Key success factors impacting foreign direct investment and technology transfer: a comparative study of Libya and Egypt

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ABSTRACT

The research presents a comparative study of Libya and Egypt. Both are developing economies in North Africa, and both have adopted FDI and TT as ways to enhance economic development and economic structure in the countries. The purpose of this study is to investigate the key success factors impacting foreign direct investment (FDI) and technology transfer (TT) from the perspective of governments of the host countries .

The investigation applies a questionnaire survey method for primary data collection from firm managers in the two countries. Data were collected from representatives of firms with FDI and TT in Libya and Egypt. The matched samples comprise 149 firms in both Libya and Egypt, so that key economic sectors could be covered in the two countries. This research also uses data collected from secondary sources such as government reports, documents and government websites.

The results were strongly impacted by host government policy in the process of FDI and TT. A number of factors were identified as being important in the process of FDI and TT, these factors are divided into two groups: manageable factors such as policy, level of education, skill of labour and so on and unmanageable factors such as availability of natural resources, location and the climate of the host country .The created framework has broad significance and can be applied for the evaluation of the role of FDI and TT in the evolution of the economic structure of a country.

Declaration

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GLOSSARY, ABBREVAITIONS AND ACRONYMS

CJVs	Contractual Joint Ventures
DTI	Department of Trade and Industry
EJVs	Equity Joint Ventures
FDI	Foreign Direct Investment
FI	Foreign Investor
GDP	Gross Domestic Product
HG	Host government
ICT	Information communication technology
ITT	International Technology Transfer
IPRs	Intellectual Property Rights
IMF	International Monetary Fund
IRT	Intellectual Property Rights
JITA	Japan Industrial Technology Association
JV	Joint Venture
KT	Knowledge Transfer
LDCs	Less Developed Countries
LIB	Libyan Investment Board
MOT	Management of Technology
MNCs	Multinational Corporations
MENA	Middle East and North African
OLI	Ownership Location and Internationalization
OPEC	Organization of the Petroleum Exporting Countries
R&D	Research and Development
TRIMS	Trade Related Investment Measures
TT	Technology Transfer
WIPO	World Intellectual Property Organization
WFOEs	Wholly Foreign Owned Enterprises
VAR	Vector Autoregressive Model

List of Contents

CHAPTER SIX: RESEARCH APPROACH

CHAPTER SEVEN: DATA COLLECTION, ANALYSIS AND DISCUSSION

CHAPTER EIGHT: CONCLUSION

List of Tables

List of figures

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Foreign direct investment (FDI) is generally perceived as a growth-enhancing factor in host countries. It not only brings in capital, but also introduces advanced technology that can enhance the technological capability of firms in the host country (UNCTAD, 2010) Moreover, the technological benefit is not limited to domestic firms. Technology spillover itself is not however automatic. Rather, it is a process that depends on a number of factors: the first, country-specific items, the second environmental features, but the third and most important factor pertains to trade policy between developed and developing countries (Kohpaiboon, 2006).

Technology transfer (TT) to developing countries has been one of the most debated subjects within the field of international economic relations in the past thirty years. In particular, the role of Multinational Enterprises (MNEs) in the process of developing, applying and disseminating technology across national borders to such countries has generated special interest (UNCTAD, 2010). At present, technology plays a crucial role in fostering adjustments in industry structure and in promoting economic growth. Many countries have policies that promote technology as it is recognized as a key to economic development (UNCTAD, 2008).

For the processes of FDI and TT, there needs to be a technology gap between local firms and foreign investors. All the evidence suggests that FDI has a more positive impact than domestic investment on productivity, quality, economic development and economic structure, in cases when the technology gap between domestic companies and foreign investors is

substantial, or where the technological level in the host country is low (UNCTAD, 2008). In such situations, local firms are unlikely to be able to attract foreign technologies transferred via FDI because the technological gap, including not only availability of advanced technologies, but also technological skills and capabilities, is rather large (OECD, 2009).

There are two major parties involved in the processes of FDI and TT: the host government (HG) and foreign investors (FI). They are the key actors in the FDI process. These actors are the driving force behind the start of the processes of FDI and TT. According to Marinova et al. (2004), there are *three* parties participating in the processes of FDI and TT; they are foreign investors; the host government and host firms (local companies). The importance of the local company (host firm) is determined by its technological level, size and ownership structure. Host firms of whatever size in developing countries often do not play a significant role in initiating the processes of FDI and TT.

Host governments and foreign investors (HG and FI) are however crucial in starting the process of FDI and technology transfer from developed countries to developing countries. The motives of the parties are the key drivers that make those parties get involved in FDI and TT between developed and developing countries. The motives of foreign investors and host governments should be in agreement so that the process of FDI and TT to a host country is successful (Marinova et al, 2004).

Finally, it is important to recognize the extent to which FDI has become a very important source of technology inflow into developing countries. FDI plays a significant role in many countries' economies, particularly in the export

sectors. Additionally, FDI is also a dominant vehicle in international TT. Moreover, technology and FDI have been gaining importance as vital sources of country and firm competitiveness in the globalized economy (UNCTAD, 2008). Although it comes second after contractual licensing, FDI is an important source of TT to developing host countries; it can take many forms from joint ventures (JVs) with local contractors to wholly foreign owned enterprises.

"Technology flows from the advanced to the developing countries and the factors influencing such flows have generated attention of development economists during most part of the past half a century." (Dhar and Joseph, 2012, p3).

The focus has largely been on the role of TT in host countries, the way technology is transferred, and how technology transfer contributes to economic growth. In addition, FDI and TT have become very important issues in the development of less developed countries and economies (UNCTAD, 2010). UNCTAD continues to point out that "technology dissemination, skill building and upgrading are not automatic. Developing countries face the risk of remaining locked into relatively low value added activities." (World Investment Report 2013, p X) The number of international studies regarding FDI and TT has increased, especially in Arab countries. Any discussion of investment by Trans-National Corporations (TNCs) and TT requires a sound understanding of two issues: firstly, what is meant by the terms 'technology' and 'TT', and secondly, how firms in developing countries become proficient in using new and more advanced technology (UNCTAD, 2009).

One of the very important issues in the Libyan economy is the level of FDI, because it still suffers from low volumes of foreign investment compared to some other developing economies such as Egypt. In addition, one could also point out that FDI and TT are comparatively new issues for Libya's decision makers and corporate managers (Libya Foreign Investment Board Reports, 2005).

The objective of this research is to enhance our understanding of the key success factors for foreign direct investment (FDI) and technology transfer (TT), by presenting a comparative study between Libya and Egypt. This comparative pair approach has been adopted by UNCTAD for its Investment Advisory Series B (FDI Case Studies) since 2009, beginning just after this study was initially designed. Two developing countries that are somewhat different are compared for this study. The two countries differ in the stages through which their economies have been and also in terms of their economic structure. Consequently, they have different experiences, they have received different amounts of FDI and different levels of TT and they have created different structures for their national economies in terms of economic sector (Central Bank of Libya, 2009). Indeed, as UNCTAD notes, Egypt is expected to progress further: "This ongoing but punctuated process *[of accelerated growth in the BRICS countries]* is expected to continue, with additional countries (such as Nigeria and Egypt) experiencing similar growth in the future. (UNCTAD, 2012, p 1).

Economic expansion and growth in these countries is attributable to several important and interrelated factors: their growing capabilities in manufacturing and services, greater investments in technologies and efficient use of

opportunities arising from globalization. In general, the process of attracting inward FDI is recognized for its positive impact on economic development, growth and economic structure. According to the OECD, (2001) the main benefit of the process of FDI and TT for host countries lies in its long-term contribution to economic growth and development and related changes in the economic structure, such as achieving a more balanced national economic structure compared to exporting or importing only.

There are many studies which confirm that FDI contributes to economic growth in host economies through increased employment, capital, exports and technology transfer. FDI and TT also could lead to improved productivity and economic structure, and enhanced economic development (Norback, 2001; Sinani and Meyer, 2004; Blaock and Gertler, 2007; Liu, 2008).

As FDI in Libya has been relatively small (Libya Foreign Investment Board Reports, 2000, 2005) the opportunities for TT via this route have been restricted. In contrast, Egypt is perceived as more advanced in its more concerted efforts to attract FDI and related TT. This provides an opportunity to consider Egypt's development as a possible model for the future development of Libya as FDI and TT are very important for the future of both Libya and Egypt and for the global economy as a whole (Libya Foreign Investment Board Reports, 2000; 2005).

Egypt has been chosen for this comparative study for the following reasons: firstly, Egypt and Libya are in close geographical and cultural proximity, hence having low psychic distance; secondly, the Egyptian economy is more diverse and developed than the Libyan economy; and thirdly, Egypt does have long-term experience in attracting FDI and has emerged as the leading FDI

recipient in Africa, achieving second place in FDI in 2006. It was ranked 33rd in the world for attracting foreign investment and Egypt has received US$11 billion in 2007, according to the World Investment Report (UNCTAD, 2010). The research questions for the study were based on these ideas and are discussed in detail below.

1.2 Research Questions

It is important to recognize the extent to which FDI has become a very important source of technology inflow into developing countries. FDI plays a significant role in many countries' economies, particularly in improving national economic structure and in impacting host country development and growth (UNCTAD, 2009). Additionally, FDI is also a dominant vehicle in international TT. The process of FDI and TT has both a direct and an indirect impact on economic growth and development in host countries. Direct impact is seen as the creation of employment skills, capital inflow, increased exports, improved product availability, the introduction of new technology and improved productivity in local firms. Altogether, the direct impact of FDI and TT is increased gross domestic product (GDP) while the indirect impact in host countries is increased income and more opportunities for employment.

Consequently, the key research questions in this thesis are:

- What are the key successes factors impacting FDI and TT in Libya and Egypt?
- How transferable are the practices of FDI and TT between the two countries?
- How do FDI and TT impact on economic growth, economic development and economic structure?

In the course of addressing these particular questions, the similarities and differences between Libya and Egypt in FDI and TT will be explored. Both Libya and Egypt are developing countries in North Africa and they are facing the challenge of building the sectoral structure of their national economies. However, there are many differences in terms of structure and development distinguishing Libya from Egypt. There are also differences in contributions to GDP made by the different economic sectors. Moreover, the oil and gas sector has helped Libya to attract high levels of FDI into this particular sector, along with oil related technology. TT can take place via different methods, but FDI has become a major channel for TT in the oil sector. Egypt has a different economic structure, however, because the economic structure of Egypt depends more on the industrial sector, which is the largest recipient of FDI and the most technology-intensive sector. Manufacturing ranks first in terms of its contribution to Egyptian GDP (Egyptian Ministry of Investment, 2009).

It is also important to understand that the background to the historical development of FDI in Libya and Egypt differs greatly. The history of FDI in Egypt is longer than that in Libya and it goes back to the 1920s. The Egyptian economy is more diversified than the Libyan one and its growth is embedded in different economic sectors such as industry, tourism and agriculture. The Libyan economy depends mostly on oil. In this respect, it is greatly exposed to the variations and fluctuations of the global oil prices and any changes in these can greatly affect the GDP of Libya either positively or negatively (Egyptian Ministry of Investment, 2009) . Comparisons of FDI and TT between Egypt and Libya show that Libya has lagged behind Egypt in attracting FDI. The reasons are diverse and could be related to government policies, industry

structure or even the period over which each of the countries has been welcoming FDI. In relation to this latter aspect, Egypt has been more open for FDI and has been inviting FDI and TT over a longer period of time. Libya has started attracting FDI more recently; initially and predominantly into its oil sector and investments then followed into other areas of the economy, such as banking, tourism and agriculture (Central Bank of Libya, 2009). Addressing the three research questions posed in this thesis is possible if the condition that identification and examination of the key success factors impacting FDI and TT in the two developing countries representing the context of the study is possible.

1.3 Research Objectives

The aim of this research is to test the relationship between factors and FDI and technology transfer to developing countries, using the Libya and Egypt as an example of such a developing countries. The main objectives of the present study are as follows:

- To review the published literature to understand the processes of FDI and TT and explore their impact on economic growth, economic development and economic structure. In doing so, the objective is to determine the key success factors impacting FDI and TT and whether an increase in FDI leads to a greater level of technology transfer and economic growth, economic development.
- To develop a conceptual framework on FDI and TT applicable to developing economies in order to understand which host country factors are conducive for technology transfer from FDI to take place and explore

their impact on economic growth, economic development and economic structure.

- Discussing the Libyan investment climate and the Libyan economic structure and compare it with the Egyptian and the experiences of foreign companies in various economic sectors within Libya and Egypt in terms of FDI and TT.
- Providing recommendations regard the policies and procedures which can be helpful in improving the Libyan business environment to enable it to attract more FDI and TT in the non-oil and gas sectors.

1.4 Research methodology

According to Bryman (2008), social research methods can be divided into two main categories: qualitative and quantitative. A qualitative approach involves dealing with events and information in a non-quantitative manner, in which the results will be obtained through observation and the analysis of events featuring attitudes, pictures, documents and communication through word of mouth or otherwise. Quantitative research is usually worthwhile when ample literature and data about the subject of study are readily available, leading to the easy creation of specific hypotheses. Moreover, Malhotra (1993) argues that exploratory research's target is to provide a temporary understanding of the research problem, and it should then be used for further research.

This study uses qualitative research because its aim is to explore and understand the key success factors impacting foreign direct investment and technology transfer in Libya and Egypt. So an exploratory and comparative approach is better suited and more focused.

A qualitative approach, here mainly questionnaires, provides opportunities for participants of foreign companies in the two countries, Libya and Egypt, to present their views about the process of FDI and TT in the two countries. The questionnaires will be administered in accordance with the MRS code of conduct and as such are anonymous, and the data will be aggregated. The data from this study will not be disclosed to any third parties beyond those involved in the study.

The research approach adopted will use Libya and Egypt as specific instances for the investigation of the key success factors impacting FDI and TT in two developing countries. This enables a point of comparison between the two countries. The use of such an approach is consistent with previous studies in this area. There are many reasons for choosing Egypt for this comparative study: firstly, Egypt and Libya are in close proximity geographically; secondly, the Egyptian economy is more diversified and developed than the Libyan economy; thirdly, Egypt has long-term experience of FDI.

Interviews are not used in this study, because in this research context, the researcher would need go through a number of administrative procedures before being allowed to conduct any interviews in the two countries, and because the foreign companies are distributed across a vast geographical area in the two countries.

1.5 Structure of the Thesis

This thesis is divided into eight chapters: This first chapter is introductory and explores the research plan, and presents the research questions, objectives, methodology and outline of the study.

The second chapter provides a literature review of foreign direct investment and technology transfer, focusing on concepts used in this study relating to the definition of foreign direct investment and technology transfer. It also focuses on the mechanism of technology transfer via foreign direct investment. It also reviews of the empirical literature on foreign direct investment and technology transfer and FDI and TT on economic growth and development are explored at the end of the chapter.

In Chapter three, the conceptual framework for the research, along with the key success factors impacting FDI and TT taking a host country perspective, is presented.

Chapter four provides a general overview of the development and structure of the Libyan and Egyptian economies. It gives a historical perspective about FDI in Libya and Egypt. It also addresses comparatively the Egyptian and Libya economy, in order to explore the reasons that caused the inflow of FDI to Libya to be limited, compared with Egypt. Chapter five analyses foreign companies in the main sectors within Libya and Egypt; it is divided into three sections; section one is an analysis of the investments of foreign companies in Libya; section two, an analysis of the investments of foreign companies in Egypt and finally a comparison of conditions for foreign direct investment (FDI) and technology transfer (TT) in Egypt and Libya.

Chapter six describes the research approach and the qualitative approach used in aggregating data. Chapter seven presents a dissection of the data that was collected from the selected companies in two countries.

The final chapter has conclusions of the study and it deals with, the findings of the study, the contribution of this study, main problems faced by the study and limitation, presents those recommendations and finally suggestions for further research.

Chapter Two Literature Review

2.1 Introduction

FDI and TT have become of key significance to the formation of economic structures, especially in developing countries such as Libya and Egypt, it has been recognized that FDI and TT are key factors in the process of economic development and growth (OECD, 2001). For these reasons, it is of importance to investigate the impact of FDI and TT on economic structures and growth in host countries. An argument of this thesis is that the perspective taken on FDI and TT rarely is from a host country. This chapter reviews both FDI as a source of TT, as well as exploring the nature of FDI and TT. The chapter focuses on theories of FDI and TT relevant to a host country perspective. The impacts of FDI and TT on economic growth and economic development are put under scrutiny. Finally, a review of relevant empirical literature on FDI and TT is presented.

2.2 Review of the literature on foreign direct investment (FDI) and technology transfer (TT)

2.2.1 The concept of foreign direct investment (FDI)

Fundamentally, investment is of two types: indirect and direct. Indirect investment is the movement of capital through intermediate markets or organizations such as a stock exchanges or bank loans. Direct investment concerns direct managerial financial and operational control over companies as a crucial factor. It is this latter type that gives rise to FDI. This second category includes different types of assets and contractual arrangements relating to FDI (Campos, and Kinoshita, 2003).

Scholars use the term ‘FDI’ differently. For example, Moosa (2002) describes FDI as a process undertaken by a country’s corporations or individuals in which they buy assets or manufacturing units in other countries to improve production processes. Reference is made to FDI in the transfer of capital, knowledge and technology from a home country to a host country. This puts the transformational role of FDI forward. Chen and Rogers (2006: 407-408) define FDI as “investment that brings (foreign) investors effective control and is accompanied with managerial participation”. On the other hand, these authors also describe FDI as being an investment by MNCs in foreign countries for the purpose of production, acquiring assets and controlling activities of other firms in those countries.

In terms of expressing value *to the host country*, the issue of particular significance here, the International Monetary Fund (IMF) states that FDI indicates long-term capital investment, which represents long lasting interest in the production process and control over different kinds of activities, by a foreign investor in, to them, the foreign host country. Moosa (2002) holds that it is normally realized that FDI brings many benefits to host countries in the sense of capital, productive assets, entrepreneurship, better skills, technology, innovation, management, organization, increased export and upgraded marketing expertise. Dunning (1983) describes FDI as contributing a variety of things to host countries, e.g. capital, technology, entrepreneurship, new markets and management skills.

FDI will be defined here as a long-term investment representing a flow of capital between countries. This will encompass transfer of finance, technology, knowledge and knowledge application, new skills and additional

requirements of the production process that are generally imparted as accompanying processes or results of FDI.

2.2.2 The concept of technology transfer (TT)

An analysis of the process of FDI and TT requires a definition of technology. Technology has been defined in various ways. While historically definitions emphasized the 'technique' of production, more recent definitions are broader and more meaningful, in that they include, for example, marketing and financial management, in defining 'technology'.

According to the World Intellectual Property Organization (WIPO) a comprehensive definition of technology - in the Licensing Guide for Developing Countries - (1977: 45) is: "Technology means systematic knowledge for the manufacture of a product, the application of a process, or the rendering of a service, whether that knowledge be reflected in an invention, an industrial design, a utility model, or a new plan variety, or in technical information or skills, or in the services and assistance provided by experts for the design, installation operation, or maintenance of an industrial plan, or the management of an industrial or commercial enterprise, or its activities." Along with such definition, technology is independently defined by many researchers; each of them with their own point of view that is based on different factors.

Technology can be a non-tangible asset, such as marketing or skills training, 'tangibility' can be seen in terms of capital through financial investment. It is imperative for developing countries to use technology as an important mechanism for economic prosperity (Chen and Roger, 2006).

According to the Saad, Cicmil and Greenwood (2002) technology is the knowledge, including the hardware and software, that relates to a specific sector or industry. A more specific definition of technology has been provided by Shih-Fen, (2005); Argote, Levine, and Moreland (2000:3-4) with the identification of technology as “the knowledge set of processing and/or fabricating techniques required producing industrial materials, components and end products.” It included “data on equipment requirements, detailed processing sheets, standards and specifications for raw materials or industrial materials, quality control procedures and other related technical information.

Thompson (2002) expresses the view that technology can be described as any sort of knowledge which can improve economic activities in the host country.

Haiming (2000) proposes that technology has become an indicator of development in the modern society (in which we are living). Society has different kinds of needs such as food, education, industrial development, higher levels of economic development and in all of these sectors technology plays a key role. Given this potential range, Elsayad (2004) explains that the definition of technology in many studies is dependent on either a government’s aims or the research group studying them.

In addition, technology has other definitions that focus on technology as an application of science, and others on technology as human skill or in connection with human rationality. It has been explained that technology is the method or process used to perform different actions, and systems or devices that can make it easier to perform these actions and or also achieve better results (Muller and Schnitzer, 2006).

Morphet (1987) looks at technology in the sense of method or tools applicable to a production system by using them to increase the human capacity to perform the tasks. These definitions depend upon two things: firstly, knowledge and secondly techniques and technology. These definitions are however a little limited. Regarding this point, Allan (1996) considers technology in terms of technological *advancement* and its *contribution* to the economic sector, as this plays a key role in countries' development. As a consequence, another researcher Elsayad (2004: 10) pointed out that "technology is the specialized equipment and technical know-how including manuals, designs, operating instructions, training and technical advice and assistance, necessary to maintain and operate a viable system and the legal right to use these for that purpose on a non-exclusive basis". The OECD (2001) identifies some scholars describe technology in the sense of 'high technology'; with high technology representing new technology.

Albert (1984) suggested that high technology can be identified from particular criteria; such as human capital input, research and development and production sophistication). This 'high' aspect is not however present in the majority of definintions.

According to Dunning (1982: 10), the broadest concept of technology could be considered as "a resource that comprises knowledge applied to improving the efficiency of the production and marketing of existing goods and services and of the creation of new goods and services". Dunning (1994: 3-5) again utilized the same definition. For Lan (1996), technology is the creative activity (research and development) that is used to create new products using technical and scientific knowledge. At the same time he suggests that

technology can be considered as: applied science, engineering, invention and sub invention (OECD, 2001).

2.2.3 General theories of FDI and TT

There are many studies in the area of FDI and TT. FDI and TT go from (chiefly) developed countries to developing countries (home to host countries) because there are different structures of economy, different needs and different levels of economic development. The aim of this section is to highlight studies considering broad issues. The studies vary in focus and outcomes. This review considers studies that view FDI and TT and related factors from the points of view of foreign investors (FI) and host governments (HG). Given this perspective, it is necessary to know how the *processes* of FDI and TT are conducted and how these processes have importance for the host country.

There are a number of theories in the area of FDI, such as the transaction cost theory, Dunning's eclectic paradigm theory and Investment Development Path (IDP) theory and so on. They all deal with the relationship between the foreign investor (FI) and a host government (HG). All these theories help foreign investors to manage the process of FDI in the best possible way, and have been provided to explain the process of FDI and TT, from the point of view of the foreign investor (actor). These theories are:

- Transaction cost theory: concerns the home country and the foreign investor (it is the one theory to take the perspective of the foreign investor); it was the first theory to distinguish between the external economy and the internal transactions. The basic concern of this

theory is why foreign investments exist, and why foreign investors expand or out-source activities to the external market (host market). Foreign investment goes from home country to host country in order to access markets, resources and seek efficiencies. On the other hand, this theory differentiates between the important costs: transaction, information, bargaining and enforcement costs; all these factors are important to foreign investors (perspective of foreign investor) (Williamson, 1975). The role of the host government in the process of FDI and TT does not exist in this theory (it is missing), because this theory relates solely to the foreign investor (FI) perspective.

- Dunning's (1981) 'eclectic paradigm' classifies the policies of the host government, economic structure and market structure as among the most important factors for all countries. Dunning tried to explain why foreign companies prefer FDI rather than exporting, importing or licensing in order to move from developed country to developing country; in this perspective this move depends on the advantages a local company has (Dunning, 1981). Dunning's theory still provides the most extensive explanation of overseas activities. It explains the factors of FDI and TT and how these factors are differe between firms, and between countries. But the role of host government does not exist in Dunning's theory, because it has been formulated from the perspective of the foreign investor (FI).
- Dunning and Narula (1994) later added the government perspective to the theory, to fill the gap in this area, because host governments (HG) play an important role in the process of FDI and TT. This role is

especially significant at the beginning of market opening and during the phases of economic growth and development. Dunning and Narula looked from the point of the view of the HG that receives FDI. Dunning's theory identified and developed some basic factors to explain FDI, such as advantages of ownership and location. Ownership advantages include technology, monopoly power, managerial skills and marketing expertise, which make FDI attractive. According to Dunning (1993), location advantages include the legal environment, cultural, political and institutional factors.

- Investment Development Path (IDP) theory was then developed by Dunning and Narula (1996). The basic idea of this theory is that inward and outward foreign investment depends on the (comparative) level of economic development, when compared to other counties. This theory contains the perspective of host government. According to IDP theory there are five stages which a country goes through in the process of FDI and TT.

  Stage 1, in this stage there is low level of FDI, and no technology transfer from home country to host country. The policies of the host government are unsuitable and its economic level under-developed, with low levels of education and low skill levels of manpower. FDI does not generally go to this kind of country; FDI, where it occurs, is usually limited to natural resources (such as oil and gas) exploitation, in countries such as Libya. During this stage, the host government *should* to do many things, such as develop domestic economic

structures, develop the workforce via training and education and improve economic policies.

Stage 2, in this stage FDI increases and FDI goes largely to natural resources, and primary industries. They will be supported and modern technology will be implemented where possible.

Stage 3, in this stage FDI (outward and inward) will increase; also the ownership advantages for foreign companies start to become important. In this stage, economic growth and market size will increase and a country in this stage will be able to attract technology. On the other hand, motives of FDI will change from imports to efficiency seeking production.

Stage 4, host firms in this stage have the ability to compete strongly with foreign firms in their own country. In this stage, assets are created from the important factor of location advantages, and governments do not intervene directly. Instead, some policies may help strengthen local capacity. In this stage, the level of FDI will become greater and the host country will able to attract advanced technology.

Stage 5, in this stage the probability is that FDI becomes more balanced; the motives of FDI in this stage depend on the source of FDI. The motives for FDI will be knowledge seeking and market seeking if FDI comes from countries at lower IDP stages, and the motives for FDI will be efficiency seeking if FDI comes from countries at a more advanced IDP stage; FDI and TT will occur, in particular, in natural resources in developing countries such as Libya. Moreover, in this stage the host government's policies, education level, level of training

of manpower, infrastructure, and economic development are very important factors of FDI and TT as well as FI and HG.

FDI and TT are viewed as the main drivers of economic growth and development, especially in developing counties and transition economies, where governments give priority to the attraction of FDI and technology. MNEs are viewed as a means to import better technology, knowledge and management. According to Nunnenkamp and Spatz (2004), the economic climate is very important for FDI and TT. 'Economic climate' is taken to include infrastructure, the situation of local labour, investment policy and the economic position. The policy of the host government depends on its motivation. For example, if the government's policy desire is to increase the potential benefit from FDI to labour, then the host government policies will focus on education and the training of the work force. If the host government is motivated by a desire to increase the potential benefit from FDI to the economy more generally, then host government policies will focus on providing a good economic climate; emphasizing perhaps infrastructure or investment conditions.

All the above theories show that there are two very important actors involved in the processes of FDI and TT from developed to developing countries. These are FI and HG. Also, the motives behind HG and FI actors are very important in the processes of FDI and TT as they take place between developed and developing countries. The theories about FDI have naturally (as they are the active parties) been focused on how to serve investors and, to a much more limited extent, the interests of the countries where the

investments and technology go. But for the other actor, (the HG) the impact of FDI and TT on economic development and growth are therefore not so well investigated.

2.3 Foundations of FDI and TT

Historically the study of FDI and TT has largely focussed on the role of the *processes* of FDI and TT in the economies of host countries (economic development and economic growth), the manner of technology transfer and how technology transfer contributes to economic growth and, finally, to economic development. The processes of FDI and TT have become a very important issue for economic development and economic growth in LDCs (UNCTAD, 2010).

Foreign direct investment (FDI) is just one way, but a key one, for technology transfer (TT) to be facilitated. Others ways include importing machinery, or trade in general; the international movement of labour, and the licensing of technology and joint ventures (JVs) (Michael, 1998).

According to Robinson (1988), technologies or components, can be transferred either through FDI or through a variety of contractual arrangements. These contractual devices are: export of equipment; licensing; technical assistance contracts; management contracts; marketing agreements; training contracts; research and development contracts (R&D); turnkey contracts; manufacturing contracts with the provision of technical assistance and the oversight of construction contracts (Kohpaboon, 2006).

TT can take different forms when applied to different contexts. For example when TT originates from an advanced country to another advanced country it

will likely requiring licensing, whilst technology transfer from an advanced country to a developing country will likely require a management contract or joint ventures or exchange of technical know-how (Bernard, Kethe, and Kamal, 2005).

TT via FDI from home countries (developed) to host countries (developing), can flow into both low technology and advanced technology settings. Table 2.1 below shows the differences between the two types of technologies (low and advanced). There are many differences between these two types of technology that transfer through FDI to host countries. For example advanced technology needs a highly skilled or specialized user, however, to apply a low technology, much skill is not necessary, and installation is easier. Cost is also a differentiating factor, with low technology being cheaper. For this cost reason there are many developing countries that cannot afford to attract advanced technology.

In general it is also the case that high technology represents higher productivity than less advanced technologies, and thus its contribution to economic improvement and growth in host countries is greater (Yasser, 2002). Low technology contributes to economic development and growth, but at a lower level. Raw materials also differ between advanced technology and low technology, and raw materials also differ between home and host countries and are not necessarily readily available at the same level in the host and home country. Where raw materials for advanced technology are found outside the country it is necessary to import raw materials from elsewhere, such as oil and gas (Yasser, 2002).

Table 2.1 Differences between two types of technologies

	ADVANCED TECHNOLOGY	**LOW TECHNOLOGY**
THE NATURE	Complex	Simple
EQUIPMENT	Machinery	Tools
MAINTENANCE OPERATION	Complicated	Easy
SKILL LEVEL	Highly Skilled	Skilled, not necessarily
FACTOR-INTENSITY	Fairly Capital Intensive	Labour Intensive
RAW MATERIALS	Local, but largely imported	Mostly local
PRODUCTIVITY	High	Low
COST	Expensive	Cheap

Source: Based on Yasser, 2002.

Table 2.1 summarizes findings about the role of various factors on the ways and specifics of TT. Thus, depending on the nature of how advanced the technology is, the process can be complex or simple. When complex, TT has a stronger impact on economic structures and economic indicators of recipient countries. The sophistication of the transferred equipment can result in either advanced or low technology transfer. Consequently, the maintenance of the transferred technology can involve various levels of complexity. These levels involve different requirements for labour in terms of skills, specialization and qualifications. Factor intensity is subsequently impacted in the areas of labour or capital. Factors of production shift from local towards foreign when sophistication increases, hence advanced technology functioning is largely

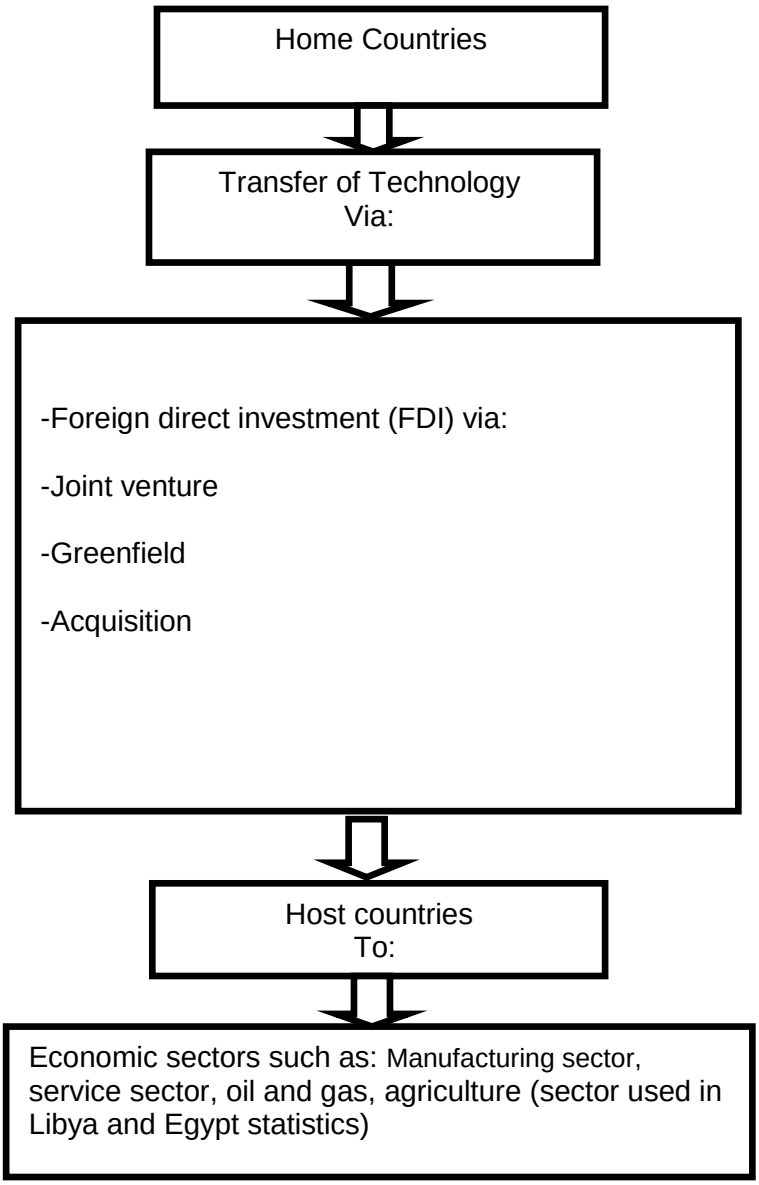
dependent on foreign inputs. Finally, impact is exercised on economic indicators such as productivity and the costs of production. Advanced technology transfer appears to have a much stronger impact on economic indicators.

In the majority of cases, the channels through which technology transfer takes place from home country to the host country or from home to home country are similar. For example, TT can take place via FDI through licensing agreements involving local companies with foreign companies. Arrangements can cover trademarks, patents, franchising and technical assistance. Another channel for TT is joint venture (JV) which refers to ownership by the FI and (possibly) the HG (sharing percent with local government or a local company). There are other channels for transferring technology as indicated in Figure 2.1.

According to the OECD (2001) many countries lean towards FDI from MNEs as a major source for acquiring new technology and upgrading their own production plants. Such technology will differ from one country to another and it is different from one sector to another. For example the type of TT to a host country such as Libya will be different from TT to another country such as Egypt, because these countries have different levels of economic development and diversified economic structures. TT also will be different from one sector to other.

The process of TT is presented in Figure 2.1. It shows the forms of TT and the areas of impact concerning economic structure and indicators in the host countries.

Figure 2.1 TT from home to host country



Source: The author using ideas from a variety of relevant source

2.3.1 Mechanism of TT via FDI

The mechanisms of TT are the *means* by which the technology is transmitted from the seller to the buyer. As technology may be comprised of interrelated components having different degrees of sophistication there may therefore be multiple mechanisms by which the process may be accomplished.

Ramanathan (1995) divided TT mechanisms into those that were either market or non-market oriented. Market oriented mechanisms were considered to be those stimulated by the profit motive. Market forces influence growth, competitiveness and the profits of the seller and buyer. Non-market oriented mechanisms in contrast were not motivated by market forces and financial gain. The major mechanisms of TT are: purchasing of equipment and FDI; joint ventures; technical collaboration; licensing; technical services agreements; turnkey contracts; sharing production; joint research; management contracts; product in hand contracts; expert services; construction and engineering agreements; trade in goods and services; cross-border movement of personnel (OEDC, 2002). Non-market oriented mechanisms include; technical information services; industrial trade fairs and exhibitions; conferences, seminars and workshops; training; sales literature; books and academic journals and informal personal contacts (Frischtak and Newfarmer, 1992).

According to the OECD, (2002), TT may flow via greenfield developments or acquisitions, as well as joint venture forms of FDI. TT flows through one of these options depends on *both* host government and foreign investor motivations, because the motives of HG may be completely different to motives of FI. The motives of HG for the processes TT (and of FDI) are

usually those of seeking economic development and economic growth, or acquiring advanced technology and/or the development of economic structures.

2.3.1.1 Foreign direct investment (FDI)

Tomsik et al. (2001) suggest that FDI that results in TT is of two key types: greenfield and acquisition. Greenfield investment means that an investment of new capital flows from home country to host country into a previously undeveloped location. This kind of investment is seen as more desirable, because it brings new technology and creates new jobs in the host country. As it is starting from the ground up, it builds new facilities, adding to capital stocks. This type of investment usually means any technology transfer will be of new or the latest technology.

The second form of FDI in this context, acquisition, occurs when an investment of new capital flow takes the form of full or partial control of an existing enterprise in the host country. UNCTAD (2009) concurs with the suggestion that the phenomenon of FDI in developed and developing countries uses (predominantly) one of these two form of foreign direct investment (FDI) as a basis for TT: either inflows through acquisition (purchase of a controlling stake, or 100% participation in total capital, with either host government or company) in host country or greenfield investment..

The specifics of TT via one of these forms (acquisition or greenfield) depend on the motives of the FI and the HG. For example, if the policy of the HG is to increase the potential long-term benefits from the processes of FDI and TT, such as receiving new advanced technology, development of economic structure, or increasing productivity and quality and increasing exports, then

the HG will prefer the greenfield form. On the other hand, if the policies of HG are development of one particular economic sector or company and its technology, it will prefer acquisition.

2.3.1.2 Joint ventures (JVs)

In a JV, companies from one or more countries contribute assets such as finance, access to markets, land, equipment and skills to a combined business. In the case of a joint enterprise they often share a degree of managerial responsibility and risks to the value of their respective contribution to the venture (Johri, 1995; Datta, 1988).

Joint ventures (JVs) between host firms in developing countries and home firms from developed countries have become a popular means for the management of the two companies to satisfy their objectives such as acquiring advanced technology, the development of economic structure, and other objectives (Miller, Glen, Jaspersen and Karmokolias, 1997). TT in this type of investment depends on agreements between host government and foreign investor. They must agree on all elements in the process, such as percentage of ownership to be obtained, what type of technology it will transferred and so on. According to Ali and Guo (2005) Equity Joint Ventures (EJVs), Contractual Joint Ventures (CJVs) as well as organizations of Wholly Foreign Owned Enterprises (WFOEs) were considered important types for the environment of Chinese context. This was because the Chinese government believed that Joint Ventures were the best way to obtain a high level of technology and FDI management experience. This perspective may be valid elsewhere.

TT can take place via all the forms presented previously, but the nature of the technology will likely differ from when the various forms of TT are applied. For example, with greenfield FDI the type of technology transfer from foreign investor to host firm will be new, because it is a start up situation. With acquisition, the type of technology transfer from foreign investor to host firm may be new or old because of the purchase of an existing firm (See Table 2.2 below). On the other hand, the technology transferred via other forms, such as Joint Ventures, may be new or old, because the foreign investor is sharing in an existing firm with the host government or other investor. In this kind of investment (joint ventures), the host government can play an important role in terms of the type of technology transfer, because the host government, before signing the contract with a foreign investor, can encourage that foreign investor to transfer whatever type of technology that the HG needs, especially if the host government has more than 50% of percent in the project (Again, see Table 2.2).

Starting with a new project and with new and high levels of technology, greenfield projects with 100% ownership by the foreign investor will usually be preferred, because in this case the foreign investor perhaps has a preference not to participate with local firms or host governments. Many greenfield starts occur in large markets; on the other hand, acquisition and Joint Ventures with existing firms, or acquisition and Joint Ventures and may start in small or medium sized markets.

Table 2.2 Comparative forms for FDI and TT from developed into developing countries

	Greenfield	Acquisition	Joint Ventures
Area of investment	New project	Purchase an existing company	Sharing in an existing company
Type of technology	New technology	Old technology or replacement technology	New and old technology
Ownership of investment	100% owner foreign investor	Participate of percent between 10 to 49% /or 100% for foreign investor with partner	Sharing percent with local government or company
Country of foreign investor	Developed country	Developed or developing countries	Developed or developing countries
Market investment	Large market	Medium sized markets	Medium sized markets
Level of benefits for host country	High level of benefits in long term	Lower level of benefits in short term	Lower
Investment Risks	Low	Medium	High
Impact of investment	Very significant	Significant	Significant
Fixed investment cost	High	Low	Low

Source: Developed by the author using a variety of relevant.

From various aspects of Table 2.2 it can be seen that, from the perspective of the host country represented by the host government, various forms of FDI and TT bring different impacts on economic structure. Taking a time dimension, acquisition and JVs will produce quicker but smaller impacts on the economic structure of the host country. If a greenfield approach is applied the impacts will be more significant. However, impacts will vary with the ownership structure. If the new entity is wholly foreign owned, the host government will perhaps have to intervene heavily to preserve the interests of

the host country, in terms of economic structure and economic benefits. The country-of-origin of the investment and technology is also of key importance. Overall, the factors need to be managed appropriately by the HG to reach the best possible outcome from their perspective (UNCTAD, 2010).

The concept of FDI has become more and more attractive to HGs in less developed countries, because it can play a vital role in the development of the country's economy (economic growth and economic development), as well as the transfer of advanced technology. Host countries are giving more incentives, or conditions, in order to attract FDI. These incentives include tax concessions being offered for a specific time period and tariff reduction, as well as good investment policies. According to the United Nation's report (2003), developing countries are more attractive to foreign investors than the less developed countries. There are several reasons for this, including political stability, and the potential speed involved in developing new projects for the sake of country's development.

The other important factor is the ability to recover the investment (in the shape of profit margin), as compared to LDCs. So it can be said that developing countries have a competitive advantage compared to the less developed countries in attracting FDI, because there is a different level of economic development and different government motives. In brief, in light of the evidence presented in this section it can be concluded that FDI and TT have become critical aspects for the advancement of developing countries and ensuring their economic growth. The following sections focus on the impact of FDI and TT on economic growth, development and structure, and review the empirical literature on FDI and TT (Ali and Guo, 2005).

2.4 Impact of FDI and TT on economic growth and economic development

Since the end of World War II, economic development and economic growth have remained a topic of concern for developing countries. In order to achieve economic growth and economic development, economic resources figure prominently in the needs of developing countries. Arguably, the importance of FDI and TT stems from the fact that it tends to boost economic development and economic growth in host countries (UNCTAD, 2014).

The strategic roles played by FDI and TT are very important in achieving economic growth, development and economic structure improvement (as various authors suggest below in sections 2.5.1 and 2.5.2), because an increasing level of capital accumulation is the most important factor in helping overcome barriers to further economic development in developing countries. FDI and technology promote economic development in host countries through a number of channels, but the impact they have largely depends on the receiving countries, their industries and border countries, such as investment policy, level of economic development and economic structure and so on (Cantwell, 1995).

First, the role of FDI on host countries is considered. Then the impacts of technology transfer on technological capacity and progress, including direct effects; indirect effects on supply linkages and networks (diffusion); skills-creation effects and effects on domestic R&D are examined.

2.4.1 Impact of FDI on economic growth and development

For a long period of time, economic growth and economic development have assumed a very important place in economic theory. There are many theories that have addressed these issues, such as modern growth theory and classical economics. There are many factors that can have an impact on economic growth, including the level of foreign direct investment (FDI), level of technology, the type of economic system, and available raw materials. The impact of these factors on economic growth and development depends on economic circumstances. Factors of economic growth and economic development are not the same in all countries, differing from one country to another, and from developing to developed countries as well as from one time period to another (Huay and Hui, 2006; Li and Liu,2004).

The role of FDI in both developed and developing countries is significant, as these countries seek to implement systems that will help the local economy. Arguably, there are many advantages to bringing in FDI into the local economy, such as technology transfer, management systems, expertise in marketing techniques, increased productivity, stimulating the development of various sectors in the economy, increasing international competitiveness, furthering employment and education (JBIC, 2002 and OCED, 2005).

FDI has two additional positive effects; firstly, it improves the economics of host economies, and facilitates further foreign investment, by increasing business opportunities for home firms, construction, transportation and hospitality and business service firms (Ali and Guo, 2005). Secondly, FDI creates new jobs for local employment (Ali and Guo, 2005). Foreign investment into developing countries and local economies is seen as highly

beneficial, as it is difficult to acquire finance for economic development from developed countries. The contribution introduced by FDI has been fundamental to the furthering of economic development. Developing countries have been plagued with economic hardships and by attracting FDI and technology, such countries have the opportunity to raise the standard of living for their people (Huay and Hui, 2006).

Kugler (2006) states that developing countries see FDI as an important source to help to economic development and economic growth. FDI is seen as a contributor to the improvement of the local economy, skills of local manpower and assisting the use of advanced means of production. This implies that one of the most significant contributions of FDI in developing countries is that of technology transfer. Technology can be seen as one valuable resource that helps economies to grow and development. The advantages of FDI are that local companies who work with the foreign investor can benefit in specific areas of technology that contribute directly to their companies FDI also contributes to the economy of host countries. Indirectly, a benefit occurs between domestic or local companies that work in the same industries in those countries. Foreign companies often provide technological support to domestic companies in order to foster economic development and growth (Kugler, 2006).

Despite the significant benefits that FDI offers to host economies, there are certain elements that must be developed before FDI is allowed to come to host countries (Likara, 2003). These elements are important, as they strongly determine the outcome of such decisions, such as the relationship between host government and foreign investor, the political stability of the country, (as

it would not be viable to invest in a country that has political problems or no stable government); the existing economic infrastructure; the climate of the country; the type of investment; the skills of the local workforce; the education and willingness to train people of the domestic economy. Once the investment decision is made the level of investment and type of investment must be determined. The role of the host government in the process of FDI can be very important, because as mentioned previously the host government is one of the actors in the process of FDI. In order to secure benefits to the host government from the process of FDI, it needs create good conditions for the process of FDI itself. For example, if the host government's motivation is to benefit from FDI in the economy, then the host government policies will focus on economic development (Borensztein, Gregorio and Lee, 1998).

It should also be noted that the significance of the process of FDI in developing countries becomes evident when poverty is reduced and people are employable, alongside direct economic development. *Developed* countries are those that have greater sources of FDI and a high level of technology, with governments that are stable, and the population has high standards of education, good health services, as well as a high GDP per capita. *Developing* countries in contrast are those that have a high unemployment rate, low per capital income and considerably lower education for the population. Some, if not most, of the developing countries have experienced recent wars, widespread sickness and disease and in many cases natural disasters (Borensztein, Gregorio and Lee, 1998, Likara, 2003).

FDI involves more than just the FDI itself; rather, it is an investment in human capital as a rich resource for these countries. Human capital has been seen in

terms of creating a workforce that is capable of continued education and skills training, the effect of which is a richer and more stable economy. By offering training and development, the workforce becomes a valuable resource to the domestic economy. There is little doubt that improved technological skills, an educated workforce and the creation of jobs are important factors that contribute to economic growth. In fact, when a local economy benefits from FDI and TT, there is a connection between productivity and industry (OECD, 2001). Developing countries have long tried to attract FDI in pursuit of improving economic stability. A study by Likara (2003) argues that there is a co-relationship between FDI and how poverty is reduced by technology. Sustained economic growth through TT means better machinery for factories, and improved production methodologies, greater producing and enhanced health.

The penetration of local markets by FDI occurs most simply through the integration of local firms with MNEs (acquisitions or joint ventures). In this way, local firms can be financed to purchase or obtain much needed technology.

An important additional issue, concerns the economic environment in host countries, which if unstable can have adverse results on local industries and then on the process of FDI (OECD, 2001). This could mean that if the host government fails to provide a good economic climate, then the process of FDI will not be successful. So the role of host government in the process of FDI is very important in encouraging FDI. Effective polices would ensure continued growth and secure future investments. Without a doubt, by bringing FDI into local economies, there is great benefit to the local economy from this process,

such as support for economic growth, increasing productivity, to improving and, getting access to advanced technology, obtaining managerial skills and job creation (OECD, 2001).

Writers such as Johnson (2005) have argued that while FDI has advantages for the economic growth of the developing countries, we should ask: firstly what are the effects? And secondly: what are the differences? The answer depends to a certain extent on the level of economic activity in the local economy and, secondly, on how that economy is sustained. While many developing countries have poor infrastructure, it is questionable whether FDI can sufficiently encourage further economic growth. Many countries do not favour FDI, as it is often seen to be an outside force coming to take over local businesses, hijacking the local economy.

It has to be noted that each developing country comes with a different level of economic activity and this contributes to suitability for FDI within these economies. Some may have a better infrastructure than others. So the role of the host government is to provide a good environment, so that foreign investors find it much easier to work within the host economy (UNCTAD, 2012).

2.4.2 Impact of TT on economic growth and development

Technology has played an important role in economic development and economic growth. The relationship between technology development and economic growth has been suggested by many scholars such as, Freeman, (1982), McIntyre, (1986) and Rosenberg (1994).

Technology without doubt brings prosperity to a country and gives it power, competitive spirit, as well as a rise in social spending power (UNCTAD, 2011). Technology is a powerful key player on the world stage that gives contemporary societies a stronghold in terms of production and economic development. The computer, for example, has not only become a necessary tool to harness information but the World Wide Web has brought individuals, as well as local companies and multinationals, closer together. One of the advantages is that those that are employed enjoy the privileges of learning about technology. Technology transfer is one of the fundamental tools that is necessary for economic development of developing countries for sustained economic growth and development (UNCTAD, 2009).

The earlier Organization for Economic Co-operation and Development reports (1981, 1989) reinforce the view that TT has positive impacts on the domestic economy, such as providing more information for workers to do their jobs effectively, increasing knowledge which would help the business, increased productivity, a changed economic structure and other such types of benefits. In addition, when TT is narrowing the gap between developing and developed countries, then productivity levels rise, accompanied by an increase in exports to other developing countries. The main advantages of allowing TT from foreign investors to developing countries can be seen by the growth in economic development, through the increase of productivity that helps create efficiency and growth. In developed countries technology know-how has given the power not only to sustain economies but also to help mould businesses as they venture into new arenas; on a wider scale, the role of technology has

become a source that is used by the developed world to build their economic infrastructure (Saggi, 2002).

The foreign investor's perception of development of the domestic economy in the host country is that the use of technology transfer helps productivity in local firms, economic development and economic growth (UNCTAD, 2008). However, the process of TT increases with certain elements such as the human capital that is required to use this technology, education of the workforce, and training requirements. Sustaining economic growth and development in the host country comes from having good levels of technology and capital investments as well as ensuring that the host government knows what the needs are from this process, as elements necessary for good economic stability (Blalock and Gertle, 2007). Transfer of technology thus has both a direct and an indirect impact on economic growth and development in host countries.

The role of technology in economic growth and development takes a number of different forms: firstly, technology allows the creation of new wealth and increases efficiency, and is a major source of national power and prosperity (McIntyre, 1986). Secondly, technology is responsible for shaping economies and even international management adapts their operational strategies in pursuit of gaining productive forces (Rosenburg, 1994). Thirdly, technology directly impacts on fluctuations in the economy due to the constant changes and new innovations. Moreover, qualitative and quantitative evidence has suggested that technology contributes to economic growth and development (UNCTAD, 2010). Although advances in technology are a requirement for economic growth, there are other institutional, structural and social factors

that significantly affect a country's ability to introduce the technological change needed by the short and long-term changes in an economy. The non-economic factors affect the role of technology in increasing the productivity and competitiveness of a country's economy (UNCTAD, 2009).

Non-economic factors affect the role of technology in increasing productivity and competitiveness of a country's economy.

FDI has been viewed in a number of developing countries as happening via companies from technologically advanced countries, and as a means of attaining TT. There are many developing countries having both local and foreign firms that do not benefit from TT from their parent firms (Glass and Saggi, 1996). Blomstrom and Sjholm (1999) suggest that TT has both a direct and an indirect impact on economic growth in host countries as well as it having an effect on domestic R&D. Direct impact on the host countries is seen through employment skills, capital, increased exports, increased product and new technology, as well as improved productivity in the local firms as the result increase GDP. Frischtak and Newfarmer (1992) reported that investment in equipment and human skills are advantageous to the transfer of new knowledge (Tong, 2001).

The impact of the processes of FDI and TT in least developed and more developed countries differs, because the benefits from the processes of FDI and TT vary from one country to other, the variations relate to the situation of the host country economy and its investment environment. This is attributable to a number of factors (both manageable and unmanageable), which have a very great impact on the process of FDI and TT (UNCTAD, 2008).

It is important to differentiate between these types of factors for the processes of FDI and TT. ‘Manageable’ factors are more important than ‘unmanageable’ factors in the processes of FDI and TT, because the host government can alter manageable factors in order to gain greater benefits from the processes of FDI and TT (such as supporting economic development and economic growth, obtaining advanced technology, developing manpower skills and creating new jobs, as well as improving economic structure. Manageable factors are those such as governance; size of the market; economic growth; economic structure; technology gap; skills of labour; good level of education and relationship between home and host countries. These are all factors that, to a greater or lesser extent, can be influenced (over time) by the host country government. On the other hand, unmanageable factors are those such as the indigenous availability of raw materials, the location’s climate, (natural endowments), neighbouring jurisdictions and so on.

In order to achieve desirable outcomes in the processes of FDI and TT, the host government needs to manage all those factors under its influence in the best possible way, before being able to benefit from the processes of FDI and TT in their economy (UNCTAD, 2007). The main benefits of the processes of FDI and TT for host countries lies in their long-term contribution to economic growth and development and changes in economic structure (more balance) in order to sustain higher imports as well as higher exports (OECD, 2002). Thus, all the benefits from the processes of FDI and TT are ‘real’, but do not accrue automatically. The empirical evidence for the processes of FDI and TT effects on host countries differs significantly across countries (and economic sectors in the host countries), because motives differ. For example, if the host

government has put a lot of FDI into a sector such as tourism, then it will need to develop those other sectors related to tourism, such as infrastructure, banking, and personal services and so on, in order to make its economy more balanced. On the other hand, if the host government puts a lot of FDI to a sector such as oil and gas, and at the same time it ignores other sectors, the chosen sector may be well developed, but the government will have problem with other (under- developed) parts of the economy.

To summarize, attracting appropriate FDI and the transfer of appropriate technology, is crucial for host countries. These processes can become an obstacle rather than a boost, economic restructuring and growth, if inappropriate.

Overall, it seems that in all countries (developing or developed) labour, capital and natural resources all play a contributing role in economic development and technology strongly supports this role.

2.5 Review of the empirical literature on FDI and TT

This part of the literature review presents an analysis of the existing *empirical* literature on FDI and TT. In particular it considers that part of the literature that presents the empirical aspects of the interrelations between FDI and TT. The selected studies are based on FDI and TT, as well as their impact on economic development in developed and developing countries and transition economies.

Davidson and McFetridge (1984) explored the key characteristics in the choice between licensing and FDI as a vehicle for international technology transfer (ITT) in the USA. Moreover, a set of hypotheses regarding these relationships were developed and tested in a statistical model for a sample of

1,226 intra-firm and market technology transactions carried out by 32 US based multinational enterprises during the period of 1945 to 1978.

The findings of this paper showed that there was a strong relationship between the host country's conditions such as investment policy, taxation, structure of economy and so on, and the choice between licensing and direct investment in order to transfer technology. This paper found that host county policy (taxation policy and exchange policy); market size and geographic proximity had a positive impact to FDI levels and the choice between licensing and direct investment to TT. On the other hand, the result of this study also showed that FDI has very strong impact on the host country economy through increases in the capacity of an economy to produce; level of income and GDP as well as transferring good level of technology. However, microeconomic factors such as the presence of an affiliate in a receiving country and the company's R&D spending also appeared to have an important in its impact on FDI.

With regard to country conditions for technology transfer and the choice between licensing and FDI, licensing is perceived as a good way to transfer technology between developed countries, because they are deemed to possess a good level of existing technology. Support for this view comes from Lan (1996), Moosa (2003) and Chen & Reger (2006).

The purpose of the study by Ming and Xing (1999) had been to explain the emerging strategy of technology transfer to China. The analysis of the features of the new environment and a discussion of the framework of technology transfer, based on a review of theory, surveys and studies of Chinese enterprises during the period from 1990 to 1995, were at the core of

the paper. The findings of these surveys show that technology transfer played a very important role in adjusting the industry structure in China, because the industry structure was not previously in balance. With regard to FDI, this remains an important channel for gaining access to the Chinese market for MNEs, while at the same time FDI is major channel for Chinese technology acquisition. According to the questionnaire survey of manufacturing industry in China, it was found that software was the main type of technology transferred after more than 20 years of technology transfer. For example the electronics industry has used co-production, joint ventures and wholly foreign owned companies to attract foreign capital to this sector of the industry.

This study also showed that the later strategy of technology transfer to China was to attract large MNEs to invest in China. It represents a major source of technology (more than 500 of the largest MNEs have established their businesses in China); it also encourages FDI in all areas *within* the country in order to geographically spread development.

Yin (1999), tried to investigate the relationship between FDI inflow and industrial structure in developing countries. The model was used in this study to investigate the effects of tax on the structure of domestic industry, in terms of obtaining technology. The model identifies the host country as a developing country embodying two characteristics. The first is that it is a developing country giving tax incentives to FDI, and the other that it has a lower technology level of a developing country, in contrast to developed countries.

This investigation found that if the host country adopts a preferential tax policy for foreign direct investment (FDI), it will encourage FDI to take place, and technological gain occurs (Hakanson and Nobel, 2000). A lower tax rate (as

an inducement for FDI) has the effect of raising total industry output and increasing productivity and increasing exports. As a result, more foreign firms will then enter the sector. Moreover, this study suggests that host governments should be cautious in reducing tax to attract FDI, rather than TT, and should adjust their preferential tax treatments for *all* industries, rather than just one industry, in order to develop economic structures and economic growth and as result increase GDP.

The limitation of this study is that it focuses on the impact of tax on FDI and TT in only one industry, and that it did not take into consideration other effects on FDI and TT, such as the government policy, policy of the host country, the economic development level of the country, and so on. Also, this study did not take in other sectors (outside the FDI sector) into consideration.

With regard to the impact of taxation on FDI, studies show it is an important factor in encouraging foreign investment to host countries, because in general foreign investment has an allergy to taxes as well as TT (though the OECD (2007) points to a wide range of estimates of the tax elasticity of FDI). Moreover, that treatment contributes to the transfer of technology to recipient countries. Support for this view comes from Blalock and Gertle (2007) and Liu (2008).

Tong (2001) examined the effects of FDI and foreign technology on local Chinese firms; the data used in the analysis were based on a survey conducted by the World Bank in early 1993 in eight cities in China. In each of the eight cities, fifty to sixty firms were randomly chosen and a total of about 500 firms were included in the survey. The empirical data were used to

investigate the effects of foreign investment and foreign knowledge on local Chinese firms' activities.

The most important results were that the inflow of foreign technology that had a positive impact on production of local firms in China was via FDI. The benefits were reflected in different aspects of local firms, including increases in the firms' exports in the subsequent years and higher production, especially in the short-run as well as improved economic structure. Moreover, this study found that foreign participation was an important mechanism for technology transfer to firms in China.

Norback (2001) attempted to analyse the relationship between technology transfer cost and the impact on production. Swedish multinationals (MNEs) were used as a case study in this research to investigate the impact of technology costs on production during the period 1965 to 1994. The questionnaire was used to collect primary data from Swedish multinationals (MNFs) in the manufacturing sector; these data cover a period from 1965 to 1994.

The findings of this study showed that R&D intensive firms might find it more profitable to avoid technology transfer costs rather than physical transport costs. There is a negative relationship between technology cost and overseas production. If the cost of technology is low, the host country or company will be able to gain that new technology, then increase its productivity, then increase GDP, increasing exports and income.

With regard to cost of technology, there are several empirical studies such as those of Teece (1977), Robinson (1988), Sarfaraz and Emamizadeh, (1993), and Lkiara (2003) which have supported this finding.

Damijan, Knell, Majcen and Rojec (2003) sought to investigate the importance of TT via FDI to local firms in transition economies. The data on balance sheets and financial statements used in this study were collected for the period 1995-1999 for the following countries: Estonia; Slovenia; Slovakia; Latvia; Lithuania; Hungary; Bulgaria; Czech Republic; Poland and Romania. The coverage of firms in Slovakia, Latvia, and Lithuania was between 150-190 firms, while coverage in Estonia and Hungary was between 360-370 firms, and in Bulgaria, Czech Republic, Poland, Romania and Slovenia, firm coverage was high, between 1100-1700 firms. The data were used in this study to compare the importance of TT via FDI to local firms in transition economies using an econometric approach.

The findings of this study showed that FDI had a direct impact on firms' productivity in five out of the ten examined transition economies. FDI was the most important to improving productivity, improving economic structure and technology transfer to firms in Central and Eastern European countries (CEECs). FDI is the most important and cheapest channel of direct technology transfer to developing countries. The study also found that international trade works as a channel of technology transfer via imports of intermediate products and capital.

Mayanja (2003) sought to investigate the different sources of international technology transfer to 205 UK industrial companies for the years 1979-1991. An economic model was used in this study to investigate the different sources of international technology transfer to the UK. Value added was the dependent variable. Other variables were: export propensity; import penetration; capital expenditure and number of employees. As well as

investigating intra-industry technological gains the share of employment in foreign firms to total industry employment was used as a measure of FDI or foreign presence.

The results of this study showed that FDI was more important than trade in terms of technology transfer across borders, and the relationship between foreign presence and value added was positive and strong. Also, the FDI level was more positively correlated with value added as compared to trade. In addition, this study found that the UK government was justified in spending public funds to attract FDI, which raised the productivity of industries they entered, due to the relationship between FDI and technology transfer, because they are keys to economic development.

Sinani and Meyer (2004) sought to examine the impact of technology transfer and foreign direct investment on the productivity of local companies in Estonia during the period from 1994 to 1999, as well examining the impact of other variable such as company size, local firm trade orientation and ownership structure on local companies' ability to benefit from the transfer of technology. Their study used the production function framework to estimate the impact of technology transfer from FDI on productivity.

The findings of this study were that FDI contributes to economic development in host economies directly through increases employment, capital, exports and technology transfer. In addition, it contributes indirectly through improved productivity and improves economic structure. Host governments play an important role in helping local firms to benefit from FDI, through providing support such as policies aimed at increasing domestic learning capabilities, labour skills and promoting competition. Also, technology transfer through FDI

to local firms depended on the recipient firm's size, its trade orientation and its ownership structure.

Hoekman, Maskus, and Saggi (2005) attempted to analyse the role of national and international policy in encouraging the international transfer of technology. They also sought to distinguish between many methods of TT including FDI, trade in products, and trade in knowledge and technology, and movement of people nationally and internationally. The result of this study showed that policies of openness in the host country for FDI are very important in attracting more and more FDI, and FDI was most important for technology transfer between home and host countries or companies. Many host countries seek to attract FDI and technology via special economic policies such as economic zones, subsidies, tax holidays and other grants.

Kohpaiboon (2006) aimed to examine technology transfer via foreign direct investment in Thai manufacturing companies. The analysis of this study was built around the hypothesis that technology transfer is conditioned by the nature of the trade policy regime. A model was used in this study to investigate how technology transfer can take place via foreign direct investment; also this study used a system of two equations based on productivity determinants and FDI determinants to test the key hypothesis.

The finding of this study showed that TT is not automatic, but depends on host country factors and the policy environment of host government. For example one important factor is the nature of the trade policy in an industry. Also the size of the domestic market plays a very important role in FDI.

The limitation of this study was that cross-sectional data set with each industry represented by a single data point, which made it difficult to control

for unobserved industry specific differences. Long-term averages tend to ignore changes that may have occurred over time in the same country.

Lee and Tan (2006) investigated the intensity of international technology transfer in selected Asian economies through the import of machinery and foreign direct investment. A vector autoregressive model (VAR) was employed in this study, and the study employed data from the period 1990-2000 of ASEAN countries, which were: Indonesia, Malaysia, Singapore, and Thailand. Also, data were collected from various sources, such as: International Financial Statistics of International Monetary Fund (IMF); Indonesia Financial Statistics of the Bank of Indonesia; Quarterly Bulletin of Bank Negara Malaysia; Monthly Digest of Statistics, Department of Statistics Singapore, and Quarterly Bulletin, Bank of Thailand.

The findings of this study illustrate that the policy of host governments had a positive impact on FDI and TT; for example, host governments such as Malaysia and Singapore were found to have continued strategizing their FDI and technology transfer policies to upgrade their technological capabilities. FDI brings multiple benefits to host countries such as increased productivity, exports, economic growth and development structure of economy, but many are short-term gains. For example, FDI has impact on the productivity level in short-term, but productivity will increase in long-term. Also, technology transfer does not automatically happen, and the learning process is a also costly

Liu (2006) sought to investigate how foreign direct investment (FDI) generates externalities in the form of technology transfer. The author used a large panel of Chinese manufacturing firms to investigate how FDI was related to

technology transfer. The study was based on theoretical and empirical analysis; the empirical analyses in this study were based on a sample of manufacturing firms in China, covering over 20,000 industrial firms during the period 1995-1999.

The results of this study showed evidence that FDI brings multiple benefits to host countries such as increased productivity, exports, economic growth and development structure of economic, but many of them are short-term gains. For example, FDI had impact on the productivity level in the short-term, but productivity increases will tend level out in the long-term without further FDI.

Blaock and Gertler (2007) sought to investigate the benefits through FDI of technology transfer (TT) to local suppliers, in Indonesian manufacturing during a period from 1988-1996. A questionnaire approach was used to analyse the benefits from FDI via TT to local suppliers in Indonesian manufacturing. The The findings of this study showed strong evidence of the gains from MNEs' transfer of technology to host countries as part of a strategy to build other supply for overseas operations. There was strong evidence of the benefits from FDI, such as technology transfer, management know-how, export marketing access, increased productivity and profits increases in both home and host countries.

Blalock and Gertle (2007) aimed to investigate how technology was transferred via foreign direct investment (FDI) in the host economy. The authors used an unpublished panel dataset of Indonesian manufacturing establishments from 1988 to 1996. The primary data was taken from an unpublished annual survey of manufacturing establishments with more than

20 employees conducted by Biro Statistik Industri, while the analysis utilized data from the Republic of Indonesia's Budan Pusat Statistik (BPS).

The findings of this study showed vertical supply chains were a channel for technology transfer through FDI. It also found two major channels for technology transfer from FDI: horizontal flows to local companies (sometimes called "spill-over" because it is largely an externality), and vertical flows to backward linked suppliers.

Padilla-Perez (2008) sought to explore how technology was transferred via foreign direct investment (FDI) to host countries in two Mexican regions. This study developed a conceptual framework and presented empirical evidence to examine how technology transfers occurred from foreign direct investment (FDI) to host country. The sample of the study was one sector (electronics industry) in two different places, during the period from 2004 to January 2005. This study selected 80 foreign firms and locally owned firms, as well as conducting interviews with 30 local organizations.

The results of this study were that the empirical evidence collected in this research showed that MNEs are very important sources of production, technology, capital goods, new product, new knowledge and managerial skill. MNEs can transfer technology to the host countries through different ways, such as sale of technology and forming a cooperative relationship with local firm. Furthermore, FDI not only went to local private firms but also to other local organizations that were able to obtain some benefits from the presence of FDI, such as universities and research centres.

The limitations of this study are that the backward linkages between MNEs and locally owned companies were limited, and this study analysed only one way technology transfer from foreign investment to the host country.

Bitzer and Kerekes (2008) tried to examine foreign direct investment (FDI) as a vehicle for knowledge transfer. The authors used data on seventeen OECD countries during the period 1973 to 2000. In order to answer the question of the study, they applied the standard Cobb-Douglas production function approach. The findings of this study were that host countries benefit strongly from FDI in economic development, technology and increased productivity as well as knowledge.

Yiying (2010) attempted an analysis on the technology spillover effect of FDI and its countermeasures. An econometric approach was used in this study. The findings of this study showed that China realizes a number of benefits from the processes of FDI and TT, including the acquisition of advanced technology and industrial development.

Javorcik (2010) investigated FDI and TT in the manufacturing sector; an econometric approach was used in this study. The findings of this study showed strong evidence that FDI is very important channel of knowledge transfer across international borders; this transfer takes place through establishing new businesses.

Selma (2013) sought to explore how FDI effects the economy of the host country. The findings of this study were that the net benefits from FDI do not accrue automatically, but there are a number of factors that hold back achieving the full benefits of FDI in the host country. These factors include the

level of education in the host country, its technological level, infrastructure and location.

Groendech (2014) investigated TT through FDI to developing countries; a questionnaire was used in the investigation to collect primary data. The finding of this study showed that FDI is major channel of TT to developing countries. The level of transfer of technology depended on the policies of the host countries and the strategies of the FI. The policies of the HG impacted on the direction of FDI in the country.

Fanad (2014) investigated the role of FDI and TT in the UAE. A survey was used to collect data from a small number of respondents via a questionnaire and interviews. The findings of this study showed that FDI can play an important role in filling the domestic investment gap and spur economic growth. FDI was shown to have a positive impact on the level and speed of TT from foreign firms to domestic firms. The economic policy of the HG needs to be focused on economic growth, supported by economic stability, as these conditions are very important factor requirements for increasing the volume of FDI.

Table 2.3 summarizes the empirical evidence regarding FDI and TT. It shows the principal outcomes of the analysed empirical studies. The impacts on economic structure, economic indicators and the conditions and factors under which FDI and TT take place are presented where appropriate.

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Table 2.3 Selected empirical literature regarding FDI and TT

Author and year	Key Issue	Methodology/approach	Finding
Davidson and McFetridge (1984)	Key characteristics in the choice between licensing and FDI to international technology transfer (TT).	Statistical model for a sample of 1,226 firms.	The characteristics of host country have very important role for choice between FDI and licensing to TT, such as host county policy (taxation policy and exchange policy); market size and geographic proximity. When there are exchange controls that presence results in a greater use of licensing. FDI has very strong impact on the host country economic development, such as on an increase in the capacity of an economy to produce; income and GDP, as well as transferring good levels of technology..

Yin (1999)	The effects of tax incentives on the structure of a domestic industry, TT via FDI.	Econometric analysis (model).	If the host country adopts a preferential tax policy to foreign direct investment, it will encourage FDI and TT to take place; on the other hand, a lower tax rate will raise total industry output and increase productivity of industries, and increases exports. As a result, more foreign firms will enter this industry. Moreover, this study suggests that host governments should be cautious in reducing tax to attract FDI rather than TT and should adjust their preferential tax treatments in all industries, rather than one industry, in order to develop its economic structure and economic growth and, as a result, increase GDP.
Ming and Xing (1999)	Explain the emerging strategy of technology transfer to China.	Questionnaire survey.	Multinationals are very important sources of technology transfer to China.
Norback (2001)	Relationship between technology transfer cost and impact on production.	Questionnaire was used to collect data.	There is negative relationship between technology cost and production in developing countries. Because, if technology cost is lower this has a positive impact on productivity; it then increases GDP, increases exports, then increases income on the one hand. On the other hand, if technology cost is higher than the impact will be different (negative) on productivity.

Tong (2001)	The effects of FDI and foreign technology on local Chinese firms.	Questionnaire survey.	Chinese government encourage FDI on the condition that this will compound technology transfer, The benefits for local firms: - increased exports - improved productivity Moreover, in the short-run, FDI and TT give more exports, higher productivity and improved economic structure.
Damijan; Knell; Majcen and Rojec (2003)	Comparing the importance of TT via FDI to local firms in transition economies.	Econometric approach.	FDI is the cheapest means of technology transfer, and it tends to transfer newer technology more quickly than international trade and licensing. The output of FDI increases productivity of local firms in five out of the 10 examined transition economies.
Mayanja (2003)	Different sources of international technology transfer to 205 UK industries.	The economic model.	FDI is more important than trade as an avenue for accessing technology transfer and the relationship between foreign presence and economic developing is positive and strong. In addition, this study found that the UK government encourages FDI in order to attract TT, because they are keys to economic development, increases productivity of industries, and increases exports.

Sinani and Meyer (2004)	The impact technology transfer and foreign direct investment on the productivity of local companies in Estonia.	Production function framework to estimate.	FDI contributes to development in host economies directly through increases in employment, capital, exports and technology transfer. In addition, indirectly through improved productivity and improved economic structure. Host governments play an important role in helping local firms to benefit from FDI through providing support such as policies aimed at increasing domestic learning capabilities, labour skills and promoting competition. Also, technology transfer from FDI to local firms depends on the recipient firm's size, its trade orientation and its ownership structure.
Hoekman; Maskus, and Saggi (2005)	International policy to encourage the international transfer of technology.	Econometric approach.	Policies in host government encourage FDI and TT; in practice, many host countries seek to attract FDI and technology via special economic policies such as economic zones, subsidies, tax holidays and other grants and FDI is the most important way to transfer technology.
Kohpaiboon (2006)	Technology transfer (TT) via foreign direct investment (FDI) in Thai manufacturing.	The model was used for the analysis of hypothesis that technology transfer is conditioned by nature of the trade policy regime.	Technology transfer is not automatic, but depends on host country factors and policy environment of host government, for example one important factor is the nature of the trade policy in an industry. Also the size of the domestic market playa

			very important role for FDI.
Lee and Tan (2006)	International technology transfer in ASEAN economies through foreign direct investment.	Model (VAR) was employed in this study.	The policies of host governments, such as trade and FDI policies, have a positive impact on FDI and TT. Available evidence suggests that diffusion of FDI technology is facilitated by an open trade policy regime between home and host countries.
Liu (2006)	How foreign direct investment (FDI) generates externalities in the form of technology transfer.	Theoretical analysis and empirical analysis.	FDI brings multiple benefits to host countries such as increased productivity; exports, economic growth and development of structure of economy, but many of benefits are short-term gains. For example, FDI has impact on the productivity level in short-term, but productivity will not increase further in long-term. Also, technology transfer does not automatically happen as well as the learning process being costly.
Blaock and Gertler (2007)	Benefits from FDI through technology transfer (TT) to local suppliers.	Questionnaire approach was used.	Multinationals transfer technology to host countries as part of a strategy to build other supply for overseas operations. Strong evidence of the benefits from FDI & TT for management know-how, export marketing access, increased productivity and profits increases in both home and host countries.
Bitzer and Kerekes (2008)	Foreign direct investment (FDI) as potential for knowledge transfer.	Standard Cobb-Douglas production function approach.	Host countries benefit strongly from FDI on economic development, technology and increase productivity

			as well knowledge.
Padilla-Perez (2008)	How technology is transferred via foreign direct investment (FDI) to host countries.	Developed a conceptual framework and presents empirical evidence to examined.	MNEs are very important sources of production, technology, capital goods, new product, new knowledge and managerial skill. MNEs can transfer technology to the host countries through different ways, such as sale of technology and cooperation with local firms.
Yiying (2010)	An analysis on technology spillover effect of FDI and its countermeasure.	The econometric approach.	Benefits from process of FDI and TT such as gaining advanced technology and also industrial development.
Groendech (2014)	TT through FDI to developing countries.	Questionnaire.	The transfer of technology depends on the policies of the host countries and the strategies of the FI. The policies of HG impact on the direction of FDI in the country.
Fanad (2014)	Investigated the role of FDI and TT in UAE.	Questionnaire and interviews.	FDI has a positive impact on the level and speed of TT from foreign firms to domestic firms; economic policy of HG should be focused on economic growth and economic stability is a very important factor requirement for engorgement FDI.

Source: Developed by the author using variety of relevant sources.

Taking the information presented in Table 2.2 into account the following key aspects can be observed. The major issues are as follows: in the majority of cases, the role of FDI for TT is investigated taking into account different forms of FDI. Some investigations provide specific studies of the key factors for FDI and TT targeting developed and developing countries. Concerning the methodological approaches applied in the analysed empirical studies, it was observed that some studies used a quantitative methodology, while others applied a qualitative methodology in their data collection and analyses, which depended on the nature and purpose of the key issues studied.

From the point of view of the empirical findings, many aspects of foreign direct investment and technology transfer are well documented, but the findings of these studies are mixed. For example, Davidson and McFetridge (1984); Lee and Tan (2006); Hoekman, Maskus and Saggi (2005) and Yin, (1999) found that the host government and its policies play a very important role in encouraging FDI and TT. On the other hand, studies such as the ones by Sinani and Meyer (2004), Liu (2006), Blalock and Gertler (2007) and Norback (2001) uncovered that FDI contributes to the acceleration of the economic development of host economies through increases in employment, productivity, augmented exports, upgrading of technology, economic development and improved economic structure. The variability of findings in all studies above can be traced back to the countries having different level of economic development and different economic structures.

No studies have been found specifically concerning the key success factors impacting of FDI and TT on Libyan and Egyptian economy and economic structure. The context for this study is Libya and Egypt. They are both

developing countries. It is expected that the key factors for FDI and TT may express certain differences and similarities to those countries in the analyzed empirical studies above. The 'prehistory' of FDI and TT in the two countries is different, the process and duration of the influx of FDI and TT also varies significantly. It can also be expected that the factors impacting the processes of FDI and TT have been managed and performed differently in Egypt and Libya.

2.6 Conclusion

The literature reviewed has provided an insight into FDI and TT. It highlights the role of two key actors in these processes, namely the foreign investor (FI) and the host government (HG). The chapter also provided an overview of the key theories of FDI and TT. Moreover, the literature reviewed has dealt with the mechanisms of TT via FDI from both home and host country perspectives and also from the perspective of the different types of FDI utilized.

Moreover, the analyses presented in the chapter have revealed that FDI and TT both play a major role in driving economic growth in host countries, impacting on other determinants of economic development. This literature reviewed has also examined the role of FDI and TT in the economic development and economic growth of host countries. The studies have uncovered evidence that there are many factors that impact on the level of FDI and TT influx into a particular country.

This chapter has reviewed studies that have been related to issues of FDI and TT in developed countries and developing countries. The analysis of these particular studies showed that the policies of host governments have played a

crucial role in encouraging and managing the process of FDI and TT. Findings differed among countries, but the general trends stayed similar.

It has been uncovered that extant theories and empirical studies of FDI and TT are mostly concerned with the perspectives of the foreign investors, while the host governments in the process of FDI and TT have been somewhat ignored. The specifics of the impact of FDI and TT on the economic structure of host countries have attracted least attention. Consequently, this particular study aims to pay special attention on the roles of the HG in the attraction and managing of FDI and TT for the improvement of the economic structure and the economic indicators in the recipient countries. Therefore, this identified gap in the theoretical and empirical literature has been targeted.The next chapter is dedicated to the creation and development of a conceptual framework for this study.

Chapter Three
Conceptual framework for the study of the key factors impacting FDI and TT taking a host country perspective

3.1 Introduction

Chapter 2 of the study reviewed the literature dealing with technology transfer from FDI and the component factors impacting on these processes. In this chapter, the study organizes these factors impacting on the processes of FDI and TT into a unique conceptual framework. The literature review undertaken in Chapter 2 showed that there are numerous prior studies that have examined FDI and TT and their impact on number of various aspects of the economy. However, the role of FDI and TT as key to the change of economic structure in developing countries has not been given sufficient attention in the literature, which most frequently comes from an investor perspective.

Many existing studies concerning FDI and TT from theoretical and empirical aspects have been carried out in developed countries. It is not surprising that they do not deal with the specifics of FDI and TT typical for the developing world, including the contexts of the developing economies of Libya and Egypt. There is no available integrative framework dealing adequately with the key success factors of FDI and TT in developing countries and their impact on the changes of economic structure. In general, studies concerning FDI and TT and their impact on the changes of economic structure have been rather limited and unspecific.

As identified in the literature review chapter, the form, purpose and outcome of FDI decisions can go into three major directions: greenfield, acquisition or JV. FDI is more likely to bring TT when performed as greenfield investment. In

takeovers (or acquisitions), some of the existing technology stays and some is replaced. In the both greenfield and takeover situations for FDI, some transfer of technology is likely to take place. In the greenfield form of FDI new facilities are built, accompanied by more advanced technology. FDI also transfers technology with acquisition, because FDI will (probably) improve a local company with transfer of newer technology.

This conceptual framework is based on: the actors in foreign direct investment (FDI) and technology transfer (TT); factors impacting FDI and TT; the mechanisms of TT via FDI, and the impacts of FDI and TT on economic growth and the development of a country's economic structure. Different aspects of the theoretical framework will be discussed in more detail in the following sections.

3.2 Actors in FDI and TT

FDI from the developed world is the most important source of technology transfer. Thus, FDI originating from this part of the world has the potential to generate considerable technological transfer. However, whether and to what extent FDI facilitates TT, varies according to economic development and the priorities of the host/ recipient country and its economic structure. FDI and TT are important and effective ways that catalyse economic advancement in the developing countries (Dyker, 1999 and OECD, 2002).

Moreover, the significance of the technological gap between a developed and a developing country is a very important issue which is correlated with foreign investors' presence in the developing countries; it also determine the type of TT. In addition, the technological level of the host country's business sector is

of great importance in the encouragement of FDI and TT (OECD, 2002). Where the level of economic development is particularly low, then the host country may not be attractive for FDI, particularly from the most developed countries.

So, in order to succeed, the process of FDI and TT must reflect the technological gap between the home and host countries/firms; this gap should not be too great. Evidence suggests that for FDI to have a more positive impact than domestic investment on economic issues such as productivity, quality, economic development and economic structure, the technology gap between the respective countries/companies is wide; where the technological level in the host country is however too low, then local firms are unlikely to be able to attract foreign technologies transferred via FDI, because the technology gap between them is too big (OECD, 2002).

The processes of FDI and TT can be found anywhere in the world (developed or developing countries) (IMF,2013), but these processes are more important when they take place between developed and developing countries. That is because developed countries can provide FDI and also advanced technology, and also developing countries are interested in FDI and TT, because in general terms the level of technology is not that advanced in developing countries (OECD, 2002).

The actors in FDI and TT are the starting point in the process of FDI and TT in developed and developing countries. The actors are the driving force that leads the process to start. There are two chief actors involved in the process of FDI and TT: host government (HG – especially in centrally planned economies) and foreign investor (FI). When FDI and TT go from developed

countries to developing countries (from home to host countries), as there are different economic structures, different needs and different levels of economic development, there are also varieties in these processes. Theories providing background to the processes of FDI and TT from the foreign investor and the host government points of view were developed by Saggi (2002), Moosa (2003) and Kethe and Kamal (2005).

It has been noted that FDI and TT are most effective when they happen between developed and developing countries (Saggi, 2002; Moosa, 2002 and Kethe and Kamal, 2005), because the developed country can provide more advanced technology (such as software or hardware) into less developed countries. Developing countries will benefit most from obtaining new technology rather than outdated technology (OECD, 2001; Saggi, 2002; Moosa, 2002; Bernard, Kethe and Kamal, 2005 and Chen and Reger, 2006). When developing countries receive new technology, it will impact most positively on their economic structures, through the transfer of technology to specific sectors; and as a result of gaining new technology, increase productivity and increase exports.

There is a range of factors that impact on economic growth, such as level of foreign direct investment, level of technology, type of economic system and availability of raw materials. The impact of these factors on economic growth and development depends on economic circumstances. Factors of economic growth and economic development are not the same in all countries (OECD, 2002). They differ from one country to another, and from developing to developed countries. According to Ali and Guo (2005) market size and

growth, labour cost, host government policies; cost of capital, location distance and cultural differences are very important factors for attracting FDI.

The process of FDI accompanied by TT can be divided into three stages: before FDI and TT, during FDI and TT and after FDI and TT (Marinov, 2004). At stage one (before the process of FDI and TT) the actors taking part in the process (the foreign investor, host government) should be motivated to engage in the FDI and TT venture. This is regarded as a major precondition for stage one. If it exists, FDI and TT are likely to go on to stage two. For instance, in the case of Libya, it is expected that in the oil and gas sector FIs are motivated by the opportunities to gain access to Libyan oil and gas reserves, as Libyan oil and gas are of high quality and (had) low costs of extraction. On the other hand the Libyan government policy is to attract FDI and TT to lead to development of the economy and its structure as well as creation of jobs. As a precondition for this stage, the complementarily of motives of the FI and HG is of major importance.

At realization, stage two the relationships between FI and HG are important, as they aim to result in the actual implementation of FDI and TT. If this stage is contractually bound, the relationships between FI and HG are likely to move to stage three (post the process of FDI and TT); in this third stage new projects will be set up by the host government for securing a further influx of FDI and TT.

The key actors (FI and HG) implement FDI and TT. This is particularly so where inward investment is controlled by the HG. According to Marinova et al. (2004) most often in the processes of acquisitions, there are three parties participating in the process of FDI and TT. They are the foreign investor, the

host government and the host firms (local companies). In the process of FDI and TT the host government (HG) and host firm (HF) should be in agreement in terms of intentions and aims. HFs are most important where FDI operates relatively freely, as in the UK and other developed economies.

According to Marinov and Marinova (1999), as well as Marinova et al. (2004), the policies of the HG in attracting FDI are mostly to support economic development, gain access to advanced technology, create new jobs and supply new goods to the host marketplace. Thus, FDI and TT are viewed as main drivers of economic development and growth, especially in developing countries.

The host government can create many good conditions to help the host country to benefit from FDI and TT. For example, if the HG policy from the process of FDI is to benefit from FDI via upgrading labour qualifications it will focus on education and training of the local workforce provided by both the HG and FI. If the HG policy from the process of FDI is development or improvement of economic performance or developing the economic structures, then HG policies will focus taxation, laws and improvement of the environment again as a common goal of the HG and FI. Additionally, the host government could try to encourage FDI to help the development of specific economic sectors, to improve the existing economic structure and secure economic growth. Consequently, in order to achieve their aims, host governments must try to create favourable conditions and open up many economic sectors to FDI and TT in order to change the economic structure of their countries. Likewise, host governments must provide similar conditions

across the economic sectors in order to encourage FDI, such as tax holidays and an attractive investment policy (Fodor, 2005).

The relationships between FIs and HGs are very important in the process of FDI and TT. If these relationships are complementary then the processes of FDI and TT take place. For example, when the host government policy is a desire to increase the potential benefits from FDI and TT to the host economy and also it needs FDI and TT to go to many sectors, not only to one sector, then the host government policies needs to focus on the provision of a good economic climate (such as improved infrastructure, favourable changes to taxation and the creation and implementation of support for FDI and TT through investment laws) (Blakeney, 1989).

As a gatekeeper to FDI and TT, the host government can manage and improve their processes to serve best the interests of the host country economy in acquiring foreign capital, technology, and experience. Additionally, there are numbers of factors that have very important impacts on the processes of FDI and TT (Saggi, 2002).

3.3 Factors impacting FDI and TT

In the process of FDI and TT, it is important to distinguish between two kinds of factors, classified as the manageable (Tvaronaviciene, 2006) and the unmanageable. This conceptual model extends the literature in this area.

It has to be pointed out that the factors that are specific to one of the actors, either FI or HG, do not themselves have a big impact on the process of FDI and TT (Saggi, 2002). Thus, the focus should be on factors that are common to both FI and HG. The manageable factors of are of crucial importance. This

is because the manageable factors represent the capability of the actors to improve, strengthen and change the conditions for FDI and TT. For the HG it is most important that FDI and TT secure economic growth, improve the economic structure, overcoming any technology gap, acquire new skills, and provide good levels of education, infrastructure, taxation and political stability. Thus, generally speaking, the host governments can encourage or discourage the processes of FDI and TT via their policies. The host government policies, (which constitute manageable factors) such as those concerning trade and investment, can play key roles in the processes of attracting and performing FDI and TT. Applying such polices, host governments of developing countries can obtain FDI and access to more advanced technologies from developed nations. Obtaining the ability to effectively use advanced technology can be an important and major condition to secure development of their economies. Generally, host governments can provide more constructive conditions to strengthen the factors for the processes of FDI and TT. The manageable factors, common to both FI and HG, create the necessary preconditions for FDI and TT, when FI and HG act together.

Unmanageable factors for FDI and TT, such as the availability or lack of natural endowments, location of the host country and the climate of the host country, cannot be changed according to the will of the HG. However, if the host government *controls* many kinds of natural endowments, such as oil and gas resources, it can develop infrastructure with a high quality of technology needed for the extraction and realization of the products from the natural endowments, thus encouraging FDI and TT (UNCTAD, 2010; Cannice, Chen and Daniels, 2003). According to Ali and Guo (2005) market size and market

growth, labour cost, host government policies, cost of capital, location distance and cultural differences in the host country versus home country are factors of crucial importance for attracting and materializing FDI and TT (in China). According to UNCTAD (2009) there are a huge variety of factors that impact on the processes of attraction and performance materialization of TT. They are:

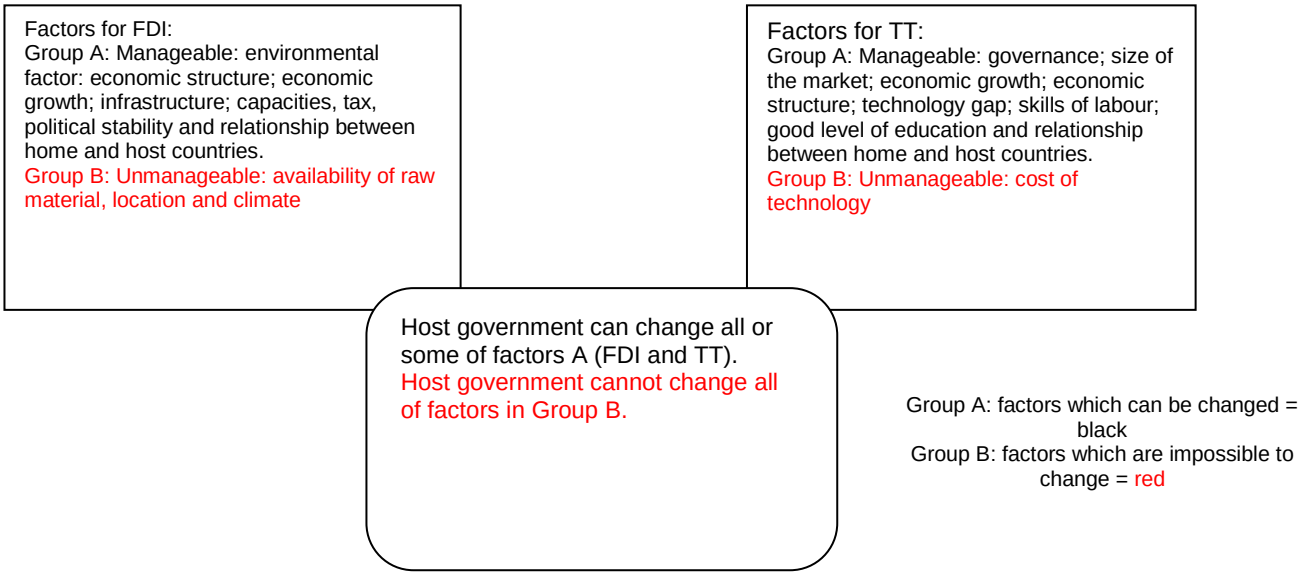
- *The nature of the technology*: Complexity, speed of change, novelty of technology, degree of centralization needed for R&D relating to products and process based on new technologies.
- *Strategy of sellers*: Size of corporations and corporate strategies; concentration on specific product technologies and dependence on the experience of international TT.
- *Capabilities of the buyers*: Firm skills and technological capabilities. Availability and accessibility to information in foreign markets and institutions supporting skill technology development and implementation.
- *Host government policies*: FDI and intellectual property right policies supporting local and foreign firms and their capabilities to engage in FDI and TT.

Following the above reasoning, in this study, the factors for FDI and TT are also divided into two groups: manageable and unmanageable (Figure 3.1). When FDI is used as a vehicle for TT through the use and diffusion of improved production techniques, the processes of FDI and TT are mutually supportive. A numbers of studies have investigated the link between FDI and TT and the economic benefits that FI and HG have realized. These studies

include those of Dunning (1994), Nunnenkamp and Spatz (2004). These authors argued that the benefits from FDI and TT are different among the economic sectors of one country and the identical economic sectors of different countries. They also uncovered that these benefits change over time, with the changing of the specifics and descriptors of FDI and TT. According to Dunning's (1981) earlier work there is also a close relationship between FDI and the levels of economic development of countries.

This particular research study used a numbers of prior studies in order to develop figure 3.1. Major studies include: Bernard, Marinova et al (2004), Blakeney (1989), Blalock and Gertler (2007), Buckley, Wang and Clegg (2007), Cannice, Chen and Daniels (2003), Contractor (1998), Keith and Kamal (2005), Marinov and Marinova (1999), Padilla-Perez (2008), Perez (1998), Ramanatha (1995), UNCTAD (2009a, 2009b, 2010), as well as other references in Table 2.3.

Figure 3.1 Manageable and unmanageable factors for FDI and TT



Source: Developed by the author using a large variety of relevant sources referenced in Table 2.3

The idea presented in Figure 3.1 is that the factors that impact the processes of FDI and TT can be divided into Group A (manageable) and Group B (unmanageable). All factors belonging to Group A applying to both FDI and TT can be managed or changed by the host government; the host government can change infrastructure in order to encourage foreign investment to take place in the country through development of roads; transportation; services and so on, while those that belong to Group B for FDI and TT cannot be changed by the host government (availability of raw materials such as oil and gas), because this factor (outside the control of the host government) cannot be increased or decreased.

3.4 Mechanisms of TT via FDI

In recent years, the phenomenon of foreign direct investment and technology transfer into host countries has become a very important issue, irrespective of the fact whether the bulk of FDI inflows are realized either via greenfield investments, acquisitions or joint ventures (OEDC, 2002).

The mechanisms of TT are the means of transmitting technology from the home to host countries, or from the seller firm to the buyer firm. In consideration of the fact that technology comprises interrelated components and different degrees of sophistication, it is reasonable to believe that there are multiple mechanisms for the realization of the process (Ramanathan, 1995).

Sometimes, in TT via FDI many newly-created assets come under the control of the foreign firms, or there may be just a transfer of existing assets to local firms. The mechanisms depend also on host government motives, as HG

motives can be completely different to and, in certain cases, opposing the motives of FI (UNCTAD, 2007). For example, the motives of HG can be to attract very advanced technology, whereas the motives of FI can be to use local resources with not very advanced technology.

If the mechanism of FDI via greenfield investment is used, this means that the investment flow from the home to the host country is for the creation of a new entity. Greenfield investment is more desired by the HG, because it creates new jobs in the host country and the greenfield FDI will (probably) transfer a relatively advanced technology to the host country, the economic sector and lead to the start of an indigenous company. This mechanism is a form of FDI where a parent company starts a new venture in a foreign country by constructing new operational facilities, starting anew. In addition to building new facilities, most parent companies also create new long-term jobs in the host country. Another key form of FDI is acquisition, whereby a parent company acquires a company or companies in a host country with a view to open a new branch and/or form new partnerships (Tomsik, et al, 2001). Such a mechanism for TT is less desirable to an HG than the greenfield one, because greenfield is more likely to play a role in the development of the country's economy (economic growth and economic development), as well as transfer advanced technology.

When a firm engaging in FDI decides to expand their operations to another host country, there are numbers of options it can face, one of which is whether it is most beneficial to have the business matters in its own hands and create a fresh new site of operations in the foreign country via a

greenfield investment, or to purchase an existing company in the host country through an acquisition (UNCTAD, 2011).

From the other perspective, an FI may choose a greenfield FDI if there is no suitable firm in the host country to acquire. This is favourable in situations where the FDI can realize a number of benefits. In order to encourage FDI, and at the same time in order to gain advanced technology, conditions managed by the HG, such as tax breaks, appropriate economic infrastructure, favourable investment policy or other benefits can be used to promote the host country as a good location for foreign direct investment (FDI) by an appropriate FI. This shows that the role of the host government is very important in the process of FDI and TT (Grunfeld and Sannarandccio, 2005). Greenfield FDI often includes transfers of new technology, and knowledge, management knowhow. When FDI is in the form of greenfield investment there is usually a greater technology transfer from foreign investor to host country or company to overcome existing technological imbalances/gaps (UNCTAD, 2012).

FI and HG apply a greenfield approach where their motives have been in line with its application. For example, if the host government is motivated by the desire to increase the potential benefits from the processes of FDI and TT in the long term, there is a wide range of potential benefits which may be sought or prioritized. They include: receiving new and advanced technology, developing the existing work force via training in the use of advanced technology, improving productivity and quality, developing one particular target sector of the economy, developing a balanced economic structure, creating new jobs, increasing imports and exports. The host government

should seek the greenfield form of FDI to achieve the widest range of benefits. On the other hand, if the foreign investor is motivated (for example) to create a new subsidiary for market seeking and resource seeking, it is likely to prefer using its own technology. In such a cases, the foreign investor will likely prefer to implement a greenfield investment. Then, the motives of the HG and the FI are complementary and the likelihood for the processes of FDI and TT to take place increases.

Another mechanism of TT via FDI is through acquisition, whereby a parent company acquires a company (or companies) in a new country with a view to opening a new branch or forming new partnerships. The technology transfer in this situation may be of new technology or old technology. In such a situation, the process hinges on foreign investor and host country, and the situation of the host company. For example there are a number of countries that allowed FIs (via FDI) to purchase 100 percent of local companies, in order to develop the company and create new jobs. (This is particularly so in countries that suffer from a lack of funding and technology, such as some African countries.) In such cases of FDI, the transfer of technology through acquisition may take the same form of FDI via a greenfield development. In the case of acquisition, if the foreign investor is happy with the technology used in the host company then it will not work to improve it. On the other hand, if the foreign investor is not happy with the existing technology then it will replace it with new technology, thus turning the acquisition into a brown field investment.

The host government and the foreign investor can go with the acquisition case, when the economic situation of the host country favours it. That is,

provided the motives of the host government, as well as relationships between the actors in this process are conducive, and the host government is motivated to participate in investment under mutually favourable conditions for it and the foreign investor. This is often done in order to develop existing sectors of the economy rapidly. If the HG implements privatization or it needs to develop local technology or local firms and improve productivity, then the HG will choose to go with the form of FDI as acquisition. The beneficiaries in this form may be more than the HG and FI, but also the acquired local firm. In this particular case, the host government may allow the FI to purchase up to 100 percent of the local companies in order to develop these companies (mostly their technology and productivity) and create new jobs for local employment (UNCTAD, 2009). Before this process takes place, the HG must be aware of which kind of technology it needs for its economy. For example, the FI may provide the wrong type of technology to the local company, and then the process of TT will have a negative impact on local companies and the economy (UNCTAD, 2012). As a result, FI companies may introduce a lower level of production technology, particularly in countries that suffer from a lack of funding and knowledge of advanced technologies (such as many developing countries). If the motives of the host government and the foreign investor in this form of investment are complementary, then the process of acquisition will take place. If these motives are not complementary, then FDI will not take place and the process of FDI will be curtailed. In such cases the host governments will go with other forms of FDI and TT, such as international joint ventures (UNCTAD, 2009).

International joint ventures (IJVs) are a further mechanism for FDI and TT. IJVs result in entities that are companies formed by parent firms from one or more countries (that can include developed and developing countries) contribute resources such as financial, market, land, equipment and skills. In addition, IJVs between host firms in developing countries and home firms in developed countries have become a popular means for the satisfaction of objectives such as implementation of advanced technology, and improvement of economic indicators (Miller, Glen, Jaspersen and Karmokolias, 1997).

In the case of an IJV among partners from developed and developed countries, or between developing and developing countries, they often share a degree of managerial responsibility and risks to the value of their respective contribution to the venture (Johri, 1995) but receive limited benefits. Additionally, they offer, to all partners foreign or local, an opportunity for benefit significantly different from the comparative advantages of the other, such as market and natural resources from the local, and technology from the foreign investor (Miller, Glen, Jaspersen and Karmokolias, 1997).

Furthermore, IJVs are one of the best ways to obtain a high level of technology and FDI management experience. But these benefits depend on the specifics of the relationships between HGs and FIs as well as among all partners of the venture. There must be agreement with (almost) everything and everyone in the process; there are some foreign investors who do not allow foreign partners to access their technology. So, in the application of IJVs, the role of the host government is very important for the processes of FDI and TT. If the HG wants to manage the process of FDI and TT well and to benefit the country where the TT originates, the HG must know how to

manage these processes. The role of HG in IJVs before signing a contract with a foreign investor is very important.

The processes of FDI and TT involving IJV formations are different from the forms of FDI via greenfield and acquisition, because IJV investments cannot happen between two countries without prior agreement and (sometimes) obtaining licenses. IJVs provide opportunities for each partner (local or foreign) to benefit significantly from the comparative advantages of the other, and the impact from joint ventures will be very significant if the motives of host government and foreign investor are complementary (Miller, Glen, Jaspersen and Karmokolias, 1997).

Moreover, the host government should know which kind of technology its firms and economy needs and which kind of technology the foreign investor will be willing to bring in this process. As a result of an unsuitable process of TT, local companies may introduce a low level of technology. Thus the preliminary agreements between HG and FIs on technology issues are of critical importance in the process of IJV creation (Marinova et al, 2004).

All the forms of FDI and TT presented above (greenfield, acquisition and IJV) can happen between any two or more countries, including the processes of FDI and TT between developed and developed countries or between developed and developing countries or between developing and developing countries. Recently, there have been such processes originating from developing towards developed countries. Processes of FDI and TT between developed and developing countries have become more common in the last 20 - 25 years and result in many benefits if appropriately managed. If investors go from a developing country to other developing countries, then

these investments rarely transfer technology; the majority of those investments are in the field of services that do not require advanced technology (Marinova et al, 2004).

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3.5. The impacts of FDI and TT on economic growth and development of economic structures

FDI and TT are viewed as key drivers of economic development and economic growth, especially in transition and developing countries, where governments give major importance to the attraction of FDI. In such contexts FDI is viewed as a main means to import better technology (Chen and Roger, 2006). According to Blomstrom and Kokko (1998) the transfer of technology has both a direct and indirect impact on economic growth and the development of the economy of host countries, as well as effects on domestic R&D. Direct impact on host countries is seen as upgrading of employment skills, provision of capital, increase of exports, increase of productivity and provision of new technology, as well as increase of GDP. The indirect impact into host countries is mostly in the form of increased income.

If the host countries are least developed, the processes of FDI and TT have a somewhat smaller effect on their economic growth and the development of their economic structure, which is attributed to a large number of factors that have a very significant impact on FDI and TT. To increase the positive outcomes of these processes the host countries need to have a certain threshold level of development in education, technology, infrastructure and economic structure before being able to benefit from the processes of FDI and TT (UNCTAD, 2007).

The technological benefits from FDI and TT are not limited to domestic firms only. FDI and TT are very important in the global economy, especially in developing countries (UNCTAD, 2007). FDI is generally known as a growth-enhancing factor in host countries. It not only brings in capital but also introduces advanced technology that can enhance the technological capability of firms in the host country and the host economy as well. All the forms for FDI mentioned previously are probably the most effective and fastest ways that can have impacts on economic structure and economic development and growth in host countries (UNCTAD, 2007, 2009).

While the empirical evidence of the processes of FDI and TT shows it has varied effects on host countries, variation arises through a number of factors. Thus, the processes differ significantly across countries and economic sectors in the host countries, where the processes of FDI and TT have a direct impact on imports and exports. The main benefit of the processes of FDI and TT for host countries lies in their long-term contribution to integrating the host economy more closely into the world economy, in a process likely to include higher imports as well as exports (OEDC, 2002).

All these benefits from the processes of FDI and TT are real, but they do not accumulate automatically. Moreover, these benefits vary from country to country according to their investment environment. For example, features shown to hold back the full benefits in some host countries include backward educational systems, underdeveloped infrastructure, unsatisfactory levels of economic development and low levels of technology in the host country (OEDC, 2002). So, in order to achieve all the aims of the host government from the processes of FDI and TT, host governments try to provide several

types of investment incentive to encourage foreign investors to move from home country to host country. These incentives include opening up more sectors to foreign firms and improving investment policy (tax holidays, low level of tax and infrastructure). In addition, host governments must know which kind of technology is needed. For example, foreign investors may give the wrong type of technology to a local company, and then the process will have a negative impact on local companies.

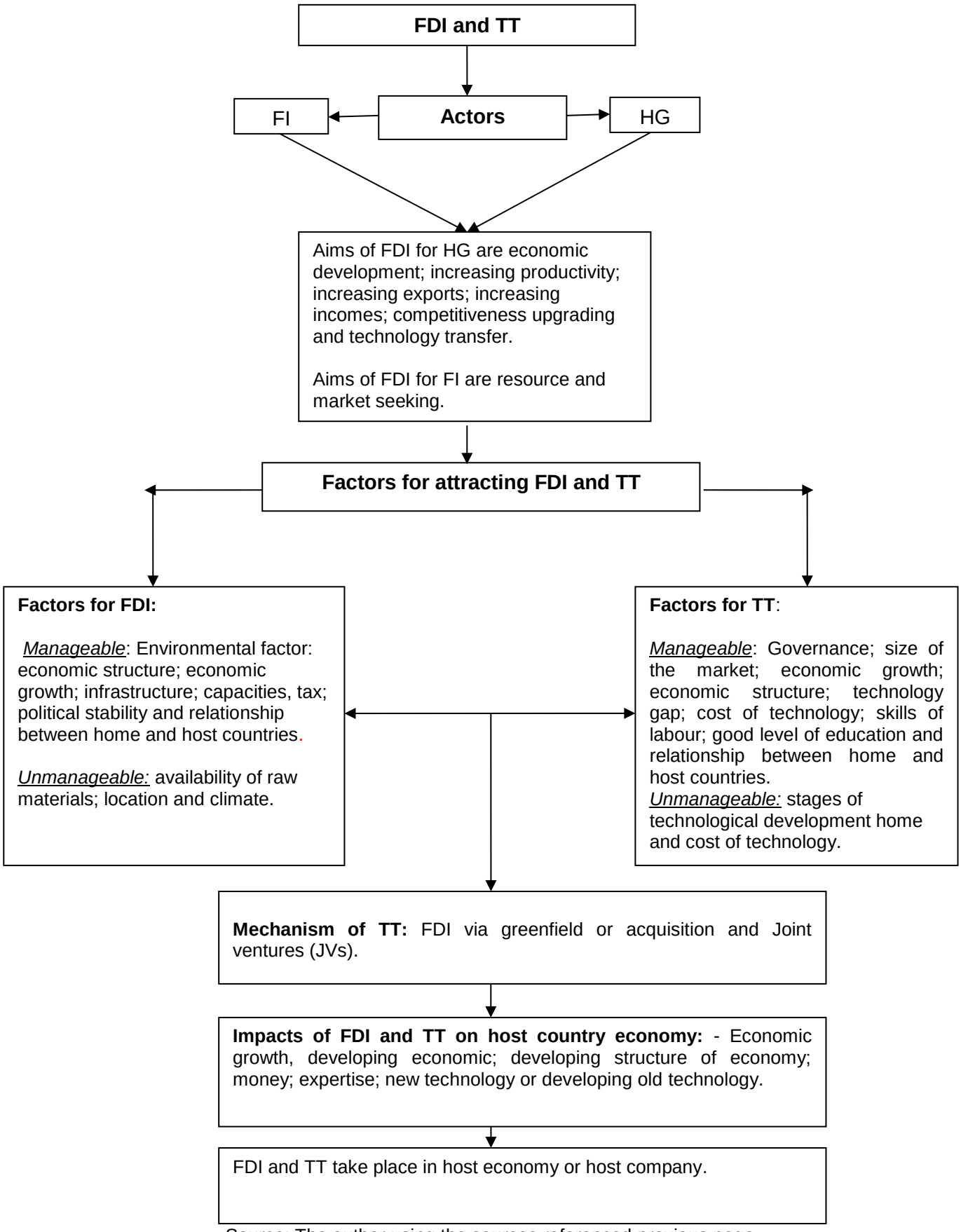
The benefits for the HG from the processes of FDI and TT depend on the outcomes of the various forms (greenfield, acquisition and joint ventures). For example, acquisition and IJV formations bring lower benefits and the risks of negative effects are greater from these processes if compared to greenfield investments (Please refer to Table 3.1). Foreign companies in these forms need short periods of time to change the industry policy of local companies in the host countries as well as improve or develop the economic structure of host countries. These forms (acquisition and IJV) may use new technology or upgrade old technology. On the other hand, FDI via acquisition and joint venture forms do not create new employment at the first time of entry into the host country, but may lead to lay-offs. The productivity gain is smaller at the time of first entry into the host country than greenfield operations (UNCTAD, 2010).

An integrated framework is presented in Figure 3.2, incorporating elaborations from the literature review chapter. The upper-most layer of the conceptual framework refers to the processes studied, namely FDI and TT. This study used a number of studies in order to develop the conceptual framework in Figure 3.2: Chen and Roger (2006), Kethe and Kamal (2005), Miller, Glen,

Jaspersen and Karmokolias (1997), Marinova et al. (2004), Moosa (2002), OEDC (2002), Saggi (2002), Tomsik et al. (2001), UNCTAD (2007, 2010). Further down, the two key actors that are always present in these processes are depicted: the foreign investor (FI) and the host government (HG). In more complex cases, other actors such as host country firms or foreign parent firms can be involved. In order that the processes can be managed well by the HG, the factors pertaining to FIs and HGs are subdivided into manageable and unmanageable classes and then associated with each part of the processes studied. Then the mechanisms through which TT via FDI takes place are summarized and the impacts of the processes on the host economy recapitulated.

The present study employs this conceptual framework to study the impact of FDI and TT on economic structure, from the highest layer to the end of the process in the lowest layer. This study will analyse expert perceptions of the key factors for foreign direct investment (FDI) and technology transfer (TT) in Libya and Egypt and their impact on economic growth, economic development and economic structure in various sectors, in order to generate an understanding how of host governments could manage the process of FDI and TT in the best possible way.

Figure 3.2 Conceptual framework for factors FDI and TT and their impacts on HG



Source: The author using the sources referenced previous page.

3.6 Conclusion

On the basis of extensive analysis, the purpose of this chapter has been to create a conceptual framework. It relates to the theoretical explanations for the key actors and factors impacting FDI and TT taking a host country perspective and the motives of FIs and HGs.

There are many studies on FDI and TT, both theoretical and empirical. However, the literature is very limited in the aspects of how economic indicators and the economic structure of the host country change as a result the process of FDI and TT. This is the reason for the focus in this area (FDI and TT) of investigation. This study has set out to investigate the key success factor impacting foreign direct investment and technology transfer in Egypt and, further, how Egyptian experience can be beneficial in Libya. Moreover, there has been no specific investigation of theoretical or empirical nature that evaluates the way through which economic structure can change as a result of the process of TT via FDI, and more so a comparison between two developing countries.

This research contributes not only to the theoretical literature of FDI and TT, but it also sets out to fill a gap in the empirical literature with a comparative study between Egypt and Libya, two developing countries with varied levels of their FDI and TT processes and economic development.

Chapter Four

Libya and Egypt: The contexts of the study

4.1 Introduction

One of this study's objectives is to investigate the Libyan economic structure and compare it with the Egyptian, including the main sectors in both countries. This chapter provides a general overview of the Libyan and Egyptian economies, and is divided into three parts. Section 4.2 is a study of Libya, covering its location, the structure of its GDP, FDI into the Libyan economy, size and distribution of FDI, the amount of labour required to fulfil available employment and the geographical distribution of FDI. Section 4.3 is a study of Egypt, including its location, the structure of its GDP and FDI into the country. Finally, section 4.4 presents an analysis of the structure of the Libyan and Egyptian economies.

4.2 An overview of FDI in Libyan economy

4.2.1 Geographic location and population of Libya

Libya's local name is Libya. It is a developing Arab state located in North Africa, sharing borders with Tunisia to the west, 459 km in length; Algeria to the west; 983 km, and Egypt to the east 1,115 km. Part of the Sahara Desert is contained within Libya, extending across the southern frontiers with Niger (354 km), Chad (1,055 km) and Sudan (383 km). Libya also has a Mediterranean coastline about 1,970 km long, from Tunisia in the west to Egypt in the east. It is the fourth largest country in Africa, with an area of almost 1.8 million square kilometres; Tripoli is the capital city and Benghazi is the second largest city. Libya has a small population (around 6 million), with

one of the lowest population densities of all Arab countries and even of all African countries at large (Otman and Karlberg, 2007).

Over 50% of the Libya's population live in the two principal cities (Tripoli in the west and Benghazi in the east). The main and official language spoken is Arabic, although English, Italian and many other languages are also used in business and trade. Almost 100% of the Libyan population is Sunni Muslim.

4.2.2 Economic overview

Libya has a relatively small economy, dependent on the extraction and sale of natural resources such as oil and gas. The economy is limited by the finite resource of oil and a lack of skilled labour, in addition to the high rate of population growth and urban migration.

There was no suggestion historically for the development of the Libyan economy before the discovery of oil, because Libya suffered from a low volume of income. In this environment, agriculture played an important role in the Libyan economy. Industry had a limited contribution to the economy, which remains so even today, because of its current dependence on agricultural production and oil. Any small-scale industry, historically, such as carpet manufacturing, depended on agricultural production and animals, such products, such as wool for spinning (Otman and Karlberg, 2007).

Oil was discovered in the 1950s; after 1962, the oil and gas sector started to take off in the Libyan economy and Libyan exports rose. Oil exports become a very important source of income and economic development in Libya.

Today, Libya is an Arabic oil-exporting country with a rather large surplus. At the same time, the Libyan economy is still developing, and has been undergoing reorganization in recent years, with the Libyan government

attempting to move towards a market economy and opening the door for FDI and TT via the creation of more favourable conditions for these processes. In particular, the Libyan government is increasingly moving towards liberalization and improvement of the country's investment system in accordance with Law No. 5 of 1997, which aimed to increase foreign investment by encouraging foreign companies to enter and work in Libya (See the report by the Central Bank of Libya, 2007).

Huge investments exceeding US$40 billion have been made in recent periods which were aimed at achieving high growth rates in productive economic activities, in order to create a production base that will help diversify national income sources and reduce dependence on oil. However, these investments have not achieved the proposed economic and social transformation targets, and the development of successive budgets, related to the diversification of income sources and increased contribution of the productive sectors in the gross domestic product, has been limited. A number of characteristics that distinguish the Libyan economy have been identified over the years, including:

- Dependence on crude oil as a source of national income, as oil exports accounting for more than 96% of the total exports from Libya. The oil sector is the main source of foreign currency and it is very important for both technology transfer and FDI.
- The high rate of population growth and yet limited skilled manpower. The population is approximately 6 million with an annual growth rate approaching 4%, at a time when the economically active proportion of the population does not exceed 45%. Along with high rates of population density on the coast (which represents 21% of the total area and is home

to more than 79% of the population), and a population decrease in the desert areas this places additional burdens on development efforts and creates difficulties in the use of available resources; the state strives to achieve balanced spatial development, assuming a significant role in the provision of goods and services.

- Increasing the contribution of the services sector to GDP. Table 4.1 presents data about the changing role of this sector in the Libyan economy. While the sectors of agriculture and manufacturing have small contributions to GDP, they took more than 30% of the total development expenditure during the period (1970-2008). The state believes that the Libyan economy needs to increase the contribution of manufacturing and agriculture to achieve a balanced economic structure.

Table 4.1 Contribution of various economic sectors to Libyan GDP 2000-2008 (Percentages)

Year	Manufacturing	Agricultural	Services	Oil
2000	8.3	13.4	19.1	42
2001	7.8	12.3	20.0	39.5
2002	6.6	11.0	20.4	52.6
2003	6.0	10.8	20.6	59.7
2004	5.3	10.0	20.0	65.5
2005	4.9	9.5	21.2	70.0
2006	4.5	7.4	21.6	72.3
2007	4.9	6.7	18	73.4
2008	5.3	2.3	13	76.2

Source: Central Bank of Libya - Economic Bulletin - Table 25 - Volume No. 45 of 2009

A closer analysis of the Libyan economic structure shows that in 2000 the economic structure of Libya was more balanced as the contribution of various economic sectors depicted in Table 4.1 varied between 8.3% and 42.0%. By comparison the economic structure of Libya measured via the contributions of various economic sectors to GDP has become more distorted over time, with percentages varying between 2.3% and 76.2%. Due to the poor economic policies of the Libyan government towards the attraction and actual implementation of FDI and TT in Libya these processes have produced a negative rather than a positive, impact on the national economic structure.

This remains a major problem in the achievement of a more balanced economic profile for Libya.

4.2.3 The distribution of FDI in the Libyan economy

FDI has played an important role in supporting the growth of the economies of developing countries, including the economic structure of Libya, examined in this present study.

According to a report by the Central Bank of Libya (2008) the Libyan economy is still suffering from a low volume of foreign investment, relative to some other developing economies such as Egypt. The flows of these investments are fluctuating from year to year as shown in Table 4.2, and their structure is still limited to a few sectors such as oil, which is the largest sector to attract FDI. Inflows to this sector began in 1962; almost immediately after Libya found oil and gas in commercial volumes in 1959. FDI in Libya was historically small for various reasons; a key one is the Libyan government did not allow foreign investment in the economy, or allowed it only via limited ways,

especially in the sectors of oil and gas. Another reason is that the topic of foreign direct investment was a new issue in the Libyan economy and there was a lack of preparedness by the government, and there was no investment organization in Libya until 1998. At that time the Libyan government established (in 1998) the Libyan Investment Board (LIB). A further reason for the fluctuation in investment flows from year to year is that Libya is trying to attract a large amount of FDI, as shown in Table 4.2.

The Libyan government has passed a number of laws to improve the climate for FDI and for local investment. The Libyan Investment Board (LIB) in 1998, (in accordance with the provisions of Law No. 5 of 1997) was created to encourage FDI. In addition, Law No. 4 of 1997 was concerned with the organization of import and distribution of commodities, Law No. 9 of 2000 dealt with the organization of border and free zone trade, Law No. 21 of 2001 focused on the organization of economic activities. Law No. 3 of 2005 allowed foreign companies to open branches in Libya and Law No. 7 (2008), allows foreign investors to create partnerships with local investors in the agricultural, industrial and service sectors, including telecommunications, real estate, electric power and infrastructure, and tourism. So over a period of ten years, the legal framework changed substantially. Law No. 7 encourages FDI into Libya and offers many benefits, such as tax holidays, exemption from income tax for 5 years, and tariff reductions or exemptions. The level of FDI in Libya remained relatively small (compared to other producers), which restricts the opportunities for technology transfer via FDI (Libya Foreign Investment Board, Reports 2000, 2008).

According to the Arab Investment and Export Credit Guarantee Corporation (2010), the value of FDI inflows into the Libyan economy during the period 2000-2010 increased from US$189 million in 2000 to US$3.1 billion in 2010, as shown in Table 4.2. This is due to Libyan government efforts to improve the investment environment, particularly with regard to facilitating the procedures for establishing companies and reducing the size of bureaucracy and a significant reduction in the rate of tax.

Table 4.2 Net FDI inflows to Libya in US$bn during the period 2000-2010

2000	2001	2003	2004	2005	2006	2007	2008	2009	2010
0.189	0.145	0.143	0.357	1.038	2.013	4.689	4.111	2.674	3.833

Source: Arab Investment and Export Credit Guarantee Corporation (2010).

A closer analysis of the size of the net FDI inflows into Libya in the period 2000 – 2010 shows interesting patterns in various periods. Thus, the first period 2000 – 2003 indicates a trend of constant decline in the FDI inflows into Libya. The year 2003 represents a turning point because of the introduction of more liberal policy towards FDI. Consequently, in the period 2004 – 2007 there was a constant increase of the net FDI inflows into Libya, reaching a peak of US$4.689 billion in 2007. As a result of the global economic downturn there has been a downward trend in the period 2007 – 2009 to be followed by a short-lived one year increase in 2010. Current instabilities contrive to frustrate further inflows.

Data presented in Table 4.3 shows that the ratio of foreign direct investment (FDI) to gross domestic product (GDP) increased from 0.82% in 2004 to 4.4% in 2008. This is because the Libyan government started paying more attention to foreign direct investment and its importance in economic growth and development in Libya. The percentage of FDI to GDP reflects the importance of this investment flow to economic growth and thus the extent of its impact on the host country's economy.

Table 4.3 Importance of FDI as a percentage of GDP in the Libyan economy

Year	FDI in US$ million	GDP in US$ million	FDI/GDP in %
2004	357	43445	0.82
2005	1038	59157	1.75
2006	2017	72031	0.30
2007	2541	81363	3.12
2008	4111	92724	4.4

Source: UNCTAD world investment report 2008, 2009.

4.3 An overview of FDI in Egyptian economy

Egypt, with a population of over 74 million, is one area of the African continent that is working towards increasing TT. It has been attracting some FDI, although this has not been quite as significant as in other countries. Its total share of African FDI has dropped from 20% in 2001 to 1.7% in 2002, in spite of the fact that many Middle Eastern countries have a monopoly over the petrol sector. Beginning in the 1990s, the Egyptian government started the process of industrialization and began a series of measures to make the necessary structural adjustments; Egypt has consequently been considered to be an area for FDI as an Arab nation. At the beginning of the 1920s a drive was started to shift the economy from benefiting foreign countries to one that concentrated on developing a more domestic economy. Many areas of productivity were developed, including natural resources and factories; others such as the entertainment industry also began to move forwards. This shift had profound effects on the Egyptian economy (Ministry of Investment, 2008).

FDI became a strong force, and in spite of the wars the economy started to boom. In 1960, all companies were nationalized and as a result private business were brought under scrutiny and more tightly controlled. In 1973 there was a big change when, under the Sadat regime, a free market economy was initiated. This free market economy brought in a system of trade intervention measures aimed at helping businesses; while regulated, there was a clear system in place to protect the domestic and foreign markets. Today, after further upheavals and a period of State involvement, Egypt has a new open economy that attracts FDI. The historical legacy has left a mark in its history, resulting in a free market economy where there is trade and

investment for both home and foreign markets. In 1997 Investment Law No. 8 was introduced to regulate investment, including foreign investment (UNCTAD, 2010). Today FDI continues to play a significant role in the Egyptian economy, with the objective of sustaining economic growth and attracting FDI. This was evident in 2004 when the Ministry of Investment identified FDI in Egypt as a way of moving the economy forward. Of all the African states, and between the years 2000 and 2008, there was a greater increase in FDI in Egypt than elsewhere. As a result, Egypt became a target for further FDI, making it one of the most heavily concentrated areas for foreign investment of all the African nations, and generating praise for its attitude towards foreign investment. Egypt was the top African country in attracting FDI, being the top performer in 2008 (Ministry of Investment, 2008). This legacy indicates that Egypt may have a bright future ahead and has the potential to increase FDI. This should mean that there will be more productivity, higher investment power and a more educated and skilled population. The following Table 4.4 shows GDP and FDI trends in Egyptian FDI. In the energy (oil and gas) sector, volume has increased to 67.6% of the total FDI during 2005-2008.

Table 4.4 FDI inflows measured as a percentage of GDP in Egypt during 2002-2008

2008	2007	2006	2005	2004	2003	2002
6.0	9.2	9.3	6.0	2.7	0.3	0.8

Sources: Ministry of Investment, Report 2008; 232

4.4 An analysis of the structure of the Libyan and Egyptian economies

In general any economy depends on natural resources, labour structure, capital structure, human resources and technology, integrated in the overall structure of economy. Also, the economic structure depends on various sector contributions: the primary sector (extraction, agriculture) secondary (manufacturing and processing_ and the tertiary sector, (tourism and services). So, any economy depends on the kind of natural resources available in the country, the degree of its economic development and growth (in a sense, its history), economic structure and the degree of interdependence of various parts of the economy. This is why there are economies that are advanced and others that are not advanced, and also why there are economies that are diversified (such as Egypt in this study) and others depend on only one or only some few sectors (such as Libya which depends on oil and gas).

In other words, there are some countries in the global economy that depend on one or two dominant sectors for the bulk of their economic activity. That means that these economies are not diverse economies; on the other hand, there are some other countries that depend on a number of sectors, which means that these economies are diverse; often these diverse economies are well developed. In this instance, the Libyan economy is dominated by the oil and gas sector, while the Egyptian economy is diverse by virtue of a number of sectors with relatively equal contribution to the GDP. Moreover, Egypt has a better environment for FDI than Libya.

According to Dunning (1981), there is a relationship between FDI and TT and the economic levels of countries (both developed and developing); there are

also many influences on the process of FDI and TT, such as the upgrading of technological and productive systems, which result in the growth of GDP and the economy. The existing economic structure impacts on the level of FDI, and a high level of technology in any country also attracts FDI. Libya and Egypt have different economic structures, and there are many differences between them, such as the investment environment, population size, contribution of various sectors to GDP, characteristics of processes of FDI and TT to state a few.

According to the Central Bank of Libya (2007) the Libyan economy depends strongly on oil and gas. The oil and gas sector comes in at the top of Libya's economic structure because Libya is a major oil-producing country. This sector provides about 76.2% per cent of Libyan government revenue in 2008. In spite of the fact that oil and gas accounts for more than 76% of GDP, the Libyan government's motives were to seek to attract FDI and TT to the oil sector, in order to develop it further, create new jobs and upgrade technology.

The oil and gas sector is the key sector in the Libyan economy, and the Libyan government remains interested in this sector because it represents the only source of capital needed to develop other economic sectors, such as manufacturing, tourism, agriculture and services. The oil and gas sector has played a crucial role in the Libyan economy since 1969, boosting its income and supporting not just the energy sector, but also all other sectors of the Libyan economy. For a long period of time, many Libyan economic sectors were exclusively dependent on the energy sector. Raw metal inputs (another primary industry) are also a very important sector in the process of FDI and TT to many foreign investments originating from around the world. The oil and

gas sector has helped Libya to obtain a high level of FDI and a high level of technology almost exclusively in this sector. FDI in the oil and gas sector started with the very first discovery of oil in the mid 1950s and has continued until the present. Since the mid-1950s Libya has implemented different kinds of petroleum agreements, such as concessions, participation and exploration sharing agreements. As clarified in chapter two, TT can take place via several ways, such as FDI. As FDI and TT in Libya happened mostly in the oil and gas sector most Libyan companies, which have participated in this study are oil companies. The oil and gas sector has contributed more than 97% of Libya's income and about 76.2% of GDP (see Table 4.5) while all other, non-energy related sectors, have contributed less than one fourth to the GDP. According to the Ministry of Oil in Libya, oil and gas have contributed significantly to Libyan employment. During the period 2006-2010 this sector absorbed approximately 12,000 workers (Central Bank of Libya, 2007). There are many Libyan sources confirming that the energy sector will continue to play an important role in the Libyan economy and important role to attract FDI and technology, significantly contributing to Libya's GDP and income, and supporting all sectors of Libya's economy for a long time to come (Central Bank of Libya, 2007).

Table 4.5 Important economic sectors for GDP (Libya)

Economic Sectors	Contribution in %
Oil and gas (energy)	76.2%
Service	13%
Manufacturing industries	5.2%
Tourism	4.1%
Agriculture, hunting and forestry	2.3%

Source: Central Bank of Libya (2007)

The contributions of non-oil sectors are still at a low level, and with little attraction for FDI, because the Libyan government was not interested in attracting FDI into non-oil sectors and the investment law did not allow foreign investors investment to non-oil sectors. An example, the tourism sector, which has the potential (Mediterranean coastline, climate and classical sites) to become an important source of employment and economic development and growth as well as attracting FDI, has not experienced major benefit. It could, because Libya is close to major European tourism markets and foreign investor markets and has major sites of touristic interior. The Libyan tourism sector has many key drivers in order to attract FDI, from those mentioned in chapter 6, such as proximity to major European outbound tourism markets and major foreign investor markets. There are huge opportunities for investors. On the other hand, according to Table 4.5, the tourism sector performed weakly in 2007, it contributed less than 4.1% of GDP. This is for many reasons, such as international sanctions, and the limited availability of foreign investment opportunities that come from the Libyan government.

Other influences include Libya's image abroad, policy uncertainty, and administrative difficulties in the FDI approval process. What applies to the tourism sector applies to all sectors mentioned in the table 4.6 (service; manufacturing industries and agriculture). (The situation for tourism, of course, remains bleak today.)

Thus, Libya needs to work hard to develop its sectors in order to balance its economy and enable it to attract significant foreign investors to make a major contribution to its GDP. The Investment Law in Libya aims to encourage FDI and provide opportunities for investment in the industrial, agricultural, health, tourism and service sectors. According to the Decision of the General People's Committee No. 108 of 2005, specified areas allowed for investment are as follows: agricultural, industrial and service projects, industrial; oil refining and petrochemicals industry; electric power generation; communication services; real estate and infrastructure investment projects and tourism projects. [These desires need to be considered against the present changed political background in Libya].

According to the Central Bank of Libya (2007) Libya's business environment ranks amongst the lowest in a sample of 108 countries (see Table 4.6) to improve this ranking, Libya *should* improve physical infrastructure such as roads, ports and telecommunications networks to move towards accepted international standards. Also, Libya needs first to upgrade its business environment in order to develop its economic structure through FDI.

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Table 4.6 World business environment ranking of selected countries in 2007

Country	BCI / Rank
USA	1
Finland	2
Singapore	5
United Kingdom	6
Malaysia	23
South Africa	28
UAE	33
Tunisia	35
Turkey	51
China	57
Egypt	**71**
Morocco	79
Libya	**108**

Source: Central Bank of Libya (2007)

In the case of Egypt, the Egyptian economy is one of the strongest economies of the Arab world, and is the second largest in the Middle East and northern Africa. Moreover, the Egyptian government works to attract FDI to position the country as one of the fastest-growing economies in the world (UNCTAD, 2008). For this reason, Egypt was chosen to compare with Libya. According to UNCTAD (2008), Libya and Egypt have different levels of investment flows and technology advancement, as both the foreign investors and the host

governments in Libya and Egypt have different aims and different motives and consequently different policies towards FDI and TT.

The picture of the Egyptian situation is in major contrast to the Libyan, because the Egyptian economy has a different economic structure to that of Libya. Egypt's economic structure depends on varied sectors, such as oil and gas, manufacturing, agriculture, tourism and services sector. According to Table 4.7, the agricultural sector performed weakly in 2007, it contributed about 13% of Egypt's GDP. The structure of FDI in Egypt has been developed in non-petroleum sectors to account for 55%, with 30% for investments in the petroleum sector; the Egyptian government has opened up its economy to foreign investors and foreign companies. In addition, the manufacturing sector accounted for about 15% of Egypt's GDP in 2009 and employed about 14% of the labour force (Ministry of Investment Report, 2009). Also the industrial sector in Egypt has also been growing speedily over the last six years. Egypt has other important sectors, too, such as the pharmaceutical industry (which now produces enough pharmaceutical products to cater for approximately 85% of Egypt's needs within the country) and the motor vehicle sector, where all vehicles produced remain in Egypt.

On the other hand, the oil and gas sector also has become very important to the Egyptian economy, as it is responsible for the largest amount of Egyptian exports. Oil provides about 92% of primary energy needs in Egypt, with the energy sector coming in third place in Egypt's economic structure.

According to what is presented previously it can be concluded that Egypt has a good economic structure (balanced economy), not like the distorted economic structure of Libya. This is due to a number of reasons. One of them

is that the Egyptian economy is at a higher level of development compared with the economies of some other Arab countries and with those of the wider world. Moreover foreign investments in the non-petroleum sectors were in diverse areas including services, tourism, communications, construction, petroleum, manufacturing industries and agriculture. This allowed the Egyptian government to attract advanced technologies into many of these sectors, which reflected positively on the contribution of these sectors in GDP as shown in Table 4.7.

Egypt appears to have a very good environment for FDI. For example, FDI in the energy (oil and gas) sector has increased to 67.6% of the total FDI during 2005-2008. Egypt ranks seventh in the production of natural gas, and it has a good environment for TT, with good foreign laws, transportation and accommodation.

Table 4.7 Important economic sectors according to their contribution to GDP (Egypt)

Economic Sectors	Contribution to GDP in %
Manufacturing industries	15
Service	14.5
Oil and gas (energy)	14.2
Tourism	14
Agriculture	13

Source: Central Bank of Egypt (2009)

4.5 Conclusion

This chapter has provided an overview of the foreign direct investment (FDI) and the economic structures of Libya and Egypt showing some key features of their economies. It identifies Libya as a country with large natural endowments, the most important ones being oil and gas that constitute a key element of the Libyan economy. The picture is different in Egypt; it depends on many different sectors such as manufacturing, service, agriculture and tourism. Based on the evidence presented in this chapter the economic structures of Libya and Egypt can be seen to be different: the contribution of economic sectors to GDP, level of FDI and TT were different. Thus, there are different competitive advantages pertaining to Libya and Egypt. Libya has them in the oil and gas sector with a large high quantity of oil reserves, with 39 billion barrels providing enough oil for 60 years ahead. Libya has a more knowledgeable and experienced workforce in the oil and gas sector than Egypt. The Libyan government has worked to increase the contribution of all non-oil and gas sectors contributions to GDP, in order to diversify income sources, but the contribution of the non-oil and gas sectors to GDP is still extremely limited – and FDI is still targeted on this sector.

The economic structure of Egypt depends on many different sectors with somewhat balanced contribution to the Egyptian economy. Thus, the Egyptian economy is diverse, and Egypt has a higher level of expertise in many economic sectors than Libya, such as manufacturing, agriculture and tourism. For example Libya imports most of the pharmaceuticals it consumes (approximately 80%) mainly from the UK, the USA, the United Arab Emirates, Egypt. In Egypt, however, the picture is different, because the majority of

Egypt's pharmaceutical needs (more than 80%) are now catered for by local companies. Egypt also has a high level of knowledge and experience in motor vehicles and agriculture, amongst several other sectors. Moreover, the Egyptian economy is one of the strongest economies of the Arab world, and is the second largest in the Middle East and North Africa (Centre bank of Egypt, 2009). For these reasons Egypt has a better-developed and stronger economy and significantly more competitive advantages than Libya. So, Libya could benefit immensely from Egyptian experience in the development of a balanced economic structure via FDI and TT. The following chapter presents an analysis of the foreign companies in various sectors within Libya and Egypt.

Chapter Five

Analysis of foreign direct investment in the main economic sectors of Libya and Egypt

5.1 Introduction

There are two types of economic diversification: vertical and horizontal. Vertical diversification is when an economy depends on the various layers or supply chain of one sector, such as oil and gas, as in the case of Libya. Horizontal diversification is when an economy is sectorally independent, for example the one of Egypt (depending on several strong sectors). Both types of economic diversification are influenced by the degree of development of the economy (Central Bank of Libya, 2008).

This chapter deals with the analysis of investments by foreign companies in five selected sectors within Libya and Egypt, namely, oil and gas, manufacturing, agriculture, tourism and services, because these sectors are the most important ones in terms of FDI and technology in Libya and Egypt and in terms of attracted FDI in economic sectors in both countries.

The sectors are reviewed in the next section of this chapter. In section 5.2 an analysis of foreign companies in these economic sectors of Libya, and in section 5.3, an analysis of foreign companies in these economic sectors of Egypt is presented. Section 5.4 compares the conditions for foreign direct investment and technology transfer in Egypt and Libya and is followed by a conclusion section.

5.2 Analysis of the investments of foreign companies in Libya

5.2.1 Foreign companies in the oil and gas sector

The economic structure of Libya is significantly skewed towards the massive contribution of the oil and gas sector to the GDP of Libya. According to the Libyan Investment Board (2005), there are 149 foreign companies in Libya, which have entered the operational phase. There are also many more companies under development at this time, most of which are also in the energy sector of oil and gas. FDI in the oil and gas sector started with the first discovery of oil in the mid 1950s and has continued until the present. Throughout this period there have been many barriers to FDI into the oil and gas sector. For example, between 1970 and 1990 the Libyan governments was not willing to allow any FDI in the country, and from 1990 to 2003 most foreign investors were not interested in investing in Libya due to the international sanctions placed on the country (Alfergani,2010). The post-sanctions era has also presented challenges.

Another factor to consider is that there was no Libyan investment organization until the beginning of 1998. Following this, the Libyan government established the Libyan Investment Board (LIB) in order to improve the climate for FDI as well as high levels of technology transfer.

In this same year, 1998, most FDI went to the oil and gas sector, as Libyan-Western county relationships were deteriorating and opportunities in the Libyan economy were extremely limited because oil and gas was the key for all economic sectors. However, the climate for FDI was soon to be boosted by the positive political developments resulting from the improvements in Libyan-Western relationships and Libyan policies substantially improved the business

environment. FDI inflows into non-oil sectors have, since mid-2003, started to increase (Central Bank of Libya, 2008). The Libyan Investment Board was also given the power to take all measures that it deemed appropriate for attracting FDI, through providing privileges and exemptions.

From the sectoral breakdown of the investments by foreign companies to Libya, it is apparent that most of the companies have targeted the domestic market of oil and gas, manufacturing, tourism, agriculture and services. The clear majority of foreign companies have invested in the oil and gas sector. In the case of Libya the motives of foreign companies are to access Libyan oil and gas due to the abundance of Libyan natural resources that are of high quality and have a historically low cost of extraction. The most important factor is the active promotion of oil and gas activities by the government and also the fact that the structure of the Libyan economy is entirely dependent on oil and gas (Central Bank of Libya, 2008). This situation arose because in the past the Libyan government was mostly interested in this sector rather than other sectors, as it was the crucial sector bringing in foreign currency. It is for this reason that previous governments neglected the other economic sectors. This means that all the other sectors of the economy were regarded as immature in terms of development, and because of this immaturity, FDI has been perceived as having the ability to provide the necessary expertise, technology and know-how in order to progress to a more developed level of economic activities (Central Bank of Libya, 2008).

In 2009, the oil and gas sector attracted 47 foreign companies in both exploration and production, and the buyers of oil and gas were both from the local and international markets such as the European Union. This resulted in

Libya obtaining some competitive advantages in this sector that led to attracting more FDI to Libya (Central Bank of Libya, 2008). There are a number of reasons as to why the oil and gas sector attracts a high number of foreign companies to invest in the Libyan market. For instance, the quality of Libyan oil is regarded as having low production costs, being easily extractable, having low costs of oil recovery with lower transportation costs than any other oil producing and oil consuming country in North Africa including Egypt (Libyan Investment Board, 2005) – though recent unrest has severely damaged these advantages.

A participation agreement (a joint venture) was one of the foreign investments forms in this sector for a long period of time. Under such agreements, foreign investors financed the exploration phase of oil operations and brought the best technology in the field. Using IJVs the Libyan government keeps 50% of the shares of the project; in order that the Libyan government would be able to manage and control some parts in the process in this sector and benefit from the processes of FDI and TT in the best possible way.

In addition, the wealth of natural resources, such as oil and gas, are not fully realized simply by the export of crude oil and gas to any country, because Libya will receive more benefits if it exports derivatives of oil and gas, such as petroleum and petrochemical products (Central Bank of Libya, 2008). This means that the government of an oil-producing state should consider not only oil exploration and extraction, but also refining and revenue derived from the manufacture of finished goods. However, this implies a need for the country to develop its economic structure in a balanced way. In other words, if a country develops one sector, this fact requires the development of another sector or

sectors in connection with it initially. Thus, taking Libya as an example, if the development of the oil and gas sector is achieved, it must also lead (eventually) to the development of other sectors, for example, the service sector, manufacturing and so on, initially to support oil and gas extraction. This will result in the encouragement of foreign direct investment with technology transfer, in order to gain access to the Libyan environment (Libyan Investment Board, 2005).

5.2.2 Foreign companies in the non-oil sector

The processes of FDI and TT in the non-oil sector are different; FDI in non-oil sectors was historically lower than in the oil and gas sector. In areas such as agriculture, tourism, manufacturing, service and so on, the processes of FDI and TT were at a low level, because the Libyan government was not interested in attracting FDI into these sectors, and because the investment law did not allow foreign investment in the non-oil sector. The Libyan government's policies were to develop the oil and gas sector, in order to increase incomes and subsequently support other economic sectors. In non-oil sectors the Libyan government sought, eventually, to attract FDI in order to access advanced technology, diversify sources of income, develop products in order to access international markets (Libyan Investment Board, 2005).

- **Agriculture sector**

Historically, agriculture and livestock have been important components of Libyan society, with more than half the population engaged in agriculture. Moreover, before the discovery of oil and gas reserves, agriculture contributed approximately 25% of GDP. The official figure for 2003 indicates that it then

represented 4-5 % of GDP and 7-8% of total employment (Central Bank of Libya, 2008).

Unfortunately, the agriculture sector performed very weakly in 2009; it attracted only five foreign companies. The low level of foreign investment in the agricultural sector is for many reasons, the most important of which is the limited arable land available (less than 0.3% of the country). Generally, there are high risks associated with agricultural investment such as ownership, the seasonal nature of agricultural production and a desert climate. As a result, about 75% of Libya's food is imported from developed and developing countries such as Egypt and Tunisia (Libyan Investment Board, 2005).

Although this sector could become a key contributor to Libyan exports and the economy overall, the Libyan government needs to be clear about economic and social objectives as well as being clear with foreign investors. Libya has many competitive advantages in this sector such as being close to key potential export markets for goods, and an import market for cheap labour (Central Bank of Libya, 2008).

- **Tourism sector**

The tourism sector is also an important source of economic and employment growth for developing countries such as Libya. Libya is close to major European outbound tourism markets and foreign investor markets. Therefore, there is a clear potential for Libya to develop a tourism industry, and this should enable Libya to encourage foreign investors to come to Libya to this sector. However, the tourism sector performed weakly in 2009, it attracted only 36 foreign companies. Clearly, it was not fulfilling its economic potential

and contributed less than 3% of GDP with 4% of employment in 2003, while in 2007 it contributed about 4.1% of GDP.

In Libya, the motive of foreign companies for accessing the tourism sector is a market-seeking motive, because foreign investors are looking for new market for sales of their products. Libya, being close to major European outbound tourism markets and also foreign investor markets offers potentially huge opportunities for investors (given a Mediterranean coastline, five world heritage sites [UNESCO] and major desert areas). On the other hand, the motives of the Libyan government for developing the tourism sector is to diversify sources of income, increase the contribution of this sector in GDP terms, create new jobs and develop local skills, as well as development of its economic structure.

The low foreign investment in the tourism sector is due to many reasons, such as international sanctions, and the limited availability of foreign investment opportunities that come from Libyan government. Other influences include Libya's image abroad, policy uncertainty, and administrative difficulties in the FDI approval process. This has led to a lack of confidence being generated among foreign investors, which means that it is unlikely that many of these investments will be realized (Central Bank of Libya, 2008). Current unrest compounds these issues.

Furthermore, the natural factor conditions, such as the location of Libya are not enough on their own to encourage foreign investors to come to Libya. According to Libyan Investment Board, (2005) the Libyan government must provide better conditions to encourage foreign investors, such as providing good policies, investments opportunities and good infrastructure such as

roads, airports, communication and so on, as well as working to create a safe tourist environment. The investment level in this sector was good when compared to other economic sectors; it came third in rank in terms of the number of foreign companies.

In tourism, the motives of the Libya government and foreign investors seem to be complementary and a number of foreign companies have entered the market. One needs access to new market (market seeking motive) and the other has a need to develop the sector further, given the appropriate in-country conditions.

- **Manufacturing sector**

In the 1990s, the state of manufacturing worsened as a result of international sanctions. This situation remained from the 1990s to 2004. During this period there were a number of factors that had a negative impact on this sector. For example, a low level of technology, and a lack of expertise and managerial know–how held the sector back. In 1997 the Libyan government passed Law No 5 which opened the door to FDI. However, because of continuing international sanctions, the effect of this law was limited. After international sanctions were lifted, many reforms were introduced to attract FDI to the industrial sector (Libyan Investment Board, 2007).

The contribution of the manufacturing sector to GDP increased from 1.8% in 1970 to 5.2% in 2008, but this is relatively modest when compared with the contribution of oil and gas and service sectors (Libyan Investment Board, 2007).

In the numbers of foreign companies in the Libyan economy, manufacturing came in second place in 2009. The change of the policy of the Libyan

government from year 1970 to 2009 saw the number of foreign companies change. During the period 1990 - 2003 there were only a small number of foreign companies due to the international sanctions on Libya. After international sanctions were lifted the Libyan government made reforms of the economy, in order to attract more FDI to the manufacturing sector. There are 38 foreign companies within the manufacturing sector, which includes 12 companies in the field of food industries, 12 in the engineering sector, 10 in the chemical industry and 4 in the field of building materials. The total foreign investment in the manufacturing sector was 331,110 million Libyan dinars by 2007, concentrated mostly in the engineering and food industries, which accounted for 86% of the total investment. There were 13 projects in operation in manufacturing, mostly concentrated in the manufacture of soft drinks (Libyan Investment Board, 2007).

Foreign investment in the industry sector by nationality shows that the UK was in first place with a value of 2379 million Libyan dinars. The United Arab Emirates was in the second place with 2070 million Libyan dinar directed to several industrial activities such as iron and steel industry, Italy came third in terms of investment with 618 million Libyan dinar spent in various industrial activities such as building materials (which accounted for more than 89% of total Italian investments) in the Libyan manufacturing sector. Egyptian investment also went to the building materials industry, which accounted for more than 79% of Egyptian investment in the Libyan manufacturing sector (Libyan Investment Board, 2007). The reason why most foreign investment was concentrated in the area of building materials industries may be due to the Libyan market need for such products and the Libyan motivation to bridge

a gap in supply. The motives are known to be different between host governments (Libyan government) and foreign investors, but these motives can be complementary. The motives of the Libyan government in developing this particular sector were to increase exports and reduce imports, upgrade technology and increase income.

- **Service sector**

The service sector in Libya has changed enormously over the last few years. A number of foreign investors have joined the sector with different types of investment. The Libyan service sector has various key elements. These include banking, finance, transport, communications and telecommunications and service came in fourth place with regard to the number of foreign companies investing in the country (Libyan Investment Board, 2007).

There are many obstacles, such as the level of technology and the experience of the people that have impacted negatively on the performance of the financial sector. The Central Bank of Libya has not played its role properly in this sector for a number of reasons, some connected to the system of government (Shernanna, 2007). The impetus for Libya to attract foreign direct investment was to attract technology transfer and managerial know-how and skills in the banking sector, as well as to create sources of income other than from the oil and gas sector (Shernanna, 2007).

Presently, many processes are still in a rather primitive state in Libya. For example all Libyan banks are still paper-based with little use of modern technology. The banking industry in Libya has changed a little over the last few years, because Libyan government policy in obtaining advances of technology and experience, and improved skills of manpower. According to

Law No. 1 and 2 in 2005, the Libyan government has allowed foreign banks to share in local banks or to open new branches (Libyan Investment Board, 2007).

After issuing these laws (Law No. 1 and Law No. 2) many international banks (including HSBC, Emirates Bank, Qatar Islamic Bank and Unicredit Group Bank) now have licenses to operate and open new branches. However, the Central Bank of Libya has imposed many conditions on these banks before they invest into this sector. For example the Libyan government has encouraged FDI through the joint ventures form, participation rate of 51 % for Central Bank of Libya and 49% for the foreign bank. Furthermore, the banks must transfer very high levels of technology for use in the banking sector, such as software and computers, and training in banking services. The positive impact of Law No. 1 and the policies of the Central Bank of Libya have had some positive impact on FDI and technology transfer. However, there are many studies which point out that the financial sector itself plays a very important role in encouraging FDI (Alfaro et al., 2002).

Additionally, the Libyan government has focused on further industries in order to encourage FDI, such as telecommunication, because the policy of the Libyan government favours development and upgraded technology in this sector. The role of telecommunications and information technology in promoting economic development is, as with financial services, very important: it gives an opportunity for countries to achieve substantial progress through the modernization of production systems and enhance their competitiveness. The telecommunications sector has achieved great success in terms of income and in the number of subscribers to mobile phone

services; this sector has also contributed to the dissemination of internet services. This sector is heavily dependent on a high level of technology which has significantly improved in recent times; telecommunications will undoubtedly therefore be one of the most important economic sectors for Libya in the future, continuing to contribute to technology transfer (Libyan Investment Board, 2007).

In telecommunications, the Libyan government has many agreements with international companies in order to develop the industry, upgrade technology, create new jobs and develop new services, these agreements are with companies such as Ericsson, Vodafone and a number of experienced Chinese companies. These investors are motivated by market seeking in Libya. All operate with high levels of telecommunication technology, thus at the end of this process, FDI and TT benefit Libya. Technologies can be transferred in a variety of ways, such as the training of personnel, and the transfer of original technology from the parent company. Many examples of TT can be seen in telecommunications (Libyan Investment Board, 2007).

The development of telecommunications influences other sectors such as manufacturing, tourism and agriculture. It will encourage further FDI inflows into Libya to many fields of economic activities. (Libyan Investment Board, 2007). The process of FDI telecommunications was successful; it attracted more than 23 foreign companies.

Thus, according to what has been presented so far, the structure of the Libyan economy and the processes of FDI and TT are changing. This is the result of the policy of the Libyan government changing its economy from a centrally planned to a market economy. The picture in Libya now remains that

oil and gas are key to the Libyan economy, and the Libyan government is still interested in this sector because it represents the principal source of capital, which then pushes development to other economic areas such as manufacturing, tourism, agriculture and services. Libyan governments must further change policies in order to improve the economy. Though, in any economy, the sectors link to each other and the development of one sector will lead to the development of another, the timing, location and focus of further developments are unpredictable. A Libyan government intention is to link non-oil activities to oil and gas, because if the income of the oil and gas sector increases, then income for non-oil sectors will increase as well. This is what should to happen in the future in Libya, in order to diversify the economy (Central Bank of Libya, 2007). These hopes remain in place, but are frustrated by the current security situation.

5.3 Analysis of the investments of foreign companies in Egypt

Until the late 20th century, Egypt's economy was highly centralized. In the 1990s the International Monetary Fund (IMF) pushed the Egyptian government for economic reforms in various sectors of the country. Then a liberalization process started and the Egyptian government increased the openness of the economy to foreign investors and companies. Thus, foreign companies entered most of the economic sectors in Egypt such as manufacturing, agriculture, oil and gas, tourism and services (Ministry of Investment Report, 2009). Entrants joined many areas of the economy including: commercial banking and financial institutions, healthcare, chemicals, pharmaceuticals, restaurants and hotels, food processing and fast-

moving consumer goods, automobiles, electrical equipment and electronics and oil. These sectors represent the backbone of the Egyptian economy and have developed significantly via FDI and TT influx into the country.

The Egyptian government earlier started attracting FDI and TT at the beginning of the 1970s, and since then has offered increasingly open markets and generous incentives to achieve this goal (Ministry of Investment Report, 2009). Moreover, the direct effects from the policy of Egyptian government to draw in FDI and TT have been supplemented by further indirect impacts from the more general development of the Egyptian economy (Ministry of Investment Report, 2009).

According to the Ministry of Investment Report (2009), at the end of 2008 Egypt had more than 1005 foreign companies invested in different sectors of its economy. Of these, 1,000 foreign companies were operational and the remaining few were preparing for the implementation of their investments and transfer of technology. The number of foreign companies invested in Egypt is significantly larger than in Libya. This is for many reasons, the most important of which are the longer period of FDI and TT in Egypt in comparison with Libya and the more coherent and consistent policy of the Egyptian government for attracting FDI and TT to the country (Ministry of Investment Report, 2009).

The sectors reviewed in the next section of this chapter are the most significant ones for the economy, based on their contribution to the GDP of Egypt, as well as ability to attract foreign companies and foreign investment.

5.3.1 Foreign companies in the oil and gas sector

The oil and gas sector plays an important role in the Egyptian economy and is one of four main sources of foreign exchange. The first oilfield was discovered in Egypt in 1869 and started production in 1910. Initially, all Egyptian oil fields were developed as IJVs between the Egyptian government on the one side and British Petroleum and Royal Dutch Shell on the other. In 1962, the formation of the Egyptian General Petroleum Corporation (EGPC) became a major factor in forming new and transforming existing IJVs with foreign investors and firms (Ministry of Investment Report, 2009).

In 2007, the Industrial Council and Energy Committee of Egypt approved nine IJV agreements with foreign companies with a total value of approximately US$223 million. The oil and gas sector is one of the fastest growing sectors in the country, with a contribution to GDP that increased from 14.3% in 2007 to 17.5% in 2008. The total FDI in it in 2008 was US$9.7billion from more than 30 foreign companies, which represented 76% of the total FDI inflow in Egypt. In addition, the process of FDI in this sector increased during the period 2000-2009 more than twice to reach US$35 billion (Central Bank of Egypt, 2010).

There are more than 50 local and foreign oil companies from 39 different countries operating in Egypt. To support their functioning there are also more than 400 service firms and 143 oilrigs. However, service firms and oilrigs have attracted a smaller number of foreign companies, mainly due to the fact that Egypt is not *particularly* rich in oil and gas (Ministry of Investment Report, 2009).

5.3.2 Foreign companies in the non--oil and gas sectors

- **Agricultural sector**

The Egyptian government has divided all agricultural activities (based on Egyptian investment laws) into four main areas: land reclamation and plantation, livestock and poultry, integrated agro-industry projects, and fisheries. FDI in agriculture goes back at least to the first five-year plan in President Nasser's era, 1960/61-1964/65, when domestic and foreign investment was directed mainly to agriculture and irrigation accounting for more than 35% of the total investment. The majority of these investments were directed to the High Dam in Aswan and to land reclamation (Central Bank of Egypt, 2009). At that time the sector had attracted 100 foreign companies that invested and transferred technology to Egyptian agriculture.

The Egyptian government worked for a long period of time to improve the sector in order to provide good conditions for the processes of FDI and TT, the aim was to improve the productivity and quality of produce. The motives of the foreign investors in this sector were mostly market seeking and resource seeking. This is because there are many investment opportunities in this sector - mostly for the production of cotton, rice, maize, wheat, beans, fruit and vegetables. Thus, the motives of the foreign investors and the Egyptian government have been along the same lines (complementary), resulting in significant FDI and TT from the 1960s till the present. The processes of FDI and TT in this sector in Egypt have been more successful than in Libya; because the Egyptian government managed them well according to the intended goals of the development of Egyptian agriculture (Central Bank of Egypt, 2009).

For attracting FDI and TT, this sector started to face competition from other sectors of the Egyptian economy, most notably services, manufacturing and tourism. Recently, foreign investment projects in agriculture have become less attractive to foreign investors, in spite of the fact that they require relatively low capital investment, and technology is not changing rapidly and drastically (compared with the investments required in such sectors as manufacturing).

- **Manufacturing sector**

The relationships between foreign investment and Egyptian manufacturing are old, dating back to the beginning of the 20th century. The manufacturing sector accounted for about 20% of Egyptian GDP in 2006/2007 and employed at that time about 14% of the Egyptian labour force. The private sector plays a very important role in manufacturing, as it contributes more than two-thirds of total manufacturing output. The manufacturing sector in Egypt produces a very wide range of goods (Ministry of Investment Report, 2009).

The first time foreign manufacturing companies invested in Egypt with FDI and TT goals was in 1930, in the food processing industry. In 1957 the German firm Siemens was the first foreign company to establish a large scale FDI and TT related operation in Egypt. At present the largest manufacturing investments in the Egyptian economy are in pharmaceuticals and electrical equipment production (Ministry of Investment Report, 2009).

The pharmaceutical industry in Egypt includes 23 companies: nine government-owned firms producing more than 1,300 types products which, in value terms are about 30% of the products sold in the market, three IJVs producing 210 types of products (the foreign forms are Hoechst, Pfizer and Farman/Novartis); eight multinational firms 100% foreign owned and three

domestic private sector companies collectively producing 700 types of products. The export of pharmaceuticals relates to some 490 products that are currently valued at US$4.4 billion. In 2006, the pharmaceutical industry in Egypt imported approximately 90% of its raw materials and intermediate inputs at a cost of US$221 million (Ministry of Investment in Egypt, 2008).

The pharmaceutical firms with foreign investment operating in Egypt are becoming aware of issues such as local management (most of the management functions now are performed by Egyptians), total quality management systems, regional co-ordination as the Egyptian affiliates are attempting to become fully integrated with their corporate regional players. Learning experience is becoming more of an issue in order to develop the principal segments of Egyptian pharmaceutical subsidiaries, application of innovation-driven products, and off-patent drugs, training of personnel to achieve high standards, and future investment plans of pharmaceutical companies in Egypt (UNCTAD, 2009).

Historically, the conclusion for manufacturing is that the Egyptian business environment has been better than the Libyan for a number of reasons. The most important is probably that Egypt has had a consistent government policy towards FDI and TT, resulting in a balanced economic structure with many different foreign companies having worked successfully in the Egyptian economy for many decades.

Egypt has a wide range of well-developed manufacturing related operation that are well interconnected representing a solid basis for the functioning of the whole economy and stimulating the attraction of further FDI and TT in the country.

- **Service sector**

Egypt has developed its service sector over a long time, especially banking. The government has undertaken considerable restructuring and consolidation of this sector since the-1990s. Thus, in 1991, the Egyptian government liberalized the banking sector, easing restrictions on foreign banks operating in the country. In 1993, the Central Bank of Egypt allowed foreign banks to operate using Egyptian currency. Furthermore, in 1996 new legislation allowed foreign ownership of 100% of local banks, subject to the individual approval of every takeover by the Central Bank of Egypt. In 1998, legislation was passed to allow the privatization of four large state-owned banks (Central Bank of Egypt, 2010).

The policy of the Egyptian government for FDI and TT has been to secure the development of all economic sectors, improve the quality of products, upgrade productivity, and upgrade technology, as well as increase exports and income. Foreign investors' policies have been to access the Egyptian market. These general arguments can be applied directly to the banking sector. The role of the Egyptian government was very significant in the process of FDI and TT in the service sector through the improvement of the investment law. As a result, the service sector is very significant for both the Egyptian government and the foreign investors. It has attracted more than 355 foreign companies in various areas of service (Central Bank of Egypt, 2010).

- **Tourism sector**

Egypt is one of the most popular tourist destinations in the world and the tourism industry has been one of the key sectors to the Egyptian economy for a very long time. The history of tourism in the country goes back at least to

the discovery of the Pharaoh antiquities, which add a special charm to Egyptian tourism.

In 2009, Egypt received more than 14.7 million international tourists, an increase of 17.6% over the previous year. The most important numbers come from Russia, Germany, Italy and the UK. This sector has a contribution of about 16.3% to the Egyptian GDP, with annual total revenue of more than US$1.8 billion. Furthermore, this sector provided about 2.8 million jobs in 2006/2007. The Egyptian government used the tourism sector to provide a major share of income to the Egyptian economy and absorb a large share of the workforce. The impact of the ‘Arab Spring’ caused numbers of visitors to drop, but the Egyptian government predicts that they will recover to pre-crisis levels in 2015. This may prove optimistic, given current regional unrest.

The processes of FDI and TT in tourism were very successful, because foreign companies were critical in terms of their impact on tourism sector. The Egyptian government has worked hard to develop and improve this sector for a very long period of time. This sector has became one of the key factors in the success of FDI and TT in Egypt over time.

In recent years, before the current crisis, FDI in Egyptian tourism has provided strong support to this sector, attracting more than 220 foreign companies with different types of investment in hotels, restaurants, shops, tourist village creation, etc. To supplement these activities the Egyptian government has undertaken various actions, such as branding and positioning Egypt as a world tourist centre, engaging in active cultural promotion, and introducing more incentives to promote the Egyptian tourism industry (Ministry of Investment, 2008).

The processes of FDI and TT in the Egyptian tourist industry have been more successful than in Libya for number of reasons. For example, the number of foreign companies investing in tourism in Egypt is greater than in Libya, mainly for historical reasons and the Egyptian government's tourism development policy. Such a policy has been lacking in Libya. The general approach of the Egyptian government has been focused on managing all factors that relate to the processes of FDI and TT. The development of tourism proceeded in harmony with other economic sectors, in order to make contributions to the national GDP balanced. Such observations do not apply in Libya.

5.4 Comparative conditions for FDI and TT in Egypt and Libya

5.4.1 Conditions for FDI and TT in Egypt

This section draws together the data from a number of sources, governmental, central bank and UNCTAD, to provide an historical overview of developments in the two countries. Table 5.1 below shows the historical development of the conditions for FDI and TT in Egypt and Libya. Inward FDI into Egypt goes back at least to the beginning of the 19th century when Egypt started a new phase of economic development. From this time Egypt has worked to upgrade and modernize its economic sectors through encouraging foreign investment and technology transfer by providing more favourable conditions over time. The FDI process can be divided into four time periods:

1850 - 1970 - most FDI in Egypt was in the area of cotton cultivation. At the same time the private sector played a very important role in the Egyptian economy and contributed to about 80% to GDP, FDI inflows into Egypt were

dramatically reduced twice during this period due to the two world wars which affected negatively all Egyptian economic activities.

1970 - 1980 was the period of a new liberal economic policy, which encouraged the participation of foreign capital in Egypt. During this period a new era dawned in the Egyptian economy because many laws had been enacted to encourage FDI. First, investment law No. 65 invited foreign capital to establish investment projects in free trade zones and also encouraged all forms of foreign participation. This period also required much technical assistance and financial resources to develop and improve the economy.

President Sadat's open door policy was liberal, encouraging FDI and local investors, and was enacted as law No. 43 in 1974. This law provided more incentives such as tax holidays and exemption from income tax for long periods of time, for the transfer of foreign capital, participation in joint-venture projects and technology transfer. It was one of the main elements taken into account by the Egyptian government when seeking foreign investment projects. This new law was specifically designed to attract Arab and other foreign investment, as well as fostering more technology transfer to promote Egypt's exports. In this period FDI in agricultural and industrial projects were subject to a 10-year exemption from income tax. This broad law helped the Egyptian economy to attract FDI and TT in many sectors such as the car industry, banking and communication.

1980 - 1990 - the Egyptian economy underwent a series of structural adjustments and phases of reform. During this period FDI inflows reached a value of US$1,190 million in 1988, the equivalent of 4.6% of Egypt’s GDP and nearly 4.3% of total flows to all developing countries worldwide.

Consequently, the government introduced Law No. 230, 1989. Further improvements resulted from later reforms that eliminated investment obstacles and production controls by minimizing approvals, licensing procedures and requirements. In 1984-1985 the government provided more incentives for American investments because relations between the two governments were good, as a result of allowing investment in strategic infrastructure projects such as sanitation and sewerage, water treatment, electricity, and roads, in order to transfer advanced technology to these important sectors. However, at this period of time technology transfer related chiefly to sanitation and civil engineering, not production.

1990 - 2007 - saw the government make further changes to facilitate the inflows of FDI and TT and the registration of foreign firms and the operations of foreign investors in Egypt. Law No. 1, 1996, for example, allowed firms performing FDI to establish specialized ports; Law No. 72 further expanded facilities and exemptions to tourism projects and land reclamation in the new communities; and Law 98 allowed more than 49% foreign ownership in IJVs, whether individuals or entities, to export and engage in export activities. Law No. 8, 1998 encouraged a uniform investment policy in Egypt, which gave more benefits, guarantees and exemptions for investments made by foreign firms. Prime Ministerial decree No. 11, 2007 appointed a committee to review complaints from foreign investors; this contributed significantly to the promotion of FDI in Egypt. The Egyptian government of that time clearly felt that working to solve problems that faced foreign investors as effectively and efficiently as possible should further encourage foreign investment.

5.4.2 Conditions for FDI and TT in Libya.

The same approach as the one applied for the analysis of FDI and TT in Egypt is applied to Libya. The situation with Libyan processes of FDI and TT is shorter from the point of view of time span and contains a smaller number of activities. The periods are analysed as follows:

1960 - 1990 - according to the Central Bank of Libya (2008), the history of FDI into Libya going back to 1962 is mostly related to the oil and gas sector. In 1962 the Libyan government actually permitted FDI in the oil and gas sector under Law No. 25 of 1955, which was further amended in 1961, 1965 and 1971. Gaddafi's government was not interested in attracting FDI to other economic sectors, apart from oil and gas. For this reason, during the analysed period, no law for FDI was enacted, other than Law No. 25, concerning the processes of FDI and TT. During this period the private sector was not allowed to work in Libya because the Gaddafi government believed that foreign investment was a type of foreign colonialism. Thus, during this period FDI and TT went only to the oil and gas sector.

1990 - 1998 - in this period a number of laws were passed to improve the climate for both local and foreign investment. A very important issue during this period was the establishment of the Libya Investment Board (LIB). This was set up in order to attract FDI and to change the Libyan image in the world. The LIB was the first entity that was able to encourage FDI in order to attract technology, to diversify income sources and to increase the participation of the local sector in economic development. In addition, the Libyan government enacted Law No. 5 concerning FDI and provided some incentives to encourage FDI in Libya. There was no technology transfer in this

period in the economic sectors of Libya. Thus, till 1998 little TT took place in Libya other than in the oil and gas sector.

1998 - 2000 - Law No.9 dealt with the organization of the borders of free trade zones in Libya. In this period the government tried to reassure foreign investors by granting a number of guarantees in order to encourage FDI inflows. The guarantees included immunity against the risks of nationalization, dispossession, seizure, reservation or freezing or any other procedures with a similar effect. During this period the value of FDI improved and restricted TT started to go to manufacturing.

2000 - 2008 - in this period, the environment for foreign investment changed for the better, many laws were enacted, such as Law No. 21 of 2001 focusing on the organization of economic activities. The amended law and its implementing regulations from 2003 consisted of Articles 29 and 30.

The government aimed to encourage foreign capital investment through the introduction of legislation and at the same time, leave the door open for local capital participation. In particular, respect was given to projects that included state of the art technology, which could contribute to the improvement of local products to bring them into line with international standards (Article 1 of Law No. 7 of 2003). In addition, Law No. 6, 2004 looked at the organization of trade agencies and Resolution No. 3, 2005 allows foreign companies to open branches in Libya.

Furthermore, Resolution No. 8, 2005 allows foreign companies to open offices in Libya; other important resolutions include Resolution No. 134, 2006 involving the establishment of the Libyan stock market and Resolution No. 108, 2005, which allows foreign investors to create partnerships with local

investors in the agricultural, industrial and service sectors, including telecommunications, real estate, electric power and infrastructure and tourism. It also encourages FDI and offers many benefits such as tax holidays, exemption from income tax for 5 years and tariff reductions for imports. In 2005, the Libyan government issued Law No. 1 and Law No. 2 which covered the establishment and supervision of commercial banks and opened the door for FDI in the banking sector and allowed foreign banks to participate in Libyan banking. In addition, the laws established a set of rights for the investor, such as the right to re-export capital at the end of the project, the liquidation of the project, the sale of the project, the right to transfer foreign capital outside Libya and the right to use foreign labour when there is no alternative available.

5.1. Conditions of foreign direct investment (FDI) and technology transfer (TT) in Egypt and Libya

Country	Periods	Conditions
Egypt	1850-1970	- FDI in Egypt were in the area of cotton cultivation
	1970-1980	- A new liberal economic policy which much encouraged the foreign participation of capital in Egypt. - In 1971 the first investment law No. 65 had been enacted, under this law foreign capital was invited to establish investment projects in Egypt and law No. 43 of 1974 provided more incentives such as tax holidays and exemption from income tax for long periods of time, for the transfer of foreign capital and the participation in joint-venture projects.
	1980-1990	- 1984-1985 provided more incentives for American investment and allowed investment in infrastructure projects such as sanitation and sewerage, water treatment, electricity, and roads.
	1990-2007	- Law No.1, Law No.72, Law No. 98, Law No. 99, Prime Ministerial decree No. 11, Prime Ministerial decree No. 11 and Law No. 223 allowed the establishment of specialised ports by foreign investors and provided more incentives such as further expanding facilities and exemptions to tourism projects and land reclamation in the new communities. Also the allowing of foreign ownership in joint-venture and private banks and permitting foreign investors to establish manage and maintain power stations. - A committee appointed to review investor complaints for facilitating investor services in Egyptian governorates

Libya	1962-1990 1990-1998 1998-2000 2000-2008	- FDI inflows to oil and gas sector started from 1962 - Provisions of Law No.5 to FDI provided some incentives such as allowing FDI to Libya. - Established new Libyan Investment Board (LIB) - Investment Law No.9: organization of border and free zone. - Law No. 21 organization of economic activities; Law 3 allowed foreign companies to open branches in Libya; Law 7 allowed foreign investor partnerships with local investors in many sectors such as industry, tourism, banking, communication, etc. - Encouraged FDI and offered many benefits such as tax holidays, exemption from income tax for 5 years and tariff reductions for imports.

Source: Developed by the author using a variety of relevant sources.

According to the Central Bank of Libya (2008), in 2007 many actions were undertaken by the government to support economic development via FDI and TT. An example was the establishment in 2009 of the National Council for Economic Development (CED) with a major task to reform the economy via encouraging foreign investment and technology transfer. (The civil wars of 2011 and of 2014 have again destabilized the country, and FDI and TT are again effectively at a standstill.)

According to data depicted in Table 5.2 and Table 5.3, the picture in Egypt was very different from the one in Libya. There are different competitive advantages concerning Libya and Egypt, due to the striking differences in the processes of FDI and TT in the two countries.

The Egyptian economy, in part due to the policies of the Egyptian government, is diverse and its economic structure is balanced. The level of FDI, numbers of foreign companies and their TT in Egypt are all greater than the respective characteristics for Libya. The Egyptian conditions for FDI and TT are more favourable than in Libya, with companies not only in one particular sector, but in variety of sectors (Central Bank of Egypt, 2009). Egypt has long-term experience of FDI and the Egyptian economy and economic structure are substantially more developed than the ones in Libya. In addition, it may be said that the Egyptian economy is one of the strongest economies of the Arab world and is the second largest in the Middle East and North Africa.

In the case of Libya, the processes of FDI and TT were taking place mostly on their own without an active and coordinating role of the national government. One particular reason is that FDI has only recently become an issue in Libya.

In addition, the policies and incentives of the HG have been different in Libya and Egypt. For example, in the oil and gas sector, the policy of the Libyan government was to attract foreign investment to develop this sector *only* in order to increase the revenue from it via increasing productivity and volume of exports. Technological upgrading of this sector was of minor significance once the stated government policy had been achieved. Thus, the Libyan government throughout the whole history of FDI and TT in the country did not manage the development of the Libyan economic structure. The 'unmanageable' factors, such as Libya's extensive reserves and natural endowment, means that Libya retains some competitive advantages in the oil and gas sector, but these advantages were not capitalized on by the policy of the Libyan government.

Libya can potentially benefit significantly from the Egyptian experience concerning the *management* of processes of FDI and TT by the national government. This would need to sit alongside concern for the conditions under which FDI and TT occur, in order to develop a harmonious economic structure and achieve fast economic growth. This suggests that any Libyan government should put in place a number of conditions in the field of investment, as Egypt did. At present, the Libyan economy is heavily dependent on revenue from natural resources. Libya is faced with a challenge to be more competitive, even in the energy sector, and at the same time, it needs to create suitable economic conditions to improve the living standards of its population, providing them with the opportunity to produce their own products and services.

Another lesson that can be learned from the experience of Egypt is that to develop a balanced economy takes vision, time and concerted effort on the part of the national government. Tourism, for example, is one area that could provide economic growth and employment for Libya, because the country is located close to Europe, which is a major potential source of tourists. However, such potential cannot be utilized, unless there is suitable infrastructure, and improvement in human and financial capital, to attract foreign investment and provide suitable security measures.

Agricultural industries can also contribute significantly to the Libyan economy and attract FDI in order to facilitate technology transfer in this sector. Due to the neglect of this sector, the country presently imports approximately 75% of the foodstuff consumed in the country. Moreover, any Libyan government should consider ways of improving the ICT sector which is currently rather backward and 100% owned by the state. According to Law 8, which was adopted in 1990, the ICT sector cannot be privatized. However, it is important that any Libyan government amends these laws to encourage FDI and TT in the ICT sector, because this sector has important relationships with all other sectors of a national economy.

It can be concluded that Libya needs to diversify its economy as Egypt did. This can be made possible after a holistic analysis of the present economic situation and the potential available for changing the economic, political and security structures. Based on such an analysis, government policy should be developed for the management of the processes of FDI and TT in various sectors of the Libyan economy and its overall balanced development, based on diversification via FDI and TT.

5.2 A comparative history of foreign investment in Libya and Egypt

Country	Year of the beginning of foreign investment	Number of operating foreign companies (2009)	Specifics of foreign investments	Country-of-origin of foreign investors	World business environment ranking in 2007
Egypt	1850	1005	Diverse in all economic areas and sectors	Most investing firms come from developed countries	71
Libya	1962 in oil/gas 1998 in all economic sectors	149	Most in the energy sector (oil and gas).	Developed and developing countries	108

Source: The author

Table 5.3 Number of foreign companies in Libya and Egypt in 2008

Sector → / Country ↓	Manufacturing	Oil and gas	Tourism	Agriculture	Services	Total
Libya	38	47	36	5	23	149
Egypt	300	30	220	100	355	1005

Source: Central Bank of Libya (2009) and Egyptian Ministry of Investment Report (2009)

5.5 Conclusion

This chapter has presented an analysis of investments by foreign companies in five sectors of the Libyan and Egyptian economies: oil and gas, manufacturing, agriculture, tourism and services.

The strength and range of any sector in an economy depends on many factors and conditions, such as the types of raw materials available in the country, the degree of its economic development, the economic structure, the level of technology, as well as the degree of interdependence of the various sectors of the economy or the overdependence on one or a number of sectors.

Based on the analysis in this chapter, it can be stated that there are many differences in the main economic sectors of Libya and Egypt. Overall it has been found that Egypt has a higher level of FDI and technology modernization than Libya. This is shown to derive principally from the longer period of Egyptian engagement with FDI, greater openness on their part and a broader sectoral engagement in FDI.

The next chapter presents the methods used for investigating the specific responses of firm managers in companies with FDI and TT, in both Egypt and Libya, concerning economic specifics (including economic structure and growth opportunities).

Chapter Six

Research Methodology

6.1 Introduction

The present research seeks to explore the 'key success factors' impacting FDI and TT in Libya and Egypt. Beyond this, there is the question of policy suggestions for Libya. These questions require an approach that seeks to describe, understand and interpret how host governments can manage these factors in the 'best' possible way. The research has been conducted in a qualitative, interpretive way, drawing on the opinions of experts in the field. A questionnaire was used to 'obtain' primary data (data generation). The purpose of this chapter is to describe and justify the methods used in this thesis.

Section 6.2 discusses research methodology in terms of answering the research questions of this study. Section 6.3 focuses on deductive versus inductive approaches. Section 6.4 focuses on research design; Section 6.5 covers the research method and data collection questionnaire, which includes questionnaire design, piloting the questionnaire, sampling, administering the questionnaire, and generating questionnaire data together. Section 6.6 discusses data analysis; this section considers data gathered from the research population of foreign companies in Libya and Egypt. In Section 6.7 ethical issues are discussed and finally, Section 6.8 concludes the chapter.

6.2 Research methodology

Many people use the term ‘methodology’ to refer to methods used in research such as Smith, (1983); Trend, (1987) and Zikmund, (2000). According to Bryman (2008), social research methods can be divided into two main categories: qualitative and quantitative. A qualitative approach involves dealing with events and information in a non-quantitative manner, in which the results will be obtained through observation and analysis of events featuring attitudes, pictures, documents and communication through the word of mouth or otherwise. Qualitative research lends itself to exploratory situations, where much prior data is not available, or where the key focus is on understanding participants’ understanding. Quantitative research, on the other hand, is usually worthwhile when ample literature and data about the subject of study are readily available, leading to the straightforward creation of specific hypotheses.

Qualitative research is advisable in cases where the research question addresses a specific topic or aims to understand or describe a specific event or phenomenon about which the researcher has very little knowledge such as cases where very limited literature is available about the subject under investigation (Ryan, 2002).

Where the level of clarity of the problem under investigation enables the researcher to use the quantitative approach to address the problem, not to mention statistically credible standard measures featuring the variables to be analysed (Field & Morse, 1985), it may have advantages. Here, the research methods used in this study are qualitative. This is because the study aims to

explore a particular case in a particular subject area, and is unable to draw on existing clarity or measures germane to the topic.

6.3 Deductive and Inductive Approaches

It is also important to decide on the approach from the perspective of the application of deductive or inductive approaches. The main difference between the two is the starting point and the desired outcome from the application of these approaches. Deductive research explores existing theories and ends in testing hypotheses. The inductive approach starts with observations and ends with theories. This means that real-world data, experiences and observations are considered and then new theories are developed from empirical data. (The combination of the two approaches is sometimes known as an adductive approach). A difference between the deductive and inductive approaches is that the former works from the more general to the more specific. The inductive approach starts from a more specific investigation and moves towards a more general one. Informally, the deductive approach is sometimes called ‘top down’ and the inductive approach ‘bottom up’ (Ryan, 2002).

Based upon the nature of the research question of the present study and because of the lack of prior research in this context, this study has an inductive approach. This research works from theory-informed observation to pattern identification; it thus adopts a broadly inductive approach. Qualitative research with an inductive approach may use personal surveys, telephone surveys, observations, archival records, questionnaires and face-to-face interviews for generating data. Qualitative research often uses a diverse

number of data generating methods that touch the core of understanding rather than just skim the surface of the facts (Greenhalgh & Taylor, 1997). This study aims to explore a particular pair of cases in a particular subject area: what are the key success factors for foreign direct investment and technology transfer in Libya and Egypt and how transferable are the practices between the two countries? The restrictions on access to data in the two countries Libya and Egypt, make data generation difficult. This is because of the arduous (sometimes hazardous) transportation, logistical conditions, extensive geography, political and security issues, cultural conditions (including *wasta*, the importance of connections and network relationships in Arab society), and infrastructure issues. For these reasons, a mixed approach to questionnaire based data generation was taken.

6.4 Research design

According to Thietart et al (2001) the research design is the framework through which the various components of a research project are brought together: research questions, literature review, data, analysis and results.

Research design is necessary before data generation or analysis can commence. Gronhaug (2002) argues that the research design is the overall plan for relating the conceptual research problem to relevant and practicable research. The quality of empirical research is greatly influenced by the underlying research design. Strategic choices for research design should come up with an approach that allows for answering the research problem in the best possible way within the given constraints. Choice of research design can be conceived of as the overall strategy to get the information wanted.

According to Yin (2009) research design is identified as exploratory, or descriptive. One fundamental distinction between exploratory and explanatory design is whether the research seeks to answer questions relating to existing knowledge and theoretical understanding or investigates phenomena about which little is known (exploratory).

However, according to Ghauri and Gronhaug (2002), exploratory research requires skills such as the ability to control and access information, and then give an explanation. Malhotra (1993) argues that exploratory research's target is to provide a temporary understanding of the research problem, and it should then be used for further research as it investigates phenomena about which little is known.

It is in this sense that the approach here is `qualitative and exploratory'. Some data collection methods have been identified with exploratory research, such as observational methods, narrative, in-depth individual interviews, focus groups, questionnaires and analysis of documentary evidence. However, it is important to note that practitioners of exploratory qualitative research vary considerably in the extent to which they rely on particular methods of data collection (Silverman, 2000).

There are a number of main reasons which lead to qualitative research: firstly, when the subject matter needs to be more clearly understood or defined before it can be measured; or in newly developing social phenomena. Second, qualitative research offers a deeply rooted understanding of phenomena that needs to be deeply set within the participants' personal knowledge or understanding of themselves; for example, beliefs about personal autonomy. Third, researchers should use qualitative research when

the subject of study is complex and where there is need to understand phenomena that are naturally complicated or theoretically difficult to relate to. (Ryan, 2002).

Therefore, this study uses qualitative research because its aim is to explore and understand the key success factors impacting foreign direct investment and technology transfer in Libya and Egypt. As little is known, a qualitative approach provides opportunities for participants (individuals with knowledge of foreign companies in the two countries, Libya and Egypt) to present their views honestly about the processes of FDI and TT in the two countries. It is also a very good approach in projects where the researcher deals with a large population in dispersed settings, as in this study. Moreover, this research is seen as qualitative, as it rests on the opinions of respondents. It gathers data revealing perceptions and opinions from managers in companies involved in FDI and TT in the two countries. Using their opinions, gathered through a questionnaire survey, it seeks to evaluate the key success factors identified by respondents for FDI and TT.

Questionnaires are used exclusively in this study and no other formal method for primary data generation, such as interviews, was employed. The difficult logistical conditions (related to geography, transportation, infrastructure, political and security issues) conspired to make interviews with respondents in this study problematic. In the two countries, Libya and Egypt, because the administrative systems are very ‘complex’, obtaining access to interviewees significantly hinders broad-scale research. In these countries, for any type of study, it is difficult to get information from individuals or government in either country without considerable *wasta*. The situation in Libya is more difficult

than Egypt, because any researcher needs go through a number of administrative procedures before being allowed to make any type of interviews in number. FDI and JV activity has been very tightly controlled and regulated, so firms often have direct government links, e.g. through the involvement of state enterprises or government shareholdings, or through ministerial connections. This situation is markedly different if compared with developed countries such as the UK, because in the UK there are a number of options available to researchers in conducting their studies, such as questionnaires or interviews. In the UK, researchers have access to and can use a number of practical options: post; internet; telephone, personal contact and so on in order to conduct the study.

The main problem of the research can be identified in the form of questions that the study then tries to answer. Borg and Gall (1983) stated that the problem that is eventually isolated for research purposes could be posed in terms of a question for which the proposed research is designed to obtain an answer. Therefore, the main objective of this chapter is to present and explain the research approach and procedures which are considered crucial for undertaking the research into FDI and TT.

6.5 Research method and data collection

The concept of research methods refers to all the methods and techniques selected by the researcher in the research. The choice of the appropriate method is a function of many factors including the nature of the research, the associated information, the nature of the research population, and the

circumstances of the researcher with regard to money, time and experience (Yin, 1994).

There are many ways and techniques of data collection available in a case study or situational review, such as a personal survey, the telephone survey, observation, archival records, questionnaires and interviews. According to Yin (1994), the appropriate method for collecting case study data is determined by the nature of the phenomenon being investigated and the accessibility to and availability of these several data collection methods. In this instance, the research setting *could* be considered two case studies, or conceived as a situational review. Yin's position seems to apply more broadly than to simply case study research, however. In this research, a questionnaire is used to generate data. The data generated from informed respondents should permit the research questions to be addressed, through the aggregation of their responses – 'measuring the balance of opinion', in effect. The nature of the instrument is therefore of particular importance – it needs to meet both technical desiderata, and be culturally appropriate. The technical concerns relating to questionnaire construction and distribution are discussed in detail in the following section.

6.5.1 The Questionnaire

Questionnaires have previously been used to gather data in the fields of FDI, JV and TT research. The chief objective of this research made the use of a questionnaire format to secure the opinions of managers of foreign companies in the two countries Libya and Egypt about the very important factors impacting in FDI and TT a clear option. In particular, the questionnaire was

formulated in order to address the aims of this study, using the prior experience of others.

The general view is of a self-completion questionnaire as one distinct method of gathering information. In essence, a questionnaire consists of a number of questions in relation to the subject of the research whereby members of the research population have to give their responses to these questions. The questions should always be clear and easy to understand and should be included on one form. The questionnaire can be presented to participants in one of four ways: by mail, in which case an interview maybe necessary after completion; by telephone; by hand; or by the internet either through a website especially designed for this purpose or e-mailed (Bryman, 2008). The questions can either be open-ended or close-ended, provided that the questions are initially examined for clarity, gradation, distinction and validity.

6.5.2 Questionnaire Design

The method of collecting data through questionnaires has been widely used, especially in surveys such as this, which involves investigation to obtain the views and opinions of respondents. The subject of questionnaire design is intimately related to the general plan or design of the survey. It has to be designed according to particular specifications and with specific aims in mind. Furthermore, Bryman (2008) explained the usefulness of using a questionnaire as a research tool, by stating that the main advantage in using a questionnaire is that a considerable amount of information may be obtained with the minimum expenditure of both time and effort. In order to generate and gather the appropriate and necessary data and information to fulfill the

purpose of this exploratory and comparative study a questionnaire was therefore designed.

Mason and Bramble (1978) asserted that the questionnaire has the advantage of increasing the generalization potential of the data, and at the same time gives the respondents more freedom to express their points of view. The questionnaire for this comparative study was designed to measure items that were created by the researcher or arose from the previous literature. Therefore, the questionnaire for this study was mainly designed and developed to cover the scope of the aims and objectives of the study.

The methods (and items) applied in this study in the area of FDI and TT were similar to those developed by Ahmed (2004), Blacok and Gertler (2007), Ming and Xing (1999), Myanja (2003), Norback (2001), and Sinani and Meyer (2004) In all of these studies, a questionnaire was used. Consequently, some of the associated questions have been designed and based on these studies, which previously addressed the subject of this present piece of research (see Appendix 4).

The closed and open form of questions were designed to give all participants in the foreign companies an understanding of the questions, and respond to them in a short time, and to give all participants the opportunity to express their opinions about the issues of FDI and TT in two countries. The closed questions in this study were formulated with five-point scale values, with further open-ended questions designed to elicit and measure the opinions and attitudes of the participants towards FDI and TT in the two countries.

The questionnaire in this study had four different parts, with a total of 36 questions. The Egyptian questionnaire omitted part 2 which dealt specifically with Libyan issues.

Part one: This section was designed primarily to obtain respondent information. It comprised of a number of questions relating to issues such as name of the project or company, participation, and so on.

Part two: This part has five questions, 15 to 19; this part was designed primarily to obtain information about investment problems and obstacles in Libya only.

Part three: This part consists of six questions (20-25) this part was designed to obtain information about the labour market in both countries.

Part four: This part consists of eleven questions (26-36) and focuses on information with regard to technology transferability through FDI, including types of technology, the technological gap and the contents of this transfer etc.

6.5.3 Questionnaire distribution

In general, the idea of a study 'population' refers to all the individuals or units that should be targeted by the research. The aim of this research is to survey foreign investors who are in control of companies or branches of companies associated with all sectors, and all foreign companies registered with the Libyan Investment Board (LIB), as has already been mentioned in chapter five. The Libyan Investment Board started in 1998 and the equivalent body in Egypt started at the beginning in 1970.

In an attempt to establish an efficient means of gathering responses, the following criteria have been applied:

1. Given the small size of the study population, the wide variety of the researched companies from different countries, and the wide geographical dispersion in Libya and Egypt, specific steps have been taken to determine the study respondents. The number of respondents was decided according to the number of foreign companies with FDI that had actually started work in Libya (149 foreign companies). In determining the number of companies in terms of sector, all companies in each sector in Libya were chosen, because the number of companies was limited. Consequently, all 149 companies were contacted, in the manufacturing sector, oil and gas sector, tourism sector, agriculture sector and service sector. To balance the design, 149 companies were contacted in Egypt; the foreign companies were sampled from matching sectors such as manufacturing, oil and gas, tourism, agriculture and service sector. However, the number limitation in Libya as mentioned previously did not exist in Egypt, because the level of FDI, numbers of foreign companies and their TT in Egypt are all greater than the respective characteristics for Libya. The Egyptian conditions for FDI and TT are more favourable than in Libya, having attracted more than 1005 foreign companies to the Egyptian economy. All these companies were not only in the particular sectors of interest, but with wide sector dispersion. Companies in Egypt were therefore selected from the same sectors as those in Libya, and in similar number and proportion, despite the wider sectoral dispersion.

2. A number of companies were selected primarily because of their accessible locations. In the two countries, because the foreign companies are distributed across a vast geographical area, the following cities were selected: Tripoli; Al-Jfara; Benghazi; Tarhoona and Mislata; Al-Zawiyah; Al-Nugat Al-Khams; Misratah. A few others were selected in Libya. In Egypt, the cities were: Cairo; Alexandria and Al-Mansoura (and a few other major centres) in Egypt were the locations of choice for company selection. They are the major industrial and commercial centres, and the population of firms is greatest there. This means that firms from remote or inaccessible geographical regions were not selected for inclusion, because of the difficulties in actually reaching or contacting them.
3. The questionnaire was addressed to managers of the foreign companies or their representatives in the company in the two countries. English was used as a means of communication, in order to avoid confusion involving the use of the local understandings of special terminology (it is also likely, as companies with foreign connections, that English would be understood as a key commercial language). There would also perhaps be a status effect, as the use of English would suggest expertise and experience.

6.5.4 Administering the questionnaire

According to Bryman (2008) there are three chief ways of distributing a research questionnaire: the investigator may deliver the form in person to the respondents, stay with them, complete it and collect it thereafter; the

investigator may deliver the form in person to the respondent, go away for a while (a few hours, a day, a week, a month) and repeat the visit to pick up the completed form and the investigator may post the form to the respondents and wait in his station for the forms to be returned through the post. Alternatively, electronic methods (email, web) might be used. This study took an approach fitted to the particular circumstances.

The distribution of the questionnaires took place in August to September 2009 in Libya and October to December 2009 in Egypt. A letter was attached with all the questionnaires in both countries, explaining the reasons for the research in order to ensure that each of the respondents knew the aims and the objectives of the study. It was felt important to ensure that each of the respondents knew what s/he was committing her/himself to. The questionnaire was sent to respondents in two different ways in order to increase the response rate. In Libya for example, distribution was occasionally face-to-face (for a few companies in the capital city in Libya); the bulk of the other questionnaires passed through contacts with the Investor's Service Department of the Libyan Investment Board (LIB) itself. This department has direct relations with foreign companies in Libya, because it is responsible for these companies. The researcher distributed the questionnaire in this way (through the investor's service department in LIB) due to a number of administrative and financial factors. Firstly, the respondents in the study are distributed across a vast geographical area in Libya. Second, under such circumstances distributing the questionnaire form by hand would be difficult and time consuming, while the use of the internet was not an option as many foreign companies have no access to it, especially in Libya. The postal

system is highly unreliable, so did not present a viable option. The use of an informed intermediary known to both parties is also a form of ‘networking’ or *wasta*, in Arabic; that is a familiar and accepted way of developing and cementing relationships in society, but particularly in commercial and administrative matters. Wasta is an Arabic word, and *wasta* is nepotism or 'clout' or 'who you know'. It refers to using one’s connections and/or influence to get things done, including government transactions such as the quick renewal of a passport, and getting hired for or promoted in a job and so on.

The researcher gave the questionnaires to the Investor’s Service Department in Libyan Investment Board (LIB) in order to that they distribute questionnaires to foreign companies, using governmental distribution systems. The initial questionnaire was sent with a covering letter outlining the aims and requesting that participants cooperate by completing the questionnaire and returning it as quickly as possible. The researcher collected all returned questionnaires from the Department after three weeks. Apart from increasing the likely response rate, these methods were used because it was difficult to visit each company due to a variety of restrictions in Libya and Egypt. Internet connection and mobile phone services are unevenly distributed and often unreliable, and the researcher did not have access to satellite telephony, which is the medium used by some companies in more remote areas. In Egypt the situation is better than in Libya in terms of Internet services and postal services, but the researcher used the same technique to distribute the questionnaires for consistency’s sake. In Egypt consultations were made with the Ministry of Investment regarding the postal distribution of the questionnaire via the investor’s service department at the Ministry of

Investment. It was also decided that investors had to be those authorized by the Ministry of Investment and other government offices to provide a degree of complementarily to the respondents in Libya.

The researcher administered the questionnaire only through intermediaries, and not by post, because of the deficiencies of the postal service; not in person because of the severe logistical limitations, across vast geographic areas of Libya and Egypt; not by telephone because of service limitations, and not by email or web, because of the paucity of reliable Internet connections. As the researcher was self-funded, this also served to limit cost possibilities. In the process, data collection was well controlled, as participants were requested to return the filled-in questionnaires within three weeks from the date of receipt; even so, some forms were not returned. This is despite the fact that in both countries, the questionnaire was distributed in a way that drew on the 'aura' of government.

The study used the same questionnaire (apart from part 2) in the two countries for the collection of data. This was for the sake as consistency, but also because alternative designs using another method of data collection (such as interviews at the same time in two countries), made for greater difficulties. The work involved surveying managers from foreign investment companies in Egypt and Libya as well as government officials working in areas relevant to the research topic.

6.5.5 Securing data collection

Following the final design of the questionnaire and after choosing the research respondents, the researcher started the next stage, the general

survey. This fieldwork took more than five months from July to December 2009. Before going to Libya, the researcher secured two letters, one from the Libyan Embassy in London and the other from the University of Gloucestershire supporting the data collection. These were to assist the researcher when approaching firms in Libya and Egypt in order to obtain all necessary preliminary information.

Alongside the close monitoring of the distribution process and the fact that participants were urged to complete the questionnaire as soon as possible, the researcher also travelled to Egypt and visited the Ministry of Investment asking for help to speed up the data collection from foreign companies in Egypt.

6.5.6 Pilot questionnaire

The pilot study is the final step before generating data from the field of the study. According to Yin (1994: 74-75) “the pilot case study helps investigators to refine their data collection plans with respect to both the content of the data and the procedures to be followed.” He also indicates that the pilot study gives the researcher an opportunity to change and modify the questions if necessary.

Firstly, an initial pilot study was conducted from the beginning of May until the end of June 2009, during which a number of activities were carried out. Subsequently, one version of the questionnaire was made available in English for English speaking respondents. Then, the questionnaire was scrutinized by one of my supervisors. During the discussion with him, he advised the researcher to make some further modifications to the questionnaire (based on

his extensive cross-cultural research experience). Thirdly, the questionnaire was tested to establish that the questions would be understandable to the respondents who come from different cultural and professional backgrounds. Finally, the modified questionnaire version was distributed to a pilot group of foreign investors in Libya. The size of this pilot was set at ten questionnaires: thus, ten foreign companies were randomly chosen from the list of companies held by the Libyan investment Board. From the generally positive feedback, the researcher moved to the third stage, to amend the questionnaire after receiving feedback from some of the pilot foreign companies in Libya. Thereafter, the final version of the questionnaires was prepared and distributed to foreign companies in both Libya and Egypt.

As mentioned previously the questionnaire had been sent to respondents through contacts with the Investor's Service Department at Libyan Investment Board (LIB). Consultations were made with the management of the investor's service department at LIB regarding the distribution of the questionnaire to foreign companies. It was also decided that foreign investors had to be those authorized by the LIB. The main reason for this is that the selected foreign investors were aware of all the circumstances surrounding their investment in Libya at every stage from application to implementation and finally in operation. Accordingly, the questionnaire was sent to the participants through the LIB, with the proviso that the completed forms should be returned through the LIB, and that no personal details of either the company or the respondent were written on the envelope. In Egypt the researcher used the same option; researcher consultations were made with the management of the investor's service department at the Ministry of Investment regarding the distribution of

the questionnaire via the investor's service department at the Ministry. The researcher used these ways for a number of administrative and financial factors; also these departments in two countries have daily contact with these foreign companies. The researcher gave the questionnaires to these departments in the two countries at different times (the distribution of the questionnaires took place in August to September 2009 in Libya and October to December 2009 in Egypt), in order to distribute it to foreign companies. Three weeks after the initial distribution of the questionnaires, the researcher contacted the department again in order to collect the questionnaires. In Egypt, the researcher applied the same procedure for the distribution and collection of the questionnaires).

6.5.7 Questionnaire return rate

The questionnaire return rate in two countries was relatively high, and this was in part because of the distribution method chosen, of which more later. In Libya, 149 participants representing 149 companies were selected as the study respondents. One hundred and eighteen questionnaires were returned, of which 90 were complete and 28 rejected because they were incomplete. The return rate of the questionnaire was 60.4%. In Egypt 149 participants representing 149 companies were selected (the same number as the study respondents in Libya), as for the study sample as in Libya. One hundred and nine questionnaires were returned, of which 83 were complete and 26 rejected because they were incomplete. Thus, the return rate of the questionnaire was 55.7%. Overall, 54 questionnaires are excluded; with 173 questionnaires which represent 67% of population are useful for the study.

6.6 Data analysis

According to Bryman (2008) data analysis is a significant function that needs to be performed by the researcher to obtain answers to the research questions and investigate the objectives of the research. Data analysis offers the researcher a method of comprehensively displaying and detailing the raw data that have been gathered (Yin, 1994).

Once the questionnaires were returned, the researcher took a number of steps to process the data. The first step was to seek the advice of an expert in relation to the use of the Statistical Package for Social Sciences (SPSS) and to exchange ideas on ways for codifying and analysing the data.

Before demonstrating the statistical approaches, the values assigned to the five scale cells (both low and high limits) that are used in the study were fixed. Used in this study for analysis are the scale values of 1, 2, 3, 4, 5. These are equivalent to the 'logical' scale values of -2, -1, 0, 1, 2 for the purposes of calculation. As a result, for conducting the analysis, the scale is coded in the following manner: (not important) becomes 1, (unimportant) becomes 2, (do not know) becomes 3, (important) becomes 4 and (very important) becomes 5. Notice that assigning these values to the cells of the response scale does not affect the statistical test results, as the values are ordinal ‘codes’ in nature. Repetition and percentages using frequency tabulation and cross-tabulation were calculated to identify characteristics of the study members and to determine the responses of its members to the main themes included in the questionnaire of the study. The mean and median were computed to determine high or low value responses from respondents in the study.

Since the data produced do not have a normal distribution, then it is incorrect to apply parametric approaches. A solution in this circumstance is to use non-parametric methods. In this study, two non-parametric tests are utilized. The Wilcoxon rank sum test and Mann-Whitney test were selected. The Wilcoxon rank-sum test is a non-parametric statistical test that is used for testing whether one sample of independent observations tends to have a larger median than another particular median. It is one of the best known non-parametric tests of such differences. The Mann-Whitney test is performed on ranked data for two groups and the hypothesis evaluated is whether or not the median of the difference scores for the two groups equals zero.

Notice that the statistical tests of interest are defined to be significant if p-value is less than .05 (level of significance), otherwise the test is not significant, i.e. the possibility that the result is due to chance cannot be confidently rejected.

The next step involved entering the variables from the questionnaires separately. Thereafter, descriptive and inferential statistical analysis techniques were used to analyse the data and interpret the findings.

6.7 Ethical Issues

According to Thietart et al (2001) the basic principles of ethical considerations are universal issues that concern the researchers, such as honesty, transparency, not harming individuals and respecting the participants' rights. They stressed the need to take into account the ethical rules in social research when conducting a survey on individuals. The researcher was satisfied that the construction of the questionnaire, its distribution and the data

handling and analysis were conducted in accordance with the MRS code of conduct and of the University of Gloucestershire research ethics handbook. The questionnaires were without names (anonymous individuals), though questionnaires individually contain data on the company and the position of respondents, reported data was aggregated. No data from this study have been, and will not be, shared with any other parties and will be destroyed on completion of the research. Therefore, all data gathered remain confidential and anonymous. In addition, the data have been kept private and strictly confidential. Only the researcher and his supervisors can access the data.

6.8 Conclusion

This chapter provides a detailed description of the adopted research approach and highlights the strategies and the general methods used in this research. This chapter highlights in particular data collection via questionnaire, including questionnaire design, pilot questionnaire, sampling, and administering the questionnaire. This approach is applicable to the purpose of the existing study, because it allows an understanding of what are the key success factors impacting foreign direct investment and technology transfer in Libya and Egypt. The next chapter presents the data analysis and discussion to discover the circumstances and the nature of the FDI and TT in Libya and Egypt and the extent to which this process achieved its goals in terms attracting FDI and TT in Libya in particular.

Chapter Seven

Data Analysis and Discussion

7.1 Introduction

This chapter presents an analysis of the responses to the questionnaire survey administered to foreign companies in Libya and Egypt, reflecting their perceptions concerning FDI and TT in Libya and Egypt.

The data analysis and the subsequent discussion in this chapter are divided into four sections. Following the introduction, the second section focuses on the general information in relation to the characteristics of the representatives of the studied foreign companies in Libya and Egypt. Section three is dedicated to their perceptions of problems and obstacles for foreign investment and TT in Libya and Egypt. Section four presents the key success factors for FDI and TT in Libya and Egypt, important factors for attracting FDI to Libya and Egypt, respondents' perceptions of the requirements for attracting FDI and TT to Libya and Egypt and finally means and purposes of TT to Libya and Egypt.

The researcher used the arithmetic mean to rank the items in terms of importance, whilst median was used for the non-parametric tests. The table below helps to interpret resulting relationships between the calculated means and respective medians.

Table A: definition of categories

Category	Not important	Unimportant	Do not know	Important	Very important
Value	1-1.80	2-2.60	3-3.40	4-4.20	5

The Mann-Whitney and Wilcoxon tests are used. Notice that the value of Mann-Whitney and Wilcoxon is the sum of ranks, so it is often large. The value of the statistic from the Mann-Whitney and Wilcoxon tests reflects the size of the differences between the ranks for the two conditions. Notice that SPSS turns Mann-Whitney and Wilcoxon into a Z-score, regardless of sample size. In this study the values of Mann-Whitney and Wilcoxon test statistics are used rather than the Z score as (additionally) computed by SPSS.

7.2 Characteristics of the participants

This section focuses on general information in relation to the characteristics the respondent foreign companies in Libya and Egypt.

7.2.1 Company Ownership

Table 7.1 gives a general picture of the ownership of foreign companies participating in this study. Thus, in Libya the number of companies that are 100% owned by foreign investors is 75, which was a half of the total number of the firms with FDI in the country at the time of the research, or 83% of all researched firms. At the same time the numbers of studied firms 100% owned by foreign investors in Egypt were less, namely, 48.

Table 7.1 General Information on the sample companies

		Participation (in percent)			Total
		100%	50% or more	Less than 50%	
Libya	Count	75	12	3	90
	% within Country	83.3%	13.3%	3.3%	100.%
	% of Total	43.4%	6.9%	1.7%	52.0%
Egypt	Count	48	29	6	83
	% within Country	57.8%	34.9%	7.2%	100.%
	% of Total	27.7%	16.8%	3.5%	48.0%
	Total Count	123	41	9	173
	% of Total	71.1%	23.7%	5.2%	100.%

Consequently, the Libyan sample has a higher percentage of companies fully owned by foreign investors than the Egyptian sample. The reason is that foreign companies operating in Libya prefer not to share ownership with local companies, because Libyan companies cannot provide employees with the necessary skills, or management ability. Foreign companies in Libya believe that local companies are inexperienced and with a low level of competitiveness.

Foreign firms in the sample with 50% ownership or more in Egypt are 35%; in Libya it is only 13%. This is because the policy of the Egyptian government is focused on attracting foreign companies that will share ownership with local firms, so as to gain direct benefits from their expertise, resulting in the development of local companies and the local economy.

7.2.2 Position of the respondents

Table 7.2 presents the distribution of the respondents according to job position. In Libya, the major job categories for information providers are directors or heads of department (35 in each role); the ‘owners’ of the FDI

projects were fewer in number. The distribution in Egypt was different, with those in senior executive roles (head of department) being much more predominant – over half the respondents. The nature of the job roles suggests that respondents were sufficiently well placed to answer the questionnaire.

Table 7.2 Informants' job title

			Your position				Total
			Owner of the project	Director of division	Head of department	Other	
Country	Libya	Count	14	35	35	6	90
		% within Country	15.5%	41.7%	41.7%	6.7%	100.0%
		% of Total	5.8%	20.2%	20.2%	3.5%	53.9%
	Egypt	Count	3	33	45	2	83
		% within Country	3.6%	39.8%	54.2%	2.4%	100.0%
		% of Total	1.7%	19.7%	26.1%	1.2%	49.7%
Total Count			17	68	80	12	173
		% of Total	9.8%	39.3%	46.2%	6.9%	100.0%

7.2.3 Country-of-origin of foreign companies in Libya and Egypt

Table 7.3 describes the country-of-origin of the companies involved in this study, in order to indicate the sources of foreign investment and technology. If the majority of investment is from countries such as Tunisia rather than from Japan or the US, this will affect the value of investment and levels of technology.

In the studied companies, FDI in Libya has come from 37 countries, the most important of which were: France, Germany, and the UK. Japan, Russia and the USA, with other technologically advanced countries also in the list. Thirteen Arab countries, including Tunisia, Egypt, Jordan and Bahrain were in the list. The investments totalled US$2,481 billion in the period 2000-2008

(Libyan Investment Board). Table 7.3 shows that European countries are the key investors in Libya. The top three (all EU countries) have virtually 50% of investment projects. This is because the Libyan government believed that the benefit from these countries would be higher than from other countries, especially in relation to technology transfer. Therefore, the Libyan government worked towards achieving good political relations with the developed countries from Western Europe after 2003.

Table 7.3 Country-of-origin of the studied foreign companies that invested in Libya

Countries	Number of projects	% of total FDI Projects	Rank
France	14	18.7	1
Germany	12	16.0	2
UK	9	12.0	2
Japan	7	9.3	4
Russia	5	6.7	5
USA	5	6.7	5
Egypt	4	5.3	6
Italy	3	4.0	7
Korea	3	4.0	7
China	2	2.7	8
Sweden	2	2.7	8
Tunisia	2	2.7	8
Turkey	2	2.7	8
Holland	2	2.7	8
Canada	1	1.3	9

Many of the foreign companies in Libya come from countries with a high level of technological development and thus there are good preconditions for high quality TT and future development of the Libyan economy. Countries such as Tunisia, Turkey and Egypt that invested in Libya because of good political relations with the Libyan government will be able (probably) also to transfer advanced technology.

The Egyptian situation is different from the one in Libya, because the Egyptian government has a long history of good relationships with countries from all over the world. US companies were the largest investors in Egypt with more than 20% of the total investment (around US$6 billion), see Table 7.4. In addition to its political standing, the Egyptian government also encourages investment by working to develop the Egyptian economy utilizing the high technology brought by investors. Egypt depends on foreign investment financially because it is not a rich country (with large natural endowments), yet has the largest population within the Arab countries. Consequently, the Egyptian government actively cultivates foreign investment as a necessary source of income.

Table 7.4 Country-of-origin of foreign companies that invested in Egypt

Countries	Number of projects	% of total FDI Projects	Rank
USA	17	20	1
UK	15	17	2
France	13	14	3
China	9	10.7	5
Italy	6	6.9	6
Germany	6	4.9	6
Japan	4	4.3	7
Canada	2	1.7	8
Holland	2	1.7	8
Russia	2	1.7	8
Turkey	1	0.7	9
Korea	1	0.7	9

According to the Ministry of Investment (2008), in the period 2003-2007 the USA has contributed the largest investment to the Egyptian economy. The relationship is two-way, with Egypt being the largest market in the world for wheat from the US, as well as being a large importer of commodities, machinery and equipment. The UK was the second largest in terms of number

of companies, while the total European investment to Egypt was around US$5 billion. The investments were channelled to the oil and the gas sector, as well as consumer goods manufacturing, automobile production and financial services.

7.2. 4 Company size in Libya and Egypt

According to the information presented in Table 7.5, it can be seen that in Libya 10% of the foreign investors possess small-sized companies, 48% have invested in medium-sized companies, while 42% have done so in large-sized companies. Most of these investments in large companies are concentrated in the oil and gas sector.

Table 7.5 Company size of respondents in Libya and Egypt

		In terms of company size, to which of the following could your company be categorized			Total
		Large size company	Medium size company	Small size company	
Libya	Count	38	43	9	90
	% within Country	42.2%	47.8%	10.0%	100.0%
	% of Total	22.0%	24.9%	5.2%	52.0%
Egypt	Count	42	36	5	83
	% within Country	50.6%	43.4%	6.0%	100.0%
	% of Total	24.3%	20.8%	2.9%	48.0%
	Total Count	80	79	14	173
	% of Total	46.2%	45.7%	8.1%	100.0%

In the case of Egypt, 6% of the foreign investors have small-sized companies, 43% have medium-sized companies and 51% have large-sized companies.

The majority of foreign companies invested in economic sectors such as oil and gas, manufacturing, agriculture, tourism and services.

7.2.5 Foreign companies' objectives in Libya and Egypt

This part aims to shed light on foreign companies' objectives in Libya and Egypt. In Table 7.6 it can be seen that in Libya 7% of the foreign investors have short-term objectives. These are companies that work in housing, and the infrastructure sector, building roads and airports. At the same time, 93% of the foreign investors in Libya have long-term objectives. These investments are mostly in the oil and gas sector, motivated by the (then) low cost of extraction and plentiful supply of oil, and others in the manufacturing sector motivated by low labour costs; these two sectors attracted more than 84 foreign companies.

In Egypt, 15% of foreign investors have short-term objectives, while 89% have long-term objectives. The foreign firms with long-term objectives are motivated by the balanced structure of the Egyptian economy and are found in all sectors of the economy.

Table 7.6 Foreign companies' objectives in Libya and Egypt

		What are your company objectives		Total
		Short term objectives	Long term objectives	
Libya	Count	6	84	90
	% within Country	6.7%	93.3	100.0%
	% of Total	3.4%	48.5	51.9%
Egypt	Count	12	71	83
	% within Country	14.6%	85.5%	100.0%
	% of Total	6.9%	41.0%	47.9%
Total Count		18	155	173
	% of Total	10.4%	89.6%	100.0%

7.2.6 Type of foreign investment in Libya and Egypt

Table 7.7 shows that the majority of the study firms in Libya are wholly owned foreign subsidiaries - 79% of which entered Libya via greenfield investment. This means that foreign companies investing in Libya tend to prefer to invest on their own, without the participation of local companies or partners. JVs with the Libyan government are 9% of the studied firms and only 5% are joint venture with anther foreign company. The policy of the Libyan government is to increase the potential benefits from processes of FDI and TT by starting new projects in different areas, receiving new and advanced technology; developing only one sector of the economy creating new jobs; increasing productivity and developing revenue from exports.

In Egypt the situation seems much better than in Libya, because the Egyptian government itself was motivated to participate in investments with foreign investors, in order to obtain advanced technology and FDI management experience. To achieve this, the Egyptian government established law No 43/1974. According to this law, a more favourable environment would encourage international technology transfer (ITT) through authorizing foreign investors to apply for the formation of joint ventures with local firms and the Egyptian government. This law introduced TT as one of the major criteria for allowing FDI to Egypt. This is the reason why in Egypt 40% of the studied companies are joint ventures with either the host government or a local company.

Table 7.7 investment type in Libya and Egypt

			What is the type of investment				
			Wholly owned subsidiary	joint venture (with local government participation)	joint venture (with local company participation)	joint venture (with anther foreign company)	Total
Country	Libya	Count	69	8	8	5	90
		% within Country	79.3%	8.8%	8.8%	5.5%	100.0%
		% of Total	39.9%	4.6 %	4.6%	2.9 %	52.0%
	Egypt	Count	49	13	14	7	83
		% within Country	59.8%	15.9%	17.1%	7.3%	100.0%
		% of Total	28.3%	7.5%	8.1%	3.5%	47.4%
Total			118	21	22	12	173
		% of Total	68.2	12.1	12.7	6.9	100

7.2.7 Business experience in Libya and Egypt

Table 7.8 presents the distribution of the respondents according to work experience by foreign firms that participated in the study in Libya and Egypt, measured in years.

The results highlighted in table 7.8 show that 13% of the participating firms have one-year's experience of working in Libya, and 8% of them in Egypt. A further 64% have between two and four years of experience of working in Libya, and 41% in Egypt; 22% have more than four years experience of working in Libya and 50% have more than four years experience of working in Egypt. Libya overall had low levels of experience; the reason is Libya's short history of attracting FDI and TT. As well as this, the majority of foreign companies had preferred to limit investment for many years, due to the economic embargoes, sanctions and the lack of economic stability in Libya.

In Egypt, the experience of foreign firms is greater, because of Egypt's long engagement with FDI and TT, due to more appropriate government policies.

Table 7.8: Length of Investment Experience of Respondent in Libya and Egypt

		How many years have been invested so far			Total
		1 year	2-4 years	>4 years	
Libya	Count	12	58	20	90
	% within Country	13.3%	64.4%	22.2%	100%
	% of Total	6.9%	33.5%	11.6%	52%
Egypt	Count	7	34	42	83
	% within Country	8.4%	41.0%	50.6%	100%
	% of Total	4.1%	19.7%	24.3	48.1%
	Total Count	19	92	62	173
	% of Total	10.1%	53.2	36.4	100%

7.2.8 Manpower skills

Table 7.9 highlights the perceptions of the respondents in relation to the skill level of the local workforce in comparison with Western norms. Eighty-three of the respondents (92% of the total) described the Libyan workforce as less-skilled than Western workers. The low educational outcomes in Libya reflect negatively about the quality of the workforce. In order to reduce this gap the Libyan government requires foreign investors to train Libyan labour.

The respondents perceived the position in Egypt to be better. 35 (42%) respondents thought that the local labour force was equally as skilled as Western workers. Furthermore, 15 (18%) Egyptian respondents believed that local employment is better than Western labour (See Table 7.9). The reason for these findings is to be found in the Egyptian education system that produces higher quality workers. This can be seen in the proportion of the population which has completed secondary education: 16% of those over 15

years in Libya compared to 26% of Egypt's twelve-time greater population (Barro & Lee, 2010).

Table 7.9 Perception of Skill Level of Local Employees In Comparison To Western Standards

			What is the skill level of local employees compared with western standard?			Total
			Higher	Lower	The same	
Country	Libya	Number	5	83	2	90
		% within Country	5.6%	92.2%	2.2%	100%
		% of Total	2.9%	48.0%	1.2%	52.0%
	Egypt	Number	15	33	35	83
		% within Country	18.1%	39.8%	42.2%	100%
		% of Total	8.7%	19.1%	20.2%	48.0%
	Total	Number	20	116	37	173
		% of Total	11.6%	67.1%	21.4%	100%

The respondents were also asked if foreign companies are training national manpower. 85 (97%) of respondents in Libya stated this was the case, while 81 (all bar 2) respondents in Egypt perceived this to be the case. The results seem to confirm that Egyptian manpower attains higher skill levels than Libyan manpower. Such a high proportion of companies providing training seems to confirm the picture in the literature. Moses (2003), for example, claims that FDI brings many benefits to the host country in the sense of capital, training employment, productive assets, entrepreneurship, skills, technology, innovation, managerial, organizational, export marketing expertise.

Table 7.10 highlights the perceptions of the respondents in relation to the areas in which the local workforce requires training. Each area of training highlighted in the questionnaire had mean and median between 3.8 and 5. Testing for 'differences in median score' between the Egyptian and Libyan

respondents reveals differences, despite the fact that the medians are sometimes the same. The Mann-Whitney and the equivalent Wilcoxon test are rank sum tests and not direct median tests. The tests rank all the observations from both samples and then sum the ranks from just one of the samples; that is then compared with the expected rank sum. It is possible, although not common, for groups to have different rank sums and yet have equal or nearly equal medians. When this is the case, the existence of different mean values may indicate some underlying variation. This may show that the respondents believed that the workforce in Libya required training in these skills. Only corporate language shows a level less than 3 with p-value=1.00 (not statistically significant, P > than 0.05). The importance of the areas in which foreign companies believe the development of the workforce is necessary is, first, technical training (with mean and median of 4.8 and 5; English language (4.6 and 5) and quality assurance (4.2 and 4).

Using the resulting means, the most important areas in which foreign companies believe the development of the workforce is necessary in Libya are language skills and technical training, because language skills and technical training constitute important factors in communication between foreign and local investors in the host country, in order to transfer advanced technology and after the process of FDI and TT take place.

Table 7.11 shows the areas where the local workforce in Egypt requires training; the results are very similar to ones obtained for Libya. Each of the factors was important in both countries. Egypt and Libya seem to have similar level of factors such as the English language, because there are a number of the populations of both countries that can speak English. Overall, there were

few differences in the results between the two countries Libya and Egypt. Most studies confirm that the host countries benefit from foreign investment when training the workforce. According to Liu (2008), Tong (2001) and Sinani and Meyer (2004), FDI has a positive effect on employment.

Table 7.10 Areas in which training is necessary for workforce in Libya

	Mean	Median	Wilcoxon	p-value
English language	4.69	5.00	3981	<0.001
Technical training	4.83	5.00	4092	<0.001
Quality assurance	4.23	4.00	3628	<0.001
Finance	3.95	4.00	3069	<0.001
Production methods	3.88	4.00	3223	<0.001
Marketing	3.79	4.00	2133	0.366
Business practices	3.76	4.00	2706	0.004
Corporate language	2.88	2.00	1036	1.00

Table 7.11 Areas in which training is necessary for workforce in Egypt

	Mean	Median	Wilcoxon	p-value
Technical training	4.82	5.00	3483	<0.001
English language	4.67	5.00	3379	<0.001
Quality assurance	4.42	5.00	3399	<0.001
Marketing	4.31	4.00	3205	<0.001
Finance	4.07	4.00	2865	<0.001
Production methods	3.93	4.00	2942	<0.001
Business practices	3.89	4.00	2650	<0.001
Corporate language	3.00	4.00	1243	0.988

As the findings depicted in table 7.12 indicate, the foreign investors in each of the two countries believe the underlying training areas are found to be important or very important using the resulting median (median>=4). However, in Libya, corporate language seems to be unimportant. According to the mean value, technical training and English language are ranked at the top of training necessity. Using the Mann-Whitney test, the only significant difference (p-value<0.05) between the two countries is found in marketing and quality assurance.

Table 7.12 Comparison of the necessary of training areas in Libya and Egypt

	Libya		Egypt		Mann-Whitney	p-value
	Median	Mean	Median	Mean		
Business practices	4.00	3.63	4.00	3.89	3366.500	.242
Production methods	4.00	3.82	4.00	3.94	3494.500	.398
Corporate language	2.00	2.77	4.00	3.00	3439.500	.344
Finance	4.00	3.83	4.00	4.07	3328.500	.189
Marketing	4.00	3.31	4.00	4.31	2210.000	<.001
Quality assurance	4.00	4.06	5.00	4.42	2918.000	.007
English language	5.00	4.70	5.00	4.67	3668.500	.779
Technical training	5.00	4.83	5.00	4.82	3689.500	.824

7.3 FDI Problems and Obstacles in Libya and Egypt

This section focuses on the interpretation of the data acquired from the questionnaire survey. Obstacles and problems were identified in relation to foreign investment in the perception of the participants, articulated in their responses to the questionnaire survey in the two countries. There follow two major elements: section 7.3.1 *stages* of the problem in Libya and Egypt; section 7.3.2 *severity and types* of investment problems in Libya.

7.3.1 Stage when problems occurred in Libya and Egypt

Table 7.13 highlights whether or not investors have faced problems in the initial processing of the application. ‘Problems’ are one of the most important factors influencing foreign investment decisions. The difference in the results of initial problems faced is startling. In the case of Libya, 84 companies (96%) of all respondents reported problems and just 4 (4%) respondents did not have any investment problems in the Libyan environment. These figures show that the vast majority of foreign investors have experienced problems in Libya. There may be many reasons why the overwhelming majority of foreign investors have problems in Libya: because FDI is new issue in Libya and there is a lack of experience; Libya was not well motivated to attract FDI, and individual Libyans themselves do not have a long period of experience.

Far fewer respondents identified problems encountered by foreign investors in the Egyptian environment, because the Egyptian government has applied clear policies and has had considerable experience over a long period of time in FDI and TT. The Egyptian government has created many favourable conditions, in order to resolve (all) problems potentially faced by the foreign investors as soon as possible in the FDI process. For example, the Egyptian government created a web portal for problems and issues, in order to try to resolve problems as quickly as possible. To do this, the foreign investor just needs to access to the webpage and write what kind of problems they have and a dedicated government team will try to resolve this problem as soon as possible.

Table 7.13 Number of investors that faced problems

			Have you encountered any problems or difficulties in the process your investment?		Total
			Yes	No	
Country	Libya	Number	84	4	88
		% within Country	95.5%	4.5%	100 %
		% of Total	49.1%	2.3%	51.5%
	Egypt	Number	25	58	83
		% within Country	30.1%	69.9%	100 %
		% of Total	14.6%	33.9%	48.5%
Total		Number	109	62	171
		% of Total	63.7%	36.3%	100 %

Table 7.13 and 7.13* present a striking difference in the results from Libya and Egypt. In the case of Libya 96% of respondents have problems or difficulties. Moreover, 69% of the respondents in Libya stated that they experienced problems from the start of the project, because in Libya permissions for foreign investments have to go through a number of procedures. This process takes a long period of time. The established investment culture in Egypt led to a significant reduction of the problems experienced prior to, and during, the investment process (see Table 7.13*).

Table 7.13* Stage of the project at which problems were experienced

			If you answered yes, at what stage of your investment have you encountered these problems?		Total
			At the outset of the investment	in the process your investment	
Country	Libya	Number	57	26	83
		% within Country	68.7%	31.3%	100 %
		% of Total	53.3%	24.3%	77.6%
	Egypt	Number	3	21	24
		% within Country	12.5%	87.5%	100 %
		% of Total	2.8%	19.6%	22.4%
Total		Number	60	47	107
		% of Total	56.1%	43.9%	100 %

The number of investors who encountered problems in the Egyptian environment was very small in comparison with Libya; only 25 companies representing 30.1% of the total sample had problems or difficulties. 12.5% of these experienced problems at the beginning of the project, while the remainder experienced problems during the course of the project implementation (see Table 7.13*). The significance of the problems in the Egyptian environment is low when compared with the Libyan environment; because serving investment needs is very important to the Egyptian government as well as to the Egyptian economy (see Table 7.13 and 7.13*).

7.3.2 Severity and types of investment problems in Libya

This section of the questionnaire was administered only in Libya, as its purpose was to provide a foundation for policy recommendations to the government. Table 7.14 presents the means and medians of responses to the elements in the question related to Libya. It shows respondents' evaluation of the severity of the various extended problems in this section all yielding a

mean and median of higher than 3. Most of the respondents were unanimous that there are major problems facing investment, company-related very severe major problems, economy-related and country–related issues (all showing a level of significance of < .001; very highly significant. This confirms the previous result (see Table 7.13 and 7.13*) and offers a key reason why the level of FDI is very low in Libya; i.e. why the surveyed investors faced problems in the investment environment of Libya. If these results were to be compared with the Egyptian environment, given the data in previous tables, it is likely we have large differences repeated between the environments (bearing in mind that most Egyptian respondents would not have any difficulties to report). This enables the recognition that the Egyptian investment environment is to be judged better than the Libyan, from those operating in an FDI context.

Table 7.14 Severity and type of problems experienced in Libya

	Mean	Median	Wilcoxon	p-value
Company- related	4.08	4.00	3594	<0.001
Economy- related	3.91	4.00	3290	<0.001
Very severe major problems	3.84	4.00	3294	<0.001
Country- related	3.79	4.00	3211	<0.001
Severe major problems	3.62	3.00	2908	<0.001
Not severe minor problems	3.41	4.00	2456	0.050
Not severe major problems	3.30	4.00	1999	0.578
Severe minor problems	3.06	3.00	1509	0.985

The types of problems experienced by investors in Libya are shown in Table 7.15 (below). For example, in administrative problems, the problem of low standards in banking services was confirmed statistically by the median of 4 and 5, where the significance level was < 0.001(statistically very highly significant). This shows that foreign respondents were unhappy with the banking services. As for legal and institutional problems, the problem of the size of investment required by law was confirmed statistically by the median of 4, where the significance level was <0.001(statistically very highly significant). What applies to the factors discussed above also applies to *all* other economic factors shown in Table 7.15. These include the legal and institutional facets. This is related to the fact that the Libyan government was not interested in attracting FDI and TT to help economic diversification of the country. Infrastructure problems made respondents unhappy as the infrastructure was inadequate, lacking airports and associated services, poor transport in the country, particularly coastal maritime and ferries. Even Tripoli (the capital) suffered from inadequate services in the areas of maritime and air transport. On the social side a major barrier was the lack of FDI 'intelligence' in the local culture.

Table 7.15 illustrates the extent and magnitude of the problems identified, which are categorized into economic problems; administrative problems, legal and institutional problems, infrastructural problems and social problems. The magnitude of these problems is apparent as all had means more than 3.6, and medians equal to 4.00 or more, with statistical significance high (p-value is < than 0.05). By comparison with the Egyptian environment, the Libyan experiences are poor. The significance of problems foreign investors faced in

Egypt is lower, indicating closer relationships between the foreign investors and the Egyptian authorities than what previously occurred in Libya.

Table 7.15 Measuring of the Key Problems in Libya

	Mean	Median	Wilcoxon	p-value
Administrative problems				
1- Lack of simplification of the registration and licensing procedures of investment projects	4.58	5.00	4085	<0.001
2- Lack of qualified and trained local workforce	4.18	4.00	3725	<0.001
3- Level of technology	4.08	5.00	3362	<0.001
4- Lack of identification of the investment opportunities in the country	4.05	4.00	3719	<0.001
5- Lack of investment data and technical information for interested investors.	4.04	4.00	3774	<0.001
6- Banking services	4.03	5.00	3300	<0.001
7- Lack of data on the Libyan market	3.95	4.00	3410	<0.001
8- Tax treatment	3.91	4.00	3191	<0.001
9- Lack of clear procedures for the enrolment and residence of expatriates	3.91	4.00	3602	<0.001
10- Lack of institutional support	3.90	4.00	3669	<0.001
11- Customs treatment	3.83	4.00	3435	<0.001
12- Lack of business support structures	3.83	4.00	3500	<0.001
13- Size of the local market	3.72	4.00	2855	0.001
14- Difficulties in identifying potential local partners	3.70	4.00	3047	<0.001
15- Problems regarding transfer of salaries and remittance and profits	3.62	4.00	3064	<0.001
16- Poor performance of private sector	3.49	4.00	2583	0.016
17- Exchange rate policy	3.48	4.00	2441	0.057
18- Competition in the local market	3.30	4.00	1989	0.594
19- Marketing problems	3.13	4.00	1576	0.971
20- Lack of foreign schools	2.62	2.00	1042	1.00
Legal and institutional problems				
21- Restriction imposed on choosing the location for	4.08	4.00	3844	<0.001

business the operations				
22- The size of investment required by law	4.07	4.00	3422	<0.001
23- Arbitration	3.86	4.00	3570	<0.001
Infrastructural problems				
24- Communications and transportation	4.19	4.00	3800	<0.001
25- Lack of airports and associated services	4.01	4	3738	<0.001
26- Lack of geographical map of investment sites	3.81	4.00	2841	0.001
27- Lack of ports and associated services	3.56	4.00	2754	.000
28- Lack of road network between big cities (sites)	3.43	4	2327	0.131
29- Lack of hotels and associated services	3.36	4.00	2197	.002
Social problems				
30- Lack of local experience of FDI	3.79	4.00	3097	<0.001
31- Weather and climate	3.67	4.00	2550	.022
32- Lack of awareness of the importance of FDI to the local culture	2.86	2.50	1249	.999
33- Difficulties in the adaptability of foreigners to the local culture	2.57	2.00	912	1.00
34- Cultural differences between foreign investor and local nationals	2.50	2.00	851	1.00
35- Lack of security	2.23	2.00	630	1.00

7.4 Key factors for foreign direct investment (FDI) and technology transfer (TT) in Libya and Egypt

The objective of this section is to analyse the key factors behind FDI and TT in Libya and Egypt. The outcomes highlighted in this section provide answers to the research question of the study: what are the key factors impacting FDI and TT in two developing countries? This section is divided into three main parts: Section 7.4.1 concerns key factors influencing foreign investment in Libya and Egypt; section 7.4.2 is about factors in attracting foreign direct investment (FDI) in Libya and Egypt; section 7.4.3 considers the requirements

for attracting foreign direct investment (FDI) and technology transfer (TT) to Libya and Egypt.

According to several scholars, including Dunning (1994) and Nunnenkamp and Spatz (2004) ten years later, the benefits from the processes of FDI and TT are not uniform; they differ between the particular economic sectors in one and the same country; they vary between countries, and the benefits change over time. The patterns observed here tend to support this contingent perspective.

7.4.1 The key factors influencing foreign investment in Libya and Egypt

Table 7.16 addresses the research question by analysing the respondents' answers to the question: What factors influenced your company's decision to invest in Libya/Egypt?

Table 7.16 Factors Influencing the Decision to Invest in Libya

	Mean	Median	Wilcoxon	
			value	p-value
Investment law	4.35	5.00	3846	<0.001
Location factor	4.18	5.00	3662	<0.001
Taxation policy	4.07	4.00	3725	<0.001
Exchange rate	3.84	4.00	3125	<0.001
Market size	3.60	4.00	2778	<0.002
Marketing problems in the existing markets	3.30	4.00	2187	0.288
Strong market competition	3.29	4.00	2181	0.296

The five factors considered most important by the respondents were: investment laws, location of investment, taxation policy, exchange rate and

market size. Each of these factors has impacted foreign investors' decision-making regarding investment in Libya. All have means between 3.6 and 4, with the medians laying between 4.00 and 5.00; all are statistically significant where p-values < 0.001 (very highly significant). This means that all factors such as investment law, location factor, taxation policy, exchange rate, market size mentioned above are considered most important by the respondents to invest in Libya.

Foreign companies participating in this study believe that investment law comes first as a factor influencing their decision to invest in Libya. The Libyan government worked to develop investment laws from the 1960s. The laws were promulgated in order to encourage FDI by offering advantages to the foreign investor, including the opportunity to operate in the fields of health, tourism and services. These laws were updated in 2010 in order to encourage further FDI, by offering more advantages in a greater variety of sectors and areas, reducing the level of taxes and permitting foreign investment in strategic projects. A number of studies show the positive interdependence between investment laws, location of investment, taxation policy, exchange rate and market size and the level of FDI and TT (e.g., Saggi, 2002; Konhpaboon, 2006).

The majority of the respondents confirmed that the location of Libya played a very important role in attracting FDI, because foreign investors were mostly influenced by the geographic location of Libya allowing easy access to, and low cost of transportation to international markets.

The respondents consider market size important for selling their products in either local or international markets, Libya is considered to have good potential for market development.

Table 7.17 Factors Influencing the Decision to Invest in Egypt

	Mean	Median	Wilcoxon	
			value	p-value
Location factor	4.60	5.00	3420	<0.001
Investment law	4.51	5.00	3406	<0.001
Taxation policy	4.27	4.00	3278	<0.001
Market size	4.10	4.00	3050	<0.001
Strong market competition	4.02	4.00	2951	<0.001
Exchange rate	3.59	4.00	2328	0.004
Marketing problems in the existing markets	3.29	4.00	1926	0.204

Table 7.17 highlights the answers to the same question in relation to Egypt. It is clear that the majority of factors in the table were considered to be of great importance to the foreign investor: investment laws, location of investment, taxation policy, exchange rate and market size. Each of these factors has impacted foreign investors' decision-making regarding investment in Egypt. All have means above between 3.5 and 4.6. Also, the majority of medians lie between 4 and 5 with statistically significant result, where p-value was < 0.001.

Consequently, the Egyptian situation can be judged as similar to the Libyan situation, because items such as investment law, location and taxation policy were seen to be similar in both cases, according to the foreign investors in Libya and Egypt. The factors concerning location and investment law, for example, are very important for these countries in attracting FDI and TT. The

investment law in Egypt was constantly amended in the period from 1970 to 2008. For example, once the first investment law No. 65 of 1971 had been enacted, under this law foreign capital was invited to establish investment projects in Egypt, then law No. 43 of 1974, provided more incentives such as tax holidays and exemption from income tax for a long period of time, for the transfer of foreign capital and the participation in joint venture projects. This pattern of improvement and facilitation has continued in Egypt subsequently. For Egypt 'location' comes in first place amongst factors influencing the decision to invest.

Table 7.18 Comparison of the Factors Influencing the Decision to Invest In Libya and Egypt

	Libya		Egypt		Mann-Whitney	p-value
	Mean	Median	Mean	Median		
Location	4.18	5.00	4.60	5.00	2871	0.002
Market size	3.60	4.00	4.10	4.00	2710	0.001
Taxation policy	4.07	4.00	4.27	4.00	3195	0.076
Marketing problems in the existing markets	3.30	4.00	3.29	4.00	3561	0.563
Exchange rate	3.84	4.00	3.59	4.00	3178	0.076
Strong market competition	3.29	4.00	4.02	4.00	2078	<0.001
Investment law	4.35	5.00	4.51	5.00	3386	0.226

Table 7.18 compares the majority of factors considered to be of great importance to the foreign investor in the two countries Libya and Egypt from the survey. Table 7.18 shows clearly that (according to both the mean and the median in the table above), respondents believed that the location factor in Egypt was considered important; also location was considered important by

the respondents in Libya as well. Based on the Mann-Whitney test, it was found out that there are highly significant differences between the two countries (Libya and Egypt) in terms of location, strength of market competition and market size. Thus, location, investment law and market size in Egypt came with means of 4.60, 4.51 and 4.10 and with a good level of significance in Libya investment law had a mean of 4.35, location with 4.18 and size of the market with 3.60.

A number of other studies have also found that FDI and TT to developing countries depends on policy options, such as investment law and taxation policy, as well as factors such as close proximity to the host countries and big market size (Saggi, 2002). Ali and Guo (2005) found that factors such as a large market size, growth and low labour costs are very important for encouraging FDI. Similarly the significance of the market size and location here is in line with the findings in a number of studies, such as the ones carried out by Bevan and Estrin (2004), Yiying (2010)., and Tvaronaviciene (2006). All these studies found that the market size and location are critically important factors for FDI inflow and TT.

Libya was slightly behind Egypt in terms of attractive investment laws; primarily because foreign direct investment into Egypt goes back at least to the year 1816 and the Egyptian government has made many changes to their investment laws in many sectors over the years (see Table 5.1).

According to the Central Bank of Libya (2005), Libya has good investment law policies, but inward investment was not highly stimulated – which suggests that investors did not share the Central Bank's view. However, the difference between the scores for the two countries is not significant, since the p-value

for Mann-Whitney = 0.222; Egypt still ranks ahead of Libya, probably due to its lengthy experience and large population.

According this analysis, the key factors that influence foreign investment in Libya and Egypt maybe ‘unmanageable factors’ that cannot be impacted by the host governments of Libya and Egypt (except over historically long timescales, perhaps). Among these unmanageable factors are the market size and country location. The host governments can more readily change the manageable factors in order to attract FDI. These factors are taxation policy, marketing campaigns, exchange rate regulations, encouraging strong market competition and investment legislation.

7.4.2 Key factors for attracting foreign direct investment (FDI) in Libya and Egypt

This section focuses on the major factors that, according to the respondents, influence investment decisions by foreign investors in Libya and Egypt. The results in Table 7.19 (below) show which factors are important in encouraging FDI in Libya. Using the values of the Wilcoxon test to an answer the research question: what are the key factors for FDI and TT in the economies of Libya and Egypt?, based on the statistical analysis used in this study, it emerges that, for instance, there is a good environment for investment in Libya capable of promoting foreign investment, which confirms statistically that that respondents in Libya believe today that, at the time of research, it has a good investment environment capable of attracting FDI; that it is characterized by the stability of political priorities, as well as by the availability of natural resources. The foreign companies participating in this study confirmed that

political stability, country geographical location, availability of natural resources are very important factors for the processes of FDI and TT in Libya. For example, the geographic location of Libya comes second in the ranking. It is one of the important factors for attracting FDI to Libya; the location of Libya is very important as a link between Africa and Europe. Also, foreign investors consider Libya a door from which foreign firms can enter other markets in Africa and the Arab world. According to Law No. 9 of 1997 for example, the Libyan government set a plan for establishing a number of free zones and transport routes to link a number of areas in Libya in order to revitalize trade with many neighbouring and adjacent countries. So when the Libyan government started making investment policies to enhance the benefits of the Libyan location, this was one of the most important policy factors for attracting FDI and TT.

Foreign companies participating in this study rank political stability as the first factor in Libya. For example before 2003 the foreign investors were not interested or motivated to invest in Libya due to international sanctions. When, after 2003, these international sanctions were lifted the investment climate of Libya changed and political stability started to play an important role in attracting FDI and TT. Libya has had an economic system in which the government played the most significant role for a long time. Libya enjoyed political stability but it was isolated from the rest of the world for a long period.

The availability of natural resources in Libya comes third in importance as a factor to attract foreign investment to Libya. As Libya is one of the oil-rich countries in the world there are many opportunities for foreign investors in the oil and gas sector. Foreign investors in Libya are strongly motivated by

resource-seeking drivers. Also, exports of this sector become a vital source of income and economic prosperity in Libya. Moreover, the Libyan government opened first the door of the oil and gas sector to foreign investment.

According to foreign investors participating in the current study, Libya has other very important factors in attracting FDI, such as a good investment environment; availability of cheap unskilled labour; availability of highly skilled technical labour and (some) government incentives. Initially, the Libyan government was suspicious that FDI was a way for the exploitation of Libyan people. This situation has now changed and the Libyan government is an ardent supporter of FDI, which is a significant factor for economic development through FDI and TT.

Table 7.19 The Relative Importance of Factors for Attracting FDI to Libya

	Mean	Median	Wilcoxon	
			Value	p-value
Political stability	4.41	4.00	4067	<0.001
Country geographical position	4.34	4.00	4059	<0.001
Availability of natural resources	4.23	4.00	4025	<0.001
Government incentives	4.12	4.00	3763	<0.001
There are many investment opportunities	4.10	4.00	3668	<0.001
Supporter legal framework	3.67	4.00	3194	<0.001
Good investment environment	3.74	4.00	3042	<0.001
Economic stability	3.74	4.00	3014	<0.001
Availability of highly skilled technical labor	3.60	4.00	2670	0.006
Large market potential	3.41	4.00	2391	0.084
Availability of cheap unskilled labor	3.00	2.50	1454	0.992
Educated consumer	2.92	3.00	1204	1.000

Table 7.20 The Relative Importance of Factors for Attracting FDI to Egypt

	Mean	Median	Wilcoxon	
			Value	p-value
Country geographical position	4.80	5.00	3486	<0.001
There are many investment opportunities	4.40	4.00	3485	<0.001
Availability of natural resources	4.43	4.00	3485	<0.001
Political stability	4.16	4.00	3395	<0.001
Economic stability	4.37	4.00	3382	<0.001
Good investment environment	4.39	5.00	3360	<0.001
Supporter legal framework	3.96	4.00	3336	<0.001
Large market potential	4.00	4.00	3042	<0.001
Availability of highly skilled technical labour	3.96	4.00	3023	<0.001
Government incentives	3.93	4.00	2973	<0.001
Availability of cheap unskilled labour	3.39	4.00	1908	0.228
Educated consumer	3.19	4.00	1462	0.899

It is clear from the statistical analysis highlighted in Table 7.20 which factors are important for attracting foreign investment to Egypt. Based on Wilcoxon values, according to foreign investors participating in the current study the most important factors attracting foreign investment to Egypt are the geographical location of the country, the economic stability, the political stability and the availability of natural resources in Egypt. The geographical location came top with a mean of 4.807 and a median of 5.00, the level of significance was < 0.001.

Table 7.21 Comparison of factors for attracting FDI between Libya and Egypt

	Libya		Egypt		Mann-Whitney	p-value
	Mean	Median	Mean	Median		
1-Political stability	4.41	4.00	4.15	4.00	2979	0.011
2-Country's geographical position	4.34	4.00	4.80	5.00	2274	<0.001
3-Availability of natural resources	4.23	4.00	4.43	4.00	3088	0.021
4-Government incentives	4.12	4.00	3.93	4.00	3319	0.167
5-There are many investment opportunities	4.10	4.00	4.40	4.00	3095	0.029
6-Economic stability	3.74	4.00	4.37	4.00	2638	<0.001
7-Good investment environment	3.74	4.00	4.39	5.00	2434	<.0.001
8-Supporteive legal framework	3.66	4.00	3.96	4.00	3017	0.010
9-Availability of highly skilled technical labour	3.60	4.00	3.96	4.00	3116	0.042
10-Large market potential	3.41	4.00	4.00	4.00	2425	<0.001
11-Availability of cheap unskilled labour	3.00	2.50	3.39	4.00	3056	0.029
12-Educated consumer	2.92	3.00	3.19	4.00	3192	0.077

The results shown in Table 7.21 compare the influencing factors highlighted by the survey in Libya with that in Egypt. Table 7.21 clearly shows that the investment environment in Egypt is (statistically) better than that in Libya, because the mean and the median of investment environment were 4.39 and 5 in Egypt and in Libya they were respectively 3.74 and 4. Based on this comparison using medians, as well as the Mann-Whitney test, the difference between the two countries is very highly statistically significant (p-value<0.001). However, this does not mean that the investment environment in Libya is not itself good, because Libya has many positive factors that are working for attracting FDI and TT such as stability of the political and

economic nature, good investment environment and abundant availability of natural resources.

The component of political stability in Libya has a mean of 4.41, which is better than the mean of 4.16 in Egypt, because Libya was perceived to have a stable political system that had not changed since 1969. However, using the median, both countries seem to have one and the same median of 4. At the time of the survey in part this was due to the fact that there were no elections in Libya and no competing political parties, thus the country had been considered politically stable in the period 1969 - 2011. The importance of this finding was supported by Asiedu (2003), who conducted a study determining that the macroeconomic stability, efficient institutions and political stability have a positive impact on FDI. From the results obtained, the countries of Egypt and Libya show the same level of government incentives (p-value=0.167).

Regarding the criterion requiring availability of highly skilled technical labour, Egypt was placed higher than Libya, due to the much larger size of its population securing a larger pool of labour resources. Also, Egyptian education was indicated as better than education in Libya, as Egypt has a good educational basis and a well-developed educational system. For a number of years, Libya used Egyptian labour in the field of education in order to develop the Libyan educational system. On a comparative basis, it can be said that the Libyan and Egyptian environments are better than those in many other countries in Africa, as they contain many of the key factors for critical success looked for by foreign investors. This result has answered part of

research question of this research what are the key factors for FDI and TT in Libya and Egypt.

Moreover, the findings of this study are in line with a number of studies such as those conducted by Bevan and Estrin (2004), Kohpaiboon (2006) and Saggi (2002) concerning the importance of the factors impacting the processes of FDI and TT.

7.4.3 The requirements for attracting foreign direct investment (FDI) and technology transfer (TT) to Libya and Egypt

7.4.3.1 The requirements for foreign direct investment FDI to Libya and Egypt

This study also deals with the requirements for attracting FDI and TT, as these requirements are very important for encouraging foreign investment to host countries such as Libya and Egypt. The results are shown in Table 7.22. The factors improving and modernizing the infrastructure, reducing the minimum amount to be invested had a mean and a median between 3.4 and 4, with a significance level of < 0.001. This is evidence of the importance of these factors in attracting foreign investment. According to respondents, the least influential factors in attracting FDI are the ease of administrative procedures, taxation reforms and the establishment of free zones, with means lower than 3.4 and a level of significance below 0.05.

Table 7.22 Factors required to attracting FDI to Libya

	Mean	Median	Wilcoxon	p-value
Improving and modernizing the infrastructure	3.79	4.00	2938	<0.001
Reducing the minimum amount to be invested	3.71	4.00	3125	<0.001
Reviewing the role of courts in the arbitration	3.42	4.00	2335	0.124
Establishment of industrial and free zones	3.17	3.00	1923	0.693
Tax reforms	2.79	3.00	1054	1.00
Ease the administrative procedures	2.65	2.00	910	1.00

Table 7.23 Factors required to attracting FDI to Egypt

	Mean	Median	Wilcoxon	p-value
Ease administrative procedures	4.51	5.00	3413	<0.001
Establishment of industrial and free zones	4.36	5.00	3354	<0.001
Improving and modernizing the infrastructure	4.17	4.00	3244	<0.001
Tax reforms	4.13	4.00	3208	<0.001
Reducing the minimum amount to be invested	3.78	4.00	2981	<0.001
Reviewing the role of courts in the arbitration	3.65	4.00	2524	<0.001

The results obtained for Libya were in contrast to those in the Egyptian environment (see Table 7.23), because there all factors come with a level of significance < 0.001, meaning all factors were very important for the attraction of FDI to Egypt, including the easing of administrative procedures, introduction of tax reforms, establishment of industrial and free trade zones and improving and modernizing the infrastructure. The contrast may arise

because the sites of FDI in Libya are strongly associated with the location of natural resources, which are not found in free trade zones, and nor are tax treatments uniform, as major investment projects in oil and gas are subject to a particular tax regime.

The findings of this study are in line with those of Dunning (1993) and Nunnenkamp and Spatz (2004). These studies also found that the benefits from the processes of FDI and TT depend on a large number of factors in the host country, such as availability of natural endowments, host country location, tax reforms, establishment of industrial and free trade zones and modernizing the infrastructure.

A comparison between the two environments is highlighted in Table 7.24, which clearly demonstrates that the Egyptian environment was superior to the Libyan. For example, the three items ease of administrative procedures, tax reforms and establishment of industrial and free trade zones, because all have means above 4.13 than the same elements in the Libyan environment. As for the remaining elements, they were equal in the two countries which did not support the hypothesis of a difference. The results highlight some of the reasons that Egypt has better factors for attracting foreign investment than Libya, supported by the long term experiences Egypt has of FDI in the Arab world.

Table 7.24 Comparison of factors required to attract FDI to Libya and Egypt

	Libya		Egypt		Mann-Whitney	p-value
	Mean	Median	Mean	Median		
Improving and modernizing the infrastructure	3.79	4.00	4.51	5.00	3262	0.121
Reducing the minimum amount to be invested	3.71	4.00	4.36	5.00	3729	0.984
Reviewing the role of courts in the arbitration	3.42	4.00	4.17	4.00	3368	0.205
Tax reforms			4.13	4.00	1260	<0.001
Establishment of industrial and free zones	3.17	3.00	3.78	4.00	1817	<0.001
Ease the administrative procedures	2.79	3.00	3.65	4.00	739	<0.001

7.4.3.2 The requirements for technology transfer (TT) to Libya and Egypt

Based on research question "what are the key factors for FDI and TT in the economies of Libya and Egypt?' the Libyan environment *could* be considered better then the Egyptian environment. The foreign respondents agreed that FDI is the most important channel for TT. The percentage for Libya was 98.9% with just 75.9% agreeing in Egypt (see Table 7.25).

In this respect the findings of this study are in line with the other studies demonstrating that FDI is the most important channel for TT. Some of those (in date order) are by Tong (2001), Damijan, Knell, Majcen and Rojec (2003), Fan (2003), Saggi (2002), Sinani and Meye (2004), Hoekmam, Maskus and Saggi (2005), Kohpaiboon (2006), Lee and Tan (2006), Blalock and Gertle (2007), Buckley, Wang and Clegg (2007), Liu (2008) and Padilla-Perez (2008), all of whom argue that FDI is the most important channel for TT.

Table 7.25 Is FDI important for TT in Libya and Egypt?

			Do you think FDI is a very important way to transfer technology to Libya and Egypt?		Total
			Yes	no	
Country	Libya	Number	89	1	90
		% within Country	98.9%	1.1%	100.0%
		% of Total	51.4%	0.6%	52.0%
	Egypt	Number	63	20	83
		% within Country	75.9%	24.1%	100.0%
		% of Total	36.4%	11.6%	48.0%
Total		Number	152	21	173
		% of Total	87.9%	12.1%	100.0%

In Table 7.26, most of the respondents in both Libya and Egypt considered that their investments have a positive impact on TT. In Libya, 87 companies (97%) agreed that the size of investment in Libya had a positive impact on TT; only 3% saw no correlation between the size of the investment and the level of TT. In Egypt, 77% of the interviewed foreign firms saw a positive correlation, while 23% did not. The situation in Libya is more favourable when compared to the one in Egypt, in terms of investments having a positive impact on TT. The processes of FDI and TT are relatively new in Libya; Libya has now tried to open the doors to all foreign investors, in all sectors of the economy. The aim is to develop all economic sectors, upgrade technology, create new jobs and secure economic development. At present, these are all priorities of the Libyan Foreign Investment Board, in order to prepare a suitable environment for local and foreign investors in order to create a more diversified and balanced structure of the Libyan economy.

In chapter three, the reviewed literature suggested that the processes of FDI and TT have positive impacts on the economies of the host countries. There are studies confirming this claim, e.g., Tong (2001) examined different sources of TT and the relationship between FDI and value added via TT in

205 UK companies. The study uncovered that there was a notable positive relationship between FDI and the growth in productivity and that FDI was substantially more important than trade in cross borders transfer of technology. Kohpaboon (2006) Sinani and Meyer (2004) and Tong (2001), also obtained similar results, namely that FDI has a strong positive effect on TT to the host countries.

Table 7.26 Relationship between size of investment and technology transfer

			Do you think that the size of your investment in Libya and Egypt has:		Total
			Positive impact on technology transfer	No correlation impact on technology transferred	
Country	Libya	Count	87	3	90
		% within Country	96.7%	3.3%	100 %
		% of Total	50.3%	1.7%	52.0%
	Egypt	Count	64	19	83
		% within Country	77.1%	22.9%	100 %
		% of Total	37.0%	11.0%	48.0%
Total		Count	151	22	173
		% of Total	87.3%	12.7%	100 %

All respondents agreed that technology is the most important channel for facilitating economic development in the two countries as evident from the content of Table 7.27. For example, in Libya 78 respondents (88%) believed technology to be the most important channel for the development of the Libyan economy. In Egypt the results were similar, with 79 respondents (95%) agreeing to the statement (see table 7.27). The findings of this study are in agreement with those studies that argue that technology has a very important role in securing economic growth, development and increasing productivity in the host countries. Some of the studies that obtained similar results are

Blomstrom and Sjholm (1999); Kulger (2006); OECD (1993); Lan (1996); Saggi (2002) and UNCTAD (2009).

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Table 7.27 Does the technology you use suit the future of Libya and Egypt

			Do you think that the technology you use suits the future of Libya / Egypt?		Total
			Yes	no	
Country	Libya	Number	78	11	89
		% within Country	87.6%	12.4%	100.0%
		% of Total	45.3%	6.4%	51.7%
	Egypt	Number	79	4	83
		% within Country	95.2%	4.8%	100.0%
		% of Total	45.9%	2.3%	48.3%
Total		Number	157	15	172
		% of Total	91.3%	8.7%	100.0%

Table 7.28 The age of the equipment which has been transferred

		What age did the machines that you transferred have on the average?				Total
		New	< 1 year	2-5 years	> 5 years	
	Count	11	31	42	6	90
Libya	% within Country	12.2%	34.4%	46.7%	6.7%	100.0%
	% of Total	6.4%	17.9%	24.3%	3.5%	52.0%
	Count	12	9	45	17	83
Egypt	% within Country	14.5%	10.8%	54.2%	20.5	100.0%
	% of Total	6.9%	5.2%	26.0%	9.8%	48.0%
	Total Count	23	40	87	23	173
	% of Total	13.3%	23.1%	50.3%	13.3%	100.0%

Table 7.28 indicates the age of the equipment and technological decisions that were transferred by participants from foreign companies in Libya and Egypt. The data show that 12% of the foreign investors have transferred new machines and technologies to Libya and 15% have brought contemporary machinery and technology to Egypt. A further 34% have transferred less than one year old machinery to Libya and 11% to Egypt. 47% of the investors in

Libya transferred technology between 2 to 5 years old to Libya and 54% of the investors in Egypt imported 2 to 5 years old technology in Egypt. It is interesting to note that the technology transferred to Libya is somewhat newer than that transferred to Egypt. This may be due to the fact that technology in Libya went into a more limited number of sectors and the sector where the investment was made (oil and gas) depended (in terms of productivity) very much on capital rather than labour investment intensity.

Table 7.29 presents data that highlights the perceptions of the respondents in relation to the role of TT in developing the national economy of Libya. Policy effects, economic effects and human resource effects have means between 3.9 and 4.2; (p-value < 0.001). These findings confirm the importance of TT to improving the process of the economic development of Libya.

Table 7.29 Perceptions of the effect of TT from on development in Libya

	Mean	Median	Wilcoxon	p-value
Economic effects	4.24	4.00	3648	<0.001
Human resource effects	4.17	4.00	3582	<0.001
Policy effects	3.91	4.00	3258	<0.001
Cultural effects	2.60	3.00	879	1.00

The results for Egypt in terms of economic and human resource effects are shown in Table 7.30. They were almost identical to the Libyan results.

According to the Central Bank of Egypt (2009), the Egyptian economy is one of the fastest growing economies in the Arab world. The Ministry of Investment Report (2009) confirms this. It is evident that FDI and TT have had a positive impact on the Egyptian economy and the formation of a balanced diversified economic structure.

Table 7.30 Perceptions of the effect of TT on development in Egypt

	Mean	Median	Wilcoxon	p-value
Human resource effects	3.95	4.00	2796	<0.001
Economic effects	3.71	4.00	2459	.001
Policy effects	3.28	3.00	1821	.362
Cultural effects	3.17	3.00	1561	.796

Table 7.31 shows the answers to the question in the survey: “what are the international factors which could hinder successful TT to Libya?” Political conflicts, cost of technology and international relations between developed and developing countries were deemed to be the factors that could hinder TT. The means of these elements were between 4.4 and 4.6, with a p-values < 0.001. The results indicate that a weak investment environment is also perceived to play an important role in hindering the transfer of technology. A lack of political conflicts in Libya meant it was considered a safe place for FDI firms to work and live in, because the then Libyan government had full control on the Libyan community and economy. There were no changes in the Libyan government for 42 years. This fact gave Libya a competitive advantage over other African and Arabic countries and somewhat encouraged FDI to Libya particularly after 2003. Conflicts since have damaged this position.

These findings agree with those of the studies by Marinova, Marinov and Yaprak (2004) and Lee and Tan (2006). All of them established that political stability is a factor of major importance for the processes of FDI and TT, so all these factors are very important on the intensification of the process of TT.

Table 7.31 Measuring for international factors hinder TT occurrence to developing countries (Libya)

	Mean	Median	Wilcoxon	p-value
Political conflicts	4.61	5.00	3787	<0.001
Cost of technology	4.49	5.00	3790	<0.001
International relations between developed and developing countries	4.42	5.00	3861	<0.001
Weak investment environment	4.34	4.00	4080	<0.001
Anti-culture	3.33	4.00	2196	0.276
Lower skill of technical labour	3.18	4.00	1806	0.835

The results were similar for Egypt (see Table 7.32), with the exception of the lower skill of technical labour, which in the Egyptian case had mean 3.9 which is statistically significant p-value < 0.001.

Table 7.32 Measuring for international factors hinder TT occurrence to developing countries (Egypt)

	Mean	Median	Wilcoxon	p-value
International relations between developed and developing countries	4.06	4.00	3036	<0.001
Lower skill of technical labour	3.96	4.00	2807	<0.001
Political conflicts	3.89	4.00	2668	<0.001
Cost of technology	3.78	4.00	2585	<0.001
Weak investment environment	3.65	4.00	2223	0.015
Anti-culture	3.16	4.00	1608	0.731

As shown in Table 7.31 and Table 7.32, all international factors proved to have strong positive or negative impacts on TT in both countries. For example, the factor for the cost of technology has a negative impact on the transfer of technology to any country, although more so in poorer than in richer countries. In addition, political conflict played a very important role in hindering TT from home to host countries, because technology is related to FDI, which avoids countries with political conflict (UNCTAD, 2008). This

would, of course, be a major negative factor in Libya's current situation. According to Hoekmam, Maskus and Saggi (2005), the policies towards FDI in the host countries play an important role in TT. Norback (2001) found a negative correlation between the cost of TT and increases in productivity.

Additionally, the international relations between developed and developing countries also affect TT. Where there is a good relationship between the home countries and host countries, then technology will be transferred easily. Also, if the relationships between the host government and the foreign investor are good, then technology will be transferred with fewer problems. Thus, as Libya had good working relations with the UK and the US after the lifting of the UN and the US sanctions between 2003 and 2004, afterwards significant FDI and TT originated from the US and the UK and ended in Libya. In this period, Libya was able to access advanced technology from the US and the UK as well as from some other western European countries, such as Germany and France. . The results in Libya and Egypt were similar, as Egypt has had good relationships with the US and the UK for a longer period of time than Libya.

7.5 Conclusion

The main aim of this chapter was to empirically investigate and discuss the key factors of FDI and TT, and link them to opportunities for economic growth and development of a diversified and balanced economic structure.

The analysis and discussion presented in this chapter demonstrates that the overall foreign investment environment in Egypt is generally better than that in Libya in terms of attracting FDI and TT. Egypt has a longer history of working with foreign investors, whereas FDI in Libya started recently. Many unmanageable factors in Libya and Egypt are different. Thus, the market size of Egypt is much larger than that of Libya, which has accounted for a number of differences in the policy for FDI and resulted in a substantially more significant TT in Egypt. By comparison Libya, having huge natural endowments, attracted FDI based on the constant policy of the Libyan government, but managed to attract only limited amounts of TT.

To sum up, Libya can benefit from the Egyptian experience in FDI and TT, because Egypt has experienced FDI and TT for many years and this experience was based on a well-prepared, consistent government policy. Having good relationships with most of the advanced economies worldwide, Egypt managed to develop a balanced economic structure, which is not the case in most of the other Arab and African countries. Strong relations with Europe opened the door to FDI projects and a massive transfer of technology. In Egypt there are more than 1,000 foreign companies operating in many economic sectors of the country, including oil and gas, banking; manufacturing, tourism, agriculture, health, service and education.

The next chapter brings in conclusive remarks of the present study, in terms of its contributions, and recommendations, the main problems faced by the study and possible avenues for future research.

Chapter Eight

Conclusions

8.1 Introduction

This chapter summarizes the conclusions that have been drawn from the primary and secondary data. The primary data was collected through a survey conducted using a questionnaire with representatives of foreign companies in Libya and Egypt. Its purpose was to discover their opinions on the key factors affecting FDI and TT in Libya and Egypt.

This chapter includes five major sections in addition to this introduction. The second section presents a summary of the research objectives, section three details the literature review findings and the way in which they informed the study; section four shows the framework developed to guide this investigation section five, the main problems faced by the study**;** section six provides recommendations for policy particularly in Libya**,** while the final section contains suggestions for further research.

8.2 Summary of Research Objectives

The objectives of this research were:

- To review the literature to understand the processes of FDI and TT and explore their impact on economic growth, economic development and economic structure. A subsidiary aim was to identify, where possible, the key factors for success in using FDI and TT to stimulate economic development.

- To develop a conceptual framework for the processes of FDI and TT applicable to developing economies, in order to permit investigation of which host country factors are conducive for TT from FDI.
- Discuss the Libyan investment climate and the Libyan economic structure, then compare and contrast the perceptions of experienced informants from foreign companies in various economic sectors in Libya and Egypt, in relation to FDI and TT.
- Provide recommendations regarding policies and procedures that might be helpful in improving the Libyan business environment, with a view to attracting more FDI and TT into the non-oil and gas sectors.

The research approach was to analyse for key success factors in supporting foreign direct investment and technology transfer in two neighbouring developing countries, Libya and Egypt. By comparing responses (based on the perceptions of respondents from different sectors in the two countries) to questionnaire items derived from prior research, then to suggest ways of improving the structure of the Libyan economy, so as to enable it to attract more FDI and TT. The findings of the study are shaped by the views of respondents in Egypt, where policy and practice are seen to more attractive for FDI and TT than in Libya.

8.3 The Results of the Literature Review

The literature reviewed provided insights into FDI and TT. It highlighted the role of two key actors in these processes, namely the foreign investor (FI) and the host government (HG). Moreover, the review presented demonstrated that FDI and TT play a major role in driving economic growth in host countries,

impacting on other determinants of economic development. The reviewed studies have uncovered evidence that there are many factors that impact on the level of FDI and TT influx into a particular country.

The literature also showed some studies that found the policies of host governments have played a crucial role in encouraging and managing the processes of FDI and TT. Findings differed among countries, but the general trends stayed similar.

The literature was shown to adopt, in general, the perspective of a foreign investor, i.e. most prior studies examined the issue from the perspective of the investing firm, or examined issues from an outsider's perspective of the issues surrounding FDI and TT, and certainly not that of the recipient country or government..

The literature review suggests that FDI and TT inflows to economic sectors have, in general, a significantly positive impact on economic development and economic growth. However, this effect depends on the host country's absorptive capacity. This observation is in line with the findings of Borensztein, Gregorio and Lee (1998), Kugler (2006) and Likara (2003). The question of absorptive capacity is not one that informs the whole of the literature: it appears in a reduced form in some studies that consider relative levels of economic development in terms of FDI flows. However, relative economic levels do not, of themselves, determine absorptive capacity.

The variability of findings in prior studies in relation to effects and outcomes can, in large part, be traced back to the studied countries having different levels of economic development and different economic structures. This insight shaped the pattern of empirical research here. One other strand that

emerged was the usefulness of distinguishing (at least within the decision-process time span) the extent to which economic development and structures were influenced by factors that could be seen as manageable and unmanageable. There is little explicit recognition of this distinction in the literature – only Tvaronaviciene (2006) uses the term 'manageable' explicitly.

The definition of FDI was salient here. The definition adopted extends beyond some of the narrower views seen in the literature. The basis of many studies relies extensively on flows of capital, as this is relatively straightforward to observe and measure. Indirect flows are seen to lack certain characteristics pertaining to direct flows, but sometimes only in terms of the locus of managerial control. However it is clear from the literature that FDI 'flows' carry a good deal more than capital in many instances. Indeed, this idea is present in the inclusion of 'direct' in the very term FDI.

The early perspectives did include this wider view: Dunning (1983) took such a perspective in his seminal work; later studies frequently narrowed the concerns. However, an author such as Moosa (2002) is one example of a later scholar who continued in the Dunning tradition; this wider view was the one adopted in this study.

FDI was defined for this study as a long-term investment representing a flow of capital between countries, *encompassing* transfers of finance, technology, knowledge and knowledge application, new skills and additional requirements for the production process, that are generally imparted as accompanying processes or results of FDI.

Technology was defined for this study as knowledge, including the hardware and software, human skill and research and development that relates to a

specific sector or industry in a specific country, and technology transfer was defined for this study as technology flows from the advanced countries to the developing countries (from home country to host country).

This study extends the body of existing work by adopting a host country (HC) perspective, which was shown to be not much in evidence previously. The *specifics* of the impact of FDI and TT on the economic structure of host countries have attracted the least attention of all. Consequently, this particular study also paid special attention on the roles of the HG in attracting and managing FDI and TT. This gap in the theoretical and empirical literature has been addressed.

8.4 Research Framework and Identified Factors

Chapter three was devoted to the development of the research framework. There is no available integrative framework dealing adequately with the key success factors of FDI and TT in developing countries and their impact on the changes of economic structure.

The framework developed represents a decision flow approach, incorporating the chief actors. This focus on decision flow is not unique, but it is not the dominant tradition in the literature. The framework was then used to investigate the processes of FDI and TT for this study.

This conceptual framework is based on: the *actors* in foreign direct investment (FDI) and technology transfer (TT); *factors* impacting FDI and TT; the mechanisms of TT via FDI, and the *impacts* of FDI and TT on economic growth and the development of a country's economic structure.

The framework shows that the general contributing factors to the success of transfer of technology via foreign direct investment (consisting of both manageable and unmanageable factors) include such items as: market size; investment policy and technology policy; economic growth; economic structure; levels of education; determinants of factor endowments; selected factor endowments themselves and so on. One of the framework's key elements is the explicit recognition that there are two most important actors in the processes of FDI and TT, namely the FI and the HG. This 'dual perspective' does not inform all studies, most of which focus on the FI view. The review showed that the most important mechanisms in the process of technology transfer from one country to another country occur through greenfield investment, acquisitions and joint ventures. Some factors, in the manageable category, were common to both FDI and TT.

This conceptual framework was developed on the basis of a number of prior studies, especially (in historical order) those of Miller, Glen, Jaspersen and Karmokolias, (1997), UNCTAD ((2000), Tomsik, et al (2001), OEDC (2002), Saggi (2002), Moosa (2002), Marinova et al (2004), Kethe and Kamal (2005), Chen and Roger (2006) and UNCTAD (2007).

Manageable factors in FDI were identified as: environmental factors, economic structure, economic growth, infrastructure, tax, political stability and relationship between home and host countries. The unmanageable factors were: availability of raw materials, location and climate.

For TT the manageable factors were: governance; size of the market; economic growth; economic structure; technology gap; cost of technology; skills of labour; good levels of education and the relationship between home

and host countries. Unmanageable were: stages of technological development and cost of technology

The specific items underpinning the framework were used as a basis for the items in the questionnaire.

8.5 The Economies Compared and Respondents Views

8.5.1 The evidence presented in Chapter four showed the economic structures of Libya and Egypt to be very different: the contribution of economic sectors to GDP, levels and patterns of FDI and TT (germane to this research) were contrasting. The evidence presented in this chapter also shows the competitive advantages pertaining to Libya and Egypt. Libya has abundant factor endowments in the oil and gas sector, with large, high quality oil reserves. On the other hand, the economic structure of Egypt depends on many different sectors with a more balanced configuration of the Egyptian economy.

As the results show, the Libyan economy has been heavily dependent on oil to finance development projects. The oil sector was the first to attract foreign companies; it has attracted about 47 foreign companies. In addition, its contribution to GDP was 76%, it was the overwhelmingly most important sector to the economy of Libya.

The evidence presented shows many differences in the main economic sectors of Libya and Egypt. Overall, the evidence presented demonstrates that Egypt has higher levels of FDI and technology modernization than Libya.

8.5.2 The primary data generated through the questionnaire demonstrates that the overall foreign investment environment in Egypt is generally better than that in Libya in terms of attracting FDI and TT. Egypt has a longer history of working with foreign investors, whereas FDI in Libya started recently. The unmanageable factors in Libya and Egypt differ. The market in Egypt is much larger, which accounts for the differences in the policies towards FDI, especially when coupled with an historically suspicious mind-set in Libya. Libya, with huge natural oil endowments, however has attracted FDI based on the constant policy of the Libyan government, but managed to attract only limited amounts of TT.

The questionnaire analysis showed that the majority of the company's foreign companies operating in Libya prefer not to share ownership with local companies in the process of FDI, because Libyan companies (local companies) cannot provide the people with the necessary skills and management ability. Foreign companies in Libya believe that local companies are inexperienced and with low levels of competitiveness.

8.5.3 This study found that the foreign companies in Libya have come from 37 countries (developed and developing). This probably results from Libyan needs to diversify FDI and technology transfer, and because TT is dependent on the manner though which technology transfer takes place. For example, TT via FDI (acquisition or greenfield) may be of new or old technologies. TT via Joint Ventures may also be new or old, because in Joint Ventures, the foreign investor is sharing in an existing firm with the host government or other investor. These results for the nature of the technology transferred were

parallel to the results of Ali and Guo (2005) and Miller, Glen, Jaspersen and Karmokolias (1997).

The questionnaire responses (Table 7.5) showed that 10% of the foreign investors have invested in smaller companies, 48% have invested in medium-sized companies, while 42% have done so in large-sized companies. Most of these foreign investments with medium and large-sized enterprises in Libya are concentrated in the oil and gas sector.

The results from the questionnaire analysis indicated that it can be seen that in Libya 7% of the foreign investors have short term objectives, these are companies that work in housing, infrastructure sector, building roads and airports. At the same time 93% of the foreign investors in Libya have long-term objectives. These are investments mostly in the oil and gas sector occurring because of the low cost of extraction of the plentiful supply, with those in the manufacturing sector benefitting from low labour costs.

The majority of the foreign companies (FCs) studied in Libya are wholly owned foreign subsidiaries, 79% of which entered Libya via greenfield investment. This means the foreign companies investing in Libya prefer to invest on their own without the participation of local companies or partners. JVs with the Libyan government are 9% of the studied firms and only 6% are joint ventures with anther foreign company. This pattern can be explained by the relatively recent inflow of foreign investment in Libya at all.

8.5.4 Fully eighty-three of the respondents (92% of the total) appear not to be satisfied with the quality of human resources in Libya in terms of technical knowhow, language and teamwork. The low educational outcomes in Libya

reflect negatively on the quality of the workforce. Respondents believed that the workforce in Libya required training in the studied skill-set. The important areas in which foreign companies believe the development of the workforce is necessary in Libya are language skills and technical training for the workforce. The conclusion drawn is that workforce development is a key concern for FCs in countries such as Libya.

Most studies confirm that the host countries benefit from foreign investment when training the workforce. The finding here are in line with the findings of Liu (2008), Sinani (2004), and Tong (2001) - that FDI has a positive effect on employment.

8.5.5 The field study showed that in the case of Libya 84 companies, 96% of respondents, have had problems in the process of the investment. Moreover, 69% of the respondents in Libya stated that they experienced problems from the start of the project, because in Libya permissions for foreign investments have to go through a number of procedures, this process takes a long period of time.

The problems encountered by foreign investors in the Egyptian environment were much less. The Egyptian government has created many good conditions in order to resolve all problems faced by the foreign investors as soon as possible. For example, the Egyptian government created a website to resolve problems as quickly as possible.

The respondents were unhappy with banking services in Libya. The fact that the six major banks are owned by the public sector could be the main reason behind the poor (and deteriorating) level of banking services. Furthermore, the

results indicate that representatives from foreign investors are also unhappy with the infrastructure, airports and associated services, and transport in the country. Most importantly, this includes traffic congestion in Tripoli and Benghazi, poor urban planning to cope with traffic, the mismanagement of public transport systems, the lack of underground metro services, the lack of regular bus stops and special plates for the public transport vehicles. The upshot is a very poor opinion of transport services, but also importantly, the implication of HG failures in the current sorry state of affairs.

8.5.6 The findings from the questionnaire analysis showed that investment laws, taxation policy, market size, exchange rate and location of investment as factors determining destination preference for FDI in Libya; all of these factors are statistically significant (p-value < 0.001) with means between 3 to 4. Based on the Wilcoxon test results, the location factor is in first place; second place was investment law; the third place was taxation policy and the fourth place went to the market size as factors determining destination preference for FDI. A number of studies show the positive interdependence between investment law and the level of FDI and TT (e.g., Konhpaboon, 2006, Saggi, 2002). Similarly the significance of the market size and location are in line with the findings in a number of studies such as the ones carried out by Bevan and Estrin (2004), Coskun (2001), Galan and Gonzalez-Benito (2001), Maloney (2005), Mariam (1998) and Yulng and Yuanfei (2008). All these studies found out that the market size and location are critically important factors for FDI inflow and TT.

The previous analysis found that the key factors that influence foreign investment in Libya and Egypt maybe unmanageable factors that cannot be impacted by the host governments of Libya and Egypt. Among these unmanageable ones are the market size and country location. The host governments can change the manageable factors in order to attract FDI. These are taxation policy, marketing campaigns, exchange rate regulation, encouragement of strong market competition, and investment legislation. Moreover, the findings of this study are in line with a number of studies such as the ones conducted by Asiedu (2003), Maloney (2005), and Yulng and Yuanfei (2008) who found out that local market size, investment and business environment, investment policy, location proximity to most important market, natural resource availability, and good levels of technology, are factors important for encouraging FDI and TT inflow to host countries.

In this study several participants in this study also confirmed that political stability, country geographical location, availability of natural resources are very important factors for the process of FDI and TT in Libya and in Egypt. For example, geographic location is one of the important factors for attracting FDI to Libya. The location of Libya is very important because it acts as a link between Africa and Europe. Moreover, the findings of this study are in the line with a number of studies such as the ones conducted by Asiedu (2003), Coskun (2001), Bevan and Estrin (2004), Galan and Gonzalez-Benito (2001), Maloney (2005), Mariam (1998), as well as Yulng and Yuanfei (2008), concerning the importance of the factors such as political stability, country geographical location and availability of natural resources impacting the processes of FDI and TT.

The findings from the questionnaire analysis comparing the two environments (Libya and Egypt) are highlighted in Table 7.22. These clearly demonstrate that the Egyptian environment was superior to the Libyan concerning the first three items (ease of administrative procedures, tax reforms and establishment of industrial and free trade zones) because the means and the medians of these elements were higher than the statistics of the same elements in the Libyan environment. The findings of this study are in agreement with those by several other scholars including Dunning (1994) and Nunnenkamp and Spatz (2004). Both these studies found that the benefits from the processes of FDI and TT depend on a large number of factors in the host country, such as availability of natural endowments, host country location, tax reforms, establishment of industrial and free trade zones and modernizing the infrastructure. The findings of this study are consistent with the other studies demonstrating that FDI is the most important channel for TT. Some of those are by Blalock and Gertle (2007), Buckley, Wang and Clegg (2007), Damijan, Knell, Majcen and Rojec (2003), Fan (2003), Hoekmam, Kohpaiboon (2006), Lee and Tan (2006), Liu (2008), Maskus and Saggi (2005), Padilla-Perez (2008), Saggi (2004), Sinani and Meye (2004), Tong (2001), and Xing (1999), arguing that FDI is the most important channel for TT.

The findings from the questionnaire analysis showed that in Libya, 87 companies (97%) agreed that the size of investment in Libya had a positive impact on TT. In Egypt, 77% of the interviewed foreign firms saw a positive correlation. Kohpaiboon (2006), Sinani and Meyer (2004) and Tong (2001), also obtained similar results; many studies have highlighted that the benefit of FDI depends on the sector in which maximum investment occurs.

The findings from the questionnaire analysis showed in chapter 7 that in Libya 78 respondents (87%) believed technology as be the most important channel for the development of the Libyan economy. In Egypt the results were similar, with 79 respondents (95%). Some of the studies that obtained similar results are Albert (1984); Blomstrom and Kokko (1998); Dollor (1992); Kokko (1994); Kulger (2006); Lan (1996); OECD (1981); OECD (1989; 1993); Saggi (2002); Smali (1985); UNCTAD (1992) showing technology has played an important role in economic development and economic growth.

Wilcoxon values were used in this study to show that the international factors which could hinder successful TT to Libya, political conflicts, cost of technology and international relations between developed and developing countries were deemed to be the factors that could hinder TT. These factors had statistically significant p-values of < 0.001, with means and medians higher than 4.3. These findings agree with those of the studies by Benacek (2000), Mellahi et al. (2003) and Naude and Krugell (2007). All of them established that political stability and cost technology are a factor of major importance for the processes of FDI and TT. Norback (2001) found a negative correlation between the cost of TT and the increase of productivity.

8.6 Contributions of this study:

The current study will assist in filling the huge gap in literature regarding the factors impacting in process of FDI and TT in developing countries such as Libya. Indeed, this investigation will not only contribute to the study of Libya, but also the Arab world. This research makes several contributions:

First, according to the knowledge of the author, this is the first study on the key success factors impacting FDI and TT in the two developing countries Libya and Egypt. From the literature review of previous studies, it was clear that there are no other studies that cover the key success factors impacting FDI and TT in two developing countries such as Libya and Egypt as mentioned in chapter two. According to reviewed literature, this issue has been investigated in developed countries many years ago, but in developing countries only recently.

Second, according to studies concerning the area of FDI and TT, it was found that there are a number of factors that can lead to an impact on the process of FDI and TT, based on the evidence here. The contribution of this study strongly supports previous research in this field concerning how the host government can manage these factors in order to get the best possible outcome from the processes of FDI and TT. Also, this study highlighted groups among the factors, subdividing them into manageable factors such as skills of manpower and infrastructure, and unmanageable such as location and raw materials of the host country.

Third, according to empirical and theoretical analysis in the literature review, the issue of FDI and TT has been investigated from the perspective of a foreign investor - the role of host country or government has been neglected. The contribution of this study is an investigation into the same issues FDI and TT, but not only from the perspective of foreign investor, but also from perspective of the host government (because the role of the host government is very important in the processes of FDI and TT).

Fourth, this research creates a new conceptual framework concerning the process of FDI and TT. It draws on a review of the extant literature and different

theoretical perspectives that have been conducted related to FDI and TT, starting from the beginning of the appearance of FDI in the late nineteenth century (the first FDI theories). The key issue for this conceptual framework is to incorporate the processes of FDI and TT in terms of the factors that impact on these processes, and the impact of these processes in the host economy. The contribution of this study is to integrate all salient aspects in the research framework of the study (which includes host country specifics - market size; investment policy; technology policy; economic growth; economic structure; and so on - and the actors in the processes of FDI and TT, namely the FI and the HG).

The contribution of this study is to present a 'universal' conceptual framework, which means this framework can apply anywhere in the world (especially in the country where FDI and TT take place).

Finally, policy recommendations have been developed in this study, taken from the results of the investigation in this study. These may be useful in improving the process of FDI and TT in Libya in particular.

8.7 The main problems faced by the study and its limitations

No study is perfect, and this current study is no exception. This study has faced the following problems:

Firstly, the study encountered a problem of limited data about FDI in Libya and foreign companies that have investments in Libya. Moreover, the quality of data was different from one source to another; this may be an issue in the majority of developing countries such as Libya.

Secondly, in comparative studies, the level of funding is often very important in order to achieve the study objectives. This is because of the two geographical areas for investigation. Funding was one the main problems that indeed was faced, because in developing countries it is difficult to get data (via the internet for example) without extensive travel; the distribution method chosen reflected this. Data generation must to move from one country to other country in order to complete the study. In this study the research was self-funded, and both countries are large.

In spite of these limitations, the study has shown some important findings with regard foreign direct investment and technology transfer in the two developing countries. There are further limitations to this research. The main ones are as follows:

1- Despite their advantages, inductive studies have some limitations, for example, the use of 149 respondents in this study does not allow for statistical generalizations. In the two studied countries, Libya and Egypt, there is a great disparity in the number of foreign firms operating. This disparity in numbers makes the drawing of samples for comparison problematic. However, the use of a similar approach, via the relevant government in both countries, and the number of respondents from both countries attests to success to some degree.

   The returns fall short of the goal of a achieving a census. However, the numbers of returns from both countries is large (greater than 30) and, in the case of Libya, represents a major proportion of the population. This factor suggests that the study may have produced data that reasonably corresponds to the general situation in the two countries.

2- This study focused on only on two developing countries, Libya and Egypt. This study may need to be compared with one conducted in a developed economy in order to see what has been done in the developed country in the areas of FDI and TT; this may assist a developing country such as Libya or Egypt can benefit, and what lessons can be learned from the experiences of a developed country.

3- Another limitation derives from this study's focus on only five sectors of the Libyan and Egyptian economy, because FDI is a new phenomenon in Libya economy in all sectors other than the oil and gas sector.

8.8 Recommendations.

According to the findings of this research and in light of the above, this section contains recommendations for the Libyan government that would help it to encourage FDI and TT inflows into broader economic sectors in Libya.

1- Provide effective means to resolve the problems that foreign investors face in the processes of FDI and TT. Problems are one of the most important factors influencing foreign investment decisions. All foreign companies in the case of Libya confirmed that the problems were one of the most important factors impacting FDI. For example, Libya needs to develop regulations related to the processes of FDI, such as its bureaucratic excesses, because it was the most difficult matter facing foreign investors. It is an issue at all stages of the process of FDI. The Libyan government should work to address all the problems that face foreign investors as soon as quickly possible in order to encourage FDI. The Libyan government should work with the Ministry for Investment in

Egypt to benefit from their experience, in terms of solving all the problems that face foreign investors.

2- Improving the legal and institutional environment, because it was one of the major problems facing foreign investors for many reasons. One of these reasons was bureaucracy in all FDI stages, from beginning to the end of the process of registration. This was due to the Libyan government not being interested in attracting FDI to other sectors other than oil and gas. The Libyan government should to work to improve the registration system for FDI. This might be done, for example, by creating web pages for all foreign investors' registration stages, as does the Egyptian government.

3- Foreign investors may be interested to invest in a host country, if the host government provides accurate information about the economy, investments and opportunities. The Libyan government should provide reliable economic data and investment data; this data should be overseen by and linked with international organizations.

4- Improving the business investment environment in order to encourage foreign investors, including the infrastructure (internet service, banking service, roads and airports, hotels, geographical maps and so on), because infrastructure is one of the most important factors that impacts on the inflow of FDI. The Libyan government can facilitate infrastructure improvements by allowing foreign investors to invest in infrastructure in order to contribute to improving existing provision.

5- Libya should learn from Egyptian experience in addressing a number of conditions. At present, the Libyan economy is heavily dependent on

revenue from natural resources such as oil and gas. Libya is faced with a challenge to be more competitive in the energy sector (and other economic sectors). At the same time the Libyan government needs to create suitable economic conditions in order to improve the level of FDI and TT. This should provide it with the opportunity to increase productivity of Libyan goods and services, thus further diversifying sources of income.

6- One lesson that can be learned from the experiences of Egypt is to develop a balanced economy. Tourism, for example, is one area that can provide economic growth and employment for Libya as in Egypt. The country is located close to Europe, which is a major potential source of tourists. Libya has a considerable number of tourist attractions, including World Heritage sites. However, such potential cannot be taken advantage of, unless there is suitable infrastructure and the necessary improvement in human and financial capital to attract foreign investment.

7- The Libyan government should develop all non-oil sectors, such as agriculture, tourism, manufacturing, services and infrastructure, because the contribution of these sectors to GDP is currently limited. The Libyan government should give importance to these sectors contribution to the national economy and should work to encourage foreign investors in these sectors.

8- The Libyan government needs clarity its economic aims concerning investments and to identify priorities for the sectors which needed investment, for example sectors such as agriculture, tourism, manufacturing, services and infrastructure.

9- The Libyan government should review its policy in order to attract more FDI and facilitate the entry of multinationals. The major factor behind this is that the Libyan government has recognized the importance of multinationals for the development of technology, knowledge and the economy, but has not facilitated their entry into Libyan markets.

8.9 Directions for future research

The current research area has exposed a number of areas that may need to be investigated further. Libya nowadays has the potential to be an open country for new investments, and many foreign investments would like to invest in Libya in numbers of sectors such as non-oil and gas sectors. However, there is a lack of studies in this field because there is no specialist in this area, compounded by the early stage of development in this particular area.

Further research could highlight issues in the processes of FDI and TT and the main key success factors that may enhance the development of these processes. Moreover, factors such as the manageable factors such as skills of manpower and infrastructure, and unmanageable ones such as location and raw materials of the host country have influenced in the processes of FDI and TT here. These issues for FDI and TT need light thrown on them.

Few studies have been conducted and few researchers have focused on such factors. In addition, as this research discusses the important role of factors on the processes of FDI and TT in developing countries, further research should investigate processes of FDI and TT from two perspectives. These are those of the foreign investor and of the host government at the same time, because

the host government plays a very important role in the processes of FDI and TT.

However, as mentioned before, research on the process of FDI and TT and their impact in developing economies is still limited and has only recently become a major focus of attention for academics, international organizations and governments. Therefore, further research on the processes of FDI and TT and their impact in developing economies is needed. In particular, the factors that impact on the processes of FDI and TT identified in this study require further research, both in terms of how they can be managed in the best way as factors in Libya, and how similar factors have been well managed in other developing economies.

Therefore, studies are needed from time to time on the processes of FDI and TT so that the impact of changes in the Libyan business environment on the flow of FDI into the Libyan economy can be assessed.

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Appendix 1: Questionnaire for Libya

Dear Sir/Madam

Thank you for your interest in participating in this research program. For all persons participating in this research, the aim of this survey **an investigation of Key success factors impacting foreign direct investment and technology transfer**: A comparative study of Libya and Egypt. It should be known that any data or opinions collected will be treated confidentially and used only for the purpose of this study.

Many thanks in advance for your cooperation and best wishes to you

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Section one: About the Respondent:

1- Name of the project or company:……

2- Participation (in percent):

- 100% ( ) 50% or more. ( ) Less than 50% ( )

3- Your position:

- Owner of the project ( ) Director of division ( )
- Head of department ( )
- Other (specify) ……

4- If the company is 100% solely owned, please indicate the country of origin of the parent company.

- UK ( ) - France ( ) - USA ( ) - Germany ( )
- Japan ( ) - Russia ( ) - Other, ……

5- What is the type of investment?

- Wholly owned subsidiary ( )
- joint venture (with local government participation) ( )
- joint venture (with local company participation) ( )
- Greenfield investment ( )
- joint venture (with anther foreign company) ( )
- Licensing agreement ( )
- Franchising agreement ( )
- Binky operation ( )
- Management contract ( )

6- Why did you choose the type of investment mentioned above?

……

……

……

7- How many years have been invested in Libya so far?

- 1 year ( )
- 2-4 years ( )
- >4years ( )

8- In which kind of industry did your company undertake investment in Libya?

- Manufacturing of ……
- Pharmaceuticals ( )
- Engineering and civil engineering ( )
- Oil and gas ( )
- Automotive ( )
- Consumer electronics and appliances ( )
- Consumer products ( )
- Telecommunications' ( )
- Chemicals ( )
- Pharmaceuticals ( )
- Agriculture ( )
- food processing ( )
- Transportation ( )
- Energy ( )
- Other (specify) …….

9- Why did your company choose investment in Libya?

Mark as many answers as apply.

	Strongly agree	**Agree**	**Don't know**	**Disagree**	**Strongly disagree**
Good investment environment	☐	☐	☐	☐	☐
There are many investment opportunities	☐	☐	☐	☐	☐
Large market potential	☐	☐	☐	☐	☐
Availability of cheap unskilled	☐	☐	☐	☐	☐

labour					
Availability of highly skilled technical labour	☐	☐	☐	☐	☐
Educated consumer	☐	☐	☐	☐	☐
Country geographical position	☐	☐	☐	☐	☐
Government incentives	☐	☐	☐	☐	☐
Economic stability	☐	☐	☐	☐	☐
Political stability	☐	☐	☐	☐	☐
Availability of natural resources	☐	☐	☐	☐	☐
Supporter legal framework	☐	☐	☐	☐	☐
Other (specify)					

10- In which other developing countries has your company employed the same mode of entry?

- …….
- And how long has your company operated in this country ( )

11- In terms of company size, to which of the following could your company be categorized?

- Large size company ( )
- Medium size company ( )
- Small size company ( )

12- What factors importantly influenced your company decision to invest in Libya? Use the scale and mark as many answers as apply. Than rank them in importance

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**	**Rack in terms of important**
Location factor	☐	☐	☐	☐	☐	☐
Market size	☐	☐	☐	☐	☐	☐
Taxation policy	☐	☐	☐	☐	☐	☐
Marketing problems in the existing markets	☐	☐	☐	☐	☐	☐

Exchange rate	☐	☐	☐	☐	☐	☐
Strong market competition	☐	☐	☐	☐	☐	☐
Investment law	☐	☐	☐	☐	☐	☐
Other (specify)						

13-What are your company objectives in Libya ?

- Short term objectives ( )
- Long term objectives ( )
- Explain:

……

……

……

…….

Section Two: **Investment Problems and Obstacles in Libya.**

14- Have you encountered any problems or difficulties in the process your investment?

- Yes ( ) - No ( )

- If you answered yes, at what stage of your investment have you encountered these problems?

- At the outset of the investment ( )

- in the process your investment ( )

15- How would you evaluate these problems?

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Very severe major problems	☐	☐	☐	☐	☐
Severe major problems	☐	☐	☐	☐	☐
Severe minor problems	☐	☐	☐	☐	☐
not severe major problems	☐	☐	☐	☐	☐
not severe minor problems	☐	☐	☐	☐	☐
economy- related	☐	☐	☐	☐	☐
company- related	☐	☐	☐	☐	☐
country- related	☐	☐	☐	☐	☐
Other (specify)……	☐	☐	☐	☐	☐

16-What are the main problems:

- ***Economic problems***:

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Lack of data on the Libyan market	☐	☐	☐	☐	☐
Lack of identifications of the investment opportunities in the country	☐	☐	☐	☐	☐
Size of the local market	☐	☐	☐	☐	☐
Tax treatment	☐	☐	☐	☐	☐
Customs treatment	☐	☐	☐	☐	☐
Exchange rate policy	☐	☐	☐	☐	☐
Banking services	☐	☐	☐	☐	☐
Level of technology	☐	☐	☐	☐	☐
Competition in the local market	☐	☐	☐	☐	☐
Poor performance of private sector.	☐	☐	☐	☐	☐
Marketing problems	☐	☐	☐	☐	☐
Difficulties in finding potential local partners	☐	☐	☐	☐	☐
Lack of business support structures	☐	☐	☐	☐	☐
Lack of institutional support	☐	☐	☐	☐	☐

- ***Administrative problems***:

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Lack of simplification of the registration and licensing procedures of investment projects	☐	☐	☐	☐	☐
Lack of qualified and trained local workforce	☐	☐	☐	☐	☐
Lack of investment data and technical information to the interested Investors.	☐	☐	☐	☐	☐
Lack of clear procedures for enrollment and residence for	☐	☐	☐	☐	☐

expatriates					
Lack of foreign schools	☐	☐	☐	☐	☐
Problems regarding transfer of salaries and remittance and profits	☐	☐	☐	☐	☐

- ***Legal and institutional problems***:

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
The size of investment required by the law	☐	☐	☐	☐	☐
Restriction imposed on choosing the location for business the operations	☐	☐	☐	☐	☐
Arbitration	☐	☐	☐	☐	☐

- ***Infrastructure problem***

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Lack of road network between big cities (sites)	☐	☐	☐	☐	☐
Lack of airports and associated services	☐	☐	☐	☐	☐
Lack of ports and associated services	☐	☐	☐	☐	☐
Lack of hotels and associated services	☐	☐	☐	☐	☐
Lack of geographical map for the investment sites	☐	☐	☐	☐	☐
Communications and transportation	☐	☐	☐	☐	☐

- ***Social problems***:

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Lack of security	☐	☐	☐	☐	☐
Lack of local experience on FDI.	☐	☐	☐	☐	☐
Cultural differences between foreign investor and local nationals	☐	☐	☐	☐	☐

Weather and climate	☐	☐	☐	☐	☐
Lack of awareness of the importance of the FDI in the local culture	☐	☐	☐	☐	☐
Difficulties in the adaptability of the foreigners in the local culture	☐	☐	☐	☐	☐
Other problems (Specify					

17- Is the investment environment in Libya is suitable from the legal point view (Law no 5 of 1997).

- Yes ( ) - No ( )

- If you answer was yes, then what is the degree of relevance or suitability:
- Very important. ( )
- Important. ( )
- Neither important nor unimportant. ( )
- Not important. ( )
- Not at all important. ( )

18- From your point view, what are the requirements to attract foreign direct investment (FDI) to Libya:

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Ease the administrative procedures	☐	☐	☐	☐	☐
Tax reforms	☐	☐	☐	☐	☐
Establishment of industrial and free zones	☐	☐	☐	☐	☐
Improving and modernizing the infrastructure	☐	☐	☐	☐	☐
Reducing the minimum amount to be invested	☐	☐	☐	☐	☐
Reviewing the role of courts in the arbitration	☐	☐	☐	☐	☐
Other (specify)					

Section three: Labour market:

19- How many employees work with your company?

- Local employees ……
- Foreign employees ……

20- Number of employees according to their degree?

- Local employees :
- Bachelors: …….
- Masters: …….
- PhDs: …….
- Other (specify) ……..
- Foreign employees:
- Bachelors: …….
- Masters: …….
- PhDs: …….
- Other (specify) ……..

21- What is the skill level of local employees compared with western standards?

- Higher ( )
- Lower ( )
- The same ( )

22- Does your company train people/ its staff systematical?

Yes ( ) No ( )

23- In which areas is training particularly necessary?

	Very important	Important	Don't know	Unimportant	Not important
Business practices	☐	☐	☐	☐	☐
Production methods	☐	☐	☐	☐	☐
Corporate language	☐	☐	☐	☐	☐
Finance	☐	☐	☐	☐	☐
Marketing	☐	☐	☐	☐	☐
Quality assurance	☐	☐	☐	☐	☐
English language	☐	☐	☐	☐	☐
Technical training	☐	☐	☐	☐	☐

24- Do you look for expatriates to bring them into the investment project?

Yes ( )
No ( )

Section four: Technology Transfer:

25- Do you think foreign direct investment (FDI) is very an important way to technology transfer to Libya?

- Yes ( ) - No ( )

- If your answer was no, what other ways would you consider to be very important for technology transfer?
- ……..
- ……..
- ……..
- ……..

26- Do you think that the size of your investment in Libya has:
- Positive impact on technology transfer ( )
- Negative impact on technology transfer ( )
- No correlation impact on technology transferred ( )

27- What types of technicians did you use in your company and why?
- Local technicians ( )
- Own technicians ( )

Reason …….
Reason …….
Reason …….

28-What age did the machines that you transferred have on the average?

- New ( )
- < 1 years ( )
- 2- 5 years ( )
- > 5 years ( )
- Other specify …….

29-How would you classify the end product that you have today (an example):

- High technology ( )
- Medium technology ( )
- Low technology ( )
-

30-Do you think that the technology you use fits the future of Libya?

- Yes ( )
- No ( )
- If your answer was no why?
- Higher ( )
- Lower ( )
- Explain :

  ……

  ……

  ……

  ……

31-What type of technology did your company transfer to Libya?

- Core technology ( )
- Inputs products ( )
- Outputs products ( )
- Capital equipment ( )
- Intermediate goods ( )
- Final products ( )
- Other (specify)……

32- What types of patents or other intangible assets did you transferred to Libya?

- ……
- ……
- ……
- ……
- Others……..

33- What type of machines has been transferred to Libya examples?

- Machines with standardized technology yes ( ) No ( )
- Machines embodying state of the art technology yes ( ) No ( )

34- What effect in your opinion does technology transferred from your investment in Libya have on national development?

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Policy effects	☐	☐	☐	☐	☐
Economical effects	☐	☐	☐	☐	☐
Human resource effects	☐	☐	☐	☐	☐
Cultural effects	☐	☐	☐	☐	☐
Other (specify)					

35- In your opinion what international factors hinder technology transfer occurrence to developing countries, like Libya?

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
political conflicts	☐	☐	☐	☐	☐
cost of technology	☐	☐	☐	☐	☐
International relationships between developed countries and developing countries	☐	☐	☐	☐	☐
Investment environment	☐	☐	☐	☐	☐
Lower skilled of technical labour	☐	☐	☐	☐	☐
Anti-culture	☐	☐	☐	☐	☐

Other (specify)

Once again, thank you for your co-operation in this research.
Yours sincerely

Appendix 2: Questionnaire for Egypt

Dear Sir/Madam

Thank you for your interest in participating in this research program. For all persons participating in this research, the aim of this survey **an investigation of Key success factors impacting foreign direct investment and technology transfer: A comparative study of Libya and Egypt**. It should be known that any data or opinions collected will be treated confidentially and used only for the purpose of this study.

Many thanks in advance for your cooperation and best wishes to you

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Section one: About the Respondent:

1- Name of the project or company:……

2- Participation (in percent):

- 100% ( ) 50% or more. ( ) Less than 50% ( )

3- Your position:

- Owner of the project ( ) Director of division ( )
- Head of department ( )
- Other (specify) ……

4- If the company is 100% solely owned, please indicate the country of origin of the parent company.

- UK ( ) - France ( ) - USA ( ) - Germany ( )
- Japan ( ) - Russia ( )
- Other, ……

5- What is the type of investment?

- Wholly owned subsidiary ( )
- joint venture (with local government participation) ( )
- joint venture (with local company participation) ( )
- Greenfield investment ( )
- joint venture (with anther foreign company) ( )
- Licensing agreement ( )
- Franchising agreement ( )
- Binky operation ( )
- Management contract ( )

6- Why did you choose the type of investment mentioned above?

……

……

……

7- How many years have been invested in Egypt so far?

- 1 year ( )
- 2-4 years ( )
- >4years ( )

8- In which kind of industry did your company undertake investment in Egypt?

- Manufacturing of ……
- Pharmaceuticals ( )
- Engineering and civil engineering ( )
- Oil and gas ( )
- Automotive ( )
- Consumer electronics and appliances ( )
- Consumer products ( )
- Telecommunications' ( )
- Chemicals ( )
- Pharmaceuticals ( )
- Agriculture ( )
- food processing ( )
- Transportation ( )
- Energy ( )
- Other (specify) ……

9- Why did your company choose investment in Egypt?

Mark as many answers as apply.

	Strongly agree	**Agree**	**Don't know**	**Disagree**	**Strongly disagree**
Good investment environment	☐	☐	☐	☐	☐
There are many investment opportunities	☐	☐	☐	☐	☐
Large market potential	☐	☐	☐	☐	☐

Availability of cheap unskilled labour	☐	☐	☐	☐	☐
Availability of highly skilled technical labour	☐	☐	☐	☐	☐
Educated consumer	☐	☐	☐	☐	☐
Country geographical position	☐	☐	☐	☐	☐
Government incentives	☐	☐	☐	☐	☐
Economic stability	☐	☐	☐	☐	☐
Political stability	☐	☐	☐	☐	☐
Availability of natural resources	☐	☐	☐	☐	☐
Supporter legal framework	☐	☐	☐	☐	☐
Other (specify)					

10- In which other developing countries has your company employed the same mode of entry?

- ……
- And how long has your company operated in this country ( )

11- In terms of company size, to which of the following could your company be categorized?

- Large size company ( )
- Medium size company ( )
- Small size company ( )

12- What factors importantly influenced your company decision to invest in Egypt? Use the scale and mark as many answers as apply. Than rank them
in importance

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**	**Rack in terms of important**
Location factor	☐	☐	☐	☐	☐	☐
Market size	☐	☐	☐	☐	☐	☐
Taxation policy	☐	☐	☐	☐	☐	☐
Marketing problems in the existing markets	☐	☐	☐	☐	☐	☐
Exchange rate	☐	☐	☐	☐	☐	☐
Strong market competition	☐	☐	☐	☐	☐	☐
Investment law	☐	☐	☐	☐	☐	☐

Other (specify)

13-What are your company objectives in Egypt?

- Short term objectives ( )
- Long term objectives ( )
- Explain:

……

……

……

…….

Section two: Labour market:

14-How many employees work with your company?

- Local employees ……
- Foreign employees ……

15-Number of employees according to their degree?

- Local employees :
- Bachelors: …….
- Masters: …….
- PhDs: …….
- Other (specify) …….
- Foreign employees:
- Bachelors: …….
- Masters: …….
- PhDs: …….
- Other (specify) ……

16-What is the skill level of local employees compared with western standards?

- Higher ( )
- Lower ( )
- The same ( )

17-Does your company train people/ its staff systematical?

Yes ( ) No ( )

18-In which areas is training particularly necessary?

	Very important	Important	Don't know	Unimportant	Not important
Business practices	☐	☐	☐	☐	☐
Production methods	☐	☐	☐	☐	☐
Corporate language	☐	☐	☐	☐	☐
Finance	☐	☐	☐	☐	☐
Marketing	☐	☐	☐	☐	☐
Quality assurance	☐	☐	☐	☐	☐
English language	☐	☐	☐	☐	☐
Technical training	☐	☐	☐	☐	☐

19-Do you look for expatriates to bring them into the investment project?

Yes ( )

No ( )

Section three: Technology Transfer:

20-Do you think foreign direct investment (FDI) is very an important way to technology transfer to Egypt?

- Yes ( ) - No ( )

- If your answer was no, what other ways would you consider to be very important for technology transfer?
- ……..
- ……..
- ……..
- ……..

21-Do you think that the size of your investment in Egypt has:

- Positive impact on technology transfer ( )
- Negative impact on technology transfer ( )

- No correlation impact on technology transferred ( )

22- What types of technicians did you use in your company and why?

- Local technicians ( )
- Own technicians ( )

Reason …….

Reason …….

Reason …….

23- What age did the machines that you transferred have on the average?

- New ( )
- < 1 years ( )
- 2- 5 years ( )
- > 5 years ( )
- Other specify …….

24- How would you classify the end product that you have today (an example):

- High technology ( )
- Medium technology ( )
- Low technology ( )
-

25- Do you think that the technology you use fits the future of Egypt?

- Yes ( )
- No ( )
- If your answer was no why?
- Higher ( )
- Lower ( )
- Explain :

……

……

……

……
……

26-What type of technology did your company transfer to Egypt?

- Core technology ( )
- Inputs products ( )
- Outputs products ( )
- Capital equipment ( )
- Intermediate goods ( )
- Final products ( )
- Other (specify)……

27-What types of patents or other intangible assets did you transferred to Egypt?

- ……
- ……
- ……
- ……
- Others……..

28-What type of machines has been transferred to Egypt examples?

- Machines with standardized technology yes ( ) No ( )
- Machines embodying state of the art technology yes ( )

29- What effect in your opinion does technology transferred from your investment in Egypt have on national development?

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
Policy effects	☐	☐	☐	☐	☐
Economical effects	☐	☐	☐	☐	☐
Human resource effects	☐	☐	☐	☐	☐
Cultural effects	☐	☐	☐	☐	☐
Other (specify)					

30- In your opinion what international factors hinder technology transfer occurrence to developing countries?

	Very important	**Important**	**Don't know**	**Unimportant**	**Not important**
political conflicts	☐	☐	☐	☐	☐
cost of technology	☐	☐	☐	☐	☐
International relationships between developed countries and developing countries	☐	☐	☐	☐	☐
Investment environment	☐	☐	☐	☐	☐
Lower skilled of technical labour	☐	☐	☐	☐	☐
Anti-culture	☐	☐	☐	☐	☐
Other (specify)					

Once again, thank you for your co-operation in this research.
Yours sincerely

Appendix 3: **Questionnaire designed based on many studies**

Relationship to Literature Review	Reasoning	Particular questions
Mayanja, (2003); Tong, (2001); Sinani and Meyer, (2004) and Kohpaiboon, (2006)	This question was used to ascertain if the size of the investment in Libya and Egypt had achieved a positive impact.	Do you think that the size of your investment in (Libya and Egypt) has had a positive impact on technology transfer?
Saggi, (2005); Konhpaboon, (2006); Ahmed, (2004) and Barz, (1998)	This question was used to find out what the major factors were for the foreign investment choice in Libya and Egypt.	What are the measurable factors considered important for influencing the decision to invest in Libya and Egypt?
Ahmed, (2004)	This question was used to find out what the important requirements were to attract foreign direct investment to Libya and Egypt.	What are the requirements to attract foreign direct investment (FDI) to Libya:
Ahmed, (2004) Barz, (1998)	This question ascertained whether FDI was a very important way for the transfer of technology.	Do you think foreign direct investment (FDI) is a very important way for the transfer of technology in Libya and Egypt?
Central Bank of Libya	This question was used to find out what Investment Problems and Obstacles in Libya,	- How would you evaluate these problems in Libya? -What are the main problems?
Central Bank of Libya	This question was used to find out what is hinder factors technology transfer.	In your opinion what international factors hinder technology transfer occurrence to developing countries, like Libya?

Appendix 4: Source of Questionnaire Items

question	Mayanja, (2003)	Tong,(2001)	Sinani and Meyer, (2004)	Kohpaiboon, (2006)	Saggi, (2005)	Ahmed, (2004)	Barz, (1998)	Central Bank of Libya	Self
10									✓
11									✓
12									✓
12						✓			
14									✓
15								✓	
16								✓	
17								✓	
18									✓
19				✓	✓	✓	✓		
20									✓
21									✓
22									✓
23									✓
24								✓	
25						✓	✓		
26	✓	✓	✓	✓					
27									✓
28									✓
29									✓
30									✓
31									✓
32									✓
33									✓
34									✓
35				✓	✓	✓	✓		