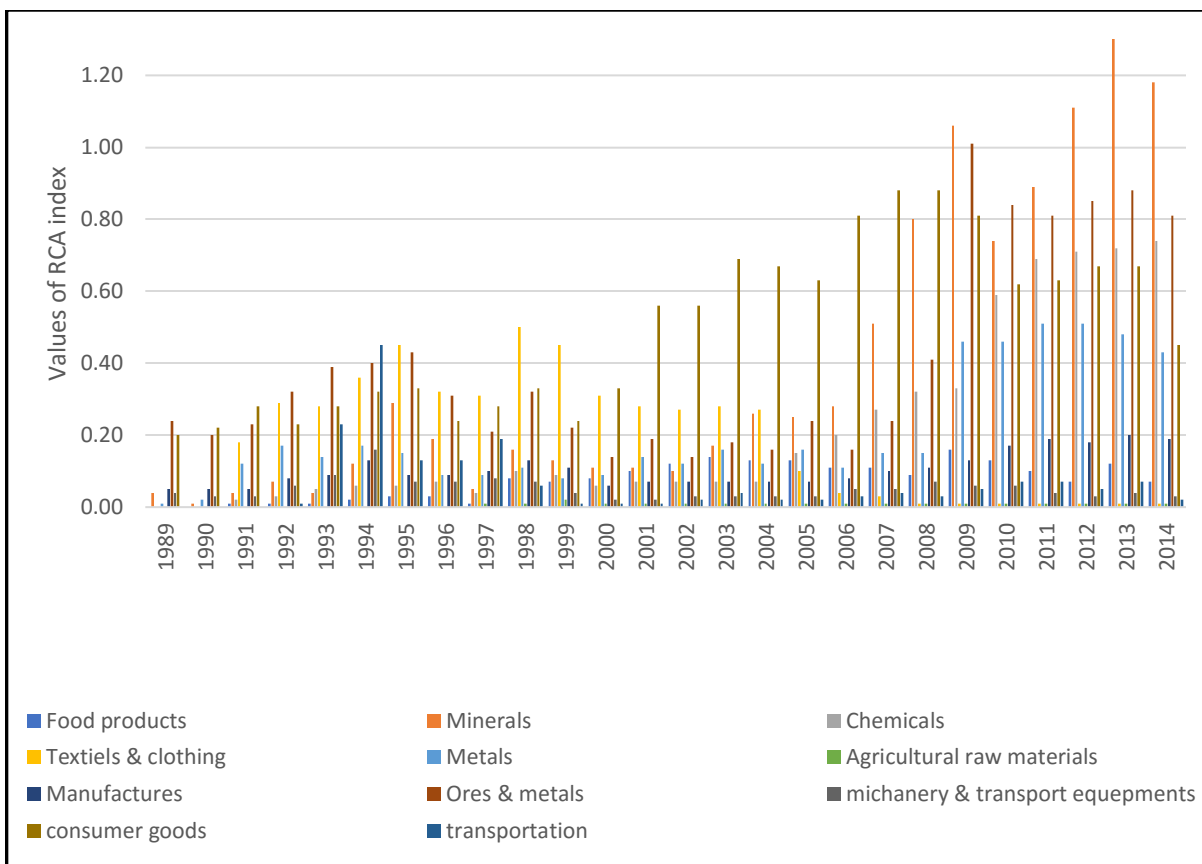
where (X) represents exports, (i) is a country, (j) is a commodity (or industry), (t) is a set of commodities (or industries) and (n) is a set of countries. RCA measures a country's exports of a commodity (or industry) relative to its total exports and to the corresponding exports of the world to a set of countries. Data for different products in Oman were gathered from World Integrated Trade Solutions (WITS, World Bank) for the period 1989-2014. The results show that RCA values for oil were very high (Figure 6.23) and it has higher export potential than other products, as shown in Figure 6.24.



*Source: World Integrated Trade Solutions (WITS World Bank)*

Figure 6.23. Revealed comparative advantages for oil (1989-2014)

Figure 6.24 shows RCA results for different products for the same period 1989-2014. The results show that most of those products do not have export potential because their RCA values are less than one. In recent years (2009-2014), the RCA values of only two products (mineral and ores and metals products) increased and reached 1, which gave an indication of the ability of those products to be exported and compete in the global markets.



*Source: World integrated trade solutions (WITS World Bank)*

Figure 6.24. Revealed comparative advantages for different sectors (1989-2014)

## 2. EXPORT CONCENTRATION (HERFINDAHL HIRSCHMANN INDEX (HHI))

The second index is the product concentration index, or Herfindahl Hirschmann Index (HHI), which is widely used as a diversification measure because it measures the degree of product concentration in the total exports. The following normalized HHI is used to obtain values between 0 and 1:



$$H_j = \frac{\sqrt{\sum_{i=1}^n \left( \frac{x_{ij}}{X_j} \right)^2} - \sqrt{1/n}}{1 - \sqrt{1/n}}$$

where:

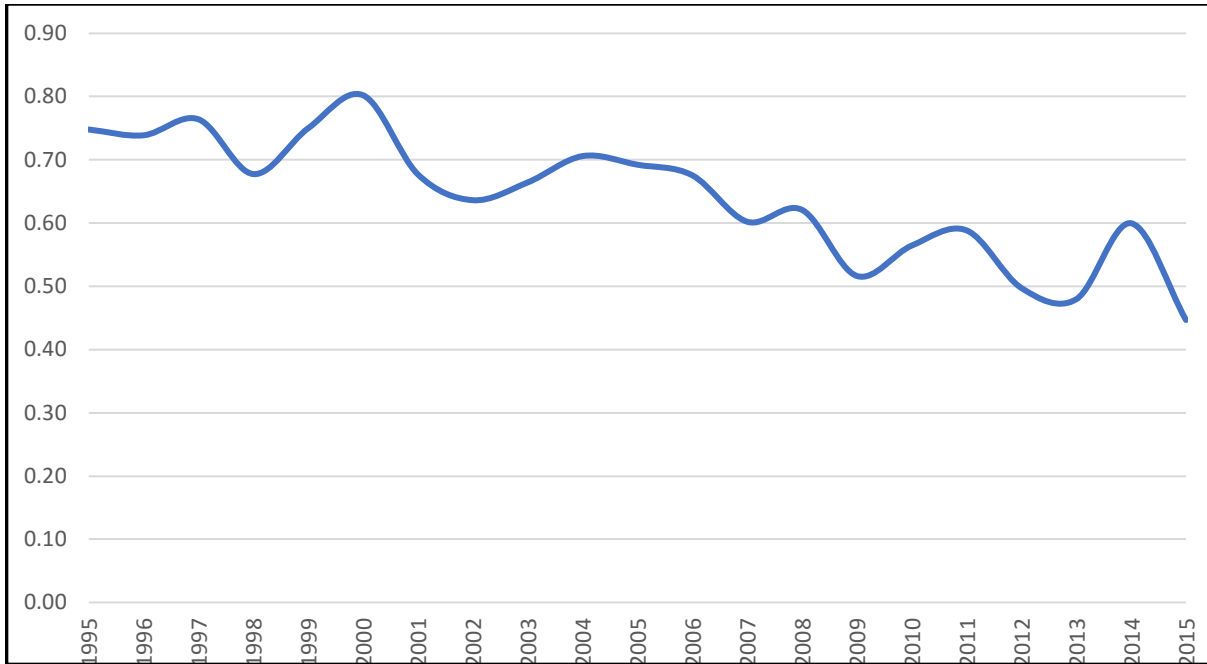
(H<sub>j</sub>) = country or country group index

(x<sub>ij</sub>) = value of export for country (j) and product (i)

(n) = number of products

$$X_j = \sum_{i=1}^n x_{ij}$$

An HHI value closer to 1 indicates a country's exports or imports are highly concentrated on a few products. Values closer to 0 reflect exports or imports are more homogeneously distributed among a series of products (diversified). Figure 6.25 shows products' HHI values for the period 1995-2015. The results show good progress in government efforts to reduce the share of oil exports in the total exports. Although the average annual change rate of values of the HHI index was -1.87 during that period, it decreased from 0.75 in 1995 to 0.45 in 2015. That progress gives an indication that other products have been added to Oman's export basket as the number of products exported increased from 533 in 1989 to 2,580 in 2015.



*Source: UNCTAD STAT*

Figure 6.25. Products export concentration index (HHI) for the period 1995-2015

### 3. EXTENSIVE AND INTENSIVE MARGINS

As mentioned in Chapter Two of this thesis, export diversification has several dimensions and can occur either horizontally (also called extensive margin) or vertically (also called intensive margin). They indicate whether the country was able to diversify its exports within the same sector or through development of other new sectors. De Lucio et al. (2011) concluded that the analysis of the relative contribution of each margin is very important to determine which policies can be more efficient to foster trade at the aggregate, geographic, product or firm level. The high share of intensive margin (vertical diversification) indicates significant level of concentration through the growth of exports in goods that are already being exported ("old products"). Increased contribution in the extensive margin (horizontal diversification) shows the pattern of diversification by adding new products to the existing export basket (Tsivadze, 2011). The International Monetary Fund (IMF) followed the definitions and methods used in Cadot et al. (2011). They first created dummy variables to define each product as "Traditional," "New," or "Non-traded." Traditional products are goods that are exported at the beginning of the sample, and non-traded goods have zero exports for the entire sample. Thus, for each country and

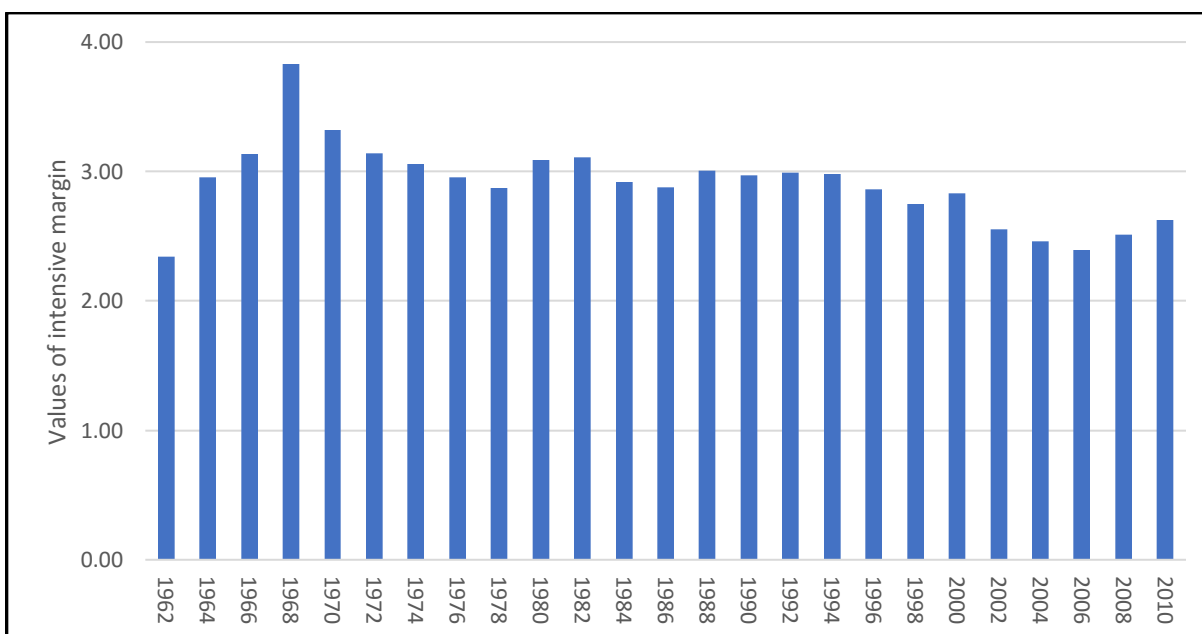
product, the dummy values for traditional and non-traded remain constant across all years of our sample. For each country/year/product group, products classified as “new” must have been non-traded in at least the two previous years and then exported in the two following years. Thus, the dummy values for new products may change over time. The following formula used to calculate the extensive margins for each country/year pair:

$$TB = \sum k (N_k/N) (\mu_k/\mu) \ln(\mu_k/\mu)$$

where k represents each group (traditional, new, and non-traded),  $N_k$  is the total number of products exported in each group, and  $\mu_k/\mu$  is the relative mean of exports in each group. The intensive margins for each country/year pair is calculated by the following formula:

$$TW = \sum k (N_k/N) (\mu_k/\mu) \{ (1/N_k) \sum_{i \in I_k} (x_i/\mu_k) \ln(x_i/\mu_k) \}$$

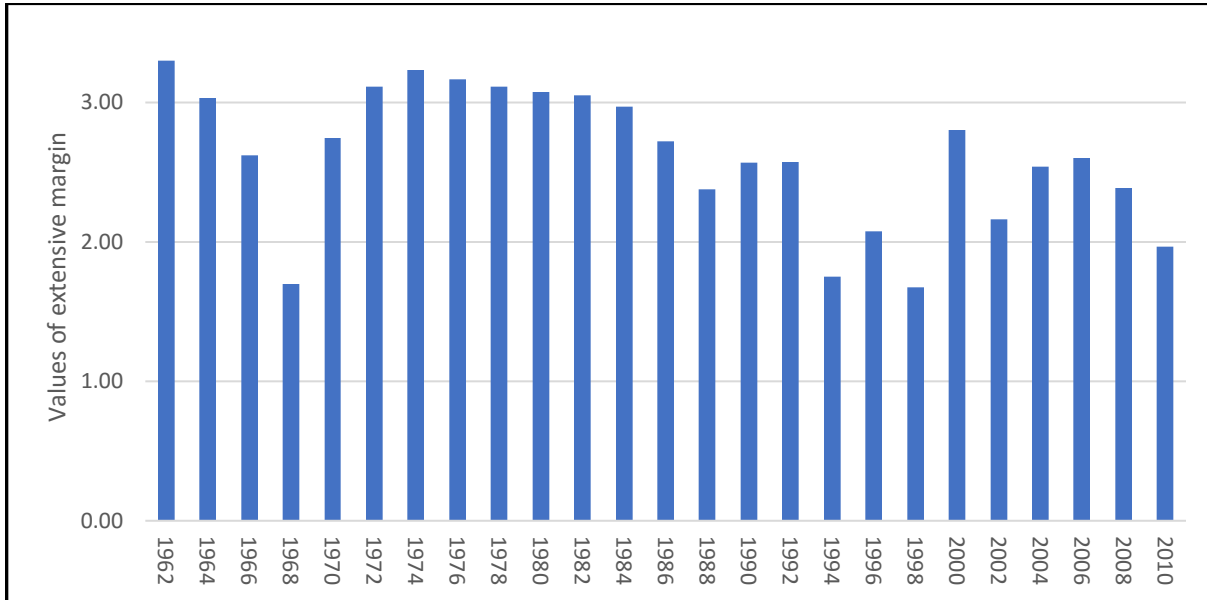
where x represents export value. Data of Oman’s intensive and extensive margins obtained from IMF (The Diversification Toolkit) for the period 1970-2010, show that the intensive margins value is still high and without much change since 1968 when oil export started in Oman (Figure 6.26).



*Source: IMF Diversification Toolkit (Export Diversification and Quality Databases)*

Figure 6.26. Oman’s intensive margin (1962-2010)

The extensive margins also increased slightly from 1.7 to 1.9 for the same period (Figure 6.27), although it was increased more during 1970s and 1980s, which indicates that more products have been added to the export basket.



*Source: IMF Diversification Toolkit (Export Diversification and Quality Databases)*

Figure 6.27. Oman's extensive margin (1962-2010)

#### 4. DIVERSIFICATION INDEX

Finally, the diversification index is computed by measuring the absolute deviation of the trade structure of a country from the world structure:

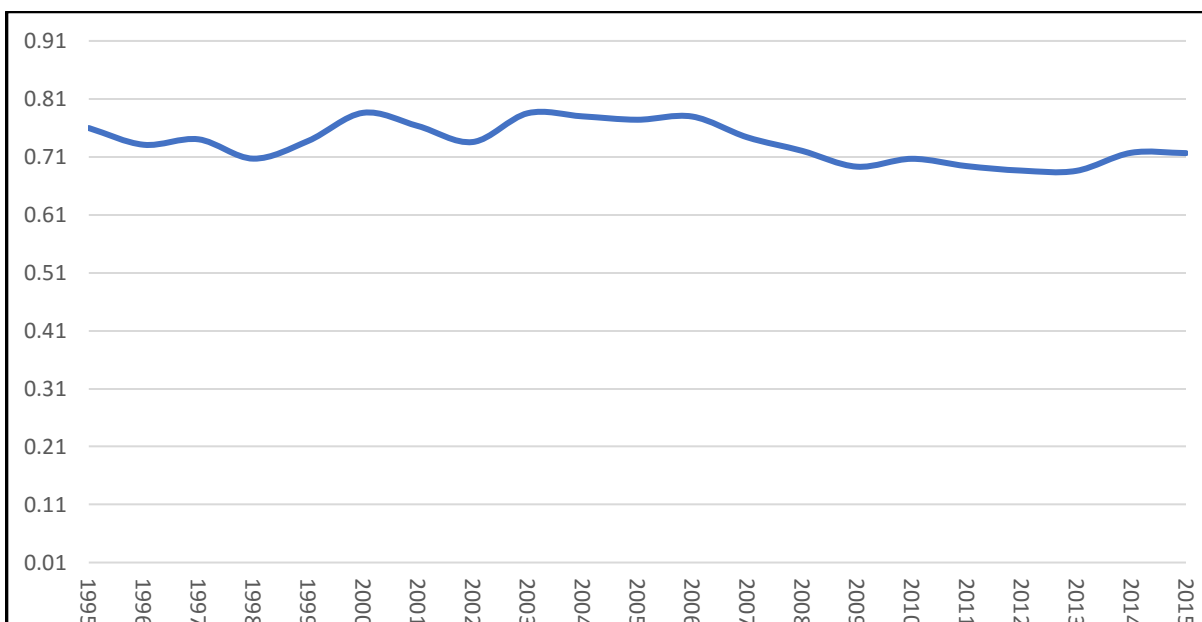
$$S_j = \frac{\sum_i |h_{ij} - h_i|}{2}$$

where:

$h_{ij}$  = share of product (i) in total exports or imports of country or country group (j)

$h_i$  = share of product (i) in total world exports or imports.

The diversification index takes values between 0 and 1. A value closer to 1 indicates greater divergence from the world pattern. According to UNCTAD Hand Book of Statistics (2016, p.98) this index is modified from Finger and Kreinin (1979). Figure 6.28 shows Oman’s export product diversification index for the period 1995-2015. The diversification index for Oman is still high (0.72) and a slight change happened during that period when the diversification index decreased from 0.76 in 1995 to 0.72 in 2015, with an annual decrease rate of -0.23 percent during that whole period. Overall, the results of the different diversification indexes show that there is a small progress in the diversification process in Oman. Oman’s exports are less diversified than required and the economy is still specialized, with the oil sector remaining the dominant sector.



*Source: UNCTAD STAT*

Figure 6.28. Oman diversification index (1995-2015)

- **SUMMARY OF THE MAIN FINDINGS OF THE LF AND TOC ANALYSIS**

The LF and TOC analysis showed that the second hypothesis is rejected, as the huge government investment in the infrastructure development (more than 11,732 million OMR), and other activities in human development and promotion during 1996-2015, have not generate a significant impact in the diversification index. In general, the development of infrastructure and logistics contributed to:

- Improving the rank of the quality of overall infrastructure in the Logistics Performance Index (LPI) from (43) in 2007 to 34 in 2016. In the Global Competitiveness Index (GCI), the rank improved from (42) in 2007 to 31 in 2016. In the Global Enabling Trade Index, it improved as it decreased from 50 in 2008 to 41 in 2016.
- Increasing the value of investment of FDI in general (as it increased from 1,588 million OMR in 2005 to 7,638 million OMR in 2014) and in different FTZ and Industrial Estates.
- Increasing the freight volumes and container port throughput at different ports as well as increasing air passenger traffic at Muscat International Airport from 2.7 million in 2000 to 9.3 million in 2015.
- Increasing the percentage share of non-oil exports in total exports from 6.1 in 1996 to 22.4 in 2015; and non-oil exports revenues increased from 173.3 million OMR in 1996 to 3003.9 in 2015.
- Decreasing the share of transport and logistics sector in the GDP from 6.8 percent in 1996 to 5.8 percent in 2015.
- Increasing the re-export activities on total exports from 13.7 percent in 1996 to 19.2 percent in 2015.
- The employment opportunities among the national workforce in the logistics sector shows a decrease in the percentage of Omani workers from 17.8 percent in 2011 to 12.5 percent in 2015).
- The decrease of the diversification index: the analysis shows a low progress in most of the diversification indexes (the index decreased from 0.73 in 1996 to 0.72 in 2015).

Moreover, a correlation analysis between the value of investment in infrastructure, the overall quality of the infrastructure, and the diversification index during the period 2007-2015 showed a strong positive correlation (0.83) between the overall quality of infrastructure and the values of investment in infrastructure. There is a negative correlation (-0.73) between the value of the diversification index and the values of investment in infrastructure, as well as a strong negative correlation (-0.89) between the value of the diversification index and the overall quality of infrastructure in Oman, as Table 6.27 shows.

Table 6.27. Correlation of investment with infrastructure and diversification (2007-2015)

	<b>Value of investment in infrastructure</b>	<b>Overall quality of infrastructure</b>	<b>Value of diversification index</b>
<b>Value of investment in infrastructure</b>	1		
<b>Overall quality of infrastructure</b>	0.830133205	1	
<b>Value of diversification index</b>	-0.734099344	-0.892488767	1

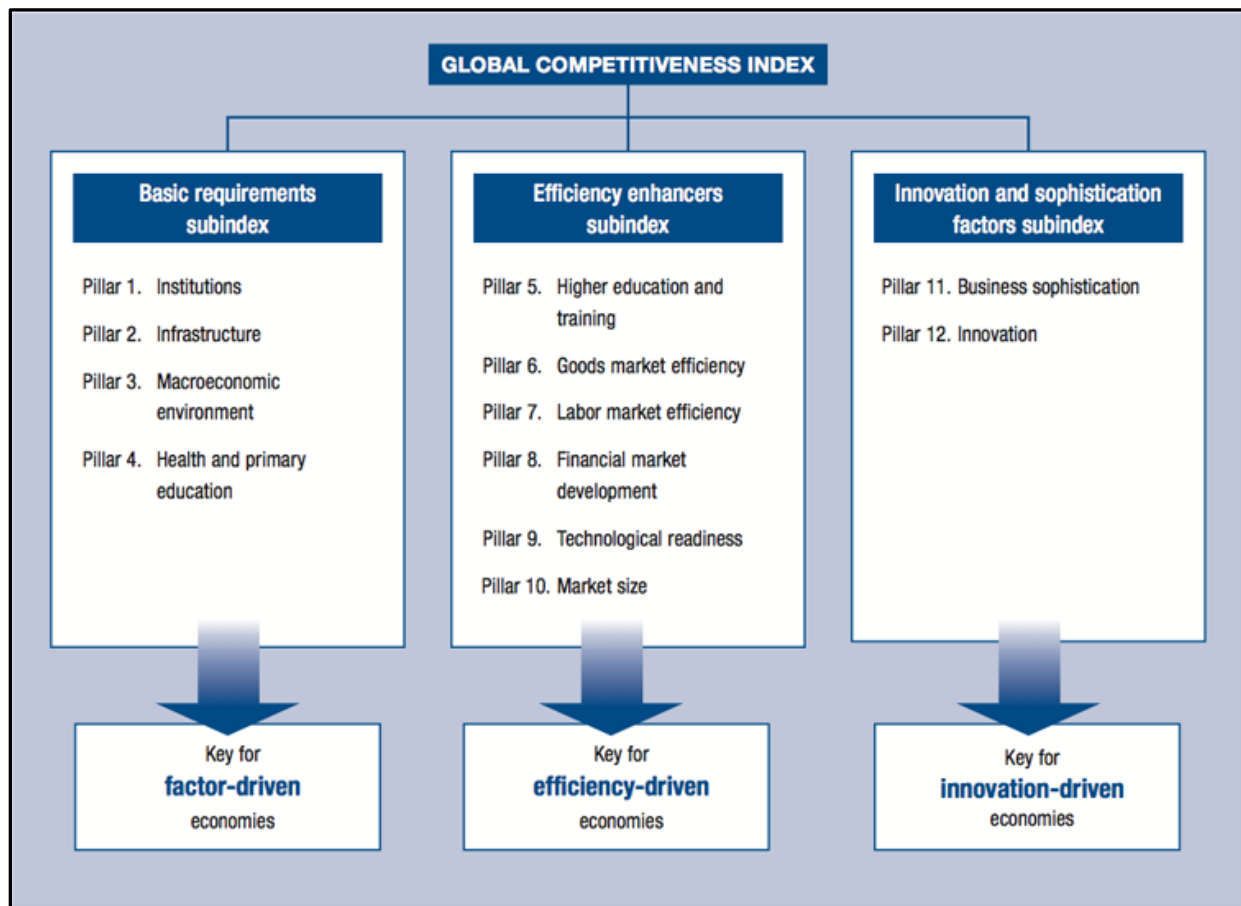
*Source:* Author's own elaboration based on government investment data from the Supreme Council for Planning (SCP) and diversification index data from UNCTAD STAT

## 6.6 PANEL REGRESSION ANALYSIS

This thesis assesses the impact of infrastructure on export diversification and through that, on economic diversification, competitiveness and prosperity. Panel data is used to test the hypothesis that better infrastructure is associated with better diversification levels in the first stage of development of resources rich countries. Therefore, panel data consisting of the value of the four pillars of the GCI (INS1+INF2+MAC3+HEAL4) and the diversification index of twelve resource rich countries (Bahrain, Botswana, Chile, Indonesia, Kuwait, Malaysia, Norway, Oman, Qatar, Saudi Arabia, South Africa and UAE) during the period 2007-2015 were used to run a set of different models.

The justifications for use only the four pillars of GCI is that, first, this thesis concern in assesses the impact of development of infrastructure on economic diversification. Infrastructure is among the four pillars that factor-driven countries used to compete at the first stage of development (Schwab, 2016) as shown in Figure 6.29. (R) statistical software was used to run the panel regression analysis and choose the best model (fixed effect or random effect) that indicates

the significant variable that is correlated with the change of the diversification index during the period 2007-2015.



*Source: Global Competitiveness Index (GCI) report (2016-2017)*

Figure 6.29. Global Competitiveness Index (weight of the pillars at different stages of development)

- **DESCRIPTIVE STATISTICS**

The descriptive statistics (Table 6.28) of the panel data shows that the number of observations for the dependent and all independent variables was 108. The mean (average) value for the independent variable (diversification index) was 0.67 during the whole examined period (2007-2015). Among the twelve resource rich countries in the panel data, Malaysia scored the minimum



value of 0.44 in the diversification index during the whole period, whereas, Botswana scored the maximum value of 0.91 during the same period.

Table 6.28. The descriptive statistics of the panel data

<b>Variable</b>	<b>Observation</b>	<b>Minimum</b>	<b>Median</b>	<b>Mean</b>	<b>Maximum</b>
Diversification index	108	0.44	0.71	0.67	0.91
Institutions	108	3.81	4.89	4.93	5.95
Infrastructure	108	2.74	4.79	4.69	6.30
Macroeconomic environment	108	4.39	5.82	5.79	6.83
Health & primary education	108	3.60	5.75	5.58	6.53

*Source:* Author's own elaboration based on UNCTAD STAT and GCI

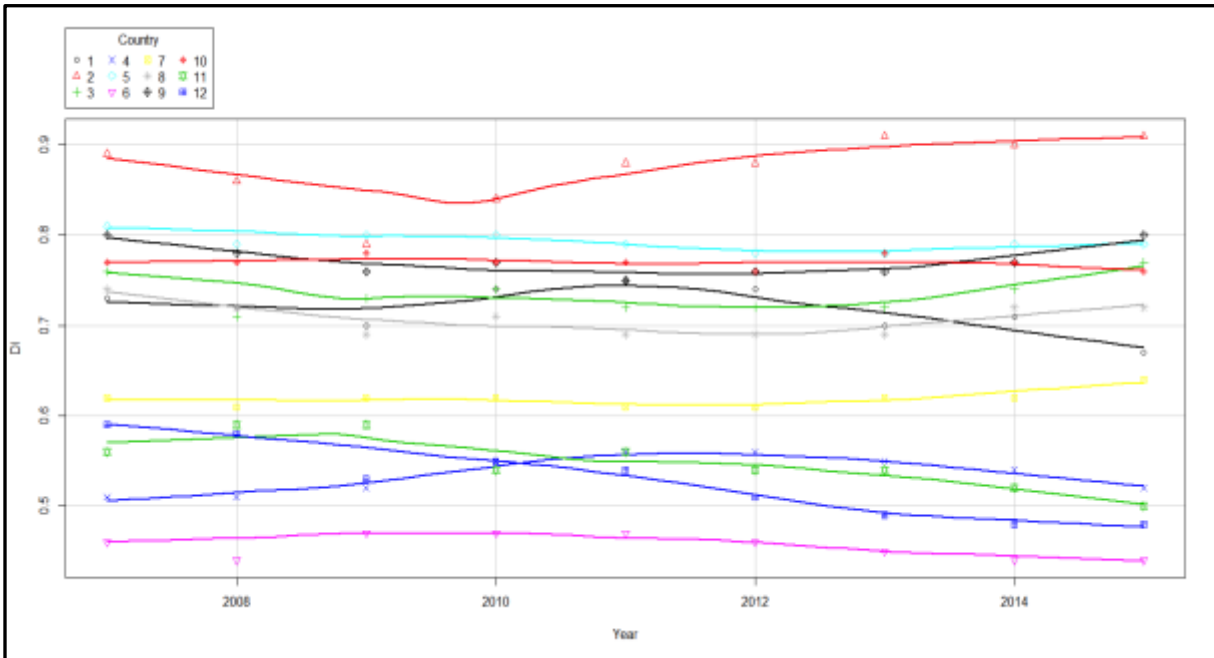
Additionally, the average (mean) values for all independent variables ranged between (4.96 for infrastructure and 5.79 for the macroeconomic environment). The infrastructure score of Chile in 2010 scored the lowest value (4.96) of all the independent variables, whereas, the macroeconomic environment in Qatar in 2008 scored the highest value (5.79) of all the independent variables. The average value of the institution variable was 4.93. The maximum value was 5.95 scored by Qatar in 2013. The infrastructure variable has an average value of 4.69. Its minimum value was 2.74 scored by Indonesia in 2007 and its maximum value was 6.30 scored by UAE in 2014 and 2015 respectively. The data of different GCI indicators at the first stage of development for the all countries in 2015 are shown in Table 6.29.

Table 6.29. Different GCC indicators for all countries in 2015.

Country	% of exports on GDP	Diversification index	Institutions	Infrastructure	Macroeconomic environment	Health & primary education
Bahrain	73.91	0.67	4.92	5.10	4.60	6.20
Botswana	52.66	0.91	4.43	3.25	6.46	4.46
Chile	33.69	0.77	4.64	4.60	5.61	5.64
Indonesia	22.42	0.52	4.09	4.19	5.50	5.59
Kuwait	63.79	0.79	4.09	4.32	6.72	5.60
Malaysia	83.67	0.44	5.13	5.51	5.41	6.33
Norway	38.66	0.64	5.85	5.03	6.83	6.53
Oman	72.33	0.72	4.73	4.81	5.99	5.78
Qatar	68.80	0.80	5.86	5.62	6.72	6.31
Saudi Arabia	48.57	0.76	5.07	5.09	6.63	6.01
South Africa	30.71	0.50	4.42	4.12	4.50	4.22
UAE	94.55	0.48	5.71	6.30	6.53	6.15

*Source: UNCTAD STAT and GCI (2015).*

As can be seen from Table 6.29, Malaysia has the lowest diversification index value (0.44) with an export share of 83.7% in its GDP, followed by UAE with a diversification index value of 0.48 and an export share of 94.5% in its GDP. Botswana has the highest value of 0.91. In a comparison of Oman's diversification index with other GCC countries, it was found that it was better than those of Saudi Arabia, Kuwait and Qatar, with a diversification value of 0.72 and an export share of 72.3% in its GDP. Its performance in institutions was only better than Kuwait. The same was also found for the infrastructure indicator. The scatter plot in Figure 6.30 shows the diversification index for all countries during the period 2007-2015. Their performance sequence was Malaysia, UAE, South Africa, Indonesia, Norway, Bahrain, Oman, Saudi Arabia, Chile, Kuwait, Qatar and Botswana respectively).



**Source:** elaborated from panel regression model output from R software

*Note:* 1- Bahrain, 2- Botswana, 3- Chile, 4- Indonesia, 5- Kuwait, 6- Malaysia, 7- Norway, 8- Oman, 9- Qatar, 10- Saudi Arabia, 11-South Africa and 12-UAE.

Figure 6.30. Ddiversification index for all countries (2007-2015)

### • MODEL SPECIFICATION AND REGRESSION ANALYSIS RESULTS

As mentioned in the literature review of this thesis (Chapter Two), economic diversification increases the productivity and competitiveness of different economic sectors, and enhances the real abilities within the framework of global competitiveness. Therefore, the following model has been specified to measure the diversification index as a function of pillars of the Global Competiveness Index (GCI) at the first stage of development during the period 2007-2015<sup>44</sup>.

$$DI = \alpha + \beta_1 INS1 + \beta_2 INF2 + \beta_3 MAC3 + \beta_4 HEAL4$$

Where:

<sup>44</sup> As mentioned earlier in this chapter, this period has been chosen because Oman data on the GCI only started to appear in 2007.

DI = Diversification index for the  $i^{\text{th}}$  country ( $i = 12$ )

$\alpha$  = the intercept

$\beta$  = variable coefficient

INS1 = Institutions

INF2= Infrastructure

MAC3 = Macroeconomic environment

HEAL4 = Health and primary education

The procedure to choose the most appropriate model (either the fixed or random effects) is as follows: the regression analysis starts by running the fixed model including all four independent variables (INS1, INF2, MAC3 and HEAL4) and comparing the significant levels of the different independent variables and their adjusted R-squared values. Then the Hausman test is run to choose either the fixed effect model or the random effect model, which will depend on its P-value (if it is less than 0.05 we choose the fixed effects model, and if it is greater than 0.05 we choose the random effects model). The first fixed model (*Fixed4*) with was run with the four variables (INS1, INF2, MAC3 and HEAL4) and the two control variables (GDP and EXP) as in the following:

$$\text{Fixed4} = \text{DI} = \alpha + \beta \text{INS1} + \beta \text{INF2} + \beta \text{MAC3} + \beta \text{HEAL4} + \text{GDP} + \text{EXP}$$

The results of the regression output of the model *Fixed4* show that there is a weak significant ( $0.09$  as  $0.05 < P < 0.10$ ) between INF2 and the diversification index with an adjusted R squared value of  $-0.045$  and the two control independent variables (GDP and EXP) are not significant. The regression output of (*Fixed4*) model is presented in Table A2.10 at *Appendix 1*. Consequently, the following fixed model is run with the same four variables but without the two control variables as they were not significant:

$$\text{Fixed4a} = \text{DI} = \alpha + \beta \text{INS1} + \beta \text{INF2} + \beta \text{MAC3} + \beta \text{HEAL4}$$

The results of the regression output of the model *Fixed4a* show that only INS1) has significant ( $0.06$ ) relationship with the diversification index but with a higher an adjusted R squared value of  $-0.035$  than in the previous model. The regression output of (*Fixed4a*) model is presented in

Table A2.11 at *Appendix 1*. The next step is to eliminate the least non-significant independent variable (MAC3) and run the fixed effect model with only the three variables, as in the following:

$$\text{Fixed3a} = \text{DI} = \alpha + \beta \text{INS1} + \beta \text{INF2} + \beta \text{HEAL4}$$

Again, the results show that only INS1 is significant (0.05) but with high but with a higher adjusted R squared value of -0.026 than in the previous model. The regression output of Fixed3a model is presented in Table A2.12 at *Appendix 1*. The least non-significant independent variable (HEAL4) is eliminated as it had the "wrong" sign, and the following fixed effect model is run with only the two independent variables (INS1 and INF2):

$$\text{Fixed2a} = \text{DI} = \alpha + \beta \text{INS1} + \beta \text{INF2}$$

The regression results show that INS1 is significant (0.05) with a slightly lower adjusted R squared value of -0.021 than in the previous model. The regression output of Fixed2a model is presented in Table A2.13 at *Appendix 1*. Therefore, the model is fixed with one variable (INS1) as in the following:

$$\text{Fixed1a} = \text{DI} = \alpha + \beta \text{INS1}$$

The regression results show that INS1 is significant (0.002), but with a slightly lower adjusted R squared value of -0.025 than in the previous model. The regression output of Fixed1a model is presented in Table A2.14 at *Appendix 1*. So, the previous model is kept and the following random effect model with two variables (INS1 and INF2) and without the control variables is run:

$$\text{Random2a} = \text{DI} = \alpha + \beta \text{INS1} + \beta \text{INF2}$$

The regression results show that INS1 is significant (0.085) with an adjusted R squared value of 0.074. The regression results of both Fixed2a and Random2a models show that INS1 is the significant variable (0.05 and 0.08 respectively) as in Table 6.30 and Table 6.31.

Table 6.30. Panel regression model output of general model (Fixed2a)

	<b>Estimate</b>	<b>Std. Error</b>	<b>t-value</b>	<b>Pr(&gt; t )</b>
<b>INS1</b>	-0.0269741	0.0140129	-1.9249	0.05726*
<b>INF2</b>	-0.0108609	0.0090604	-1.1987	0.23365
<b>Total Sum of Squares</b>	0.053022			
<b>Residual Sum of Squares</b>	0.04757			
<b>R-Squared</b>	0.10282			
<b>Adj. R-Squared</b>	-0.021256			

Significant codes: \*\*\*(0.001), \*\*(0.01), \*(0.05)

*Source: elaborated from panel regression model output from R software*

Table 6.31. Panel regression model output of general model (Random2a)

	<b>Estimate</b>	<b>Std. Error</b>	<b>t-value</b>	<b>Pr(&gt; t )</b>
<b>INS1</b>	-0.0242160	0.0139476	-1.7362	0.08546*
<b>INF2</b>	-0.0124450	0.0090604	-1.3736	0.17250
<b>Total Sum of Squares</b>	0.059281			
<b>Residual Sum of Squares</b>	0.053815			
<b>R-Squared</b>	0.092206			
<b>Adj. R-Squared</b>	0.074915			

Significant codes: \*\*\*(0.001), \*\*(0.01), \*(0.05)

*Source: elaborated from panel regression model output from R software.*

Finally, the Hausman test was run to choose between the most parsimonious (Fixed2a and Random2a). Hausman p-value of was less than 0.05 therefore the Fixed 2a model has been chosen as the best model.

<p>phtest (fixed2a, random2a)</p> <p>Hausman Test</p> <p>data: DI ~ INS1 + INF2</p> <p>chisq = 76.485, df = 2, p-value &lt; 2.2e-16</p> <p>alternative hypothesis: one model is inconsistent</p>
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- **SUMMARY OF THE MAIN FINDINGS OF THE PANEL REGRESSION ANALYSIS**

Despite the low explanatory power of the regression model (low  $R^2$ ), the overall panel regression analysis results of this study showed that among the twelve pillars of the GCI, the-quality of institutions in resource rich countries significantly correlated with the change of the diversification index. Moreover, the infrastructure, country GDP and the percentage of exports of the GDP were not significantly correlated to the change of the diversification index during the period 2007-2015. This result supports the previous empirical analysis of the existence of weak institutions in Oman mentioned in Chapter Five of this thesis as well as in the previous empirical literature that emphasizes the role of institutions in economic diversification and development in resource rich countries (highlighted in Chapter Two of this thesis). Chapter seven provides a general conclusion of this study as well as the recommendations and suggested further research.

# **7. CHAPTER SEVEN:**

## **CONCLUSION AND RECOMMENDATIONS**

### **7.1 INTRODUCTION**

This chapter presents the conclusions of the thesis, which has focused on the three main streams of the literature related to resource rich countries: resource curse, economic diversification, and policy impact. The first stream deals with the resource curse theory, its effects and causes, as well as its common indicators of existence. The second stream focuses on economic and export diversification as a form of government intervention (policy) to overcome the effects of the resource curse. It focuses on the different factors that drive economic diversification and can be affected by policies, in addition to the exploration of the different measures of export diversification.

The different forms of economic diversification have been mentioned in chapter two with focus on the importance of exports and exports diversification. Then the importance of transport infrastructure and logistics has been highlighted too. Chapter three reviewed literature on the policy design and policy evaluation.

The overall objective of this thesis was to understand the dynamics of economic diversification policies in resource rich countries by assessing the impact of infrastructure and logistics development on export diversification, and through that, on economic diversification and competitiveness. Precisely, the thesis assesses uses the Oman case as an example of an export diversification policy and therefore it assesses the impacts of development of roads, ports, Free Trade Zone (FTZ) -to make Oman a regional and international services center (global logistics hub) in the economic diversification process during the period 1996-2015. The case study methodology was used to test the hypotheses, accomplish the thesis goals and to answer the research question “*How can the development of roads, ports, FTZ and Industrial Estates impact the economic diversification in resource rich countries*”.



The case of Oman presented in this thesis contained broad details of Oman's economy in general, and the good effects of oil on developing the country. Also, it showed the efforts and policies of economic diversification that government performed during the last forty-six years to diversify the economy and the challenges that constrain the success of diversification. Whereas, the analysis at chapter six examined the existence of resource curse symptoms in Oman's economy. It also presented the details of constructing the LF and TOC for the transport and logistics policy in Oman and their different analysis. Furthermore, a panel regression analysis was used to find the significant variable (Institution, Infrastructure, Macroeconomic stability and Health and Primary education) of the GCI that correlated with the change of the diversification index in resource rich countries at the first stage of development.

After this brief introduction, section two is devoted to present the conclusions gathered from the review of literature and the empirical analysis of the case of Oman in the resource curse stream. Then section three presents the lessons from the literature and Oman's experience in economic diversification. In section four the main conclusions of the policy impact analysis in the Oman case are presented. The main limitations of the thesis are presented in section five, and section six includes the recommendations. Finally, section seven presents further research that could be carried out.

## **7.2 RESOURCE CURSE**

From the previous literature reviewed in this thesis for the stream of the resource curse, several conclusions have been extracted. First, natural resources are important for economic growth and development, especially in the early stages of a low-income country's development process (Auty, 1993), where they act as means for capital accumulation and an accelerator for economic growth. Second, the existence of a resource curse is not inevitable in resource rich countries (Elbadawi and Gelb, 2010). Experiences of different resource rich countries (Malaysia, Indonesia, Norway, South Africa and Chile) have shown that they were able to diversify their economies and avoid the resource curse through good management of resource revenues (Sovereign Funds), creation of good institutions, applying laws to protect public money, and fighting against corruption.

Third, the presence of good institutions and the rule of transparency also play important roles in overcoming the resource-curse effects (Rodrik and Subramanian, 2003; Acemoglu and

Johnson, 2003 and 2005 and Mehlum et al., 2006b). Furthermore, it is important to mention that most studies in resource-curse literature tend to explain the existence of the negative correlation between resource dependence and poor economic growth (resource curse), more due to political factors (such as weak institutions, rent-seeking and corruption, regime type and social conflict) than to economic factors (such as commodity price volatility and low external linkages of the mineral industry). Therefore, political reforms like transparency, accountability and democracy were found to be essentials to surmount the resource-curse effects in resources rich countries.

A large segment of the studies showed that the existence of good quality institutions and the implementation of successful economic diversification policies are essential in avoiding the resource curse. In addition, most studies are concerned about export diversification policies as the most common path to reach economic diversification and rarely deal with the development of other sectors as another path to economic diversification. The wise management of resource revenues through the establishment of sovereign funds for exploitation of the revenues and their rational investment have contributed to the acceleration of economic diversification and avoidance of the resource curse effects (Holden, 2013). It is still confusing to judge whether resource rich countries are blessed or cursed due to the absence of a unique (agreed) method in the literature of examining the existence of the resource curse symptoms in resource rich countries (economic and political factors categories). Most of the studies examined only one or a few resource curse symptoms (Table 7.1).

Table 7.1. Example of studies that examined one type of resource curse symptoms

<b>Author/s</b>	<b>Type of resource curse symptom examined</b>
Hausmann and Rigobon (2003)	Price instability
Hvidt (2011)	Low job opportunities
Bategeka and Matovu (2011)	Dutch disease
Pendergast et al. (2011)	Corruption and Rent seeking
Abubakar (2015)	Mismanagement of resources revenues
Mehlum et al. (2006b)	Quality of institutions

*Source: Author's own elaboration*

On the other hand, several conclusions can be extracted from the case of Oman presented in this thesis related to the resource curse stream. First, at the beginning of the country's development

process, oil revenues have been effectively utilized and helped to develop the country, as they contributed to transfer the country out of backwardness and isolating conditions to prosperity and modernization. Second, during the past forty-six years of the renaissance (led by the wisdom of His Majesty Sultan Qaboos), Oman has witnessed strong economic growth and achieved extended progress in the development and sophistication of services, infrastructure and improvement in the living standards of individuals. Those findings agreed with Auty's (1993) results, that showed the importance of resources for economic growth and development at the early stage of development process.

Third, the progress of different indicators of economic growth and development, like GDP and GDP per capita, HDI, life expectancy, GNI per capita, infant mortality and literacy rate, was evidence of the economic progress and development that has occurred in Oman since 1970. Fourth, although the government established different forms of reserve funds such as the State General Reserve Fund (SGRF) in 1980, the Contingency Reserve Fund in 1990 (replaced by the Oil Fund in 1993 and then replaced with Oman Oil Company in 1996), Oman investment fund (OIF) in 2006, and different pension funds for the government employees to invest inside the country, the spectacular decline of oil prices since June 2014 has proved to be a challenge to the development process. It caused a deficit in the state budget that reached 4.5 billion OMR and a decrease of 11 percent in government expenditure in 2015.

Fifth, the results of the first part of the analysis accepted the first hypotheses in this thesis. It showed, that despite the fast and sustained economic growth at Oman, as it was being classified as one of only 13 economies around the world that succeeded to grow at a rate of 7 percent a year or more for 25 years (1960-1999) or longer after the Second World War, Oman is cursed with oil. Specifically, the results of the empirical examination of the existence of the resource curse effects (Chapter six) showed the presence of three factors out of four in the economic category (commodity price volatility, low external linkages of the petroleum industry and Dutch disease), whereas in the political category only two of the five factors were present (weak institutions and presence of corruption).

### **7.3 ECONOMIC DIVERSIFICATION**

From the economic diversification stream in this thesis, it can be concluded that there are differences in the literature in defining economic diversification. Some studies define it as the

change in percentage share of different sectors in the GDP, others define it as the existence of different production lines in the economy, while the majority used the diversification index (the ratio between the percentage of different sectors' exports to total exports). That variation resulted in un-identification of a certain measurement to determine the degree of success or failure in diversification (Alsharif et al., 2016). Consequently, different studies classified some resource rich countries as examples of successful countries in diversification, contrary to others' views (for example, the case of Botswana in this thesis).

The existence of other natural resources before the exploitation of the new resource is vital and has an impact on the diversification process acceleration (Ville and Wicken, 2012). Thus, the country that does not have resources before the exploitation of the new resource starts from scratch (for example, the case of all GCC countries) and most of the resource revenues of the new resource are directed to development and economic growth activities if not wasted by rent seekers.

The demographics of population in the resource rich countries delay or prohibit the economic diversification process, because a large portion of the population pyramid is in non-producer age groups (children and old people), which enforces the state to take responsibility of providing basic requirements such as education, infrastructure, health and job creation. Those commitments weaken the efforts and resources that are supposed to be directed to the development of the alternative sectors that can contribute in the economic diversification process (Merzuk, 2013).

The development and diversification of exports played a major role in various economic diversification policies, where most countries that have succeeded in economic diversification have applied those policies. Moreover, the challenges (obstacles) of economic diversification can be overcome by applying capacity development policies that improve the competitiveness and export performance of Small and Medium-Sized Enterprises (SMEs) as well as the development of new technologies, knowledge and innovation skills.

The absence of certainty about the level of success or failure in diversification explained the regular claims of the official authorities in most resource rich countries that their countries have gone a long way in the process of economic diversification and that the development of different sectors was enough evidence for their efforts towards the target of economic diversification-even though the share of those sectors in the GDP was small and even sometimes negligible.

Furthermore, it found that most empirical studies in the diversification field started their arguments in economic diversification in general and then the analysis dealt only with export diversification. Development and export diversification do not always work as a root solution to economic diversification, as many resource rich countries can easily diversify their export baskets. That diversification effort could be due to increase of the same stream of resource products, which can be counted as the same source (horizontal diversification). The evidence of that claim came from the case of Oman where most of the non-oil exports were gas and refined oil. According to ESCWA (2001) and Al Kawaz (2008) the other essential factors for the success of economic diversification include:

- Availability of human capital and the potential for skill development.
- The potential for specific non-oil based sectors to compete in the local and international market.
- Investing in human capital that responds to the needs of priority economic sectors.
- Creating an enabling business environment to provide the conditions for the growth of the private sector away from hydrocarbon-based activities.

The analysis of different economic diversification efforts during the period 1976-2015 that have been presented in the case of Oman showed that there were numerous achievements in the economic diversification axis. The most notable achievements were reflected in the GDP's slipping share of petroleum activities from 66 percent in 2000 to 44 percent in 2014 and in the continuous increase of the relative contribution of the non-oil activities on GDP, even though most of that increase was due to the export of gas and refined oil.

Despite all the achievements, deficiencies in the implementation processes of different economic diversification policies have taken Oman along paths that were not consistent with the initial goals of the second long-term strategy for development "*Oman 2020*". It weakened the opportunities for further growth and sustainable development in the long-term through the continued dependence on oil revenues and increase in government spending. Even though there is no unique formula or policy for economic diversification that suits all countries, the experiences of successful countries can provide good lessons for other countries to be guided by and learn from, even though it is not necessary or advisable to replicate them exactly the same way. Oman has been guided by the experiences of some countries that succeeded in diversifying their

economies (Chapter Three). For example, recently in 2016, the government followed the example of South Africa and Botswana by identifying and focusing on the promising sectors and working to develop them to diversify the economy. According to the Supremum Council for planning, the five promising sectors that have been identified are: manufacturing, transport and logistics, tourism, fisheries and mining. The selection of those promising sectors was based on specific criteria, mainly that they do not depend on depleted resources or on government spending, have some inter-sectoral linkages with other sectors, provision of productive employment and rewarding for Omani youth, have a comparative advantage, have the ability to attract foreign investment, and can contribute to the export capacity growth (export-oriented activities).

The government is currently following the Malaysian example in the systematic execution of efficiency and performance, which was one of the country's most important factors in achieving economic diversification. Therefore, the Supreme Council for Planning (SCP) contracted the Performance Management and Delivery Unit (PEMANDU) of the Malaysian government as an expert to assist and provide technical support in the application of The National Program for Enhancing Economic Diversification (TANFEEDH), which started in September 2016.

#### **7.4 POLICY IMPACT ANALYSIS**

Government intervention through a set of policies is the first line of defense against different failures. They seek to achieve goals that are considered to be satisfactory to the whole society. Impact assessment of long-term policies is a particularly challenging task, as there is no common trend in the methods and techniques of analysis followed in different literatures. Therefore, the existence of a detailed and documented Logical Framework (LF) and Theory of Change (TOC) that disentangle inputs from outputs and clearly show the intended pathway to achieve the impacts of the policy, are prerequisites to achieving the desired goals of long-term policies. The implementation and formulation of short and medium-term specific and detailed diversification policies that are commensurate with the potential and the resources available, in addition to the monitoring and evaluation on an ongoing basis, can improve the levels of the diversification indicators in resource rich countries.

This thesis has also contributed to the impact evaluation literature, as it used the combination of the Logical Framework (LF) and Theory of change (TOC) to assess the impacts

of a certain policy over a long-term period, in addition to the identification of a specific model that measures the diversification index as a function of certain pillars of the Global Competitiveness Index (GCI) at the first stage of development.

The analysis of the LF and TOC of Oman case showed good progress in many TOC indicators of the policy of development of roads, ports, and Free Trade Zones (FTZ) to make Oman a global logistics hub. For example, Oman has succeeded in improving the quality of infrastructure in the Logistics Performance Index (LPI), Global Competitiveness Index (GCI) and Global Enabling Trade Index (GEI), which improved the nation's competitiveness in this field.

Additionally, the results showed that there were not many activities conducted in the institutional reforms and establishment. Consequently, the results showed that the impact of development of roads, ports and FTZ was not enough to generate a significant change in the diversification index during the period 1996-2015, as the diversification index is still high (0.72) and only a slight change had happened during the previous nineteen years (1996-2015). The diversification index decreased from 0.76 in 1995 to only 0.72 in 2015 with an annual decrease rate of (-0.23) percent.

Overall, the analysis for different indicators of the TOC showed a good commitment of most indicators in reaching the goal of making Oman a regional and international services center (global logistics hub). It can be concluded that the diversification policies in Oman are general and rarely include clearly defined goals, input, output and impact indicators, which have had impact on the evaluation and monitoring tasks. They also lacked clearly defined timeframes within which policy actions were to be implemented.

Based on different field studies, currently the transport and logistics sector in Oman faces different challenges like last mile inefficiencies (movement of people and goods from transportation hub to final-destination in the home), land infrastructure (warehouses, custom declaration and documents) and road infrastructure. Different efforts of different ministries and institutions have implemented different programs to serve that policy. Appointment of the new minister of Transport and Communication -*Dr. Ahmed Al Futaisi*- in 2012, played a great role in directing and focusing efforts towards the issue of developing the roads, ports, free trade zones and logistics services in Oman. Thus, most of the achievements of the infrastructure development and establishment of institutions and legislations were performed since he was appointed. However, there is still an urgent need for an effective coordination institution, to coordinate the

transport and logistics sector at general and the role of each port, as well as integrated and efficient management and operation systems for the different ports.

Finally, the results of the panel regression analysis showed that among the different GCI pillars (Institution, Infrastructure, Macroeconomic stability and Health and Primary education), the existence of good institutions was the only variable that was significantly correlated with the positive changes in the diversification index for the twelve resource rich countries during the period 2007-2015. That emphasized that at the first stage of development of the resource rich countries, possession of good institutions is the most important factor in the diversification process, rather than the development of infrastructure, macroeconomic stability and health and primary education. Also, it could explain part of why the development of infrastructure and logistics in Oman case was not enough to generate a significant impact in the diversification index, as Oman is cursed and it has weak institutions.

## **7.5 LIMITATIONS**

The unavailability of detailed documentation of the policy and unavailability of the data for the LF and TOC indicators in a long-term series were the main limitations to the assessment of some indicators in this thesis. First, most of the government policies are generally stated and they do not contain any LF. Second, many government and private institutions lack efficient statistical units that are capable of recording and documenting the necessary data of the institutes for long-term periods.

## **7.6 RECOMMENDATIONS**

Based on its conclusions, this study provides some important recommendations for decision-makers in Oman that can be lessons for other GCC and resource rich countries in the region. First, Oman can overcome the resource-curse effects through enhancing the role of different economic sectors and institutional reforms. This can be achieved through the following: the strengthening of the regulations and laws for accountability to protect public money and fight against corruption in all sectors; and by increasing investment in capacity-building of human resources, through improving the education process (to ensure that graduates have the skills needed to thrive in the private sector). The hinge axis of the economic diversification depends on



the implementation of a detailed LF and TOC for all implemented policies, thus allowing outputs, goals and impacts of the policies to be easily monitored and evaluated.

Second, regarding the government goal of making Oman a global logistics hub, the government should take into consideration the high competition of other pre-existing transport and logistics services in GCC neighbors such as the UAE and Saudi Arabia.

Third, the absence of the coordination between the roles of the ports and FTZ creates a lack of integration for the advancement of the process of economic diversification through attracting foreign investment to increase and diversify exports. Currently the ports and FTZs are operated by different authorities, and this has led to internal competition between them, instead of being united to compete globally.

On the other hand, based on the difficulties experienced by the researcher during the data collection phase, it was found that although the National Center for Statistics and Information (NCSI) played a vital role in providing national statistics, it will be better to have separate statistical units in all government institutions to take on the responsibility of recording, analyzing and interpreting all important data that can be used easily and effectively in the evaluation and monitoring process.

Moreover, there is a need for an appraisal and modification of the role and responsibilities of the policy department in the Supreme Council for Planning (SCP), in order to qualify it and make it capable of designing, implementing and evaluating national policies, especially the policies of the future long-term strategy for development, “*Oman 2040*”. Finally, simplification of the current bureaucratic procedures in applying the regulations and laws related to doing business and facilitating trade are urgently required.

## **7.7 FURTHER RESEARCH**

As this thesis explored different issues in resource curse, economic diversification and policy impact analysis, further research can be carried in the following areas:

- As this thesis examines the existence of the resource curse in Oman only, further research could examine its existence in other resource rich countries to help build a database of experiences that determine failure or success of economic development policies.
- Resource curse have economic, political and environmental effects, part of the empirical analysis in this thesis examined the existence of economic and political effects only, so

further research can investigate the environmental effects. Further research can also assess the spill-over effects of development on export diversification.

- As most literature focuses on export diversification, there is a need for further research in identifying other strategies that can contribute to the economic diversification process through the development of sectors such as industry and tourism.
- Further research can combine the effectiveness of policies that focus on infrastructure with the strengthening of institutions.
- This thesis investigates the significant variables that correlate with the economic diversification in the first stage of development, so further research can investigate the relationship at different stages of development (the second or third stage).
- Literature shows that export of sophisticated products enhances and accelerates economic diversification; therefore, further research is needed to investigate the impact of existing high-technology facilities and incentives in FTZ to attract investments that produce sophisticated products for exports.
- Finally, in Oman further research is needed to study the Relative Comparative Advantage (RCA) of different Governorates to initiate some export-oriented projects that can contribute more to the diversification process.

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# APPENDIX 1

Table A1.1 LF indicators and their data sources

Measurable Indicator	Unit of Measurable Indicators	Source of Data
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>1. Values of investment at new ports, FTZ areas &amp; modernization of various sea &amp; air ports &amp; new road links.</li> </ol>	<p>Million OMR and its share from the total budget</p>	<p>Supreme Council for Planning (SCP)</p>
<ol style="list-style-type: none"> <li>2. Structural changes of some government institutions, legislation, rules, regulations &amp; trade facilitation</li> </ol>	<p>List of efforts to set new institution and development of regulations</p>	<p>Supreme Council for Planning (SCP), Ministry of Transport &amp; Communication and Ministry of Commerce and Industry</p>
<ol style="list-style-type: none"> <li>3. Government programs on human capital development at transport and logistics.</li> </ol>	<p>Name &amp; values of government programs on human development at transport and logistics</p>	<p>Ministry of manpower &amp; Ministry of Transport &amp; Communication and ministry of higher education</p>
<ol style="list-style-type: none"> <li>4. Promoting Oman as a leading transport and logistics center on the region</li> </ol>	<p>Number of promotion campaigns &amp; exhibitions, Number of programs for foreign investors invitation to visit Oman and number if international representative.</p>	<p>Public Authority for Investment Promotion and Export Development (<i>Itthraa</i>)</p>
<p><b>Outputs:</b></p> <ol style="list-style-type: none"> <li>1. New national railway network.</li> <li>2. Increase the lengths of paved roads</li> </ol>	<p>Km</p>	<p>Oman Global Logistics Group (OGLG)</p>
	<p>Km</p>	<p>Ministry of Transport and Communication</p>

<p>3. New ports, FTZ areas and industrial estates</p> <p>4. New institutions &amp; set of regulations &amp; legalizations established for transport &amp; logistics sector.</p> <p>5. Professionals &amp; qualified graduates &amp; trained cadre in Maritimes affairs &amp; logistics sector.</p> <p>6. Local &amp; international exhibitions &amp; promotion campaigns to promote export and investment at Oman</p> <p>7. Locations of commercial representative appointed in main world markets.</p> <p>8. Bilateral matchmaking meetings</p> <p><b>Impacts:</b></p> <p>1. Value of domestic, regional &amp; foreign investments existed at different ports, FTZ areas &amp; industrial estates.</p> <p>2. New logistics companies established</p>	<p>Names of new ports, FTZ areas &amp; industrial estates</p> <p>Names of new institutions and lows established</p> <p>Numbers of qualified graduates &amp; trained cadre in Maritimes affairs &amp; logistics sector.</p> <p>Names &amp; numbers of Local &amp; international exhibitions &amp; promotion campaigns</p> <p>Names &amp; locations of commercial representative</p> <p>Numbers and name of bilateral matchmaking meetings</p> <p>Millions OMR</p> <p>Numbers and names of the New logistics companies</p>	<p>Ministry of Transport and Communication &amp; Public Establishment for Industrial Estates (PEIE).</p> <p>Ministry of Transport and Communication</p> <p>International Maritime College Oman (IMCO), National Center for Statistical and Information (NCSI), ministry of manpower &amp; ministry of higher education.</p> <p>Public Authority for Investment Promotion and Export Development (<i>Ithraa</i>)</p> <p>Public Authority for Investment Promotion and Export Development (<i>Ithraa</i>)</p> <p>Public Authority for Investment Promotion and Export Development (<i>Ithraa</i>)</p> <p>Ministry of Commerce and Industry, Public Establishment for Industrial Estates (PEIE) and the National Center for Statistical and Information (NCSI).</p> <p>Ministry of Manpower</p>
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<p><b>3.</b> Share of goods exported to and imported from GCC, Asia &amp; sub-Saharan African countries</p> <p><b>4.</b> Oman rank in the logistics performance Index (LPI), Global Competitiveness index &amp; Global Enabling index</p> <p><b>5.</b> Freight volumes at ports &amp; air passengers' traffic at air ports.</p> <p><b>6.</b> Non-oil exports on total exports.</p> <p><b>7.</b> Transport &amp; logistics sector contribution on the GDP</p> <p><b>8.</b> Re-export on total exports</p> <p><b>9.</b> National employee working in transport and logistics sector</p> <p><b>Goal:</b></p> <p>1. Diversification index</p>	<p>% share of imports and non-oil exports &amp; re-export from and with GCC, Asia &amp; sub-Saharan African countries</p> <p>Ranks</p> <p>Number of container port throughput (million TEU), Air transport freight (million ton-km) &amp; air passengers' traffic</p> <p>% share of non-oil exports on total exports</p> <p>% share of transport &amp; logistics sector on the GDP</p> <p>% share of re-export on total exports</p> <p>Numbers of Omani employees working in transport and logistics sector</p> <p>Values between 0 and 1<sup>45</sup></p>	<p>National Center for Statistical and Information (NCSI)</p> <p>World Bank Database &amp; World Economic Forum</p> <p>World Bank Database &amp; National Center for Statistical and Information (NCSI)</p> <p>National Center for Statistical and Information (NCSI)</p> <p>National Center for Statistical and Information (NCSI)</p> <p>National Center for Statistical and Information (NCSI)</p> <p>Ministry of manpower and National Center for Statistical and Information (NCSI).</p> <p>Data center of United Nations Conference on Trade and Development (UNCTAD STAT)</p>
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<sup>45</sup> A value closer to (1) indicates greater divergence from the world pattern.

<p>2. Revealed Comparative Advantage Index</p> <p>3. Product Concentration index (Product HHI)</p> <p>4. Extensive and intensive margins</p>	<p>Values less and greater than 1<sup>46</sup></p> <p>Values between 0 and 1<sup>47</sup></p> <p>Values between 0 and infinity<sup>48</sup></p>	<p>World integrated trade solutions (WITS World Bank)</p> <p>Data center of United Nations Conference on Trade and Development (UNCTAD STAT)</p> <p>IMF Diversification Toolkit: Export Diversification and Quality Databases.</p>
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*Source: Author own elaboration.*

<sup>46</sup> values greater than (1) indicates that country has a comparative advantage of the product.

<sup>47</sup> value closer to (1) indicates a country's exports are highly concentrated on a few products. Values closer to (0) reflect exports or imports are more homogeneously distributed among a series of products (diversified).

<sup>48</sup> Higher values indicate lower diversification.

Table A1.2 Government programs for investment in logistics infrastructure, free zones area, industrial estates, latest technology, upgrade ports, airport facilities & new railway& road links (1996-2015)

<b>Programs</b>	<b>Year</b>	<b>Budget (Million OMR)</b>
Extension of existing and building of new industrial estates*	(1996-2000)	NA
Establishment of new roads, routine maintenance of existing roads, rehabilitation of roads & new internal roads	(1996-2000)	32.25
Maintenance and renovation of jetties at different ports	(1996-2000)	2.56
Improvement, development & Upgrading airports systems and establishment of new technology airports systems	(1996-2000)	6.06
Development of Sultan Qaboos port (phase I)	1996	0.77
Establishment of one stop station for investment services	2001	0.023
Expansion of Salalah Port	1997	100
Sohar port	1998	NA
Establishment of free trade zone area in Al Mazunah	1999	NA
Extension and establishment of fishing harbors	(2001-2005)	15.3
Establishment of new roads, routine maintenance of existing roads, rehabilitation of roads & new internal roads	(2001-2005)	81.02
Improvement, development, upgrading airports systems & establishment of new technology airports systems, buy spear parts	(2001-2005)	5.25
Expansion of Shinas port	2001	0.5
Establishment of free trade zone area in Salalah	2001	11
Development of Salalah port	(2006-2010)	41.7
Salalah new airport	(2006-2010)	294.1



Establishment of authority of Ports	(2006-2010)	NA
Establishment of Oman dry-dock company	2006	NA
The establishment of a national joint-stock companies to manage ports	(2006-2010)	NA
Establishment of Duqm port	2007	775
Establishment of free trade zone area in Sohar	2010	NA
Establishment of free trade zone area in Duqm **	2011	NA
Sohar regional airport	(2011-2015)	56.3
Duqm regional airport	(2011-2015)	58.2
Ras Al Had regional airport	(2011-2015)	32.6
Construction of cargo building at Muscat and Salalah airports	(2011-2015)	70.0
Construction of national railway network	(2011-2015)	7.7 (billion OMR)
Salalah new airport	2011	NA
Construction of supply building at Muscat and Salalah airports	(2011-2015)	30.0
Construction of Dry Dock at Duqm	2011	63.0
Khasab port development	(2011-2015)	2.4
Shinas port development	(2011-2015)	12.0
Rehabilitation works at Muscat international airport	2011	0.35
Development of Salalah port	2011	5.7
Construction of departure terminal in Muscat international airport	2011	706.3
construction of Hasik port for receiving fast ferries	(2011-2015)	40.0

*Source: Author's own elaboration from eight five-year development plans (1996-2015) documents*

**Notes:**

\* Currently there are seven Industrial Estates operated by the Public Establishment for Industrial Estates (PEIE) which was established in 1993.

\*\* Duqm free trade zone area has a unique location and has been developing as international trans-shipment hub and logistic center (Stalinska, 2014).

Table A1.3 Government programs on Human Capital Development at transport and logistics (1996-2015)

<b>Programs</b>	<b>Year</b>	<b>Budget (Million OMR)</b>
Training the staff of the directorate general of roads	(1995-2000)	0.150
Qualification of Omani staff in civil aviation	1996	0.25
Training the staff of the directorate general of roads	(2001-2005)	0.28
Training program for Omanis in driving and operation of heavy vehicles	(2001-2005)	NA
Rehabilitation Omani cadres in the fields of aviation and meteorology	(2006-2010)	NA
Qualification of Omani staff in civil aviation	2011	0.09
Establishment of centers for training in each of the port of Salalah and Sohar	(2006-2010)	NA
Training the staff of the directorate general of roads designs	(2006-2010)	NA
Training workforce to operate new airports	(2011-2015)	8.5
Training ten Omanis air controllers annually	2011	0.003
Training cadres in aviation	2011	0.08

*Source: Author's own elaboration from eight five-year development plans (1996-2015) documents*

Table A1.4 Number of qualified graduates in Maritimes affairs & logistics sector in 2015

Specialization	Degree				
	Diploma	High diploma	Bachelor degree	Master degree	Doctorate
Maritime Navigation	42	3	28	1	0
Business Information & Logistics Management	6	3	0	0	0
Transport and Technology Operations	0	0	0	1	0
International Legal Commercial Transaction & Logistics	0	0	0	18	0
Logistics	0	0	0	1	0
Coastal Engineering & Port Development	0	0	0	1	0
Air Transport Administration	0	0	0	1	0
Navigation & Ports Administration	1	0	0	1	0
Transportation & Freight Management in Ports	1	0	0	0	0
Procurement, Logistics & Supply Chain Management	0	0	1	1	0
Administration of Trade Logistics & International Transport	0	0	40	0	0
Logistics Management	0	0	16	0	0
Maritime Transport & Maritime Science Technology	0	0	29	0	0
International Transport Administration	0	0	0	1	0
Shipping & Transportation	0	0	0	4	0
Logistics & Supply Chain Management	0	0	2	0	0
Maritime Engineering	4	1	70	0	0
Aviation Power Engineering	43	0	0	0	0
Aviation Management	0	1	80	0	0
Airport Management	0	0	169	1	0
Logistics Management	38	0	9	0	0
Shipping, Transportation & Port Management	154	1	281	3	0
Maritime Engineering	26	0	10	0	0

Maritime Navigation (Deck Officer)	11	0	149	0	0
Aviation Electronic Engineering	98	0	0	0	0
Export Management	3	0	0	0	0
Communications / Marine Radar	0	0	0	0	0
Skipper Depths of Fishing Vessels (Water Unlimited)	10	0	0	0	0
Mechanic Fishing Vessels Deep (Water Unlimited)	10	0	0	0	0
<b>TOTAL</b>	447	9	884	35	0

*Source: Ministry of man power and ministry of education*

Table A1.5 Names and numbers of international exhibitions & promotion campaigns to promote export and investment at Oman (1998-2013)

SL	Name of The Fair	Place/Country	Date of Participation
1.	Dar-Es-Salaam International Trade Fair (DITF) (For 2 Years)	Dar-Es-Salaam, Tanzania,	02/07/1998 to 10/07/1998 29/06/2001 to 08/07/2001
2	Middle East Exhibition	Sana, Yemen	3 <sup>rd</sup> April 1998
3	GCC Mobile Exhibition	All GCC Countries	April & May 1999
4	GCC Exhibition '99	Almaty, Kazakhstan	11/05/1999 to 15/05/1999
5	Project Lebanon '99	Beirut, Lebanon	18/05/2000 to 22/05/2000
6	INDEX '99		
	International Furniture and Interior Design Exhibition	Dubai, UAE	06/10/1999 to 10/10/1999
7	'IETF' 99 – India Engineering Trade Fair	New Delhi, India	12/12/1999 to 17/12/1999
8	3rd Yemen Commercial International Exhibition	Sana, Yemen	20/05/2001 to 26/05/2001
9.	21st Al Khartoum International Exhibition	Sudan	18/01/2004
10	Dubai International Humanitarian Aid & Re-Development Conference & Exhibition (Dihad 2004)	World Trade Centre, Dubai	6th – 8th April 2004
11	Kenya – The Gateway to Africa – 2004	Nairobi, Kenya	6th to 9th May 2004
12	1st Aden International Exhibition	Aden, Yemen	27th to 4th April 2006
13	International Boston Seafood Show (For 5 Years)	Boston, USA	11 <sup>th</sup> to 13 <sup>th</sup> March 2007 24 <sup>th</sup> to 26 <sup>th</sup> February 2008 15 <sup>th</sup> to 17 <sup>th</sup> March 2009 14 <sup>th</sup> -16 <sup>th</sup> March 2010

				20 <sup>th</sup> - 22 <sup>nd</sup> March 2011
14	Anuga Food Exhibition		Cologne, Germany	13 <sup>th</sup> to 17 <sup>th</sup> October 2007
15	The INTRADE Malaysia 2009 exhibition		Kuala Lumpur, Malaysia	10 <sup>th</sup> – 12 <sup>th</sup> November 2009
16	European Seafood Exposition (For 3 Years)		Brussels, Belgium	28 <sup>th</sup> - 30 <sup>th</sup> April 2009 27 <sup>th</sup> -29 <sup>th</sup> April 2010 3 <sup>rd</sup> – 5 <sup>th</sup> May 2011
17	Sourcing at MAGIC 2011 (Garments & Textile show)		Las Vegas, USA	13 <sup>th</sup> – 16 <sup>th</sup> February 2011
18	13 <sup>th</sup> MUSIAD International Trade Fair		Istanbul, Turkey	7 <sup>th</sup> - 10 <sup>th</sup> October 2010
19	International Exhibition of Stone Design and Technology (MARMOMACC) (For 5 Years)		Verona, Italy	29 <sup>th</sup> September – 2 <sup>nd</sup> October 2010 21 <sup>st</sup> – 24 <sup>th</sup> September 2011 26 <sup>th</sup> -29 <sup>th</sup> September 2012 25 <sup>th</sup> -28 <sup>th</sup> September 2013 24 – 27 September 2014
20	The FOOD ASIA 2012 EXHIBITION (For 2 Years)		Singapore	17 – 20 April 2012 8 – 11 April 2014
21	The Omani Products Exhibition (Every year in different country)		Riyadh, Saudi Arabia	24 – 27 December 2012 17 <sup>th</sup> – 20 <sup>th</sup> November 2013 (will be held in Qatar)
22	the International Building & Construction Exhibition (Building Tanzania Exhibition)		Dar-Es-Salaam – Tanzania	22 <sup>nd</sup> – 24 <sup>th</sup> February 2013

*Source: Public Authority for Investment Promotion and Export Development (Ithrad).*

Table A1.6 Names and locations of commercial representative appointed in main world markets

<b>Name of Commercial Representative</b>	<b>Address</b>	<b>Location</b>
Mrs. Shireen Abdul-Qadir Yousif Said	Commercial Attaché Embassy of Oman.	Washington, USA
Mr. Najib Tayara	President Vista International Trade	Miami, USA
Mr. Ejike Edward Okpa II	Okpa Company	Texas, USA
Mr. Emad Al Shakili	Director General Oman Economic with the Islamic Republic of Iran	Bandar Abbas, Iran
Mr. Joseph Stanom	Chairman of the board of Directors Zanoubia General Trading	Damascus, Syria
Mr. Jihad Anees Al Tannir	Managing Director, Arab Consultancy & Marketing	Beirut, Lebanon
Mrs. Rukia Abdulkadir	Asst. Managing Director Vision Africa Company	Ethiopia
H.E. Kamal Mahfoodh Al Obaidani	Honorary Consul OF Oman	Zimbabwe
Mr. Charles Kader Goore	Chairman, CKG Holding Group.	Ivory Cost
H.E. Ole Munch	Honorary Consul of Oman	Danmark
Mr. Holger Kohler	Berner Stieg	Hamburg, Germany:
H.E. Ms. Ana Maria De Lara	Honorary Consul of Oman in Spain	Madrid, Spain
Mr. Salem Moosa J. HASSAN	Namma Development Chairman	Paris, FRANCE
Dr. Marco Occhipinti	Via Antonio Canova 21	Milano, Italy
Mr. Youcef Fartas	Ecosave GmbH Sonnmattstr	Birr/ Switzerland
H.E. Boleta Senkiene	S.v Stepono	Vilnius, Lithuania
H.E. Louis K.C. Wong	Honorary Consul of Oman	Wong Chuk Hang, Hong Kong
H.E. Leonardo B. De Ocampo	RODEO Building, 802 West Service Road	Manila, Philippines
Mr. Mohamed Abdul Jaleel (Colin)	Managing Director MES Group of Companies	Cendex Centre, Singapore
Mr. Shaif Al Hakimi	General Manager Al-khaled For General Commercial Agencies	Sana'a, Republic of Yemen

Mr. Jialin Liu	Chairman New Century International Investment Development Group	Beijing, China
Mr. D. Paranthaman	Newry Sampreeti	Tamil Nadu, India
Mr. AK. TAREEN	B1 Mallika, 34 Pycrofts Garden Road	INDIA
Mr. Suhail B. AITayar	Khalid Bin Waleed Street	Jeddah, Saudi Arabia
Mr. Chupong Jeb Kanchanalak	7th Floor, Asia Sermkij Tower	Bangkok, Thailand
Mr. Graham C. Hornal	Managing Director The Quesbay Group	City beach, Australia
Mr. Andre'D Yalda	Managing Director Universal Trading Group	Le-sands, Aустaralia

*Source: Public Authority for Investment Promotion and Export Development (Ithraa)*



Table A1.7 Inviting foreign investors and match meetings organized by export development department (1998-2013).

<b>SL. NO</b>	<b>Details</b>	<b>Date</b>
1	Matchmaking meeting with ten OCIPED Representatives	08/12/1998
2	Matchmaking meeting with three officials of United Nations Procurement Offices	12/09/1999 to 13/09/1999
3	Matchmaking meeting with Leather Division of Senior Official of Hindustan Lever, India	02/09/2000
4	Matchmaking meeting with Marine Division Head of Hindustan Lever, India	28/10/2000 to 30/10/2000
5	Matchmaking meeting with Two Senior Officials from Ministry of Trade, Government of Iraq	15/12/2000 to 22/12/2000
6	Matchmaking meeting with Managing Director of Hallidon Marketing, India- Importer of 'Dates'	12/02/2001 to 14/02/2001
7	Matchmaking meeting with Mr. Suleiman Al Hilal of Al Hilal Ceramics and Hardware Ltd, Tanzania	22/09/2002 to 24/09/2002
8	Matchmaking meeting with 2officials Dahabshil Group, Somalia	27 <sup>th</sup> to 31 <sup>st</sup> December 2003
9	Matchmaking meeting with 3 officials from Sistech Italia, Italy	23 <sup>rd</sup> to 25 <sup>th</sup> May 2004
10	Matchmaking meeting with 2 officials from Singex, Singapore	01/06/2004
11	Matchmaking meeting with Delegation from Iran	11 <sup>th</sup> to 13 <sup>th</sup> December 2004
12	Matchmaking meeting with Delegation from Iran	20 <sup>th</sup> & 21 <sup>st</sup> February 2005
13	Matchmaking meeting with a buyer from Iraq	30 <sup>th</sup> April to 4 <sup>th</sup> May 2005
14	Matchmaking meeting with H.E. Alain Bedouma YODA, Minister of Health Burkina Paso	5 <sup>th</sup> & 6 <sup>th</sup> June 2005
15	Matchmaking meeting with Lion Dates Co. a buyer from India	30 <sup>th</sup> September - 2 <sup>nd</sup> October 2005
16	Matchmaking meeting with officials from Ministry of Trade, Iraq	31 <sup>st</sup> December 2005 to 3 <sup>rd</sup> January 2006
17	Matchmaking meeting with Mr. Ponudurai MD of Lion Dates Pvt. Ltd, India	3 <sup>rd</sup> - 5 <sup>th</sup> August 2006
18	Match Making Meeting with Mr. Oktay Esmael Zadeh, Iran	25 <sup>th</sup> - 27 <sup>th</sup> November 2006
19	Match Making Meeting with H.E. Alain Bedouma YODA, Minister of Health, Burkina Faso and his team of officials	4 <sup>th</sup> - 7 <sup>th</sup> June 2006

20	Matchmaking meeting with Mr. Ponudurai MD of Lion Dates Pvt. Ltd, India	February 2007
21	Matchmaking meeting with Mr. Oktay Esmaeil Zadeh, Iran	5th to 7th March 2007
22	Matchmaking meeting with Mr. Ponudurai MD of Lion Dates Pvt. Ltd, India	July, September, November 2007
23	Matchmaking meeting in Khartoum, Sudan	22 <sup>nd</sup> January 2008
24	Matchmaking meeting in Kuala Lumpur, Malaysia for Pharmaceutical (Asia Healthcare Forum)	10 <sup>th</sup> to 12 <sup>th</sup> March 2008
25	Matchmaking meeting between Italian delegation and Poly Products LLC & Al Khouth Steel Furniture	18 <sup>th</sup> March 2008
26	Matchmaking meetings with officials from Brigade Enterprises Ltd. India	18 <sup>th</sup> to 22 <sup>nd</sup> July 2009
27	Matchmaking meeting with the delegation from Libya in Muscat, as a part of OCIPED's market study in Libya	15 <sup>th</sup> November 2009
28	Matchmaking meeting between Omani Exporters & Libyan importers in Tripoli & Benghazi, as a part of OCIPED's market study in Libya	4 <sup>th</sup> and 6 <sup>th</sup> October 2009
29	Matchmaking meeting with a high-level delegation from Iran	25 <sup>th</sup> to 27 <sup>th</sup> April 2010
30	Matchmaking meeting with Mr. Hsieh, Association of Plastic Manufacturer Taiwan in Muscat	26 <sup>th</sup> & 27 <sup>th</sup> May 2010
31	Matchmaking meeting with Dr. Anukanth Anumanthan, President, USAILInc	28 <sup>th</sup> April 2010
32	Matchmaking meeting with Mr. Steve Bolson, President, Partners Management Group, New York	22 <sup>nd</sup> to 24 <sup>th</sup> October 2010
33	Matchmaking meeting with MR. Edward E. Okpa, Ociped Representative in Dallas, USA	4 <sup>th</sup> to 10 <sup>th</sup> June 2010
34	Matchmaking meeting in MUMBAI, INDIA, as a part of OCIPED's market study in India	25 <sup>th</sup> January 2011
35	Matchmaking meeting with MR. Edward E. Okpa, Ociped Representative in Dallas, USA	19 <sup>th</sup> to 24 <sup>th</sup> February 2011
36	Matchmaking meeting with delegation from Seychelles	1 <sup>st</sup> & 2 <sup>nd</sup> March 2011
37	Match meeting in India New Delhi, India, as a part of OCIPED's market study in India	12 <sup>th</sup> May 2011

38	Matchmaking meeting in MUMBAL, INDIA, as a part of OCIPED's market study in India	20 <sup>th</sup> October 2011
39	Match meeting between Omani Marble Cos and Mr. Rafael Alves, CEO, Opportunity International Business LLC, from USA	26 <sup>th</sup> to 30 <sup>th</sup> September 2012
40	MR. Naresh Bana's, Managing Director –BBV consultants LLC, PAIPED Representative in India	10 <sup>th</sup> – 12 <sup>th</sup> December 2012
41	Matchmaking meeting (final) in Chennai, INDIA, as a part of OCIPED's market study in India	11 <sup>th</sup> February 2013
42	Mr. Ike Nxedlana, Managing Director - Mabi Investments (Pty) Ltd, and PAIPED representative in South Africa	24 <sup>th</sup> – 27 <sup>th</sup> June 2013

*Source: Public Authority for Investment Promotion and Export Development (Ithraa)*

Table A1.8 Value of local and foreign investment at different industrial estates.

Name of industrial estate & FTZ area	Size of local investment (Million OMR)						Size of foreign investment (Million OMR)					
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015
Buraimi industrial estate	62.6	62.6	63.1	64.2	67.5	67.9	10.5	10.0	10.0	10.0	10.1	10.1
Duqm FTZ* (2011)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mazunah FTZ	1.0	NA	0.69	0.71	1.3	1.3	3.7	NA	4.3	4.6	1.0	1.5
Nizwa industrial estate	159.8	170.8	170.8	93.8	103.5	65.6	79.9	85.4	85.4	15.3	20.4	68.8
Raysut – Salalah industrial estate	56.6	64.0	81.0	93.8	194.6	217.3	8.3	6.0	4.3	10.1	27.7	30.4
Rusayl industrial estate	220.0	192.9	192.9	259.1	275.6	323.8	73	99.9	99.2	57.2	73.2	60.3
Salalah FTZ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sohar industrial estate	795.0	960.0	969.3	972.7	973.2	977.8	705	710.0	770.0	743.3	783.8	878.0
Sohar FTZ	NA	NA	NA	NA	NA	0.086	NA	NA	NA	NA	NA	0.12
Smail industrial estate	NA	NA	36.4	101.2	65.7	78.8	NA	NA	8.5	24.2	16.4	17.9
Sur industrial estate	738.2	678.7	709.4	711.0	747.0	400.8	527.1	600.0	1184.7	1184.8	825.6	900

Source: Public Establishment for Industrial Estates (PEIE)

Note: Duqm FTZ\* and Duqm industrial estate are still under construction and currently there are few investments existed.

Table A1.9 New logistics companies currently existed at different ports, free trade zone areas and industrial estates in Oman in 2015.

NO	COMPANY NAME
1	DHL Express
2	Zubair's Oman oil industry supplies services & power logistics
3	Seven Seas
4	Maersk Shipping Services
5	GHC Oman
6	Pentagon Oman
7	Oman Shipping Company
8	Bahwan Logistics Services LLC
9	Oman Integrated Logistics Services SAOC
10	Goal Logistics LLC
11	Spectra Gulf Logistics
12	Badri Logistics Services LLC
13	Oasis Logistics
14	Logistical United Trading & Contracting Services
15	Sea Navigation and Logistics
16	Elite Shipping & Logistics LLC
17	Resources and industrial & logistics LLC Equipment
18	Meteor Logistics Co., LLC
19	Interior Logistics Services LLC
20	Trans World Cargo Services Logistics & Trade LLC
21	Treasure Logistics Services LLC
22	Aramex Logistics LLC
23	Falcon Shipping & Logistics LLC
24	Road Safety Transport & Logistics LLC
25	Land & Sea Freight & Logistics LLC
26	Summit Logistics Services
27	The new route Logistics Co., LLC
28	Integrated solutions for transport & logistics LLC
29	Crystal Logistics Services LLC
30	Staff for Logistics Services Recommendation
31	Seventh Ocean for logistics and freight LLC
32	Prairie Logistics
33	Activity for logistics & Warehousing LLC

34	Guide for Logistics Services LLC
35	City Logistics Co. SAOC

*Source: Ministry of Manpower*

Table A1.10 Panel regression model output of general model (Fixed4).

Variable	Estimate	Std. Error	t-value	Pr(> t )
INS1	-2.3103e-02	1.4565e-02	-1.5863	0.11618
INF2	-1.8626e-02	1.0934e-02	-1.7035	0.09192*
MAC3	2.6315e-03	6.0901e-03	0.4321	0.66670
HEAL4	4.2579e-03	1.3129e-02	0.3243	0.74646
GDP	-1.7051e-08	1.7073e-08	-0.9987	0.32062
EXP	-8.7020e-05	3.2090e-04	-0.2712	0.78687
Total Sum of Squares	0.053022			
Residual Sum of Squares	0.046607			
R-Squared	0.121			
Adj. R-Squared	-0.045035			

Significant codes: \*\*\*(0.001), \*\*(0.01), \*(0.05)

Source: elaborated from panel regression model output from R software.

Table A1.11 Panel regression model output of general model (Fixed4a).

Variable	Estimate	Std. Error	t-value	Pr(> t )
INS1	-0.0261645	0.0142310	-1.8386	0.06921*
INF2	-0.0137426	0.0098230	-1.3990	0.16517
MAC3	0.0020252	0.0058795	0.3444	0.73130
HEAL4	0.0076836	0.0122010	0.6298	0.53042
Total Sum of Squares	0.053022			
Residual Sum of Squares	0.047227			
R-Squared	0.1093			
Adj. R-Squared	-0.035925			

Significant codes: \*\*\*(0.001), \*\*(0.01), \*(0.05)

Source: elaborated from panel regression model output from R software.

Table A1.12 Panel regression model output of general model (Fixed3a).

<b>Variable</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>t-value</b>	<b>Pr(&gt; t )</b>
INS1	-0.0267881	0.0140484	-1.9069	0.05963*
INF2	-0.0129510	0.0095050	-1.3625	0.17632
HEAL4	0.0087528	0.0117435	0.7453	0.45795
Total Sum of Squares	0.053022			
Residual Sum of Squares	0.047288			
R-Squared	0.10815			
Adj. R-Squared	-0.026108			

Significant codes: \*\*\* (0.001), \*\* (0.01), \* (0.05)

*Source: elaborated from panel regression model output from R software.*

Table A1.13 Panel regression model output of general model (Fixed2a).

<b>Variable</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>t-value</b>	<b>Pr(&gt; t )</b>
INS1	-0.0269741	0.0140129	-1.9249	0.05726*
INF2	-0.0108609	0.0090604	-1.1987	0.23365
Total Sum of Squares	0.053022			
Residual Sum of Squares	0.04757			
R-Squared	0.10282			
Adj. R-Squared	-0.021256			

Significant codes: \*\*\* (0.001), \*\* (0.01), \* (0.05)

*Source: elaborated from panel regression model output from R software.*



Table A1.14 Panel regression model output of general model (Fixed1a).

<b>Variable</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>t-value</b>	<b>Pr(&gt; t )</b>
INS1	-0.036042	0.011823	-3.0485	0.002979**
Total Sum of Squares	0.053022			
Residual Sum of Squares	0.048298			
R-Squared	0.089108			
Adj. R-Squared	-0.025953			

Significant codes: \*\*\*(0.001), \*\*(0.01), \*(0.05)

*Source: elaborated from panel regression model output from R software.*

## APPENDIX 2

Countries like Indonesia, Malaysia, Chile, Brunei Darussalam and Botswana worked on enabling frameworks and they proceeded well in the diversification process. The experience and efforts of six countries (*Botswana, Chile, Indonesia Malaysia, Norway and South Africa*) are presented below.

**BOTSWANA** is a small tropical/subtropical and landlocked southern African country and one of the world's largest producers of diamonds. The diamond-mining sector accounts for almost one-third of its GDP. It also produces coal, soda ash, copper-nickel matte and gold. Botswana is the great exception of postcolonial African history (Samatar, 1999) as after its independence in 1966, its GDP per capita was 283 USD and its GDP was estimated at 387.6 million pula, of which more than 40 percent was contributed by agriculture, with cattle raising and beef production being the main economic activities. The second largest contributor was the services sector, including banks, insurance and business services (Siphambe, 2005). Over the past few decades, Botswana has been considered among the best performing economies in the world. That is because it has succeeded in increasing its per capita GDP by an average of about 7 percent annually since 1960 (Fosu, 2011), and its economy moved from being one of the poorest in Africa and in the world at independence in 1966 to an upper-middle economy by 1998. According to Acemoglu et al. (2002), Botswana had the highest economic growth in the world between 1965 and 1998 (Elsgard, 2014).

Furthermore, it has one of Africa's highest sovereign credit ratings as it sets up mechanisms to ensure that a significant part of its mineral resource revenue is allocated for investment in health and education. It also invests a portion of its resource wealth in its Pula Fund, which serves as a buffer against price volatility and preserves a share of the rents from diamond exports for future generations. Botswana has also made very significant progress in terms of the maturity of its democracy, good governance, strong institutional base, and good physical and social infrastructure. The government has managed its resource rents better than might have been expected, developed stronger institutions, experienced little rent-seeking or corruption, and has encountered little social conflict (Crain, 2010). Thus, it was classified as the

African continent's least corrupt country and it is considered as one of the few countries that have managed to turn its resource into a blessing rather than a curse (Sekwati, 2010).

After the discovery of diamonds in 1967, significant structural changes took place in the economy, with the share of agriculture declining rapidly (from 42.7 percent in 1966 to 20.7 percent in 1975/76), while the share of mining increased rapidly in the years that followed (increased from 17.5 percent in 1975/76 to 33.9 percent in 1995/96, and 40.7 percent by 2005) (Acemoglu et al., 2001). During 2006-2007, diamond production increased and the mining sector accounted for 75 percent of national export earnings, 42 percent of GDP and 48 percent of government revenues. Table A2.1 shows the percentage of sectoral distribution in GDP in Botswana from 1966 to 2013.

Table A2.1 Percentage of sector shares in GDP of Botswana (1966-2013)

<b>Sector</b>	<b>1966</b>	<b>1975/76</b>	<b>1985/86</b>	<b>1990/91</b>	<b>1995/96</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2013</b>
<b>Agriculture</b>	42.7	20.7	5.6	4.8	4.1	2.6	1.8	2.9	2.3
<b>Mining</b>	NA	17.5	48.9	39.5	33.9	40.9	40.7	25.5	22.4
<b>Manufacturing</b>	5.7	7.6	3.9	4.7	4.8	3.8	3.5	5.9	5.2
<b>Water &amp; Electricity</b>	0.6	2.3	2.0	1.7	2.1	2.2	2.2	0.4	-0.2
<b>Construction</b>	7.8	12.8	4.6	7.6	6.2	5.2	4.5	5.4	6.3
<b>Trade, Hotels &amp; Restaurants</b>	9.0	8.6	6.3	5.9	9.9	9.4	9.1	14.0	14.9
<b>Transport, Post &amp; Telecommunications</b>	4.3	1.1	2.5	3.2	3.6	3.4	3.2	4.8	5.5
<b>Banks, Insurance &amp; Business</b>	20.1	4.7	6.4	8.8	11.2	10.0	10.0	12.4	13.9
<b>General Government</b>	9.8	14.6	12.8	13.5	15.4	14.8	16.6	14.3	14.8
<b>Social &amp; Personal Services</b>	NA	2.8	2.5	4.2	6.6	3.9	4.0	5.6	6.1

*Source: Sekwati, (2010), Botswana Annual Report (2009) and Statistic Botswana*

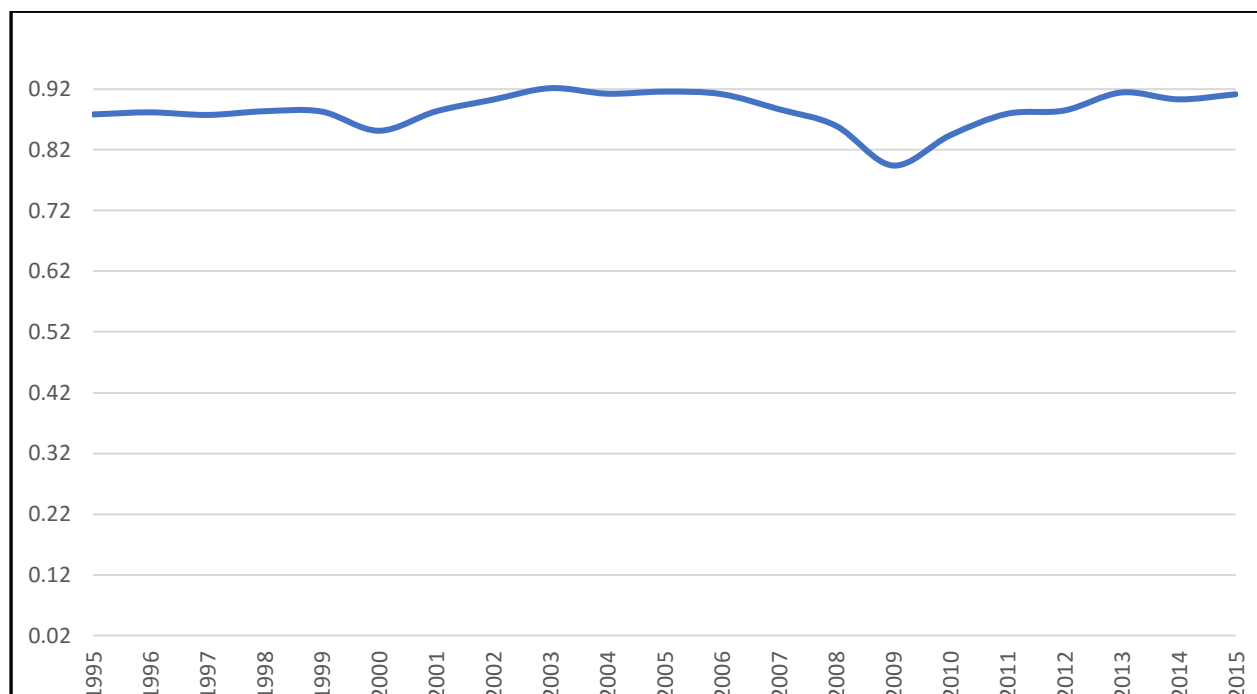
In recent years, the government has been trying to promote value addition and beneficiation within the diamond-mining industry by facilitating downstream activities, including manufacturing diamond jewelry and retailing. Thus, the government provided impetus for the growth of secondary business sectors such as banking, security, and information technology. Moreover, it promoted eco-tourism through conservation and developing its extensive nature

preserves. After several years of implementing different policies, strategies and programs for economic diversification (Industrial Policy (1974), Tourism Policy (1990), National Policy on Agricultural Development (1991), Local Procurement Program (1997), policy on Small, Medium and Micro Enterprises (SMMEs) (1998), Privatization Policy (2000)), Botswana implemented a three-pronged approach. First, it aimed at pursuing economic diversification to render it less dependent on the volatility of the mining sector. Second, it de-linked expenditure from revenues and developed other expenditure smoothing mechanisms in order to render it less susceptible to alterations in revenue relating to the price fluctuation of its resource. Finally, it invested surplus revenues for the use of future generations (Mejia and Castel, 2012).

In order to promote economic diversification, the government took several steps including the creation of the Business and Economic Advisory Council (BEAC) in 2005. The council was mandated to identify constraints hindering economic diversification; to formulate a key strategy and action plan to overcome those constraints; and to identify projects for Botswana to move forward (Sekwati, 2010; and Botswana Excellence, 2009). The Government has identified areas to focus on for enhanced economic growth and diversification and six “Hubs” were created. The first hub was the education Hub that aimed to increase the quality and relevance of education at all levels. The second hub was the innovation Hub that aimed to create a platform for local and foreign businesses engaged in R&D and knowledge-intensive activities. The third hub was the Agriculture Hub that aimed to encourage participation in farming, mentor farmers on agribusiness skills, and endeavor to commercialize the agricultural sector in an effort to make the industry more sustainable. The fourth hub was the diamond Hub that aimed to establish a diamond trade center for rough/polished diamonds and to promote sustainable downstream activities such as polishing and jewelry making. The fifth hub was the medical Hub that aimed to identify projects and programs that will make Botswana a center of excellence in the provision of healthcare services. The sixth hub was the transport Hub that aimed to re-position the country as a regional hub for rail, road and air transport, and to support a competitive transport and logistics industry (OECD, 2010).

The implementation of the action plan for diversification in 2008 focused on: (1) creating a business-friendly environment; (2) providing the structures and incentives that serve to improve Botswana’s business capacity through training and business development efforts; (3) addressing policy and institutional matters such as ensuring the stability of the financial sector; (4) providing

instruments of support for diversification initiatives including the promotion of privatization; and (5) creating projects to drive diversification through the support of agriculture and tourism among other sectors (Sekwati, 2010). Therefore, Botswana is often cited as an exception to the “resource curse” (Brand, 2011, Acemoglu et al., 2003; and Torvik, 2009). Although Botswana succeeded in avoiding the resource curse and the government has strived to diversify its economy away from diamond-mining, it is still undiversified as the diversification index is high (0.91 in 2015) and its annual decrease rate was positive (0.23) during the period 1995-2015, as Figure A2.1.



*Source: UNCTAD STAT*

Figure A2.1 Botswana diversification index (1995-2015)

**CHILE** relied heavily on the extractive industries and agriculture. It is the world's leading producer of copper (it has 38 percent of the world's copper reserves) and a leading supplier of molybdenum, rhenium, silver, gold, iron and natural nitrates. Table A2.2 shows the share of the mining sector growth through the period 1960-2015.

Table A2.2 Percentage of sector shares in GDP of Chile (1960-2015)

Sector	1960	1970	1980	1990	2000	2005	2010	2015
<b>Agriculture &amp; forestry</b>	10.1	6.5	6.7	6.7	4.3	3.2	2.7	2.9
<b>Fishery</b>	0.4	0.3	0.5	1.5	1.2	1.0	0.5	0.6
<b>Mining</b>	8.0	8.8	8.6	12.6	7.0	15.7	16.0	9.0
<b>Manufacturing industry</b>	21.8	25.5	21.4	18.5	17.6	14.9	10.8	10.9
<b>Construction</b>	4.6	5.1	5.2	5.6	7.1	6.1	6.8	7.5
<b>Services</b>	55.1	53.8	57.6	55.1	62.8	59.1	63.2	69.1

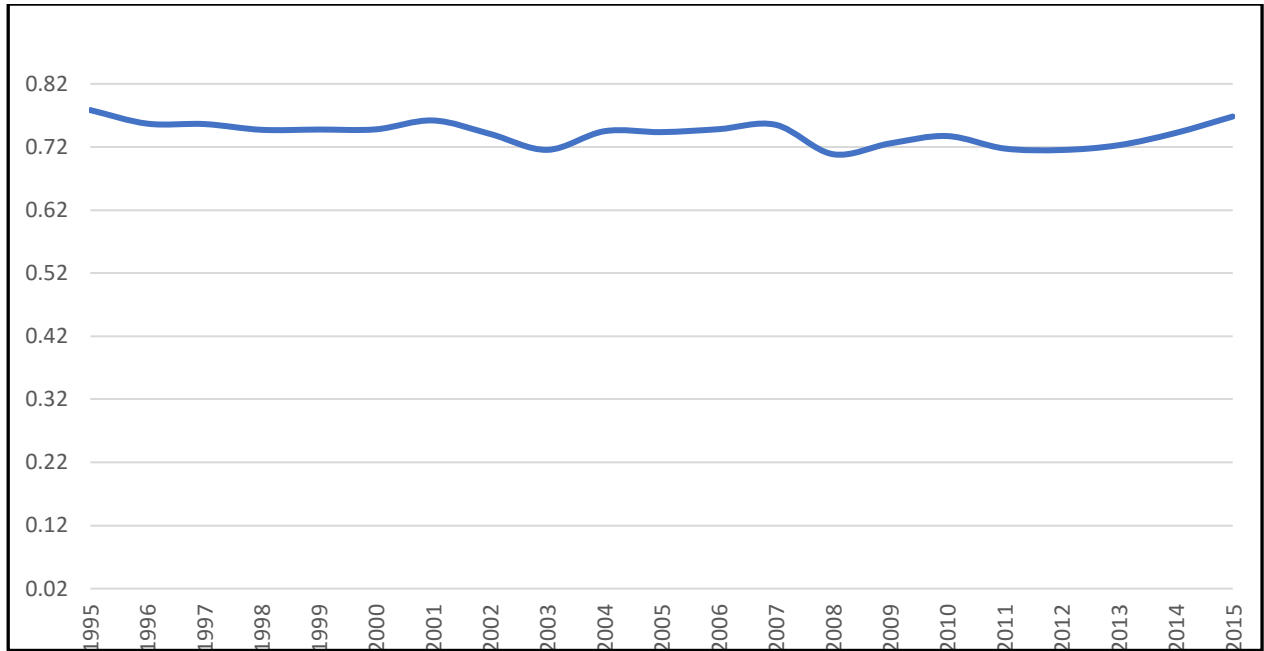
*Source: Chile Central Bank*

Chile has made great strides in diversifying its economy and is regarded as one of the world's more successful developing countries. Policy makers have enabled it to develop competitive agriculture and fishing industries. Chile's approach to industrial policy, productivity and growth in an initial phase focused on import substitution, high levels of government intervention, and basic price controls. After the second half of the 1970s and the implementation of liberal and market-friendly reforms, Chile experienced the first signs of government efforts to diversify through projects that openly steered away from the extractive industry; this was the case in the salmon, wine, pork and blueberries industries (Miguel Benavente, 2006 and Katz, 2006). It was able to diversify its production composition sectors and a range of resource-based exports to include new and more sophisticated products. In this regard, the share of agriculture and forestry in total Chilean GDP decreased from 10.1 percent in 1960 to 2.9 percent in 2015. The share of mining products was not affected significantly for the same period, but the share of the manufacturing sector decreased by half (Table A2.2). From 1970 to 2008, exports of mining products declined from 85.5 percent to 58.7 percent, while the share of manufactured goods in total exports increased from 11.6 percent to 35.3 percent (Esanov, 2011).

A democracy restoration had been conducted in 1990, followed by a third set of economic reforms and high levels of growth that averaged 6.7 percent in the 1990s, partly due to high

capital inflows, an extensive program of free trade agreements, important reforms in the financial sector, and the strengthening of macroeconomic policies (Varas, 2012). Acknowledging the causal relationship between growth and export diversification, Chile's industrial policy in the 2000s was marked by a fourth generation of reforms geared towards efficiency gains, diversification and innovation. Thus, the National Council on Innovation and Competitiveness (NCIC) was created with the role of implementing a new national strategy that would put in place a set of horizontal and vertical policies in pre-defined industry clusters with set goals and deadlines. Varas (2012) offered five points that they considered as fundamental obstacles to economic diversification in Chile and needed to be improved: (1) R&D spending, (2) Human capital, (3) Small and Medium Enterprises (SMEs), (4) Birth/death ratio and (5) Institutional coordination. Chile also sponsors investment in high-level human capital by funding scholarships for study abroad (Sinnott et al., 2010). Chile's approach to export diversification was different in terms of the tools it used, particularly the use of export subsidies and its reliance on public-private partnerships to help establish and develop new firms. Chile also identified and worked on important sectors having comparative advantage, strengthening technical skills and encouraging innovation.

The country's diversification strategy, like that of Malaysia, took advantage of the focus on SMEs development, which was undertaken by specialized development agencies (e.g., Production Development Corporation (CORFO), The Agricultural and Animal Husbandry Development Institute (INDAP), and the Technical Cooperation Service (SERCOTEC) that oversaw coordination of state assistance to SMEs, monitored their performance over time, and facilitated financial intermediation for their establishment and growth as needed (Al Darwish et al., 2015; Goldberg and Palladini, 2008; and Lundgren et al., 2013). Data from the Chile diversification index during (1962-2010) in Figure A2.2 shows that the annual decrease rate of the diversification index was (-0.03) percent and the economy was able to diversify during the period 1995-2015 although the value of diversification started to increase in 2011.



*Source: UNCTAD STAT*

Figure A2.2 Chile diversification index (1995-2015)



**INDONESIA** is a vast maritime archipelago situated on the Equator, slightly above Australia. It consists of 17,000 islands and is the leading global exporter of thermal coal and the source of several natural resources (i.e., geothermal reserves, Liquid Natural Gas (LNG) reserves and minerals such as bauxite, coal, copper and gold). The Indonesian economy has undertaken various reforms to improve competitiveness and has expanded strongly during the last five decades, becoming the fourth largest economy in east Asia. The sectoral composition of Indonesia's economy has gone through a series of changes during the period 1965-2014. As can be seen from Table A2.3 the economy was highly dependent on agriculture and then moved to diversify its economy through the development of the manufacturing industry as the role of the mining and quarrying sector declined.

Table A2.3 Percentage of sector shares in GDP of Indonesia (1965-2014)

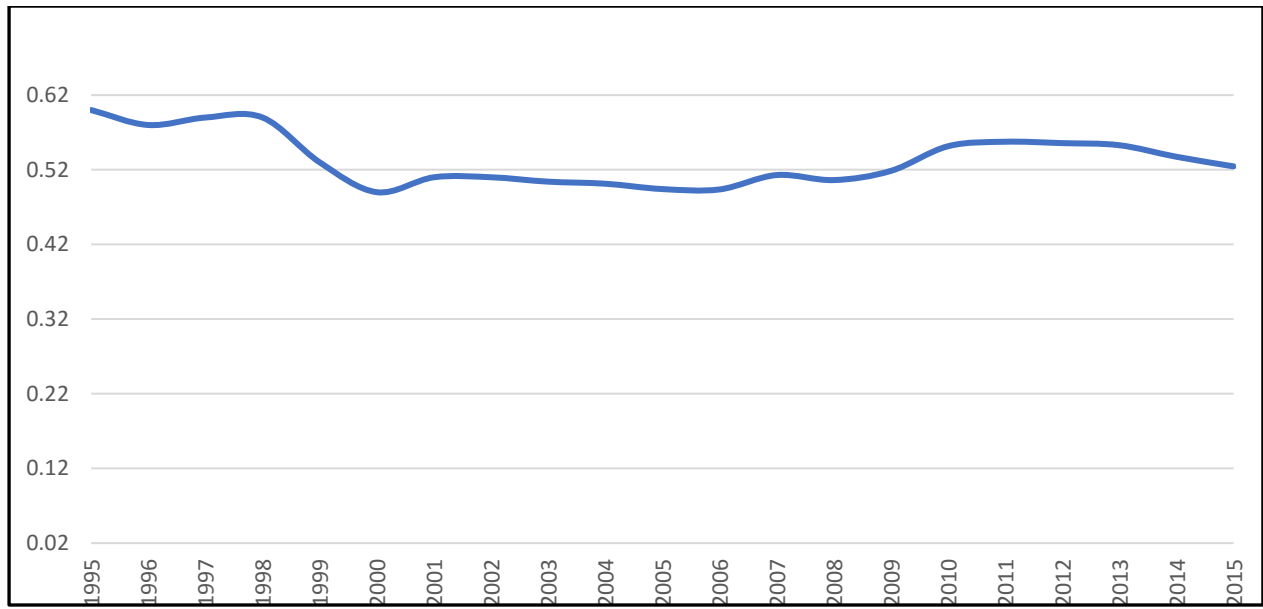
<b>Sector</b>	<b>1965</b>	<b>1980</b>	<b>1996</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2014</b>
<b>Agriculture</b>	51	24	16	16	13	15	14
<b>Mining &amp; Quarrying</b>	NA	17	8	12	11	11	10
<b>Manufacturing Industry</b>	8	13	26	28	27	25	24
<b>Construction</b>	NA	10	10	6	7	10	10
<b>Services</b>	36	36	40	38	42	39	42
<b>Total</b>	100	100	100	100	100	100	100

*Source: Statistics Indonesia*

According to Elias and Noone (2011), Indonesia's manufacturing sector has focused on food, tobacco and textiles, rather than more complex manufactured goods (e.g. mechanical and electronic products). Indonesia's economic development can be divided into three periods. The first (1965-1975) began with the stabilization of its socio-political situation and openness to foreign capital. In the second period (1975-1981), using oil profits, the government built the economy in a few basic sectors: infrastructure, basic industries, agriculture and education. The third period (1982-1997) was when a decline in demand for oil drove prices down dramatically and the state revenues fell, leaving the country facing an economic crisis. Later, Indonesia made economic reforms and implemented an import substitution policy, as well as policies to attract foreign capital in the manufacturing exports field. In addition, the country offered several incentives to promote exports, such as setting up free trade zones, providing tax incentives to

firms and industries, and reducing barriers to trade (tariff and non-tariff) and lifting protections on domestic industries (Aswicahyono and Manning, 2011).

The World Bank (1993) reported that by the early 1990s, the Indonesian economy had become widely regarded as one of the East Asia's so-called "miracle" economies (Rosser, 2007, p.39). The United Nation Conference in Trade and Development (UNCTAD, 2010) provides data on Indonesia's exports and its concentration index by using a sample of 232 to 257 products. It showed a moderate level of concentration between 1995 and 2008, while export products had a moderate concentration index, which indicated the export of quite diverse products. Since then, the government has relaxed restrictions and promoted export-oriented policies, and heavily invested in infrastructure. FDI has increased and investors from China, India, Russia, and South Korea have been attracted. This contributed to higher diversification in manufacturing industries as they invested in labor-intensive manufacturing activities. A fundamental element of its diversification strategy, however, was a large exchange rate devaluation. According to Rosser (2007, p.40), Prawiro (1998) has explained Indonesia's success in overcoming the resource curse during the 1970s and early 1980s in terms of the strong influence of technocratic ministers on economic policy, particularly macroeconomic and fiscal policy. Indonesia's experience also relied on using oil revenues to tap, enhance, and develop other sectors, such as agriculture and the country's aircraft industry (Al Darwish et al., 2015). Indonesia's diversification index during 1995-2015 shows very good progress in reduction when it decreased from 0.60 in 1995 to 0.51 in 2010 (Figure A2.3). The annual decrease rate of the diversification index was (-0.60) percent.



*Source: UNCTAD STAT*

Figure A2.3 Indonesia diversification index (1995-2015)

**MALAYSIA:** on 31 August 1957, Malaysia became independent, and in 1963 Singapore, Sarawak and Sabah joined Malaya to form the Federation of Malaysia. In the first years of independence it had a dispute with Indonesia and in 1965 Singapore withdrew from the federation. The Malaysian economy was very simple and depended on tin (discovered in Malaysia in the seventeenth century), rubber (planted by British in their acquisition time) and palm trees (for the extraction of palm oil). Over time, Malaysia has become the main exporter of these three commodities (tin, rubber and palm oil). Nowadays Malaysia is an example of an economy endowed with natural resources that has been successful in diversifying its economy over the past forty years of independence. The economy has shifted from being one dominated by agriculture and the exports of agricultural commodities (especially rubber) to a strong manufacturing sector that is both technologically advanced and well connected with the global market (Nambiar, 2010).

It is important to mention that existence of a prosperous private sector and the delayed production of oil commercially, assisted Malaysia in diversifying its economy easily. At the same time, Malaysia also targeted SMEs development (Al Darwish et al., 2015). Malaysia's diversification experience involved active intervention on the part of the state to enhance the growth in sectors it deemed important, developing national oil companies into global firms, saving to invest and applied the import-substitution strategy in heavy industry (Noh, 2013). Performance Management and Delivery Unit (PEMANDU) was formally established in 2009 as part of the Prime Minister's Office to support the implementation of Malaysia's National Transformation Program (to oversee implementation and assess progress). It aims to transfer the Malaysian economy into a high-income economy by 2020, through transforming public services and attracting foreign investment into the private sector. It does this by acting as an in-house government consultancy, supporting ministries in developing and implementing new solutions to transform the Malaysian public services.

In order to achieve high rates of saving the government intervened through a mandatory publicly managed retirement fund in which all employees were required to contribute ten percent of their income to which the employer added twelve percent of the employee's salary. Even in 2010, resource-based products represented 42 percent of value-added manufacturing; the country sustained a high and relatively stable savings rate, and made massive investments in land development and replanting schemes to expand and modernize the production of rubber and palm

oil. It also made heavy investments in technology and infrastructure, especially in the areas of energy, communications and transport (Gelb, 2010). Additionally, Malaysia used public agencies to enforce a continuous retraining and skills upgrading of employees. The Human Resources Development Fund was set up in 1993 and has been financed by a levy on employers (about one percent of each employee's salary). The structural changes of the Malaysian economy from (1971-2011) are shown in Table A2.4.

Table A2.4 Percentage of sector shares in GDP of Malaysia (1971-2014)

Sectors and their Share of GDP (%)	Years									
	1971	1975	1980	1985	1990	1995	2000	2005	2010	2014
<b>Agriculture, forestry &amp; fishing</b>	26.1	26.1	21.4	18.3	15.2	12.8	8.6	8.4	10.1	8.9
<b>Mining &amp; quarrying</b>	23.2	17.0	17.2	17.3	11.8	6.2	9.5	13.3	10.7	9.9
<b>Manufacturing</b>	11.3	14.4	16.6	16.7	24.2	26.3	28.7	27.7	25.9	23.9
<b>Construction</b>	5.0	4.6	5.6	5.7	3.4	6.2	3.9	3.2	3.1	3.4
<b>Services</b>	34.4	37.9	38.8	41.6	45.4	48.5	49.3	47.4	51.2	53.9
<b>Total</b>	100	100	100	100	100	100	100	100	100	100

*Source: Malaysia economic Statistics time series (2015)*

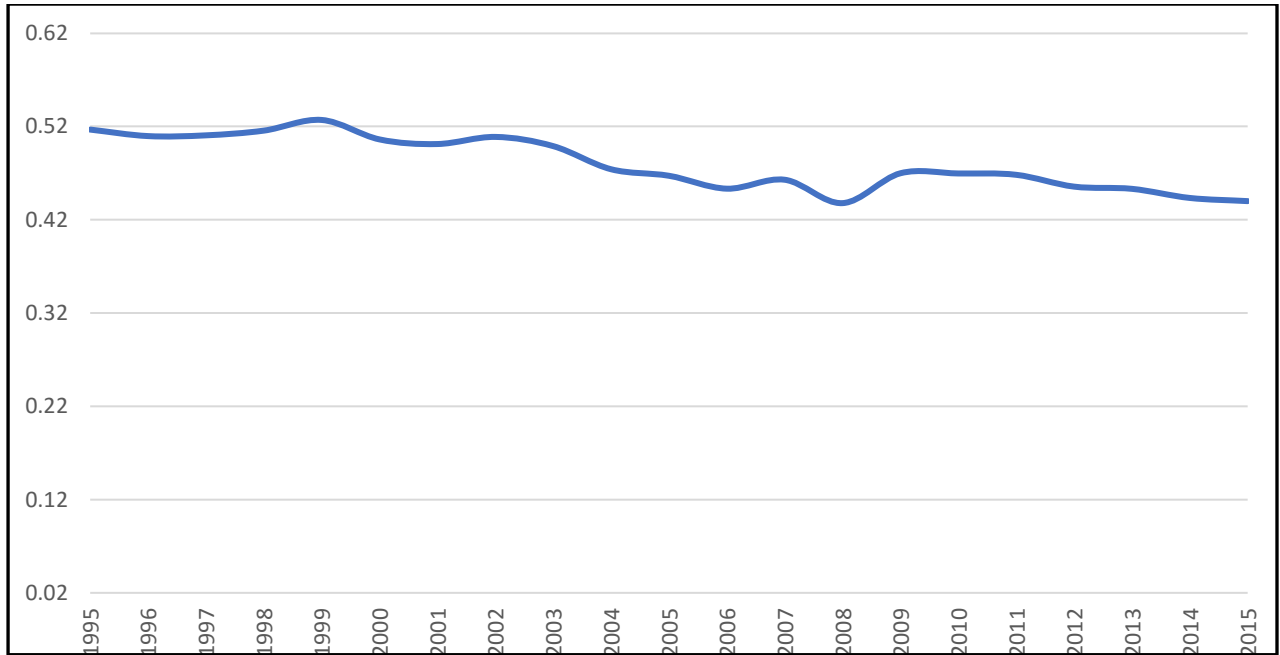
As Table A2.4 shows, the Malaysian economy has diversified beyond agriculture and primary commodities, so that manufacturing and services sectors account for a much larger share of GDP (25.5 percent and 54.8 percent respectively). The share of agriculture in the GDP decreased from about 26 percent in 1971 to about 12.8 percent in 1995, and to 8.9 percent by 2014. The manufacturing share of GDP increased from 12.4 percent in 1971 to 26 percent in 1995 and 23.9 percent in 2014. The share of services contributing to GDP also increased. Export diversification proceeded at a fast pace as Malaysia's export structure changed dramatically over the past 50 years. Exports of commodities, tin, rubber and later palm oil dominated its exports in the 1950s and 1960s.

The export-led industrialization drive from the 1970s raised the share of manufactured exports to about 81 percent by 2005. Exports of electronics and electrical products accounted for a sizable share of total manufactured exports. Malaysia has also used revenue from oil and gas to develop other sectors, including the petrochemicals industry and the services associated with the oil and gas industry (Yusof, 2012). In addition, the revenue from oil and gas was partly utilized to finance the development expenditure of the federal government, subsidize the price of gas to industries, and restructure the economy away from agriculture and towards more

industrialization. Revenue from this sector also helped finance the growth of education to meet the needs of an industrializing economy.

Yusof (2012) concluded that the Malaysian economy has shown that diversification played a key part in sustaining its growth. It was a key strategy for economic growth and structural changes. Diversification has reduced the contribution of agriculture to the GDP and as a source of revenue. An export-led growth for manufacturing has diversified Malaysia's exports, and manufactured exports now account for more than 70 percent of total exports. The diversification process is still being pursued through the exploitation of natural resources as well as moving up the value-added chain in manufacturing. The government recognized that there is a need to move up the value chain to a more knowledge-based economy. Beside those strategies, Malaysia relied on export promotion policy thus allowing the manufacturing sector to grow tremendously and become internationally competitive especially in information technology products, electrical and electronic goods.

Consequently, the government maintains investments in such key sectors as banking, media, automobiles, and airlines. New industries such as computer animation, digital games, mobile applications, interactive television and digital archiving are among the economic activities that will emerge in Malaysia in the years to come as part of the economic diversification program that stresses knowledge-based development. To achieve all of this, Malaysia used a multi-faceted approach: (1) it selectively encouraged FDI in the exports sector, especially in electronics; (2) it focused on human and capital development through training and skill-upgrading of workers. (3) it relied on free trade zones; (4) offered lower taxes; and (5) provided a stable business environment and an educated workforce with competitive wages (Cherif and Hasanov, 2014). Figure A2.4 shows that the Malaysian economy was able to diversify as its index fell from 0.52 in 1995 to 0.44 in 2015 with an annual rate of -0.76 percent.



*Source: UNCTAD STAT*

Figure A2.4 Malaysia diversification index (1995-2015)

**NORWAY** is the largest oil producer and exporter in Europe and one of the world's most prosperous countries. It is one of the most prominent examples of countries that seem to have been able to avoid the resource curse. It is at the top of the international league tables for governance and economic performance (Frankel, 2012). Norway's development was characterized by continuous development of new resource-based industries since 1950s as shown in Table A2.5 and it had exported traditional resources like fish, metal, food, timber, animal skins and furs, and coal. These remained significant exports at the end of the twentieth century, aided by continuous innovations in production and marketing using emerging new technologies, such as remote control mining, futures markets, and electronic selling.

Table A2.5 Development of resource based industries in Norway (1850-2000)

Period	New Resource Based Industries
1850	Fisheries Timber Mining
1850-1900	Wood processing
1900- 1950	Electricity (from 1900) Metals Fertilizers Mining (1880-1920)
1950 – 2000	Frozen fish (1950s) Fish oil/meal (1950s) Iron/steel and coal(1960s) Oil (1970s) Petrochemical industries(1980s) Fish farming, marine resources (1980s) Natural gas (1990s, 2000 LNG) Solar cells(silicon) (2000s)

*Source: Ville and Wicken (2012); and Wicken (2009)*

The old industries have been transformed into modern production systems. The economy was diversified even before the discovery of oil in 1969. The key to Norway's success in diversification is that the Norwegian decision-makers believed that resources belonged to the nation, and the development programs should benefit the whole society and its future generations (Holden, 2013, p.870). The sectoral composition of the GDP in Table A2.6 shows that in 1970 the services and manufacturing sectors dominated Norway's economy as they contributed 54.2 percent and 32.4 percent respectively. The share of both fishing and aquaculture, and mining and quarrying were still small, and the oil and gas sector contributed zero percent. Generally, through



the period 1970-2015, the share of the agriculture and forestry sector declined as well as the manufacturing sector. The share of the oil and gas sector increased slowly, even though it declined in 2015 due to the world oil price depression.

Table A2.6 Percentage of sector shares in GDP of Norway (1970-2015)

Sector	1970	1980	1990	2000	2005	2010	2015
<b>Agriculture &amp; Forestry</b>	3.9	3.1	2.6	1.2	1.0	0.9	0.8
<b>Fishing &amp; Aquaculture</b>	1.0	0.8	0.8	1.0	0.9	1.1	1.4
<b>Mining &amp; Quarrying</b>	0.6	0.4	0.3	0.3	0.3	0.3	0.3
<b>Oil &amp; Gas extraction</b>	0.0	8.0	7.8	14.2	14.6	12.6	9.8
<b>Manufacturing</b>	32.4	27.6	22.8	19.0	17.3	16.3	15.5
<b>Construction</b>	7.9	7.5	6.8	6.0	7.3	7.8	9.6
<b>Services</b>	54.2	52.7	58.9	58.3	58.6	61.0	62.6
<b>Total</b>	100	100	100	100	100	100	100

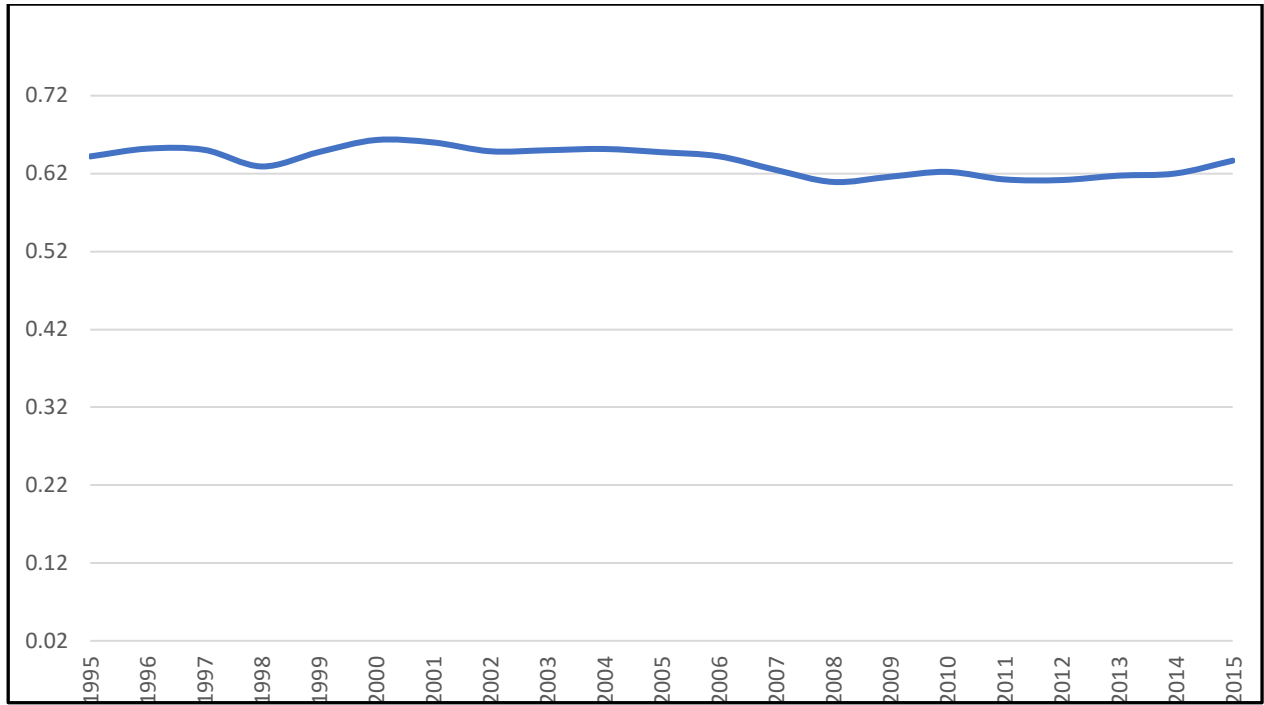
*Source: Norway Statistics*

Mehlum et al. (2006b and 2008) concluded that with good protection of property rights, reliable public bureaucracy, and little corruption, natural resources are more likely to lead to economic growth. When oil was discovered in 1969, Norway had already had a long and stable tradition of democratic rule since 1905, and a well-functioning state bureaucracy with little corruption (Holden, 2013, p.872). Oil production started in June 1971, on the “*Ekofisk*” field, and until 1980 the oil revenues were fairly-small and Norway ran with sizable current account deficits to finance the necessary investments (Holden, 2013, p.871). In the first part of the 1980s, petroleum production accounted for about 8.0 percent of GDP and for less than 0.5 per cent of total employment (Bjerkholt et al., 1982, p.172). According to Ville and Wicken (2012), the close interaction between oil and gas producers and knowledge-intensive organizations in Norway created over time a strong cluster of companies and research institutions, which shaped technological development in the petroleum sector and increased its potential for export. These clusters became important elements of the economy both as producers and as competence centers for other sectors of the economy.

According to Holden (2013), in 1983 a government commission suggested the establishment of a buffer fund, to ensure that the increasing oil revenues would not lead to a corresponding increase in the spending of the oil income. Later in 1986 the conservative Willoch government supported the idea of a government oil fund and in 1990, the Petroleum Fund was

established (the name was changed to the Pension Fund in 2006, to emphasize an important motivation for saving the money) and the fiscal rule was adopted in 2001 (Holden, 2013, p.871). It was decided that all government net revenues from the petroleum sector would be transferred to the Fund and only the expected earnings from it (estimated to be 4 percent of the domestic value of the fund) would be transferred to the state budget every year, with any change in the transfer rules to be approved by parliament (Cappelen and Mjoset, 2009). The key feature of the Pension Fund asset management is transparency, reports and supervision. The idea behind the fiscal rule was that the spending of the oil revenues should be equal to the expected real return from the Pension Fund. Thus, the Fund would grow when new oil revenues flowed in, but as one would only withdraw the expected return, the Fund would never be smaller, in expected terms. This fiscal rule enabled the government to run with a permanent non-oil budget deficit and allow for higher public spending and/or lower taxes than would be possible without the oil revenues. Thus, the Pension Fund and the fiscal rule would ensure that the large, volatile and temporary net cash flow from the petroleum sector be transferred to a stable supplement to the government budget. Because of this policy, it found that in 2012, the petroleum sector constituted 23 percent of GDP, 30 percent of government revenues, 29 percent of total investments and 52 percent of total exports (Norwegian Petroleum Directorate, 2013).

Consequently, Norway has diversified its economy through innovation and developing new technologies. Although the share size of oil in the GDP was relatively small, the good management of its revenues benefited the Norwegian economy. Norway has had ‘good institutions’ and ‘clever policies’ to prevent the resource curse (Cappelen and Mjoset, 2009). So far, Norway has been able to save a large share of petroleum revenues, leading to higher economic growth and more welfare. Finally, the diversification index during the period 1995-2015 shows that the Norwegian economy tended to become more specialized after a long term of diversification and development of many sectors and products (Figure A2.5). The annual decrease rate was only - 0.03 percent.



*Source: UNCTAD STAT*

Figure A2.5 Norway diversification index (1995-2015)

**SOUTH AFRICA** is the second-largest economy and the second most competitive country in the African continent. Its economy is driven by massive mineral deposits like platinum, gold and diamond as it is the world's largest producer and exporter of gold and platinum and one of the leading producers of base metals and coal. In addition, South Africa's bio-diversity is a key factor underpinning its strong tourism sector, which is seen as an important component of the country's economic development, because of its spill-over effects in developing infrastructure (roads and airports especially), construction of hotels and other facilities, job-creation and image-building for the whole country. Since the late 1990s, economic growth performance has improved significantly and overall poverty levels have declined. As can be seen from Table A2.7 that contribution of the services sector increased through the period 1993-2015. The share of the mining and quarrying sector declined from 14.8 percent to 7.6 for the same period, whereas, the manufacturing sector remained the second large contributor to the GDP.

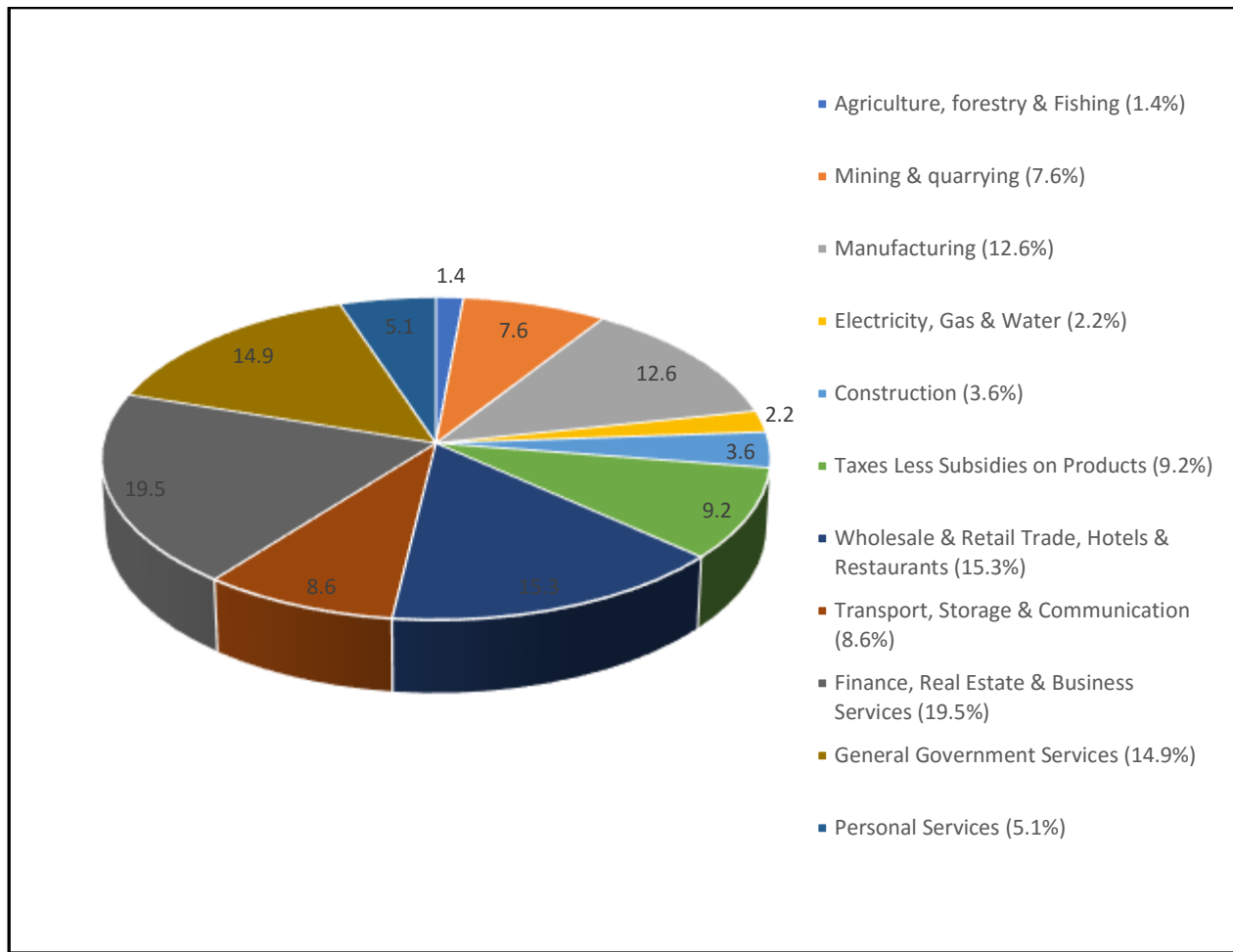
Table A2.7 Percentage of sector shares in GDP of South Africa (1993-2015)

Sectors and their Share of GDP (%)	Years									
	1993	1998	2003	2008	2010	2011	2012	2013	2014	2015
<b>Agriculture, Forestry &amp; Fishing</b>	2.2	1.7	1.3	1.6	1.5	1.6	1.5	1.5	1.5	1.4
<b>Mining &amp; Quarrying</b>	14.8	12.7	11.2	8.5	8.4	7.8	7.4	8.0	7.7	7.6
<b>Manufacturing</b>	14.6	14.2	13.8	13.6	13.1	13.1	13.3	13.0	12.9	12.6
<b>Electricity, Gas &amp; Water</b>	2.9	3.0	2.7	2.5	2.5	2.4	2.3	2.3	2.2	2.2
<b>Construction</b>	2.2	2.2	2.4	3.4	3.5	3.4	3.4	3.4	3.5	3.6
<b>Services</b>	63.3	66.2	68.7	70.5	71.0	71.8	72.0	71.8	72.1	72.6
<b>Total</b>	100	100	100	100	100	100	100	100	100	100

*Source: Statistic South Africa (STATS SA).*

According to OECD (2010), the country is at the top of its class when it comes to market and business sophistication, technological readiness, and innovation performance, which all contribute to South Africa's well-diversified economy. Thus, the economy displays a healthy development through its shift away from primary sectors such as agriculture (from 2.2 percent in 1993 to 1.4 percent in 2015) and mining (from 14.8 percent to 7.6 percent for the same period) to manufacturing and services sectors (12.6 percent and 72.6 percent respectively in 2015). The key services sectors that drive the economic growth and diversification process in 2015 based on their contribution to the GDP are finance, real estate and business services (19.5 percent), wholesale

and retail trade, hotels and restaurants (15.3 percent), and general government services (14.9 percent), as Figure A2.6 shows.

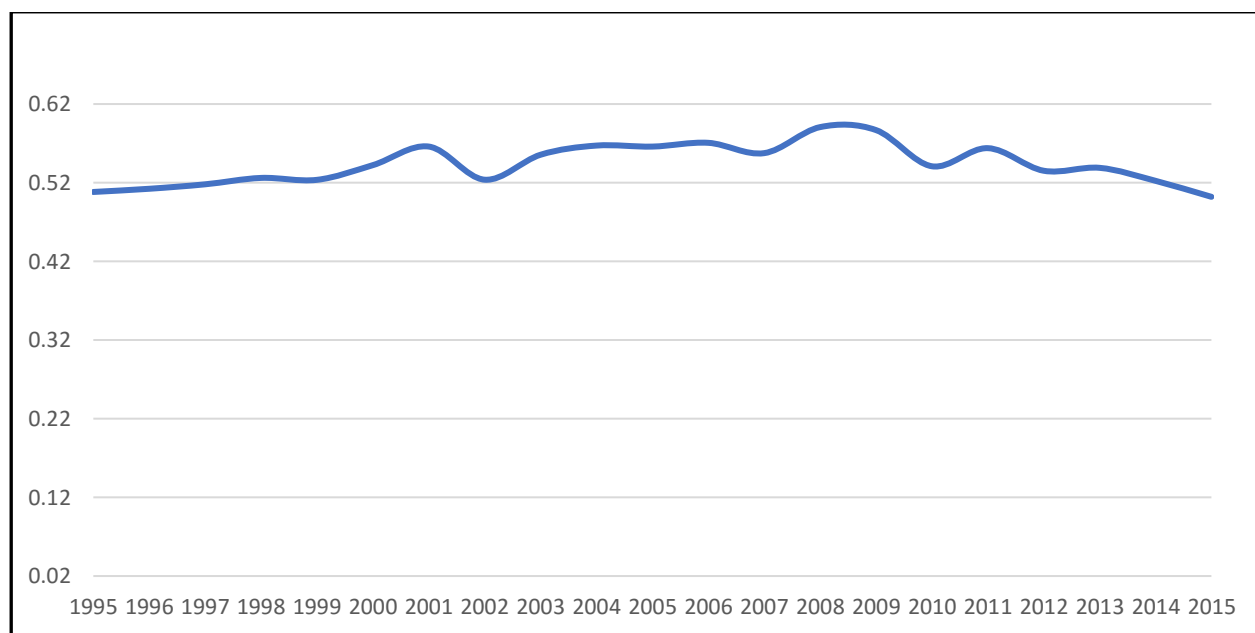


*Source: statistic South Africa (STATS SA)*

Figure A2.6 South Africa key sectors (2015)

Many institutions such as the South African Bureau of Standards (SABS), South Africa’s Industrial Development Corporation (SAIDC), and the Council for Scientific and Industrial Research (CSIR) that were created before the 1990s have continued to stimulate economic diversification during the post-1994 period. Additionally, in 2006, the government launched the Accelerated and Shared Growth Initiative for South Africa (ASGISA), which aimed to reduce poverty and unemployment, and improve economic growth. Then in 2007 the National Industrial

Policy Framework (NIPF) and its Industrial Policy Action Plan (IPAP) were created. The IPAP targeted many sectors such as automotive, plastics, clothing, textiles, footwear and leather and paper, pulp and furniture. Next the IPAP prepared a sector profile of key opportunities, major constraints, and key action programs, outcomes, and milestones for developing the sector. According to the profiles of each sector, a set of strategies was applied to promote it (e.g. Regional Industrial Development Strategy (RIDS), Motor Industry Development Program (MIDP)). In 2012, the National Planning Commission released the National Development Plan (2030) that aspires to end poverty and reduce inequality. In addition, South Africa has a significant economic partnership with the European Union (EU) which is the major trading and development partner, and a source of FDI. The existing trade relations with the EU are perceived as a stimulant to economic diversification and to contributing to helping South Africa to compete in the open international economy. Also, factors like business sophistication, technological readiness and innovation support the diversification process. However, the annual decrease rate of the diversification index has not changed significantly, and despite a positive rate, the index decreased from 0.51 in 1995 to only 0.50 in 2015, as shown in Figure A2.7.



*Source: UNCTAD STAT*

Figure A2.7 South Africa diversification index (1995-2015)