Cost-Benefit Analysis of Egypt's Free Economic Zones:
A Way Forward for Libya

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy of the University of Gloucestershire

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Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Khaled Ahmed Fakroun
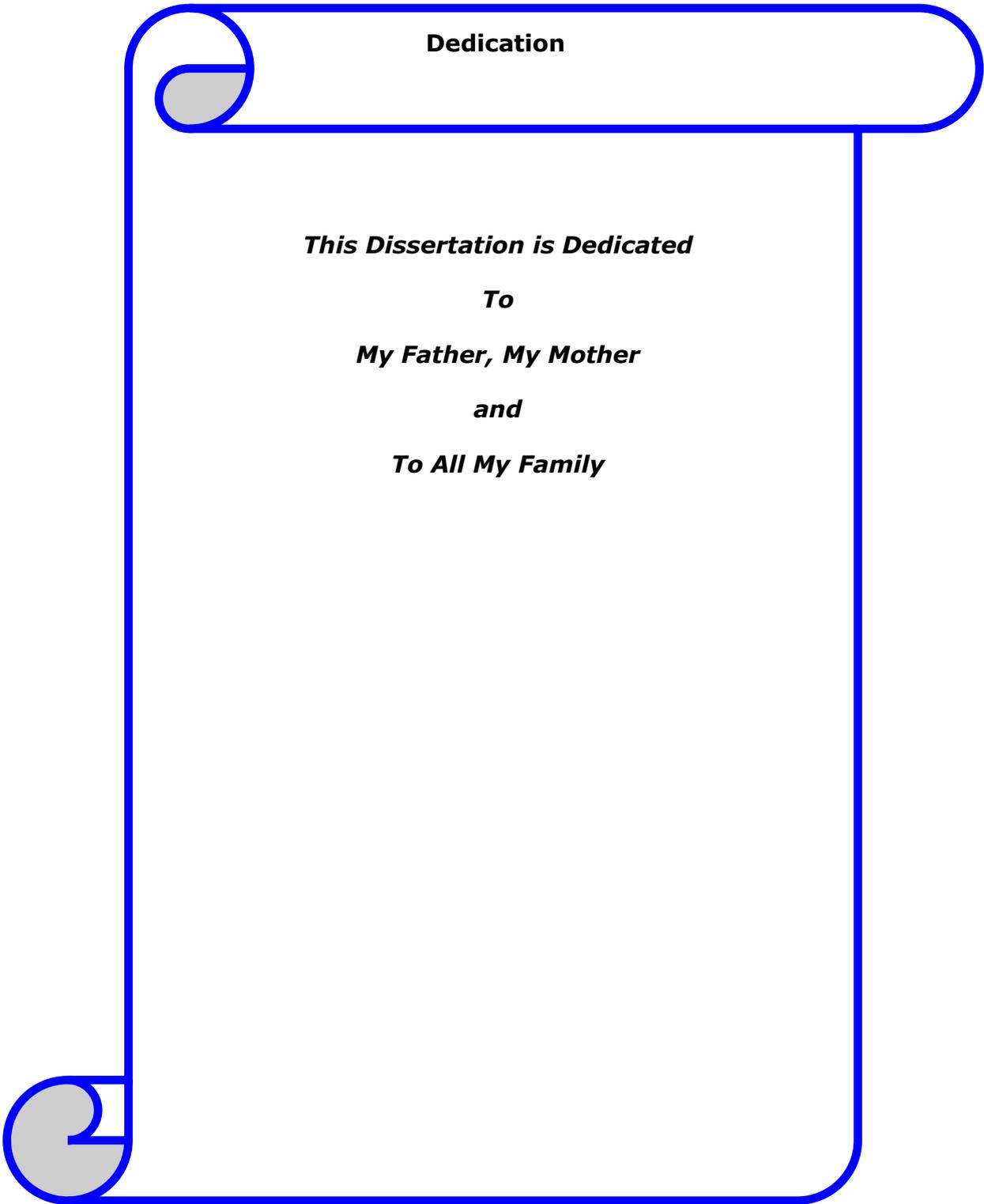
Dedication

This Dissertation is Dedicated

To

My Father, My Mother

and

To All My Family

Acknowledgements

All praise and thanks be to Allah for giving me the health and strength to finish my studies. My sincere thanks also go to my supervisors Dr Steve Harding and Dr Philippa Ward, and I wish to express my deepest appreciation and gratitude for their invaluable scholarly guidance, assistance and support without whom this would have been impossible to complete. I would also like to extend my thanks to all the administrative staff of the School of Business and the Graduate School, for their help, advice and constructive criticism and positive feedback.

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Abstract

Libya has an economy over dependent on hydrocarbon and the petroleum industry. In a bid to diversify, the Libyan government is looking at Free Economic Zones (FEZ) as a viable option versus other avenues, like Foreign Direct Investment (FDI). This thesis explores FEZ as a tool to fetch investment for the development of Libya's economy. Some of the factors in favour of FEZ are believed to be employment opportunities for local labour, enhancing their skills and knowledge, as well as bringing new technology along with management styles, thereby boosting not only the national economy, but overall growth of society. This thesis examines these arguments by comparing existing FEZ in various parts of the world, particularly Al-Ameria FEZ in Alexandria, Egypt. The case study revolves around this FEZ, as it has geographical and cultural similarity to that of Libya. In stimulating a potential decision making process, cost-benefit analysis is carried out to evaluate financial return against benefits envisaged. Finally, the study recommends the perceived best way forward in establishing successful FEZ to achieve desired sustainable economic growth in Libya. This is the first study of its kind in the Arab world that covers cost-benefit analysis of different industries within FEZ, and could prove to be a guideline for academics and business communities working in this field.

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CHAPTER ONE

BACKGROUND TO THE RESEARCH AREA

1.1 Opening Remarks

Petroleum dominates the economy of Libya, with revenues from the oil sector accounting for over 95% of Libya's hard currency earnings, 75% of government receipts and about 31% of GDP (Alfergani, 2010). In order to diversify the Libyan economy, the government has formulated comprehensive development plans to develop the non-oil manufacturing and construction sectors, and in a bid to underpin success in this respect, it has decided that Free Economic Zones (FEZs) should be introduced. Such a development strategy, if properly implemented, will contribute towards economic sustainability. In order to develop FEZs and ensure their effective operation, the Libyan state needs to be aware of the various factors and forces that play an important role in the development and sustenance of the international trade in less developed countries (Working Group 1, 2009). Recognizing the role of these numerous influences will assist Libya in establishing a successful and stable FEZ network.

1.2 Background to the Study

The past thirty years have seen increasingly rapid advances in different types of free economic zone (Rankevica, 2006), which have grown considerably in size and number over the last few decades. However, the precise number of such ventures is impossible to calculate since various terms have been used to describe them, such as: Free Economic Zone, Free Zones, Export Processing Zones, Special Economic Zone, Free Trade Area, Export Production Zone, Foreign Trade Zones etc (Marhoz & Szymanski, 1996).

Over time, the reasons for establishing FEZs have differed, depending upon the needs of the host countries (Jayanthakumaran, 2002). In 2006, there were approximately 3,500 FEZs, operating in no fewer than 130 countries (Engman et al, 2007). However, despite this large number, there has not yet been a classification system developed in respect of FEZs (Marhoz & Szymanski, 1996). Some countries such as China, Korea and Taiwan have been successful in developing FEZs, as is reflected by large amounts of direct foreign investment and increased exports. On the other hand, there are also FEZs that have failed to attract important investments, and where the expenses have outweighed the economic and social benefits (Sharaf & Dayoub, 2005). Such cases can be found in

many countries in Africa because of the high costs involved with the development of FEZs' infrastructure, the bureaucracy associated with this, and non-transparent procedures in accessing incentives (Tekere, 2000). In the Arab World, the number of FEZs varies from one country to another, but it is reported that approximately 110 such initiatives have been operating for several years (OECD, 2003).

For a country such as Libya, that is in its infancy in respect of the establishment of FEZs, the experience of other countries in the Arab World that share a similar economic position and culture with Libya and that have been successful in their operation of FEZs, is of value, providing a history of the strengths and weaknesses of their approach in this respect, and hence, producing evidence of what can bring success. Consequently, this study will analyze the nature of the Egyptian approach to FEZs and examine the performance of several ventures within one FEZ in particular the Alexandria Free Economic Zone that is believed to offer lessons for the Libyan government. The study will analyze the benefits and costs in Egypt, and will make a major contribution to the literature on FEZs in the Arab World, as well as a major contribution to the development of the Libyan economy as the lessons learned from Egypt strengthen the Libyan approach, and consequently, increase the likelihood of successful implementation. The ability of the study to make recommendations concerning the form of FEZs that would be appropriate to support Libyan economic development is of great value.

1.3 Research Questions

Given the situation outlined, four important research questions emerge as follows:

1. What are the costs and benefits of the free economic zones in Egypt?

2. What are the key factors contributing to the success of the free economic zones in Egypt?

3. What lessons can be learned from the experiences identified above in relation to Libya?

4. What form of free economic zone would be most appropriate to support Libyan economic development?

1.4 Research Aim and Objectives

The overall aim of the study is to analyze and critically assess the costs and benefits associated with Egypt's Free Economic Zones (taking the situation of Alexandria as an example), in order to establish best practice and use this information to support Libya's development in this direction. The following four objectives derive from this aim:

Objectives:

1. To explore the costs and benefits of the Alexandria FEZ in Egypt.

2. To establish the degree of success of the Alexandria FEZ in Egypt.

3. To explore the key factors attributed to the success of the Alexandria FEZ in Egypt.

4. To make recommendations concerning the form of free economic zone that would be appropriate to support Libyan economic development.

1.5 Methodology and Data

This research adopts a position of scientific realism. The nature of economic activity lends itself to a modelling approach, which is an established tradition in the discipline. In order to address policy questions, however, detailed consideration of context is also required, and the case study approach is one that allows the development of policy suggestions, when linked to the results from the model. It has been suggested that quantitative and qualitative methods can be usefully combined, particularly in the process of triangulation (Brannen, 1992), and again the case study method is one that facilitates such combination since it can encompass the collection of both quantitative and qualitative data. Yin (1993) states that case studies are useful when trying to attribute causal relationships, but emphasises that when investigating any phenomenon, researchers should do so within its natural context. In respect of this study, it is quite possible to do that, and consequently the case study as a vehicle for securing the Egyptian data of interest to the Libyan situation, is adapted.

In tandem with the case study approach, the study also uses a framework to identify the costs and benefits associated with free economic zones, to the host countries, and in this respect, the 'Enclave Model' developed by Warr (1989) is of interest. The point is made (Jayanthakumaran, 2002) that few empirical studies have attempted to quantify the costs

and benefits of FEZs using the framework offered by the Enclave Model, instead often using conventional cost/benefit analysis techniques. In fact, Jayanthakumaran and Weiss (1997) used Warr's Enclave Model as the analytical framework to identify the costs and benefits of FEZs in four Asian countries: Indonesia (the Jakarta EPZ), South Korea (the Masan FEZ), Malaysia (the Penang FTZ), and the Philippines (the Bataan EPZ). The model estimating an economic net benefit-cost (NBC) position in any year, expressed for year t, is shown as follows:

$$NBC_t = (MWR - SWR)_t L + (DP - MSC)_t Q + T_t + NP_t - K_t - A_t$$

MWR and SWR refer to market and shadow wage respectively. DP is the domestic price of locally purchased inputs and public utilities, and MSC is the opportunity costs of locally purchased inputs and public utilities. L and Q refer to the number of workers and units of domestic inputs, respectively. T is tax payments and NP refers to the net profits accruing to local shareholders. K refers to the infrastructure cost of the FEZs and A to the operational costs.

The main benefits and costs of FEZs may include:

Benefits:

1. The difference between wages paid to local labour (MWR) and the national opportunity costs of this labour, as measured by the shadow wage (SWR);
2. The difference between payments by firms for public utilities and locally purchased inputs (DP) and the opportunity cost of these public utilities and locally purchased inputs (MSC);
3. All tax payments by firms (T);
4. Net profit income that goes to local equity shareholders in the FEZ firms (NP).

Costs:

1. The domestic economy provides capital infrastructure cost (K);
2. Administrative expenditure for zone operation (A).

It has been argued that the main drawback to the Enclave Model is that while costs are readily available, some benefits such as transfer of skills and technology are difficult to calculate and can only be estimated (Jayanthakumaran & Weiss, 1997). That said, in its overall framework, the Enclave Model is appropriate for examining the main benefits

and costs of a tightly-ringed trading zone, and consequently it is believed that its use in the study will enable the identification of the principal costs and benefits of the Alexandria FEZ and provide the resulting knowledge to policy-makers in Libya and other Arab countries such that the benefits of existing FEZs may be maximized.

The Alexandria FEZ has been selected as the case study since Egypt is considered to have the most famous FEZs in the Arab world (OECD, 2003). Additionally, it has long experience of operating FEZs, and as Libya's neighbour, it has a similar economic position and culture.

This study uses both qualitative and quantitative data to draw on specifications of the General Free Zone in Alexandria (El-Ameria), and the researcher employs each statistical criterion (mean, mode, median, standard deviation, variance and frequency tables, cost/benefit ratio, net present value, internal rate of return, payback period) to establish the costs and benefits. In addition, the study utilizes multiple regressions to pinpoint the factors that may affect investment in free zones, using SPSS, E.Views and Costben computer programs.

1.6 Data Sources

The data come from different sources such as the World Economic Processing Zones Association (WEPZA), the OECD, and the World Bank. The majority of the data required is in the public domain, and that which remains can be accessed through application to the appropriate organization. The research adopts ethical practices. In this respect, the information obtained is not used for any non-research aims, and the conduct of the research is as indicated in the guidelines within The University of Gloucestershire's Handbook of Research Ethics.

1.7 Significance of the Study

The study is significant in that it makes a sound contribution to the literature relating to FEZs in the Arab World and simultaneously, confirms the use of the Enclave Model as a suitable methodological approach in this matter. Additionally, as it is understood that FEZs help to accelerate the process of merging the economies of their host countries

into the world economy, they enable the host countries, and especially those with FEZs that were implemented after the establishment of the World Trade Organization and the implementation of the GATT agreement at the beginning of 1995, to continually adjust to the increasing developments that occur in their economies.

It should be mentioned that the developments that have occurred in the world economy throughout the last two decades, involve new challenges for the free zones in addition to other obstacles. Hence, this research study is important in its ability to determine those obstacles and their different effects on free zones and host countries' economies.

1.8 Stages of the Research

The steps involved in the study are depicted in Figure 1, which essentially shows the thesis structure. The eight chapters that comprise the thesis are presented in diagrammatic form to provide an immediate overview.

CHAPTER TWO

FREE ECONOMIC ZONES:

CONCEPTS AND GOALS AND AN OVERVIEW OF

THE LIBYAN AND EGYPTIAN APPROACH

2.1 Introduction

This chapter is essentially comprised of two parts. The first considers the concept of FEZs and the goals they are intended to achieve. It begins by undertaking a conceptual analysis of such zones and hence, stipulating the conditions required for a trading area to quality as a FEZ. It then proceeds to explore the various types of Free Trade Zone, and in doing so, it considers how such zones vary according to country priorities, and stages of development. The goals of FEZs are then discussed. Part Two of the chapter then attempts to locate these concepts in the context of Libya and Egypt. It does this by providing an economic overview of Libya, in which some detail of the current FEZ situation in the country is included, and by providing a review of the Egyptian economy and the FEZs in existence in that country, since the Egyptian model will be used as a basis for enhancing the provision in Libya. Finally, the chapter finishes with a short conclusion.

PART ONE

In reviewing the literature associated with FEZs, it is clear that many countries have established such zones as they represent one of the most important tools available for developing the national economy through their creation of, and support for, the export industries (Devereux and Chien, 1995). Additionally, FEZs bring modern technology, provide job opportunities, and generate many sources of foreign currency, since they are exempt from customs and taxes, simultaneously being given several other incentives. Hence, it can be understood that FEZs are one of the most important means of developing exports.

It was noticed during the period from the mid-1960s to the end of the 1980s, that there had been great interest among the developing countries in the idea of establishing FEZs. This interest was reflected in the rapid growth in the number of these zones in these countries. Many attempts were made to explain this phenomenon and to study the extent of FEZs' contributions to the national economic development of the countries involved (Tahir, 1998). In fact, the FEZ is considered to be the most recent level of development, following on from Free Ports and Free Trade Zones, and their main aim is to attract and develop industrial investment in export industries.

2.2 The Concept of Free Economic Zones

As noted earlier, the terminology differs in respect of areas of free trade. One term used is the Free Exports Processing Zone, and there are many definitions of such an entity, although only three are mentioned here, those by Rudy Maex (1985), the World Bank (1984), and Hamada (1974).

Meax (1985) defined a Free Export Processing Zone as: A relatively small zone, separated geographically inside the country and subject to the country's administration. It is usually situated on or near marine ports or airports. Raw materials, mediatory goods and industrial requirements imported to the zones are exempted from any tariffs on condition that the manufactured projects are directed to international markets.

The World Bank (Basile & Germidis, 1984:35) defined the Free Export Processing Zones as:

> *"Specialized industrial zones situated geographically and administratively outside the customs borders of the country. Industrial production directed to exports is concentrated mainly in these zones; the zones are provided with establishments and services to transform raw materials, industrial requirements and mediatory goods usually imported from abroad into terminal products suitable for exporting to outside countries. However, sometimes these materials, requirements and mediatory goods are directed partly to the local market on condition that the usual tariffs are paid, and the zone implements a comprehensive system of incentives to attract investors."*

And Hamada (1973:225) provided a comprehensive definition of these zones as follows:

> *"a country provides a portion of its well-located land for foreign investments in certain industries, and in return ... it can enjoy benefits of various forms, such as an increase in the employment of labour, an increase in exports leading to improvement in the balance of payments and the absorption of advanced technology ... Without sacrificing the interests of protected industries ... a country ... provides various*

conveniences and facilities to foreign firms: ... duties on imported equipment, materials and intermediate goods are exempted; commodity taxes on production in the zone are exempted; goods from other parts of the country ... are considered as exports ...; administrative procedures for the registration of firms ... are simplified; less restrictions are imposed on foreign exchange transactions...".

From these three definitions, and from other contributions (Takeo, 1977; Miyagiwa, 1986), it can be appreciated that certain elements must be present in any zone, for it to fall within the category of a FEZ, these being:

1. The zone must be separated, as a limited space zone, from the customs border of the country. This requires the authorities to define the area in which the free zone is to be established, and in practice this is often inside naval ports, near airports, or near land borders. In securing the isolation of the free zone from state territory, walls are often built to form an enclave or natural features such as water or mountains are used to delineate the zone. The aim is to create an entity that from the standpoint of customs is out of the state territory, such that legally, the goods from this area can be dealt with like imports, and those coming from the state into the area are considered as exports.

2. The zone must be subjected to the full sovereignty of the state and its current laws, unless special legislation is issued to organize the legal treatments inside this area.

3. Elements of the infrastructure and necessary facilities must be sufficient for the establishment and settling of industrial activity (ensuring simultaneously the stability of the activity), and the transformation of raw materials and industrial requirements into manufactured materials, or half-manufactured materials, that are directed mainly for export abroad.

4. A comprehensive and regulated system of custom and tax incentives must be applied to industrial investments, and the zone's imports must be exempted from

customs duty. The range of this customary exemption and the rules that organize the tariff exemptions of the exports and imports, differ according to each country's prevailing economic policy. Usually, the incentives system is distinguished from the system applied to industrial activities within the country.

5. The activities to be permitted within the boundaries of the zone must be specified clearly, and may only include: raw material imports, storing, re-exporting, and manufacturing for export. It is noted (Basile & Germidis, 1984) that zones in the United States that do not include the need to export their end products abroad are excluded from the general definition of Export Processing Zones.

However, even with this level of guidance, it is still difficult to formulate a well-defined concept of free zones, and this is partly because the legislative processes that have developed in this respect have not articulated a definite concept. Rather, they have created a group of basic working rules to be applied inside the zone.

Generally, therefore, it is accepted that a free zone is a part of the state land, located on its land, maritime or air outlets, or near them. It is geographically limited by walls and isolated from the rest of the state territories, it follows specific legal rules, and is subjected to the complete sovereignty of the state.

A report prepared by Tom Kelleher for USAID in 2005 provides the following objective and unique selling proposition of FEZ (Tom Kelleher, (2005), Recommendations on Egypt's Free Zones, USAID, Page 2)

"Free zones should be regarded as a temporary or second-best option to wider improvements. Within the zone, investors enjoy duty-free facilities and other benefits, such as fiscal, legal, and administrative advantages, and sound infrastructure within a limited area. The best option is a regime that provides similar benefits and facilities countrywide, not just in limited geographic or administrative areas.

If well planned in a national framework, a free zone should begin moving a country toward a streamlined, duty-free, bureaucracy-free regime. The free zone should

demonstrate the benefits of efficient administration and sound infrastructure. It should also enable a country to experiment with administrative procedures or system-wide innovations before extending innovations countrywide. A free zone program is successful when it is no longer necessary.

At Shannon, for example, the free zone continues to exist as a legal entity, but many free zone trappings have disappeared. There is no customs control at the zone boundary. Many of the companies operating in the zone do so "out of customs control"—they pay duty on materials and equipment at the point of import.

A World Bank paper—Managing Entry into International Markets; Lessons from the East Asian Experience—noted that free zones can be very effective in the early stages of an export drive in attracting foreign investors and demonstrating a country's export potential. Over time, however, the importance of zone exports should decline as export investors are attracted into the wider economy and as a strong export base develops in the wider economy."

The report especially discusses the role of FEZ in Egypt and has covered various aspects like investor-friendly environment, better infrastructure, effective administration systems, as the key components of establishing a successful FEZ. The report, however, does emphasise the fact that FEZ alone cannot guarantee a successful economic model for overall national growth of any country, and points out to the fact that a country should try to emulate such a conducive atmosphere for both internal and foreign investors. This is regarded as a unique selling proposition of establishing a FEZ in countries like Egypt and Libya, where red tape prohibits capital growth thereby strangling economic activities that are necessary to realise overall growth of the nation.

2.3 The Various Types of FEZ

There are various types of free zone, and it is important to consider these in some detail in order to arrive at the best form for the Libyan context. As noted already, there are numerous different terms within the literature to indicate the different types of free trade zone. In this respect, Kusago and Tzannatos (1998) identify 18 commonly used terms for such zones as shown in (Table 1). The list can be seen to include simple variations

that to all intents and purposes may be interchangeable, as for example, terms such as 'free zone', 'industrial free zone', 'tax free zone' mean much the same thing, and in all likelihood only developed because the establishment of such zones happened in a piecemeal way around the world, arguably with the same intentions but without the communication across countries that would result in a totally common terminology. Within this study, the term Free Economic Zone (FEZ) is used to cover all the variants indicated in (Table 1).

Table 1: List of Common FTZ Terminologies

1	Free Trade Zone	10	The Science-based Industrial Park or Industrial Park
2	Free Economic Zone	11	Export Processing Zone
3	Foreign Trade Zone	12	Special Economic Zone
4	Industrial Free Zone	13	Duty Free Export Processing Zone
5	Free Zone	14	Free Trade Area
6	Free Port Zones/Free Ports	15	Industrial Export Processing Zone
7	Free Airport Zones	16	Free Production Zone
8	Industrial Estates /Enterprise Zones	17	Tax Free Zone
9	Free Banking Zones	18	Privileged Export Zone

Source: Kusago and Tzannatos (1998:31)

The lack of proper classification of these variants has led to significant confusion. This is largely visible in the secondary data provided by international organizations, since each computes statistics using different definitions for various zone types. This results in different organizations using the same terms but ascribing different meanings to them, and therefore including different content in each case.

Generally, Free Zones are any geographical area limited in space, in which projects owned by individuals, private sector companies or joint ventures are established to practise an economic activity. Naturally, these projects enjoy certain direct advantages, represented by a reduction in, or exemption from, custom tariffs on its imports, as well as a reduction in, or exemption from, taxes on the profits of these projects. Additionally, there is a reduction of the necessary procedures for establishing the projects and their

operation (USAID, 1984). The world has long since known different types of free zone, the type being determined by the country that wishes to establish the zone. The decision in this respect is made in light of its expected advantages and benefits, the economic policies adopted by the country concerned, the phase of development the country is experiencing and the priorities and goals the country is seeking to achieve.

In the following sub-sections, the main types of free zone are introduced.

2.3.1 Free Port Zones/Free Ports

These zones are the traditional form of Free Zone and have been known in the Mediterranean since ancient times (Grubel, 1982). However, they gradually spread to different regions of the world, including Singapore, which was recognized as a Free Port in 1819, and Hong Kong, which became a Free Port in 1842.

The Free Port Zones are recognized as Free Zones established within a marine port; they include storehouses (sometimes small factories) and port service facilities. In ancient times, the aim of these storehouses was to store merchandise and then reship it without paying any tax or tariffs. In modern times, these zones can extend to include the city in which the port is situated and can also be provided with hotels, tourist facilities, free markets and shopping centres etc. In this case, the city is a Free Port in which trade transactions, whether by individuals or companies, are not subject to tariffs or taxes. Examples of these types are Hamburg, Copenhagen, Singapore, Hong Kong and Port Said. The country's economic returns in this type of Free Zone come from facilitating international trade and accelerating the process of landing and reshipment of goods, as well from the development of trade transactions within the Free Port, the motivation of tourism, and the generation of opportunities for employment (Guangwen, 2003).

2.3.2 Free Airport Zones

These are established inside airports as limited and closed area zones where goods are stored and shipped. These goods might be subject to simple processes of manufacturing or assembly before reshipment. The production of lightweight goods, which have relatively high added value and are shipped by air, is concentrated in these zones. Examples of such goods are electronics, drugs and medicines, and light tools. The

Shannon Free Airport Zone in Eire is considered the most famous example of this type of zone (Guangwen, 2003).

2.3.3 Free Trade Zones

These are limited in space and usually situated near, or inside, a marine port or an airport. They are considered to be outside the country's custom borders. The dominant activities in these zones are storing, landing and reshipment of goods that are circulated internationally. These zones have long been considered as storage, repackaging and repacking centres, and centres for similar simple processes that aim to reship goods to international markets. Taxes and tariffs are not imposed on goods imported to the zone, provided that they are indeed reshipped to external countries. Additionally, trade activities inside these zones enjoy reduced custom procedures. A country's economic returns from Free Trade Zones are represented in the development of its trade exchange and in the facilitation of its connections with international markets. Although, to a large extent, the primary role of these zones is similar to the role of Free Ports, they only serve companies and ventures that work inside the zones in the fields of import and export, storing, shipment and distribution. Free Trade Zones are considered to be the traditional model of Free Zones, such as Singapore, Hong Kong and Panama (Guangwen, 2003).

Free Ports and Trade Zones played an important role in supporting the trade position of countries of the Mediterranean, Northern Europe and the Far East in the middle ages. Some Italian cities introduced the advantages of Free Zones to trade personnel in the Renaissance, and Britain made Singapore and Hong Kong Free Trade Zones during their period of occupation of these countries. These zones helped promote international trade and for a long time trade activity remained the dominant activity within them (United Nations, 2005).

In recent times, Modern Free Ports and Free Trade Zones have evolved from their historic characteristics, essential changes occurring during the 1960s and 1970s. Trade activity is no longer the dominant activity and the primary role of these zones is no longer storing goods, but rather to attract related national and foreign, private, industrial investment in order to achieve certain national goals. Additionally, the advantages given to existing projects in Free Trade Zones are no longer simply exemptions from fees and

tariffs, since there is now a regulated and comprehensive system of different incentives, with higher effectiveness in attracting and developing industrial investment. The top economic advantages achieved in these zones are the reduction of, or exemption from, tariffs and quantity restrictions, in addition to the reduction of complex trade-related management (Dabour, 1999).

2.3.4 Industrial Estates/Enterprise Zones

These zones are created with the aim of attracting and encouraging private investment to establish projects in economically stagnant areas. Investment Zones are one of the modern forms of Free Zones (Campos & Banilla, 1982). They were first known in Britain in 1977, when the British government established 13 zones in economically stagnant areas, urban and rural. Between 1981 and 1984, the United States created more than 200 zones according to the law issued in 1980 that allowed different incentives for investment in zones where poverty, unemployment and other signs of underdevelopment are widespread. A mixture of trade and industrial activities is dominant in these zones. The incentives enjoyed in these zones are concentrated on tax exemption on profits and fewer procedures. Additionally, most such zones are exempt from tariffs. The economic returns of countries in these zones are represented in the achievement of regional development in areas where economic stagnation has occurred and in the creation of employment (Guangwen, 2003).

2.3.5 Free Banking Zones

These are restricted to certain areas or cities, but might extend to include the whole country. They are sometimes called Offshore Banking Facilities. This type of Free Zone emerged during the 1960s and 1970s, with the growth of the Private European Market. In addition, with the presence of a huge surplus of stateless currencies, Singapore, the Bahamas and Panama became International Free Banking Zones, as well as the United States, which established a Banking Zone in New York. Certain bank transactions such as foreign currency deposits might acquire the advantages of Free Zones. Financial institutions in these zones might also introduce loans for investors. Banking activities are exempt from restrictions in dealing with foreign currency and from an Interest Rate Ceiling, and they enjoy reductions in, or even the abolishment of, currency control. The

economic returns from these zones are represented in the attraction of maximum flows of foreign currency (Ernst & Young, 1990).

2.3.6 The Science-based Industrial Park or Industrial Park

Such parks aim to attract industrial companies specialized in highly technological projects, which use labour with distinct technical skills. They also attract companies interested, in particular, in research and development processes (R&D) in the field of production. These zones emerged in Singapore, Korea and Taiwan during the 1980s when these countries started to pay attention to science and technology-based industries, and industries requiring intensive knowledge and technical skills (APO, 1987). The establishment of these zones is supervised by governments, private companies or universities, and the incentives system focuses on exempting the profits of companies that pay a great deal of attention to the processes of research and development, from taxes. The economic returns from these zones are represented in the achievement of technological progress, the encouragement of scientific research, and the ability to apply this to the fields of production (The Services Group, 2000).

This type of free zone first emerged in Eire, in the form of Shannon's Free Airport Zone when, in 1947, the Irish government established a free market with the aim of using the duration for landing planes crossing the Atlantic Ocean between Europe and the United States to be provided with fuel and attract passengers across Shannon Airport (Sklair, 1986). The free market at that time helped activate travel in the airport, achieving financial returns of foreign currency and creating employment. This stimulation did not last for long owing to the increased use of airplanes able to cross the Atlantic Ocean without stopping to refuel, and consequently there were negative impacts on Shannon Airport which led the Irish government to establish the Shannon Airport Development Company in 1959. This was accompanied with a notable transformation in the economic policies of the government, with the aim of protecting trade activities and local industries' alternatives to imports, in addition to encouraging the flow of industrial foreign investments that direct their production to exports by setting appropriate laws and incentives. This was done by transforming the Shannon Airport area from a free market annexed to the airport, into a Free Export Processing Zone in 1959. With the gradual development of the zone it started to include a wide range of different industries such as pharmaceutical industries, light tools, electric and electronic sets (Sklair, 1986).

Following the saleability of the Free Export Processing Zone in Shannon Airport, a number of similar industrial zones were established in different parts of the world, especially in countries that began the transformation from manufacturing policies, with the aim of substituting imports into manufacturing and expanding industrial exports. A group of Asian and Latin American countries began adopting the idea of establishing these zones. In late 1966, the first Free Zones in Asia opened, these being the Kaohsiung Zone in Taiwan, and the Kandla Zone in India.

From 1966, the idea of establishing Export Processing Zones became more widespread in developing countries. In 1970, four new zones were established in South Korea, Mexico and Colombia, in addition to Hong Kong, which started to operate as an Export Processing Zone, despite having been known as a Free Trade Zone since 1842. Singapore, too, had begun adopting the Free Export Processing Zone Status as an extension to Singapore's Free Zone known since 1819. The previously mentioned definition of Free Export Processing Zones does not apply to Singapore and Hong Kong. However, industrial investments that work in these zones acquire the advantages of investment in Free Export Processing Zones. The Manaos Zone was established in Brazil in 1970, and in the same year, the Philippines and Malaysia began building Free Export Processing Zones. The Dominican Republic established its first zone in 1970, and at the same time a number of small zones were created on the Mexican-American borders under the name 'Maquiladoras'.

Between 1971 and 1975, 23 Free Export Processing Zones were established in 11 countries, 14 of which were in Asia (nine zones in Malaysia, two in Taiwan, two in South Korea and one in India), whereas in Middle America and South America, three zones were established in Colombia, El Salvador and Guatemala. Additionally, three new zones were created during this period in the Caribbean: two in the Dominican Republic and one in Haiti. The first zone to be established in Africa was the Mauritian Island Zone.

During the period from 1976 to 1978, 21 new zones were established, ten of which were established in the Middle East: four in Egypt, five in Syria and one in Jordan. During the same period, three African countries established three Export Processing Zones in

Liberia, Senegal and Togo, while in Latin and South America, zones were established in Honduras, Nicaragua and Chile (Wall, 1976; Takeo, 1977).

The idea of establishing Free Export Processing Zones extended also to Centrally Planned Economies. In 1979, China decided to establish a number of these zones under the name of Special Economic Zones, the most important of which is Shenzhen that lies on the border with Hong Kong. The establishment of these Special Economic Zones (SEZs) commenced in 1980. These zones were provided with facilities and necessary infrastructure, as well as the appropriate legislation and organizational framework for the national economic conditions surrounding them (Stolenberg, 1984; Wong, 1987; Sklair, 1985). Similarly, Romania and Yugoslavia established Free Export Processing Zones (Kreye, 1978).

Until the mid-1980s, there had been a number of Free Export Processing Zones that started to actually work in different Arab countries such as Tunisia, Morocco, Jordan, the United Arab Emirates, Syria, Dubai and Egypt. Table (2) shows the total number of Free Export Processing Zones in the Third World in 1970, 1975, 1981 and 1986.

Table 2: Number of Free Export Processing Zones in Developing Countries

Countries	1970	1975	1981	1986
Africa	1	7	10	25
Asia	6	48	37	95
Latin America and the Caribbean	4	24	45	56
Total	11	79	92	176

Source: *Export Processing Zones in Developing Countries: Results of New Survey, (Kreye et al, 1978, Geneva: International Labour Organization Office, 1978:8f)*

So, it can be understood that Export Processing Zones are in evidence in both the developed and developing countries. However, their nature is slightly different. In the United States legislation for the establishment of Free Trade Zones began to be passed in 1934, when many American cities were given the right to establish such initiatives. The aim of the legislation was to strengthen trade activity by reducing customs restrictions and facilitating clearance procedures on imported goods in order to meet the demands of the local market. Interest increased in using these zones to establish assembly industries and simple industrial processes for imported products and components, with the intention of directing the final industrial products to the local

market. The number of FTZs in the United States increased notably from eight in 1970 to 65 zones at the beginning of the 1980s (Sklair, 1985). In developed countries, the important advantage of such zones appears in the case of companies that depend, to a large extent, on imported raw materials and industrial requirements, and on the zones' ability to direct such end products to the local market, since the companies involved can benefit from the reduction or delay in paying tariffs, in addition to avoiding import quotas. The returns to the national economy from FEZs in developed countries are represented in the increase in added value by substituting imported production input with manufactured products, or assembling or manufacturing these inputs. Since these trade and industrial activities contribute to creating employment, their importance is restricted to motivating and facilitating trade and to industrial activities that direct their production to the local market. In 1980, the size of trade that crossed the US FTZs was estimated to be approximately 1% of net size of the outside trade of the US, and these zones contributed to a very small percentage in employment creation (Sklair, 1985).

The previous example indicates that differences do exist between Export Industrial Zones known in developing countries, in general, and those seen in developed countries, in terms of the following aspects:

1. Terminal Product Markets: The business of such zones in developing countries is directed mainly to foreign markets; exceptions are very limited when some locations permit industrial projects to export a small part of their production to the local market. In the developed countries, however, industrial investments direct their production mainly to the local market since the purpose of these zones is to help facilitate local industries' access to raw materials and the necessary mediatory requirements for covering demand in the local market (Working Group 1, 2009).

2. Goals: In establishing FEZs, developing countries aim generally to create employment, and to develop industrial exports and returns from foreign currency. In developed countries, on the other hand, the establishment of these zones is intended to motivate and facilitate trade and industrial activities that direct their production to the local market (Singh & Zammit, 2000).
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3. Incentives: Tax exemption represents the top element of the incentives system applied in developing countries' FEZs. For example the Law of Investment Number

230, for the year 1989 in Egypt, grants Free Zone projects a tax exemption for the duration of the potential industrial project. This exemption is for 25 years, whereas the same law grants working industrial projects in the country a tax exemption that ranges from five to ten years, according to the type of activity and its importance with respect to the development plan and the location of its establishment. However, in developed countries, it is exemption from tariffs and the subsequent facilitation of customs clearance procedures on raw materials and mediatory requirements that comprise the top elements of the incentive system (Guangwen, 2003).

Additionally, in developing countries, some other characteristics have emerged (Takeo, 1977; Miyagiwa, 1986) such as:

- They house intensive work industries, which rely mainly on unskilled or half-skilled labour for conducting operations of components assembly in some industries such as the clothing and electronics industries (which are considered traditional industries that exist in most zones). Undoubtedly, this is consistent with the orientation of international companies and foreign investment towards low-cost labour in developing countries, in addition to what the labour abundant countries aim at by using intensive labour to solve unemployment.

- They are often dominant in production lines related to the processes of assembling imported components and simple industrial processes. This situation has been a long-term characteristic in most FEZs in developing countries, although there are some exceptions, the main ones of which are (Kreye, 1987):

1. The emergence of a tendency towards automation for the same production mix in a number of zones over the past few years;
2. Tendencies towards using production techniques more than traditional assembly processes;
3. The use of integrated production lines for comprehensive production of some of the more complicated products such as small motors, engines, cameras and TV sets, as found in FEZs in Brazil, Mexico, Singapore and South Korea.

Table 3: Comparison between Different Free Zones for Exportation by Activities Practised

Type of zone	Trading zones	Industrial Zones			Service zones		
Point of Comparison	Free port	Private Economic Zones	Free zones for exportation	Trading zone and storage	Zone of information processing	Zone of financial services	Free trading Zone
Site of the region	The location of the city or the port	Area allocated for the zone in the region	Industrial Complex	Part of the city or whole city	Part of the city or part of a free zone practising different activity	Part of the city or part of a free zone practising different activity	The storage zone adjacent to the port or airport
Economic goals	Growth of activities in business centre and diversifying the economic foundation	The storage zone adjacent to the port or airport	The development of export industries	Activating the movement of trade exchange	Development and information processing	Development of financial activities in banking, financial markets and insurance activities	The conduct of the importation and exportation process
Goods covered by customs exemption	All goods	Certain goods, according to the activity of the region	Production machinery and equipment	Activating the movement of trade exchange	Equipment production	Differs from one country to another	All stored good for re-exportation
Pilot activities	Trade, manufacturing, services and other activities	Manufacturing and services	Manufacturing	All activities	Data processing, software development and graphic	Financial Services	Storage, packaging, distribution, transport
Incentives and facilities	Tax exemptions, tariff exemptions, administrative facilities, free transfer of profits and capital abroad, promotional interest rates for loans.	Tax exemptions, tariff exemptions, administrative facilities, free transfer of profits and capital abroad, not subject to labour laws, prohibition of establishing trade unions	Tax exemptions for different periods, exemptions of customs, administrative facilities, free transfer of profits and capital abroad, the freedom of exchange of money, the granting of subsidies, the freedom to establish trade unions for workers in certain limits, the organization of labour relations in accordance with the Labour Code	Reduced taxes, adminis-trative facilities, prohibition of establishing trade unions	Patent protection, copyright, freedom of telecommunications services at reduced costs, the organization of labour relations in accordance with labour law, freedom to establish trade unions for workers in certain limits	Tax exemption, serious credit financial, free exchange of cash, free transfer of profits and capital abroad	Exemption from quota system, exemption from taxes, free transfer of profits and capital abroad
Exportation within the State	Permitted with paying specific customs duties	Defined in the framework and controls	Specific portion of the production			Limited to a small part of what being produced in the zone	Non-specific part and subject to customs duties
Other Features	Incentives represented in the procedural facilities	Can be established under capitalism and socialism	Advantages of geographical location				
Examples of these zones	Hong Kong, Singapore free port in the Bahamas, Macau, ...	Southern provinces in China, Khinan and Cezanne	Ireland, Taiwan, Malaysia, Mauritius, Kenya, Hungary	Indonesia, Senegal	India, the Caribbean	Bahrain, Dubai, the Caribbean, Turkey	Jebel Ali in Dubaï, Cologne, Miami, Mauritius, Iran

Source: Working Paper No. 43, Publication by INTERNATIONAL LABOUR ORGANIZATION

Table 4: Number of Investment Projects in FEZs in Different Regions of the World up to 2003

Geographical location	Number of Free Zones	Number of Investment Projects	Rate of number of projects to number of zones	Countries of the investment projects
Asia	749	475859	635	USA, Britain, France, China, Japan, South Korea, Germany, Australia, others
Central America and Mexico	3300	6320	2	USA, Italy, Mexico, China, Japan, South Korea, Germany, Denmark, Guatemala, Singapore, Canada
North America	713	2310	3.3	USA, European Union, Mexico, China, Japan, Canada…
South America	39	5778	148	USA, Spain, France, China, Japan, South Korea, Germany, Australia, Switzerland, Norway, Luxemburg…
The Middle East	37	7429	20	USA, Holland, France, China, Japan, South Korea, Germany, Emirates, India, Pakistan, Egypt, Syria, Iran…
North Africa	23	3409	200.8	USA, Britain, France, Sweden, Japan, Libya, Spain…
Africa, South Sahara	64	521	148	USA, Malaysia, France, China, Japan, Lebanon, Germany, Britain, Italy, Emirates, Australia, South Africa…
Countries of transformed economy	90	5622	8.1	USA, Greece, France, China, Japan, South Korea, Germany, Sweden, Australia, Denmark, Macedonia, Switzerland, Singapore, Italy, Turkey, ..
Countries of the Caribbean	87	1010	11.6	USA, Trinidad, Tobago, Spain, Panama, Jamaica, South Korea, Canada, Mexico, Argentina, Haiti, Italy, Denmark, ..
Countries of the Indian Ocean	3	693	231	India, Singapore, France, China, Japan, Mauritius, Sri Lanka, Malaysia.
Europe	55	5363	97.5	EU countries, USA, China, Japan, Turkey, Australia
Countries of the Pacific	14	96	7	Australia, USA, Fiji, Canada, Britain
Total	5174	514539	99.5	

Source: Pierre Singe Boyenge "ILO Database on Export Processing Zones" International Labour Office. Geneva, 2003

2.4 The Goals of Free Economic Zones

In this section, the researcher examined the goals of setting up a FEZ in developing economies. The primary goal is to increase investment in industrial, financial and service sectors, other subsidiary objectives being creation of employment, development of industrial exports and increase in foreign currency revenues, thus enhancing overall growth of the society. Additionally, such zones bring the benefit of introducing and strengthening backward linkages (in some cases, interwoven with forward linkages), bringing about technology transfer that helps to achieve regional development making these critical parameters in favour of establishing FEZ (OKUKU, 2006).

2.4.1 Developing Industrial Investments

Developing economies face challenges of capital investment for the growth of industrial and services sectors thereby thwarting sustainable economic growth (OECD report, Policy Brief, Jan 2007). In the past, these economies adopted a policy of protection by way of restricting and/or prohibiting imports from other economies, thus promoting national industries, often resulting in disrupting market mechanisms and yielding disproportionate results to that of the investment. This has resulted in years of economic suffering, erosion of capital investment and hindered true industrial development, especially in export-oriented sectors. In order to exit this period of stagnation or minimal development, and pursue a rapid growth of economic and industrial development, FEZ was considered a very important tool that would attract foreign capital investment in designated sectors like telecommunications, information technology, and garments, to name a few.

The thesis looked at the journey of some of these economies from 'curtain wall' economy to capital driven 'market economy' that thrives on export-oriented industries and service sectors to understand the role of FEZ in bringing about this change.

It has already been highlighted that the limitation in the size of industrial investments represents a serious problem that threatens the processes of economic development in the majority of developing countries. Likewise, it has been noted that the policies of protection that accompanied the manufacturing strategy for substituting imports, in order to protect national industries, often resulted in restricting the freedom of outside

trade, disrupting the market mechanisms, disturbing the evaluation of economic resources, and the evaluation of the true economic costs of industrial investments and their true revenues. These factors are considered dangerous hindrances towards the development of private industrial investments, especially in the export industries sector (United Nations, 2007).

In light of this contradiction in the goal of developing countries - the development of industrial investments in the export industries sector, on the one hand, and the presence of hindrances that negatively influence the development of these investments on the level of the national economy on the other hand – it became important to establish FEZs since this strategy allows the development of industrial investments. The precise reasons are discussed as follows:

2.4.1.1 The Scenario of an Export Industries Sector in the Current Frameworks

Developing the export industries sector for international markets requires sufficient financial resources and a certain level of technological development, as well as administrative and technical skills that can manage the process of production with the necessary efficiency. This process must be capable of producing goods that can compete with products from foreign companies that have reached a high level in manufacturing. Furthermore, this sector needs marketing skills and international market expertise. However, in the presence of the low growth rates of industrial investments in the majority of developing countries, as well as the lack of management, technical and international market expertise, it is clear that these countries cannot develop their export industries sectors to the level where they can effectively compete, purely by relying on their own resources (Nkhoma, 2007). In this respect, the motivation of direct foreign investments is important, and in particular, investors who have the capital, developed technical skills, management skills and marketing expertise, are sought. For the type of industrial investments involved in the business of developing export industries, it is important that their operating conditions allow them a relatively high degree of trade freedom, away from the protection policies and market deformations that often accompany the first stages of industrial development in the majority of countries. It is difficult to generalize such operating conditions to entire economies, however, and what may well be required to underpin the development of export industries are actions that

are not appropriate to other industrial sectors, for example: changes to legislative frameworks and implementation regulations, related to the organization of industrial and foreign trade activity, the abandonment of policies of protection for industries that direct their production mainly to the local market, and their substitution by new appropriate strategies. These procedures, for political and social reasons, might not be acceptable if applied to the level of the whole national economy (Wall, 1976). Since FEZs are separate zones that are excluded from national economic policies, they work to protect the national economy from the negative impacts that might arise due to the conflict between the strategy of manufacturing to produce alternatives to imports and the strategy of manufacturing with the aim of exporting, or due to the conflict that arises from the sudden transformation from the first strategy to the second (Nkhoma, 2007).

2.4.1.2 The Need for an Appropriate Investment Climate

Industrial investment in the field of export industries must operate under the special supervision of the country represented, by providing a comprehensive infrastructure, in addition to advantages that ensure the stability of these investments. These investments must also operate in a special context with less involvement on part of the country in its activity; they should operate away from government routines and administrative hindrances (Hayek, 1999). Establishing FEZs is a tool for attracting industrial investments in the export industries sector, since they offer, in a more concentrated manner than available in the rest of the country, everything that these investments require in basic comprehensive infrastructure, supported facilities and an incentives system. Essentially, they ensure the freedom for these investments to interact with the outside world; policies and procedures implemented in the country are not applied to these zones. Thus, governments in developing countries can implement special policies that enable industrial investments to implement profitable projects. On the other hand, these zones ensure the protection of industrial investments within them from different dangers, such as nationalisation and confiscation. Additionally, by formulating different labour laws for these industrial investment zones, they can protect these zones from labour strikes and the restrictions of trade and labour unions (Charles, 1994). However, this would be considered as a cost to establishing a FEZ by national industries, and hence would require associated benefits attached to it like higher wages, perks, facilities

(like canteen, accommodation, car etc.) along with establishing employment tribunals, if necessary.

2.4.1.3 Non-integrity of the Market

In the presence of protection policies, followed in the majority of developing countries to safeguard national industries that direct their production to the local market, market mechanisms in these countries are not sufficient for the country to achieve economic goals from international trade that match its relative advantages as an abundant labour country. From a private investment perspective, the absence of market mechanisms, or their insufficiency, leads to deficiencies in evaluating the actual cost of investments and their actual returns. Therefore, the lack of integrity of the market, in the majority of developing countries, represents a hindrance towards the flow and growth of industrial investments (OKUKU, 2006). FEZs are separate from the rest of the country, being excluded from implementing economic policies applied to the national economy as a whole. These zones, with what they ensure of free trade and market mechanisms, are an important tool in motivating and developing industrial investments. From a theoretical viewpoint, industrial investments are expected to operate in the climate provided by these zones of free trade and market integrity, and to intensify the use of the abundant element of production in developing countries, by intensifying the use of labour and achieving economic profits that match the relative advantages of the country (Spinanger, 1984).

Hence, the main and subsidiary goals of developing countries' FEZs are easily observed, and are discussed in more detail in the following sub-sections.

2.4.2 Generating Employment

Generating employment represents one of the top goals for developing countries in their establishment of FEZs, especially countries distinguished by their labour surplus economies such as Malaysia, Sri Lanka, the Philippines, Thailand, Indonesia, Pakistan, Bangladesh, Mexico and Egypt (United Nations, 1985). The economic impacts of industrial investments on labour in FEZs are divided into two types, the first of which is direct impacts on labour, and the second non-direct impacts. As for direct impacts on

labour, these are seen in the employment opportunities created through industrial investment within the zones (Chen & Medici, 2009).

The number of direct employment opportunities in FEZs depends on the size of the zone and its level of development, the integration of the infrastructure elements, the extent of its success in attracting industrial investments, and the method of production followed by these investments. In order to estimate the relative size of an FEZ in the national economy and the extent of its success in achieving the country's economic goals, different indices are used. In respect of achieving the employment goals, the index of the rate of industrial employment, used in industrial investments in the zone to net industrial employment in the country, is often adopted. It is natural for the relative importance of FEZs to differ in terms of generating employment from one country to another, according to the difference in size of available labour in the industrial sector (Al Mdanat, 2006). In countries in which the industrial sector is still limited, or still in the first stages of industrial development, the relative importance of the zone increases in its ability to create employment where the industrial investments within it contain a large percentage of labour in the industrial sector. In contrast, in countries in which the industrial sector has witnessed growth and is experiencing relatively higher levels of progress in terms of industrial development, the relative importance of the zones in developing employment depends upon the size of the labour pool in the industrial sector in the country (Al Mdanat, 2006). For example, the percentage of direct industrial employment in the zones of Mauritius reached 27% of the net size of industrial employment in the country in 1981. In 1981, direct employment in Brazil and India reached 68% and 0.02% respectively of the net size of industrial employment in the countries concerned (Basile, 1984). It is worth mentioning that a similar result was observed when reviewing the experiences of some developing countries, as indicated in the third chapter of the thesis.

Concerning the structure of direct employment in FEZs, there are no big differences from one zone to another. Nor has there been any essential change in this structure over time; the aspects most common in the structure of employment in the majority of zones are the young age of the labour force, and the high rate of female labour. There are reasons for the high rate of employment between young women in the structure of direct employment in the majority of FEZs, the first being the fact that young women receive

lower wages than men. The majority of industries in the zones are involved in intensive labour assembly and manufacturing processes, and hence, any rise in the overall salary bill of these industries is addressed by the employment of more women as they are cheaper to employ than men (United Nations, 2005).

As for the indirect impacts of FEZs on employment, these are expressed by the jobs created in sectors of the national economy owing to the zones' industrial investments' domestic interaction with different sectors (production and services). Indirect employment is generated in the sectors of the national economy through the influence of backward linkages that occur via three channels, these being (ILO Office, 1987):

- Indirect employment in the sector of production goods inputs; this employment is acquired by industrial companies in the zones from the local market;
- Indirect employment in the different services and facilities sector required by the activities of the zones, such as transport sectors, maintenance and restoration and other services;
- Indirect employment created in the consumption goods production sectors resulting from the consumption spending of currency incomes acquired by labour in the zones (national and foreign employment) within the national economy.

Some studies (for example, Frobel, et al., 1980) state that the multiplier effect of investment activities in FEZs on the creation of new employment opportunities in sectors of the national economy, is limited. This is due to the nature of the industrial activities in these zones, especially investments of multi-branch companies, which are vertically integrated with the original company or with other branches in different countries that benefit from the incentives system common in FEZs. This ensures the freedom to import different production requirements that are exempt from customs duties, and in doing so, undermines the backward linkages between these investments and the production sectors in the host country (United Nations, 2009).

2.4.3 Developing Exports and the Revenues of Foreign Currency

The performance of industrial exports in FEZs is considered to be a relative index for the success achieved by these zones in attracting industrial investments. This index is often explained in light of the manufacturing and development levels experienced in the

host country, as well as the development level experienced in the zone. In order to estimate the relative importance of the zones' exports with respect to the national economy, the rate of industrial exports of the zone is calculated with respect to the net industrial exports of the country (OECD Working Group, 2005).

Input flow elements are represented by the following: (McCallum, 2011)

- Wages and salaries paid to national labour in foreign currency in the projects within the zones;
- Wages and salaries paid to foreign labour in foreign currency in the projects within the zones that are spent inside the country;
- Proceeds of land use and the rent from pre-equipped buildings and factories;
- Revenues of foreign currency in return for purchases of the projects in the zones from different requirement goods in the local market;
- Proceeds from transportation and maintenance services;
- Dissemination of profits acquired by national partners of joint ventures in the zones, to preserve them inside the country;
- Tax proceeds after the end of the exemption periods.

Output flow elements are represented by the following: (McCallum, 2011).

- What the country shoulders from necessary foreign currency to fund the foreign component of investment costs required to implement expansions of the zone, in addition to processes of substitution, renovation and maintenance of the zone's facilities;
- Foreign currency expenses shouldered by the country with the aim of promoting its zones abroad.

2.4.4 Development of Local Added Value

This is represented by elements of added value achieved for the national economy of the host country, by the industrial investment activity in the zones. These elements are as follows:

- Salaries and wages in respect of those directly employed in projects of the zones, as well as the wages of indirect employment in the local economy through backward linkages;

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- Amounts paid to the country by the projects in the zones in return for land use in the zones, as well as the rent of pre-equipped factories;
- Loan interest payments where funds are acquired from local funding sources;
- Dissemination of profits paid by joint ventures to national shareholders; the profits are kept inside the country (it is natural for foreign investors to transfer their entire profits abroad, benefiting from the incentives system applied in the zones).

The labour wages represent a high percentage of added value achieved for the national economy, whereas payments for rent or land use in the zone represent a very small percentage in net added value. In most cases, they do not reflect the true economic value of the land as one of the advantages included in the incentives system implemented in these zones (Rankevica, V, 2006).

With regard to profits - as one of the elements of added value achieved for the national economy - they depend on the percentage of contribution of the national investments in joint ventures in the zones, as well as on the extent of the motivation of these ventures to keep their share of profits within the country. This indicates that the contribution of national investments in achieving the added value for the national economy is more than the contribution of foreign investments (Maex, 1985).

As for payments of taxes after the termination of the exemption period for profits achieved by companies in the zones, they are often of little importance with respect to the national economy. The value of half-manufactured or entirely manufactured products exported by the branches of multinational companies to the original company to other branches or to international markets, as well as the value of imported production requirements, depends on the pricing policy followed by the original company. It is also determined in light of mutual transactions between the branches of the companies in the zones and with outside companies. Thus, the branches of foreign companies in the zones are often able, especially after the termination of tax exemption periods, to reduce disclosed profits of their activities through the transfer pricing method. This is done by augmenting the value of requirement imports and raw materials, in addition to reducing the value of exports between these branches and other branches of the original company abroad, leading to a reduction in the value of taxes

imposed on the profits of these companies after the termination of tax exemption periods (Maex, 1985).

With respect to the relative importance of added value, achieved from industrial investment activities in the zones compared to the added value achieved in the industrial sector in the country, this is basically related to the relative size of the zones to the industrial sector of the country.

2.4.5 Technology Transfer and Strengthening Linkages

Technology transfer occurs through different channels, including technical knowledge bonds, licence agreements, inner contracts and direct contracts with experts, in addition to training and research and development processes. However, direct foreign investment is the most important of these channels, especially when considering the goal of technology transfer in the scope of FEZs. The technological flow that accompanies direct foreign investment from developed industrial countries to FEZs takes two primary shapes: the first is embodied technology, represented in technological knowledge applied through capital used in production processes, and the second is disembodied technology, which is the technical knowledge used in production through the element of labour (Abd-el Kader, 1980).

Disembodied technology requires capital investment, whether constant like buildings and machinery, or changing like raw materials and fuel. Based on a survey carried out by this researcher on FEZs that involve disembodied technology projects, capital investments necessary for buildings declined to a large extent, because of what these zones offer to industrial projects within them; they offer pre-equipped buildings, or land prepared for building with an annual rental system as part of the incentives system implemented in the zones, in order to attract industrial investment and help in reducing investment costs, or necessary capital expenditure for establishing projects. Thus, such zones nurture a new stage of national and economic development, and consequently, it is expected that the capital expenditure in industrial investments in FEZs will be concentrated in embodied technology in machinery and tools, either with the aim of expansion, or substitution and renovation. This spending leads to modern technological improvements. Therefore, from a theoretical viewpoint, there is a mutual relationship between the capital components, on the one hand, in the form of machinery and tools,

and technological progress on the other. This indicates that achieving a transfer of technology in its embodied form, through the activity of foreign investment in FEZs, requires these investments to raise the rates of their capital components, including machinery and tools, on a regular basis during the years of operation, either for expansion (adding new machinery and tools), or for substitution and renovation to modernize existing machinery (Rankevica, 2006).

As for disembodied technology, this is represented in the technical knowledge used in various activities like production, design, purchase, vendor development, etc. through to the quality of labour, whether technical or administrative. This was clearly specified by investors dealing with such industries and covered in the survey. This type of technology leads to an increase in the efficiency of the labour element and an increase in its productivity by innovating new training programmes related to industrial and management skills. The efficiency of the training programmes in developing technical knowledge depends on the nature of the industrial processes and the general education level of the workforce. Research and Development (R&D) programmes are considered a form of disembodied technology; industrial investments in the zones conduct these programmes in order to develop productivity skills and to apply scientific research in the field of industrial production (Abd-el Kader, 1980).

When evaluating the technology transfer goal as one of the objectives of FEZs, what is important is not only the transfer of technology that accompanies the flow of direct industrial foreign investments from developed industrial countries to locations of production in FEZs, but also the technological development achieved through what is actually transferred to the local production sectors of the national economy (United Nations, 2005). Technology transfer in this case is represented by the offer of technical help to local sectors via the interaction of industrial investments in the zones with them, as well as contracts between companies in the zones and local importers. Furthermore, technology transfer also occurs by transferring the skills acquired by technical and administrative national labour working in the projects within the zones, to local companies through natural substitution of labour (United Nations, 2005).

Clearly, the success of industrial investments in FEZs in achieving technology transfer at the level of the national economy is related to the extent of interaction of these

investments with the different sectors of the country. This interaction is represented in two types of linkages, the first of which is backward linkages, as observed through purchase of resources and products made by of the companies in the zones, of industrial components from the local market. The second type of interaction is through forward linkages, represented in the companies' promotion of their products in the local market (Rankevica, 2006).

The strength of the backward linkages, between industrial investments in the zones and industrial activities in the local economy, is considered to be an important factor in achieving a number of goals such as generating employment, developing added value and the revenue of foreign currency, as well as achieving the goal of technology transfer (Ahmadu, 1998). The strength of the backward linkages is influenced by a number of factors that can be summarized as follows:

2.4.5.1 The Nature of FEZs as a System for Investment

The incentives system implemented in FEZs helps to strengthen the influence of their enclave characteristics as zones situated outside the borders of the country. Unfortunately, it does as the same time, reduce the motivation for backward linkages, since the system ensures absolute freedom for industrial investments in the zones to draw back industrial components, raw materials, machinery, tools and other elements exempted from any tax or customs fees, and hence, there is a strong motivation for these investments to rely entirely on foreign components. This leads to weak backward linkages with sectors of the local economy and a reduction in the opportunities for achieving the goal of technology transfer.

2.4.5.2 The Policies of Investor Companies

With respect to the branches of multinational companies, they are linked with production and distribution agreements planned previously through vertical integration between different branches, branches around the world and the original company, or between different companies. Thus, the opportunities decrease for these branches to interact in one way or another with the companies of the local economy. However, for joint ventures, owing to the presence of a national market, the probability increases that

these companies will interact with the local market, thus creating back and front linkages.

2.4.5.3 The Level of Dominant Industrial Development in the Country

Undoubtedly, the close distance between industrial investments in FEZs and the other sectors in the local economy creates a motive for these investments to acquire local components as an alternative to foreign components, if they are available and of the required quality. Moreover, if local components are cheaper than foreign imports, then such a strategy will also positively influence the profitability of these investments. However, such an arrangement depends on the industrial sector in the country having grown to an extent that allows the availability of these components at the required quality and the appropriate economic price.

Forward linkages are represented in marketing the products of industrial companies in the zones, to the local market, where drawback rules and customs authorities allow it. Although the general rule associated with the investment pattern in FEZs is that companies export abroad, there are some exceptional cases in which industrial investments permit the marketing and sale of some of their products in the local market. For example, car makers Suzuki were allowed to market their 800cc car to the Indian market while setting up a manufacturing unit under FEZ in Gurgaon, India during the 1980s.

Clearly, the more forward linkages, the greater the opportunity for interaction between companies within the zones and companies elsewhere in a country. And in this respect, some economists believe that a combination of backward and forward linkages have a positive influence on achieving technological development in the local economy provided the government is keen to provide linkages between local suppliers and foreign multinationals as a part of a cluster development strategy (Dirk Willem de Velde, March 2001). The research team that conducted a joint study on behalf of the International Labour Organization (ILO) and the United Nations Centre on Transnational Corporations (UNCTC) came to a similar conclusion. Using the case of the car industry, the researchers found that if the industrial companies in the FEZs sell some of their production in the local market and afterwards deal with maintenance

workshops for this type of car, this develops the technical skills of national labour in activities and services associated with this production centre. Moreover, the unique products of the car industries within the zones increase the efficiency of transportation in that particular country. In another example, these researchers chose the agricultural sector, pointing out that when companies in the zones produce modern agricultural machinery which the local market can then purchase, the technological level of the agricultural sector is improved and its productivity likewise increases. Furthermore, as all products manufactured within FEZs have a relatively higher technological level, forward linkages motivate local companies to compete with the result that quality levels are improved, and research and development is expanded.

Clearly, as seen earlier in Table (5), foreign investors want particular conditions to prevail as a precondition for foreign direct investment (FDI), like FEZs, before they proceed to establish their projects, and from Table (6), which now follows, it is demonstrated that political and economic stability, together with absolute security, are their top considerations in this regard. Indeed, these are also major considerations of local investors. Thereafter, the need for an infrastructure that can satisfy the demands of the activities associated with the investment projects, is considered as important. Additionally, there are other requirements as indicated in Table (6).

2.4.6 Regional Development

Regional development does not only entail providing economically depressed regions with the necessary infrastructure, such as roads, facilities and other elements, with the aim of reducing the population concentration in densely populated urban regions, or for attracting and encouraging the establishment of economic activities in them; it also entails paying attention to the population factor with the aim of developing human resources in these regions via education, training, and of developing the necessary skills and the motivation among local people such that they are willing to participate in expanding the economic activity as part of achieving the general economic development in the country, and are indeed capable of doing so.

In some countries, it is this goal of regional development that stands as the principal objective of establishing FEZs. One example of this is in China where during the period 1984–1987, the government established four zones (called Special Economic Zones)

with precisely this aim (Stolenberg, 1984). Similarly, the goal of regional development was the priority when India established the Kandla Zone, in order to reduce the population concentration in Mumbai and surrounding areas. Likewise, the reason for establishing FEZs Malaysia was to attract industrial investments and develop non-urban areas. And in the Philippines, the Bataan Zone was created with the aim of developing the region in which the zone is situated (Stolenberg, 1984).

Actually, regional development is a variable that is difficult to evaluate in quantity. In this respect, it is noted by Richardson (cited in Higgins, 1988), that several techniques exist for this purpose, including the Input-Output Model, Cost-Benefit Analysis, and Time Series Forecasting Models, among others. These take different approaches, focusing on the change in population density in the region surrounding the zone, the emergence of new economic activities in the region such as industries that feed existing industries in the zones, the development of the service sector, the transformation of a large part of the population from agricultural activity in surrounding areas to other economic activities, and the development of employment opportunities. In addition, aspects such as the attention paid to education services and labour training in the region that accompanies this development are taken into account when reaching an evaluation of the success of a zone aimed at improving the region. With such development comes a rise in the levels of wages, redistribution of income, the change from the traditional rural lifestyle into industrial community living, and the change in the pattern of consumption. The growth of the region surrounding the zone increases demand on land for establishing different activities and raises its price. It also results in an increase in the burden of government expenditure to provide roads and facilities, and to face the increase in population in the region (Fujimori, 1980).

From Table (4), it can be seen that host country and local or foreign investments seek to achieve their own goals, and that sometimes, these goals conflict. Nonetheless, both parties reap rewards as the FEZs become more successful, and hence, the FEZs are encouraged to operate effectively in order that the benefits to be derived are shared among all parties. Consequently, both investors and host country achieve their goals (Johansson 1994).

It can be observed from Table (4) that Central America and Mexico have the biggest share of FEZs for reasons as discussed during analysing growth of FEZs in America previously. However, despite the number of these zones, the number of established projects within them is limited compared to the zones established in Asia, where approximately 500,000 projects are underway in 749 FEZs.

It can also be seen that the major industrial countries have a strong presence in the FEZs in most of the regions of the world, through their investments within them. In this respect, the United States of America, Japan, and then China are notable; they compete with one another to reach international markets through FEZs. In other words, these zones represent one of the instruments that contribute to the control exercised by major industrial countries on international trade; these zones enable them to promote their products in these markets in the appropriate quantity, and to provide them in an appropriate time at a cost that competes favourably even with national projects that enjoy the support of their host countries.

Clearly, as seen earlier in Table (5), foreign investors want particular conditions to prevail as a precondition for foreign direct investment (FDI), like FEZs, before they proceed to establish there projects, and from Table (6), which now follows, it is demonstrated that political and economic stability, together with absolute security, are their top considerations in this regard. Indeed, these are also major considerations of local investors. Thereafter, the need for an infrastructure that can satisfy the demands of the activities associated with the investment projects, is considered as important. Additionally, there are other requirements as indicated in Table (6).

Table 5: Comparison of Investors'/Host Countries' Ideas Regarding Investment in FEZs

Investors	Host Countries of Free Zones
Returns on investment	Providing employment opportunities
The least possible cost	Attracting permanent investments
The least possible threats	The state's decision
No political influence	Usage on part of politicians
The least administrative effort	Rules of control
Facility in acquiring foreign currency	Investors want everything without costs
Political stability	New leadership, new rules
Tax stability	The need to rely on taxes
Free Zones should be grateful and co-operative	Investors should be grateful

Source: (International Linear Algebra Society). A working paper An Introduction to the First International Convention on Free Zones held in Cairo from 26–27 March, 2004

Table 4: Ranking of Elements Influencing the Investment Climate in Host Countries – The Foreign Investor Perspective

No.	Elements associated with the investment climate	Very important		Important		Unimportant	
		No.	%	No.	%	No.	%
1	Political, economic and security stability	27	84,4	3	9.4	1	3.1
2	The infrastructure: ports, roads, railways, transportation with airplanes, water and electricity supplies, etc.	21	65.6	7	21.9	2	6.3
3	The policy of comprehensive economic planning	20	62.5	10	31.3	1	3.1
4	The stability of currency value in the host country	17	53.1	9	28.1	5	15.3
5	The attention given in the host country to foreign investors	16	50	15	46.9	0	0
6	Assistance and aid provided by the host country in establishing and continuing with investment projects	16	50	9	28.1	6	18.8
7	The availability of skilled, low-wage labour	15	46.9	13	40.6	3	9.4
8	The presence of facilities for supply and demand	10	31.3	18	56.3	2	6.8
9	The presence of training facilities for workers	7	21.9	6	18.8	17	53.1
10	Contributing in supplying local data and information	5	15.9	14	43.8	11	34.3
11	The country's encouragement of high technology industries	4	12.5	9	28.1	17	53.1
12	The presence of export markets in neighbouring countries	4	12.5	9	28.1	14	43.8
13	The contribution of the country in feasibility studies	3	9.4	7	21.9	21	65.6
14	The presence of an information bank in the country	2	6.3	9	28.1	19	59.4

PART TWO

2.5 Economic Overview of Libya

2.5.1 Historical Development and Imperatives for a New Economic Approach

In 1952, at the time of Libyan Independence, agriculture was the backbone of the Libyan economy, employing over 70% of the labour force. Libya ranked as one of the poorest countries worldwide. However, that situation changed with oil and gas discoveries and by 1961, much social and economic development had occurred in the country, as a result (Terterov & Wallace, 2002). Libya was gradually transformed from the poor nation it was at Independence, to a prosperous one, to rank 12th among the world's petroleum producers (Arab.net, 2002). Given these huge deposits of oil and gas, it can be well appreciated that oil became the mainstay of the Libyan economy, accounting for more than 50% of GDP, 95% of foreign exchange earnings, and 75% of all government income.

The 1969 Revolution led by Colonel Qadhafi, brought with it a constitutional declaration in which sovereignty was vested in the Libyan people, and certain state aims concerning the realisation of socialism and the removal of foreign influence, especially dependency on foreign powers, were pursued (Wanees & Karlberg, 2007). It was believed that the Libyan economy would profit from a socialist approach, although in truth the brand of socialism was extremely doctrinaire and nationalistic, not lending itself to internationalism (Russell & Mustafa, 1999).

Not surprisingly, Libya's public sector grew to dominate the economy. Private property rights were abolished in March 1978 (Anderson, 1999), and gradually so too was the bulk of all private trading, retail and wholesale activity. Small service enterprises were the only kind of private sector activity not eliminated, on the grounds that they provided self-employment opportunities in the main, and were not exploitative (Hochman, 2006). The Central Bank supported the government direction by restricting lending to the private sector and directing investment instead to the public sector. Only in the agricultural sector was there encouragement for private investment and ownership. Thereafter, in the final stage of the socialist period, the government placed much effort

into developing the country's industrial capacity in a bid to encourage diversification of the economy.

Diversification was seen as an essential development since as was all too apparent in the mid-1980s, world oil prices could not be assumed as stable. Indeed, the decline in the international oil price had a major impact on the Libyan economy, and economic liberalisation appeared on the agenda in 1988, when more opportunities were made available for the private sector, small scale industries and agricultural business. Shortly afterwards in September 1992, this agenda was furthered by a privatization law; however, this produced little influence on the structure of the economy's revenues, and was indeed responsible for a serious decrease in economic activity (The Economist, 2004). The imposition of sanctions upon Libya in the 1990s by the United Nations and the United States in response to Libyan foreign policy and the country's support for terrorism, caused yet more damage to the country's economy, as Libya was placed in an isolated position internationally. Eventually, with the removal of those sanctions in 2003 and 2004, and a change in Libyan foreign policy, comprehensive structural reforms were implemented with the intention of facilitating the country's transition to a market economy.

That said, Libya's many years of centralised economic management, its heavy dependence on public sector enterprises, and its similar reliance on oil revenues, combine to present a substantial challenge to the development of a successful market economy (Country Review, 2006), and it is the case that diversification has not taken off, nor has the state relaxed its control of the economy (The Economist, 2004), and that Libya's economy remains largely state-controlled and undiversified. Indeed 75% of all jobs are accounted for by the public sector, and only 2% of GDP is provided by the private sector. Movements in GDP have, nonetheless, been notable, with the 2003 figures showing an increase on the previous year (9.1% as opposed to 3.3%) due to increased oil production and associated export revenues (The Economist, 2004). The following year, real GDP recorded a 4.6% growth, the result of higher oil prices and an expansion in the non-oil sector. In this latter respect, the construction, utilities and mining industries all showed good performance in consequence of increased government spending (The Economist, 2004). Again, real GDP continued to rise in 2005, with a 3.5% increase being documented. Having said that however, it was

essentially growth in the non-oil sector that accounted for this, having risen from 4.1% in 2004 to 4.6% in 2005, again underwritten by increased government investment (Country Review- Libya, 2006).

Such economic developments were of obvious interest to the International Monetary Fund (IMF) which commented in 2005 that deregulation was the only means by which the Libyan economy could become truly diversified. Recommendations for a substantial paring down of the public sector, and the development of the private sector were made.

The response has been much effort to make Libya an attractive proposition for international investors and hence advance its non-oil businesses in a bid to achieve a sustainable economy, and much headway has been made in this respect. Economic and structural reforms, including trade liberalisation, have been implemented to permit FDI in some sectors, to make the public sector more competitive by removing the exemptions from customs duty which they previously enjoyed, and by reducing import tariff rates (Country Review-Libya, 2006).

The economic strategy for the next decade has been developed by the Monitor Group in conjunction with the Libyan government (Reed, 2007), the focus being on energy, tourism, trade, and construction (Reed, 2007b). As a result of the report produced by the Monitor Group, the Libyan Economic Development Board (LEDB) was created, with a brief to diversify the economy by promoting private business and entrepreneurship (Reed, 2007), through the removal of the remaining barriers to successful private businesses and thereby, lessening state control (libyaninvestmnet.com, 2007).

Undoubtedly, Libya has reported strong performance in recent years, showing a GDP per capita of about USD 11,000 (see Figure 2). Now, Libya features as one of the most prosperous countries in its peer group, having outperformed several comparable countries in the region, and continuing to report solid growth.

Figure 1: GDP (PPP Adjusted) Performance, 1999–2004, Libya Relative to Peers
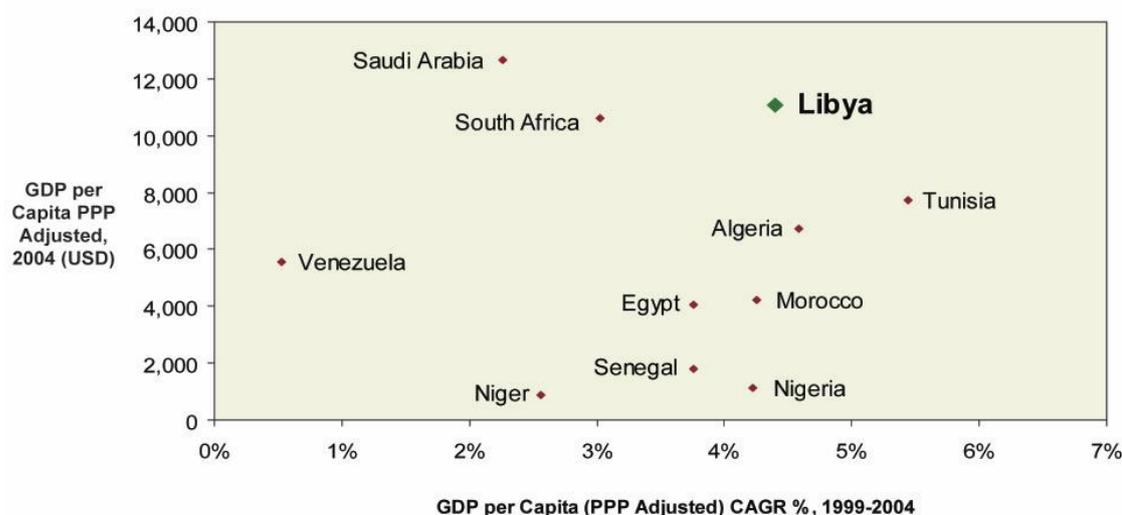
Note: [1] For computing Libya's non-Energy GDP, Energy GDP growth for 2000-03 is extrapolated for 2003-05 [2] Through Libya's nominal GDP has shrunk between 2000-05 due to a significant devaluation of Libyan Dinar, its PPP adjusted GDP has grown during this period [3] Constant prices GDP breakdown is assumed for PPP adjusted GDP breakdown between energy and non-energy sectors [4] CAGR = Compound Annual Growth Rate
Source: IMF; World Bank; Monitor analysis

Despite this apparent success, however, the levels of prosperity that might be anticipated within the country, are still not being achieved, and one burning issue is the level of employment which, whilst not being fully documented, is known to be low, with a very large portion of the Libyan labour force either unemployed or involved in activities which are below their capabilities.

One very interesting phenomenon can be observed in respect of employment, that being that in total, Libya's formal economy employs 1.6 million people, of whom only 43,000 (approximately 3%) work in the oil sector which in fact produces more than 60% of Libya's GDP. On the other hand, the public sector, which contributes only 9% to the GDP, employs over half the formal workforce (840,000 – 51%), predominantly in education and healthcare. It is considered that the revenues from the oil sector are used partly to finance employment opportunities within the public sector, making it much less productive. Additionally, it is believed that a further 1.2 to 1.6 million people are believed by senior government officials to be working informally in agriculture, construction and the retail trade.

Figure2: GDP and Employment 2003

GDP by Sector, Current LYD MM, 2003 / Employees by Sector ('000), 2003

Sector	LYD MM	'000 Employees
Energy	18,776	43
Trade, Hotels & Restaurants	2,205	171
Transportation and Communication	1,530	59
Agriculture	1,376	110
Construction	1,327	48
General / Public Services	1,305	233
Education Services	1,038	389
Financial Services & Real Estate	974	41
Manufacturing	765	183
Health Services	568	168
Other Services	451	21
Mining & Quarrying	383	31
Electricity, Gas & Water	303	54

Legend: Productive Sector, Public Services, Natural Resources

Note: [1] 2003 employment data are interpolations   [2] Energy GDP change is computed net of exchange rate fluctuations and of the 2002 devaluation of the Libyan Dinar
Source: IMF; Central Bank of Libya; Monitor analysis

There is no doubt that oil and gas do remain as the backbone of the economy, providing Libya with one of the highest per capita GDPs (US$6,800 in 2005) in Africa (Country Review, 2006). This is a situation which is not likely to change in the near future as the country has 100 billion barrels of proven oil reserves and approximately 40 trillion cubic feet of gas reserves. The oil is not expensive to recover, and Libya's geographic location places it advantageously in terms of exporting to Europe (National Oil Corporation, 2005).

Given the above discussion on the historical development of Libya's economy, it can now be understood that despite its very fortunate position as a producer of oil and gas, Libya nonetheless has seen the benefit of economic diversification and realised the value of foreign investment, as indicated in Part One of this chapter. It has accepted that to develop its economy to a competitive level internationally, both foreign and local capital, are required, and consequently, the government has realised the need for a favourable investment climate. Given this understanding, the concept of FEZs with their government incentives, exemptions and state-of-the-art facilities, has naturally been

grasped as one that has value in the attempt to entice investors to establish companies and export industries. Now, the situation prevails where Libya's economic environment is a blend of government directives and market forces.

2.5.2 FDI and Free Trade Zones in Libya

As already discussed in Part One of this chapter, FEZs have become increasingly popular in developing countries for the reasons outlined, and Libya has not failed to appreciate the benefits to be derived from this strategy, the General People's Committee Resolution No. 20 of 1999 establishing the Free Zones Authority. According to Libyan law, Free Zones function "for the exchange of commercial and industrial goods and service rendering free of any customs, taxes and monetary restrictions". The General Authority for Free Zones is the regulatory authority in this respect, being empowered to monitor the FEZs and assist in their overall development. Essentially, this body takes responsibility for all management and development of the FEZs, including the development of international commercial exchange, transit trade, and export industries. It has a wide brief that stretches to embrace legal aspects, the development of appropriate infrastructure to support the FEZs, the allocation of all land and real estate necessary, and stipulation of entry and exit procedures in respect of the FEZs.

The activities that may be conducted within Libyan FEZs are clearly indicated by the General Authority for Free Zones as being: the storage of all goods for transit, whether as imports or exports, and of goods actually produced within the FEZ. Additionally, all operations that change the value of goods (cleaning, mixing, unpacking, re-packing, etc) in preparation for sale to the market, are permitted. Any industrial processes, for instance the entire production of a commodity, or its assembly or disassembly, are also the business of the FEZs, and finally, all services required to support these activities such as financial, banking and insurance services, are permitted.

In return for their investment, businesses secure certain privileges and tax exemptions. Essentially, investors are able to repatriate their invested capital and profits without paying taxes for a period of at least five years, up to a maximum of eight years, and all machinery and equipment required for the projects receive exemption from customs duties or other taxes. They are also guaranteed against the nationalization or similar acquisition of projects within the FEZ, and are hence secure in the knowledge that their

profits will continue to be theirs. Another important aspect is that investors may use foreign labour provided those hired have specialized qualifications that are not available within Libya.

The Misurata Free Zone is the first such initiative in Libya, being next to Misurata port, and covering 430 hectares. This FEZ is 207 km east of the capital, Tripoli. Currently, consideration is being given to the establishment of other FEZs, one example which has received approval from the General People's Committee (Decision No. 215 of 6 September 2006) being a FEZ concentrating on tourism, hi-tech industry, and medical and educational projects, near to the Libyan/Tunisian border between Zuwarah and Abu Kammash.

The effort put into establishing the machinery by which FEZs can be developed and maintained in Libya is a clear indication of the government's wish to participate in a much greater way in global trade. However, as can be seen from the scale of FEZ development within Libya, there is still much to be learned about this whole issue, and consequently, it is pertinent to consider the case of a near neighbour, Egypt, which shares many of the cultural characteristics in evidence in Libya, and where FEZs have been successful for many years. Such consideration will highlight those practices which contribute to success and provide valuable intelligence for the Libyan initiatives.

2.6 Economic Overview of Egypt

2.6.1 Historical Development of the Economy

Situated next to Libya, in the north eastern corner of Africa, Egypt has a long history of centralized economic planning, spanning the rule of the two former Presidents, Gamal Abdel Nasser, and Mohamed Hosni Mubarak. However, attempts to address the resulting economic stagnation have been vigorous in the last decade, and a concerted effort to introduce liberalisation policies has been made since 2004. The aim of such economic reform was exactly as with other developing countries – to attract foreign investment and foster growth in GDP. And the attempts have seen some measure of success although the international monetary crisis has taken its toll on progress and the pace of development has slowed down, GDP growth being reported as 4.5% in 2009. In the main, the global financial downturn had its greatest effect in the export-oriented

sectors of the economy, depressing revenues from manufacturing, tourism, and the Suez Canal. It was development within Egypt's domestic economy (including energy, transportation, telecommunications, retail trade, and construction) that served to prevent a further decline in growth in 2009. In tandem, statistics reveal an increase in unemployment, and despite three initiatives amounting to US$6.3 billion in 2009 to improve this situation, there is no accurate record of how much of this has actually been spent, and irrespective of the previous high levels of economic growth, the standard of living for most Egyptians is very low, such that in February 2011, a popular revolution occurred resulting in the overthrow of President Mubarak.

2.6.2 The Egyptian Experience of FEZs

The Egyptian free zones programme began in the mid-1970s with the establishment of zones in Port Said, Suez, Alexandria, and El Nasr City. The Ismalia zone was established in 1979 and Damietta in 1992. Media City was established in February 2000.

The objectives of Egypt's free zone programme as set out in "Development of Free Zones in the ESCWA Region," published in 1995 in New York by the United Nations on behalf of the Economic and Social Commission for Western Asia, are to :

1. Attract local and foreign investment.

2. Create economic development in different parts of the country.

3. Improve the balance of payments by adding hard currency to the government treasury.

4. Create employment opportunities and improve labour skills.

5. Attract population to remote provinces.

6. Establish new industries that would benefit from local resources in each province.

7. Boost port traffic.

8. Provide essential primary goods and material for local consumption.

Building population in remote provinces is not a realistic objective for a free zone programme. A successful zone needs a good urban environment and easy access to good low-cost international transportation. Many free zones have failed when established in remote areas far from modern transport and business support services (USAID, 2005).

Alexandria (Al-Ameria Zone): Situated 20 km from Nozha International Airport As already mentioned, the liberalisation policies introduced in 2004 were aimed at improving Egypt's investment climate, and the concept of FEZs was a firm determinant in this respect. The OECD (2006) notes that under this comprehensive package of liberalisation measures reforms took place in legislative, monetary and banking, tax, trade policy, and investment policy. Additionally, the role of the private sector was expanded (OECD, 2006). A reduction of 80% in the cost of the capital required to establish a new business (from EGP 50,000 to 1,000m representing 28% of per capita income) was one measure intended to help in expanding private enterprise (World Bank, 2009), and the development of FEZs was another such that entrepreneurs were supported in their efforts to create business. Another initiative was the establishment of the Social Fund for Development (SFD) with 28 branches throughout the country, designed to provide credit on a small scale to new investors. Simultaneously, new businesses were facilitated by the establishment of the General Authority for Free Zones and Investment (GAFI) with a brief to accelerate the setting-up of new businesses, such that most new ventures (exception of health-related enterprises) could be up and running within 72 hours.

In fact, however, the idea of free trade zones is not new to Egypt because since the second part of the twelfth century, Alexandria has functioned as a busy trading post at the juncture of Europe and Asia. But it was not until 1902 that the first free zone as described by modern terminology, was established, and this resulted from an initiative involving the Egyptian government and the Suez Canal Company. Essentially, the agreement reached was to extend the Port Said zone to create a marine zone inland which would be exempt from customs duty, and thereby facilitate the Company's business and profitability. Later in 1920, it was decided that all free zones should be developed as walled enclaves in which all unloading activities should occur.

As the concept of free zones has evolved in Egypt, it has become clear that zones might be involved in very different activities. Essentially, in Egypt, such zones are known as public free zones, although within this overall category, some zones are distinguished from others because of their specializations. In strict terms, the public free zone is to be found on a sovereign border (sea, land or air) and operates as an enclave within walls. It contains investment projects that benefit from the range of incentives associated with

FEZs, and is fully supported by a comprehensive infrastructure (all utilities and communications) such that all activities can be undertaken within the zone. Currently, ten such zones exist, as follows:

Alexandria Marine Port, and Borg El-Arab International Airport, and 7 km from Al-Dekheila Marine Port, this FEZ is ideally located at the centre of several transport networks. It occupies 5.7 million square metres, and has been developed in two stages, the first concerned with creating the essential infrastructure, and the second involving the preparation of the land within the zone by the establishment of an industrial and sanitation station and the connection of natural gas. Investment projects within the zone include: gas industries, textiles, ready-made clothes, linens, food industries and food products, chemicals and petrochemical industries, fertilizers, petroleum services, natural gas processing and liquidation, engineering and electronic industries, medical industries, navigation services, marine loading and unloading goods.

Nasr City: This zone is within Cairo city, occupying an area of 168 feddans. Given its location it is close to many services and possesses all the essential utilities. Situated 15 km from Cairo International Airport, the zone is mainly industrial in its activities (90%), and similar to the Al-America zone, its important projects are: food industries, medical industries, medical and pharmaceutical requirements, textiles, ready-made clothes, engineering, electrical and electronic industries, storage and service activities in the field of marine transport and petroleum services.

Port Said: Located at the northern entrance of the Suez Canal, which as previously mentioned has been a natural trading place for over a century, this zone occupies 729,000 square metres near the marine Port of Said. Like other FEZs, its infrastructure includes all basic utilities including the provision of natural gas. Investment in this zone is high, with the result that two new sites (Al-Dresa and Al-Reswah) occupying 260,000 square metres have been incorporated. Investment projects consists of: spinning and weaving industries and ready-made textiles, the chemicals industry, the manufacture leathers and leather products, the food industry, food products, industrial detergents, storing and packing foods, sifting and gradation of agricultural crops, manufacturing electrical devices and home tools, service activities (petroleum and marine services, ships and marine equipment maintenance) and the storage and re-exportation of goods.

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Suez: The zone in Suez was established on two separate sites, in 1975. The first, Port Tawfeek, occupies 75,660 square metres and is located next to the Suez Harbour wall. The site of the second, Al-Adabia, is on the Suez Gulf coast, 5 km from Al-Adabia harbour, and it covers 24,728 square metres. Like the other public free zones, Suez FEZ has an infrastructure that includes all necessary utilities. However, its special feature is its proximity to the five important harbours of Al-Sokhna, Port Tawfeek, Al-Adabia, harbour, the petroleum basin harbour, and Al-Atka fishing harbour. Additionally, the area has the benefit of a wealth of natural resources, such as limestone, shale, coal, petroleum, marble and stone quarries, and these bring advantages to the businesses within the FEZ. Investments in the zone concentrate on: petrochemicals, dyes, detergents, fertilizers, petroleum services, hiring equipment, oil refinement and liquidation of natural gas, glass and iron manufacturing of all kinds, mineral manufacturing and mineral products, the building of ships, yachts, and fishing boats and the provision of marine services and catering for the vessels trading there, the breaking of coal and the manufacture of carbon, and administration services for the harbour.

Ismailia: This zone is positioned between the harbours of Suez and Port Said on the Suez Canal and occupies 775 feddans (325,000 square metres). It began by the construction of about 100 feddans (420,000 square metres) fully equipped with the necessary infrastructure. Being 30 km from the Mubarak Peace Bridge that provides a link over Suez to Asia, the zone is well positioned for trade. Additionally, it is within easy reach of Port Said harbour which is 85 km away, Suez which is also 85 km away, Cairo Airport, which is 120 km away, and Damietta harbour which is 125 km away. Moreover, the zone is placed close to the first and the second industrial zones and the technology valley. Investment projects within the Ismailia FEZ include: the manufacture of ready-made clothes, leathers and leather products, the manufacture of computers, electronic devices, software programs, information systems, chemicals and fertilizers, the provision of petroleum services and the hire of petroleum equipment, the storage and re-exporting of goods.

Damietta: This zone has the benefit of being located next to Damietta harbour wall on the Mediterranean Sea. This brings a number of advantages, namely that there are no transportation expenses, there is no need for insurance for goods being moved between the zone and the harbour, and there are no fees for completion. The zone is positioned

approximately 55 km from west Port Said harbour, and enjoys sound railway links with Cairo and Alexandria, close proximity to the international coast road and the marine road to the Mediterranean, good roads which allow for transportation elsewhere in the country, and the river canal linking it with other Egyptian cities. The zone spans 190 feddans and is provided with all the necessary facilities. Commonly, projects within this FEZ include: petrochemicals, petroleum services, gas liquidation, the manufacture of medical requisites, computers and electronic devices, yarn and textiles, ready-made clothes, the nutrition industries, marine transport activity, and the provision of marine services.

Mass-Media: This FEZ was established in 2000 as one that specialised in the production of goods and services for the media. Situated in the Giza governorate, it covers an area of 3,000,000 square metres. Essentially, the activities within this zone include: radio, television, and space broadcasting, the production of radio, television, and cinema advertising production programmes, the provision, manufacture and collection of all materials and equipment for media activities, presenting advertising and media services, public relations activities, organizing exhibitions and fairs for the local and international companies that specialize in media products and communication equipment, hotels, tourist facilities, and marketing centres for the services offered by the FEZ.

Shebeen El-Koum: This FEZ is located in Menoufya Governorate, and is dedicated to the activities conducted by the Misr Shebeen El-Koum Spinning and Weaving Company in respect of their Yarn and Tricot factories. The site is 12 km from the Cairo-Alexandria Agricultural Road and 70 km away from Cairo. It is relatively small in its first phase, occupying 20 feddans (84,000 square metres) but is expected to reach 48 feddans in its second phase. The site is densely populated using low-cost labour. Projects include: yarning and the manufacture of textiles, and secondary activities (conducted over an area of 21 feddans) that involve complimentary industries, ready-made clothes, the dye industry, and the tobacco, and nutrition industries.

Kafta: This FEZ is located in Quena Governorate, in Upper Egypt and covers an area of 216 feddans. It lies 7 km from the Cairo-Aswan Road, 30 km from Quena city, 45 km from Luxor city, and 180 km and 250 km respectively from Al-Kousair, and Safaga

harbours. The FEZ enjoys all the necessary infrastructure, and is fortunate in having a ready supply of cheap labour from the surrounding cities. Investments in the FEZ include: the establishment of an integrated industrial complex for the medical and related industries, and the nutrition and engineering industries.

East Port Said Harbour: Having been established in 1995, this FEZ has undergone changes to its borders such that they are now parallel to those pertaining to East Port Said harbour. The business of this FEZ, which covers 354,000,000 square metres, is container activity and transit, which is to be expected since its location places it at the centre of the international trade route. Hence, the FEZ operates as a logistics centre serving the Mediterranean Sea and its surrounding areas. It is possible that the FEZ might become integrated with the neighbouring industrial zone. The Port Said Harbour authority is responsible for ensuring all infrastructural requirements are met. Developments within the FEZ include the construction of a direct canal from the Red Sea and a container platform. Additionally, a container station has been established under the authority of the Suez Canal Company with a current capacity of 600,000 containers annually, and a predicted capacity of 2.1 million containers in the future. The existing five giant 12,000 ton containers are to be supplemented with a further seven such containers, in order to bring the total number to 12.

Up-to-date statistics regarding employment creation in the Egyptian FEZs are not available, but up to the middle of 2004, over 272,000 job opportunities had been provided in over 718 investment projects (Nabil, 2005).

2.7 Summary

This chapter explained the concept of FEZs, as well as their characteristics and aims, in both developed and developing countries. This study considers that it is difficult to establish a clear and specific concept for FEZs. In addition, the aims behind establishing FEZs vary according to differences between host countries, in economic, geographical, population, and cultural terms, as well as by type of investor within these FEZs. However, in the majority, the general aims are similar, including the economic development of host countries as the main motivator in this regard. Improving the investment environment leads to greater development in commercial and industrial

activities, which in turn helps create job opportunities, and assists in the transfer of knowledge and technology.

Hamada's (1973) definition provides the starting place to define the goals of FEZ's and illustrate these. In summary the goals identified to be utilised in this research are as follows: Inward investment, employment, exports, local added value, technology transfer and backward linkages.

The aims of host countries in establishing FEZs differ from those of investors, whether local or foreign. From this perspective, this research seeks to harmonise these aims for the benefit of both parties, as indicated in the objectives of this study. On the other hand, this study uses the term, FEZs, due to its comprehensiveness, and its inclusiveness of all kinds of FEZs.

After explaining the concept of FEZs and its aims, the economic status of both Libya and Egypt was dealt with, through following the historical development of the economies of both countries, as well as the role of FEZs in the Egyptian economy. In addition, Alexandria (Al-Ameria Zone) was indicated as being of interest, and was focused on in the study, in order to derive lessons and benefits for establishing a FEZ in Misurata. The comparison with Alexandria and Misurata will be further explored in Chapter Four (the research methodology).

The issue of supporting economic growth and understanding barriers to growth are key issues. The development of Free Economic Zones can be seen to provide a critical catalyst to enable this to happen in developing countries.

Having established the importance of the FEZ the next chapter discusses the theoretical and experimental techniques used to evaluate FEZs and their effects on both host countries and investors.

CHAPTER THREE

PREVIOUS STUDIES ON FEZs

3.1 Introduction

The purpose of this chapter is to provide a comprehensive review of the literature relating to FEZs, and from the outset it can be seen that three main types of study can be observed, these being: theoretical, empirical and descriptive. The theoretical approaches are founded on the Heckscher-Ohlin model, as explained further, and these offer insights concerning the influence of FTZs on the host country, but they work on assumptions made by the researcher, and the conclusions are dependent on these, either supporting the creation of FTZs or not. The empirical approaches employ several different methods to assess FTZ performance, and like the theoretical frameworks, they too provide mixed results, showing that in some cases more benefits than costs are forthcoming, whereas in others the reverse is reported. Clearly, the results obtained from empirical studies complement those conclusions reached by the theoretical approaches, since they highlight the impact of different FTZ characteristics on the eventual performance outcome. Descriptive approaches concentrate on the provision of general information on various aspects of FTZs internationally, and are valuable in terms of gathering intelligence and constructing the wider picture. These approaches are visited at intervals throughout the thesis, but are not reviewed in themselves. However, the salient aspects of the theoretical and empirical offerings are now discussed.

3.2 Theoretical Approaches

The Heckscher–Ohlin model (H–O model) is a general equilibrium mathematical model of international trade, developed by Eli Heckscher and Bertil Ohlin at the Stockholm School of Economics. It builds on David Ricardo's theory of comparative advantage by predicting patterns of commerce and production based on the factor endowments of a trading region. The model essentially says that countries will export products that use their abundant and cheap factor(s) of production and import products that use the countries' scarce factor(s) (Blaug, 1992). The Ricardian model of comparative advantage has trade ultimately motivated by differences in labour productivity using different technologies. Heckscher and Ohlin did not require production technology to vary between countries, so (in the interests of simplicity) the H-O model has identical production technology everywhere. Ricardo considered a single factor of production (labour) and would not have been able to produce comparative advantage without

technological differences between countries (all nations would become autarkic at various stages of development, with no reason to trade with each other). The H-O model removed technology variations but introduced variable capital endowments, recreating endogenously the inter-country variation of labour productivity that Ricardo had imposed exogenously. With international variations in the capital endowment (i.e. infrastructure) and goods requiring different factor proportions, Ricardo's comparative advantage emerges as a profit-maximizing solution of capitalist's choices from within the model's equations. The decision capital owners are faced with is between investments in differing production technologies: The H-O model assumes capital is privately held (The Heckscher–Ohlin model in theory and practice, Edward Leamer, 1995)

Hamada (1974) and Hamilton and Svensson (1982) provide two of the leading theoretical approaches. Hamada employs a standard two-commodity and two-factor model as a conceptual framework for the analysis of FEZs in developing countries. In this model, Hamada (1974) presumes that: i) the production of good 2 uses a more capital-intensive technique than good 1; ii) the country is relatively scarce in capital, so good 1 is exported and good 2 imported; iii) international prices are constant and given to the country; and iv) good 2 is protected. As a means of assessing the welfare implications of introducing the FEZ, the criterion for measurement is national income as shown in international prices. Any improvement of this measure is considered as an improvement of potential consumption possibilities. The area outside the FEZ is referred to as the Domestic Zone (DZ) and all consumption by workers takes place within that.

Initially, Hamada (1974) analyses the impact of an FEZ when there is no foreign investment and an import tariff is used to protect good 2. In this scenario, the production of good 2 occurs entirely within the DZ, where the relative price is greater. There is no taxation on good 1 in either zone, so the issue of where its production occurs is not important.

If protection occurs via an export tax on good 1, good 1 would only be produced inside the FEZ (due to the higher international price ratio), in which case the international price level prevails, and again it would not matter where good 2 was produced.

Hamada (1974) then assumes the approval of foreign investment in the presence of an import tariff on good 2. In the absence of an FEZ, such an influx of capital into industry 2 (without technology transfer) is attractive to labour, and the result is a shortage in this respect. In agreement with the Rybczynski Theorem, the output of industry 2 increases while industry 1 output drops, in what is referred to as 'the factor proportions effect', so-called because it results from the different factor proportions in each industry. Additionally, because foreigners can sell good 2 within the tariff wall and obtain the higher domestic price, national income at international prices declines, producing what is known as the 'subsidization effect'. Moreover, the country also forfeits revenue from tariff revenue to foreigners.

On the assumption that all new foreign capital is committed to producing good 2 within the FEZ, the introduction of such a zone eradicates the subsidization effect since the output of the zone must be exported or be subject to the same tariff as imported goods, if it enters the DZ. Whilst both goods are produced in the DZ, the factor proportions effect and the Rybczynski Theorem hold because industry 2 still attracts labour. As a result, national income at international prices falls by the product of the difference between the domestic price and the international price and the increase in the production of good 2 in the DZ. This equals the loss in tariff revenue because of the import substitution.

The scenario where foreign investment in the FEZ is seen in new technology, and where there is incomplete specialization in the DZ is also examined by Hamada (1974), showing inconclusive results. What emerges is that national income at internal prices is seen to rise if the FEZ's new technology is more capital-intensive than either one of the two DZ industries, but a decline is observed if the new technology is less capital-intensive than both. Hamada (1974) highlights the point that if one considers: a) the goal of industrialization; and b) externalities, or learning effects for DZ firms, his conclusions regarding the impact of FDI lose strength.

Certain aspects of Hamada's (1974) findings in respect of the economic effects of FEZs are extended by Rodriguez (1976), who demonstrates that in the case of perfect factor mobility between the FEZ and the rest of the country, the final equilibrium will produce the same trade pattern as would have existed under free trade, and that, furthermore, all of the trade will be undertaken by the FEZ.

Further extension of Hamada's (1974) results is effected by the work of Hamilton and Svensson (1982), who use Hamada's analytical framework, to explore how the location of production is influenced by opening a FEZ. These researchers, however, consider a wider variety of trade barriers than Hamada, and in the absence of capital inflows, they analyse the implications for production, consumption and welfare in several different cases. In their paper, they have also discussed the case examined by Hamada. Whilst confirming the negative welfare effects of FDI inflows into both the FEZ and the rest of the economy, Hamilton and Svensson (1982) do, however, also reveal that welfare declines relatively more with the entry of foreign capital into the FEZ. Repatriated income and its composition are quite explicitly incorporated within their paper.

That said, it is acknowledged by Hamilton and Svensson (1982) that limitations arise in their study by virtue of their lack of attention to the opportunity cost of foreign investment, the implication being that foreign investment is not endogenous. Given the establishment of numerous FEZs and the numbers of those being planned, it is strange that both theoretical studies consider the introduction of foreign capital into a FEZ to diminish welfare. This unexpected outcome is identified by Sweder Van Wijnbergen (1983), who offers a theoretical explanation of why a country may still obtain positive welfare effects by establishing a FEZ and allowing the entry of foreign capital.

By introducing a tax on profits and making the supply of foreign capital endogenous, Van Wijnbergen (1983) further extends the analysis of the other studies. He considers the supply of foreign capital as an increasing function of the positive difference between the after-tax rate of return and the world rate of return on capital. As with the other studies, Van Wijnbergen's (1983) research demonstrates a fall in welfare with the inflow of foreign capital in what is described as the Rybzcynski effect. This occurs where the labour-intensive sector declines at the expense of the capital-intensive sector, and the loss is in terms of tariff revenue. However, Van Wijnbergen's (1983)

interpretation shows the possibility of placing an optimal tax on capital so that the tax revenue outweighs the loss of tariff revenue. Such potential implies that a FEZ is not necessarily welfare-reducing. Hamada (1974) and Hamilton and Svensson (1982) omit to note this result in their assumption that all profits are repatriated and spent abroad. Hence, the contribution of Van Wijnbergen (1983) is helpful because it may explain, in part, the continued popularity of FEZs.

However, all three studies considered share the same problem in that they are bound by the limiting Heckscher-Ohlin (H-0) framework of analysis, which allows for neat results in consequence of its various assumptions, such as the full employment of all factors of production, whereas many developing countries struggle with unemployment rates higher than 25%. One of the main reasons why developing countries establish FEZs is to provide employment for some of those without jobs, and for the H-O model to assume that full employment exists is unrealistic in the developing country context. Indeed, a mass unemployment scenario stands as an obstacle to the pattern of labour movement predicted by the H-0 model. In this scenario, it is unlikely that the Rybzcynski effect will be observed because the unemployed will be amongst those working with the foreign capital in the FEZ. It does not necessarily follow, therefore, that the factor proportions effect will apply, and that the labour-intensive sector will decline when there is already an excess supply of labour. Hamada (1974) alludes to this criticism in his conclusion.

Other relevant theoretical studies on FEZs include those undertaken by Grubel (1982a; 1983) in Canada, and Donaldson (1985) in British Columbia. Grubel (1983) concentrated on the deregulation of Canadian enterprise. He considered the rationale for the emergence of regulations and the costs and benefits incurred, questioning the validity of some arguments made in favour of regulation. He argues, for example, that private speculators act in order to reduce fluctuations and maintain stability. Additionally, he addresses some of the non-market failures resulting from regulation, i.e. moral hazard and unemployment insurance, subsequently proposing that FEZs represent a useful way to achieve partial deregulation, and offering a theoretical analysis of the likely effects of such zones. Benefits relating to welfare improvement are cited as opportunities for employment, technology transfer, entrepreneurship and lower costs of protection and transacting.

The disadvantages, on the other hand, can be seen as the diversion of trade and investment from other deserving locations, and a range of negative externalities. Grubel's conclusion is that it is not possible to accurately theorize about the net benefits and that empirical work is the only way to learn how to make sensible estimates in this respect. This approach (see also Grubel, 1982a) has been criticized on the grounds that the assumptions of the Heckscher-Ohlin model are too restrictive.

Focusing on the question of whether there is a need for Special Enterprise Zones in British Columbia, Donaldson (1985) asserted that these are actually inappropriate for the province, since the potential for employment creation would be minimal, despite this being suggested as a benefit. He argued that the overall costs associated with the implementation of such zones would be too high, since subsidies and tax relief are expensive in the wider sense, and the economy would be directed away from its production of natural resources which present a competitive advantage. Donaldson (1985) concluded that foreign-owned business has disadvantages for British Columbia, that technology transfer can be achieved without the introduction of such zones, and that the zones themselves experience serious problems concerning the relocation of other firms. Issues such as direct competition with existing firms and the wasteful duplication of plant, are raised. Nonetheless, Donaldson's argument was not entirely negative since he believed that such zones may be beneficial in other contexts.

Together with the research discussed earlier, the ideas of Grubel (1982a; 1983) and Donaldson (1985) identify the pros and cons in respect of FEZs, producing the basis of, and highlighting the need for, empirical investigation. Moreover, empirical examinations are the most useful in the evaluation of FEZs' effectiveness as they do not depend on the more restrictive theoretical assumptions. Empirical studies on FEZs have been undertaken by many researchers in many different countries, and a brief review of these follows:

3.3 Empirical Approaches

There are many empirical approaches developed by a number of authors that can be classified into various themes as follows:

1. Cost-Benefit Analysis

2. FEZ and relationship with host country

3. Inward investor approaches pertaining to support for training, systems, quality and business methods

Firstly cost-benefit analysis is considered. It should be remembered that each of the following reports had a purpose at the time of writing. The reports are primarily influenced by the body that financed the research, sometimes government or industry or world trade organisation. Hence in the analysis of these reports, these limitations on outcome should be considered.

Choe (1975)

Choe's (1975) study of the Masan Export Processing Zone (EPZ) in Korea described the construction and operation of the zone, the incentives offered to investors in it and the zone's economic costs and benefits. The costs examined are: a) zone construction and development; b) management and maintenance; c) private sector capital investment; d) subsidies through loans to exporters; and e) the cost of environmental pollution. The benefits include: a) labour employment; b) foreign exchange; c) rental revenue; and d) tax revenue and returns to domestic capital invested. In this case study, the benefit-cost ratios were found to be greater than unity (i.e. positive net benefits) for alternative estimates of the discount rate, the shadow wage rate and the shadow price of foreign exchange. Choe (1975) also estimated the cost-benefit ratio, assuming that there was no subsidy from the public sector through export loans to companies within the Masan EPZ. Substantial increases in the ratio indicated that the subsidy cost could be sufficiently significant to seriously limit the attractiveness of the zone.

Andic and Cao (1980)

These researchers undertook a cost-benefit analysis of Colombia's Cartagena Free Zone (CFZ), which was established to encourage private investment, in itself believed to generate employment, encourage export growth, and implement other important economic goals required for the region's social development. Andic and Cao (1980) concurred with Choe (1975) regarding costs and benefits, with the difference that they included a multiplier effect for domestic investment spending. They calculated the present value of net benefits under four different probabilities that investment in the region would actually have occurred in the absence of the CFZ. When the probability is

highest, the most pessimistic case, the NPV was still found to be positive. Based on the procedure used by Andic and Cao (1980), the CFZ generated positive net benefits for Colombia.

Warr (1985)

In his examination of the Jakarta (Indonesia) and Bataan (Philippines) Export Processing Zones (EPZs), Warr (1985) proposed a theoretical model and then conducted a cost-benefit analysis, which revealed that in respect of the Jakarta zone, the benefits exceeded the costs, but that in the Bataan case, the opposite result emerged. This negative outcome was attributed to the location of the EPZ in a remote, mountainous coastal area resulting in high expenditure on infrastructure, and because of that foreign firms received excessive subsidies through loans below the prevailing market rate. In estimating benefits, Warr (1985) cited: a) gains from employment creation; b) foreign exchange earnings; c) technological transfer; d) property tax and other taxes; and e) unofficial levies.

Costs were identified as: a) schemes to encourage investment in the EPZ or the use of domestic raw materials; b) losses in terms of rental; c) administration costs; and d) infrastructure costs. Warr (1985) did not use technical formulae for estimating shadow prices as did Choe, but similarities were demonstrated in the overall approach of both researchers. Hence, their studies share the weakness of failing to acknowledge that some proportion of the investment in the EPZs may have entered the countries, even had the EPZs not been created, and in such a situation, the net benefits would be over-estimated.

Escapajnctc (1988)

The ESCAPAJNCTC study examined EPZs in China, Malaysia, Korea, India, the Philippines, Sri Lanka and Indonesia, highlighting their relative success across these countries, and reporting the results of cost-benefit analyses of several such zones. Additionally, the preconditions for successful EPZs were identified as: a) opportune timing; b) location; c) local infrastructure; d) incentives; e) administration (the amount of red tape); and f) the general investment climate of the host country. This piece of research is valuable in illuminating the actual experience of countries with EPZs and providing directions for other countries that are planning their creation.

Wei Ge (1999)

Exploring The Dynamics of Export Processing Zones, Wei Ge (1999) adopted a monopolistic pricing model and formulated a dynamic framework to measure the effect of such zones on the host country. He argued that whilst EPZs might represent a useful policy tool in achieving greater economic openness and growth, this can only result with proper implementation by the host country.

Knoth (2000)

In his study entitled Special Economic Zones and Economic Transformation: The Case of the People's Republic of China, Knoth (2000) reviewed the experience of China in creating SEZs during the transformation process, with the intention of measuring their impact on the host country. A theoretical model and empirical analysis were used to explore the effects of SEZs on the economy, although it is recognized that the use of mathematical and theoretical models is of little value in achieving a comprehensive analysis in this respect. Recommendations are offered to policy-makers in connection with the decision to create a SEZ, these being that: a) the country should determine the aims of an intended SEZ, and decide whether these are short or long-term; b) the location should be carefully considered, e.g. whether the best option is to establish such zones in backward or advanced areas; c) the availability of highly skilled labour in the country should be properly considered; and d) there should be careful planning in respect of tax incentives offered to investors.

The second theme of literature looks into FEZ and its relationship with the host country. From the articles below, it can be seen that there is no consensus among authors on the positive and negative effects of the establishment of FEZ. However, it would be worthwhile to see what each of these authors has to say.

Osborne (1986)

Researching China's Special Economic Zones (SEZs), Osborne aimed to evaluate the effects of their establishment on China's national economy. The study produced a review of the policy context and reforms, reported the development of foreign trade and foreign direct investment (FDI) performances, and then assessed the existing SEZs in the Republic. Additionally, it investigated the future role of China's SEZs in light of the experience to date. It was shown that SEZs emerged as part of the new 'open door

policies' introduced in the 1970s, since when there have been both an increase in FDI in SEZs, and in infrastructure costs.

Miyagiwa (1986)

In his study entitled *A Reconsideration of the Welfare Economics of a Free Trade Zone,* Miyagiwa (1986) examined several FTZs worldwide, showing that their establishment is an integrated part of the development strategy of many developing countries. This work confirmed the increasing importance of such zones from the 1970s onwards, and the fact that they had come to occupy a prominent role in developing international trade. Miyagiwa (1986) criticized the models proposed by both Hamada (1974) and Krueger (1977), finding in the main that national welfare is increased through the implementation of FTZs in economies that are restricted by tariffs.

Warr (1989)

Warr explored the effects of EPZs on the host country, in his study entitled *Export Processing Zones: The Economics of Enclave Manufacturing,* finding that the creation of these zones attracts foreign investment but does not bring value for the domestic economy. Warr's findings were that the anticipated gains from technology transfer had not occurred owing to the relative isolation of EPZs from the domestic economy, and it was also concluded that the EPZ companies had contributed little to the tax revenues. Finally, the study observed that the establishment of EPZs was a very costly undertaking for the host country.

Shamlola (1992)

In a study of the role of FEZs in the development of industrial investments in developing countries, Shamlola placed a special focus on Egypt, using multiple regression analysis of factors affecting the growth of industrial investment within these zones. The findings revealed success through the availability of abundant labour, low relative cost, political and social stability and the cordiality of Egypt's foreign relations, in addition to factors related to location, organizational structures, and the incentive system.

McKenney (1993)

In his evaluation of China's experience of the effectiveness of SEZs, McKenney demonstrated that these have had more success in attracting FDI and developing the Chinese economy, than companies outside the zones. It was indicated in the study that costs associated with encouraging FDI were extremely high, especially in respect of capital investment and infrastructure, which outweighed the gains from foreign investments in SEZs. Additionally, McKenney found that in the early stages of Chinese reform, the SEZs played only a small role in enhancing the economy.

Ahrens and Meyer–Baudeck (1995)

In their research, entitled *Special Economic Zones in Central and Eastern Europe: Shortcut or Round About Way towards Capitalism,* Ahrens and Meyer-Baudeck (1995) evaluated the developing country experience of SEZs in order to benefit from it in their establishment within Central and Eastern Europe (CEE), in efforts to quicken the pace of economic restructuring and reform in these countries. From their review of the experience in developing countries, it was evident that without strong commitment from the relevant authorities to implement market economy policies, SEZs do not benefit economies. The study revealed that efforts to implement SEZs in countries like Poland (1989), Hungary (1982), Bulgaria (1988), and the USSR (1990), were constrained by political and social issues that required the introduction of an adequate economic and political framework. It was recommended that the Chinese model of SEZs be adopted by CEE countries.

Osreer (1996)

In Osreer's (1996) research, entitled *A Theoretical Study on the Free Zones, Experience of South Korea, Hong Kong, Singapore and Egypt,* the aim was to explore the effect on FEZs on the host country. The main findings were that: 1) there were various definitions for the FEZs; 2) there were different types of FZ; 3) the success of establishing FEZs was dependent on initial feasibility studies being conducted; and 4) social impacts of FEZs were apparent on the host country. Several recommendations were offered by Osreer (1996) in this respect, such as: a) the need to undertake a feasibility study before the establishment of such zones; b) the need to explore the experience of other countries and benefit from this; and c) the requirement for flexibility and decentralization in the management and operation of such zones.

Ryal (1997)

In Ryal's (1997) study, entitled *Free Zones and Development: Study in Industrial Export Zones: The Case of Tunisia, Morris Island, and Algeria*, a review of some African countries in introducing Industrial Export Zones (IEZs) was given, and an attempt made to establish reasons for their success or otherwise. Ryal (1997) does this through a clarification of the concept. The study found that in the developing country context, the establishment of IEZs should be part of a national strategy and that solid commitment from government was a fundamental requirement. It was concluded that the creation of IEZs was costly to developing countries.

Fachini and Willmann (1998)

Reporting on *The Gain from Duty Free Zones*, Fachini and Willmann (1998) concentrated on the welfare effects of such initiatives. They provide a brief review of the associated literature before formulating a measurement model in this respect. Their findings indicate a positive relationship between welfare and duty free zones.

Madani (1998)

In a study entitled *A Review of the Role and Impact of Export Processing Zones,* Madani (1998) focused on the experience of two African countries, concluding that EPZs are not the best policy for the countries since it is first necessary to liberalize their economies. Madani (1998) then argued that it is undesirable for a country that has introduced trade and macro-economic reform to establish EPZs because: 1) the inflow of FDI will be low due to an inadequate regulatory framework; 2) the outcome will be distorted trade instruments; and 3) there are other better ways to develop the economy. The study also finds that where EPZs are in operation, government must ensure: a) sound and stable monetary and fiscal policies; and b) moderate income and corporate tax rates. This does not imply the need to waive all taxes.

Ukrainian Centre for Independent Political Research (2000)

This study entitled *Free Economic Zones in Ukraine — Genesis, trends and prospects,* concentrates on the effectiveness of the SEZs in the Ukraine in the early 1990s. It found that some transitional economies, such as China's in the 1970s, assume a large role in allowing rapid and unrestrained development towards free market mechanisms. The

study concludes that, historically, there have been few positive examples of SEZs, and that as development trends in the Ukraine remain uncertain, so too do their prospects.

Tekere (2000)

This study, entitled *Export Development and Export-led Growth Strategies: Export Processing Zones and the Strengthening of Sustainable Human Development,* considers the establishment of EPZs in Africa, concluding that, for the most part, these have not achieved their initial objectives. Several reasons are advanced, these being: 1) lack of government commitment to the initiatives that have resulted in the original objectives being weakened or removed; 2) high costs of EPZ infrastructure development; 3) government bureaucracy; 4) poor selection of locations that did not attract investment; 5) failure to introduce further trade reforms; and 6) poor management and inadequate promotion of EPZs. It was concluded that EPZs do not offer represent effective vehicles for economic development in African countries, and that they are no longer considered as a strategy for the advancement of African exporting because of trade liberalization policies, regional trade integration, and new multilateral trade regimes.

Cling and Letilly (2001)

In a study entitled *Export Processing Zones: A threatened Instrument for Global Economy Insertion,* Cling and Letilly (2001) investigate the likely influence of EPZs on the development of the host country, revealing that the aspirations for such zones are frequently unrealistic and excessive. They also show that each country's experience can differ according to a number of variables, and the argument is made that, ultimately, it is the quality of human capital and access to international markets that determine the success of EPZs.

Sinclair (2001)

Sinclair's (2001) research, entitled *Export Processing Zones: An Ingredient for Successful Liberalization,* considers the impact of FDI in EPZs on the economy before and after liberalization, using the neoclassical growth model. By including unemployment and intermediate goods in the model, the study establishes the influence of EPZs on the growth rates of per capita income, finding that the contribution amounts to 0.5% of the per capita growth of the economy. Sinclair concludes that any expansion of EPZs will lead to an increase in national income.

Ninh (2001)

An Evaluation of Export Processing Zones in Vietnam's Industrialization Process provides an analysis of the roles of such zones in Vietnam, during the development process of its economy. This analysis is reported through the adoption of a descriptive, analytical framework. A comparison is then made between similar developments in Taiwan, Korea, Malaysia and China as a means to benefit from that experience. Both direct and indirect benefits are identified in relation to the establishment of EPZs in Vietnam.

Sadni-Jallab and Blanco de Armas (2002)

These researchers' work, entitled *A Review of the Role and Impact of Export Processing Zones in World Trade: The Case of Mexico,* concentrates on foreign exchange earnings, employment, FDI, and technology transfer within EPZs. Adopting a qualitative method in respect of the Mexican economy, the researchers' main finding was that various positive impacts on the economy are apparent from the establishment of EPZs, but that foreign exchange earning was limited.

Schweinberger (2003)

In a study entitled *Special Economic Zones (SEZ) in Developing and/or Transition Economies: A Policy Proposal,* Schweinberger (2003) explores the impact of SEZs with respect to taxation in the host country. His principal finding is that if SEZs are accompanied by appropriate tax policies, increased government revenue will result. Such revenue may then be used to finance other investments in infrastructure or other public goods.

Guangwen (2003)

Guangwen's (2003) study entitled *The Theory and Practice of Free Economic Zones: A Case of Tianjin, People's Republic of China,* considers the historical development and current structure of FEZs in both China and the rest of the world. The study identifies six generations of FEZs worldwide, showing that in the 1990s, countries began to copy the Chinese model (e.g. in the former Soviet Union). The recommendation is that the Least Developed Countries (LDCs) should establish FEZs to promote regional economic development.

International Confederation of Free Trade Unions (ICFTU) (2003)

In research entitled *Export Processing Zones — Symbols of Exploitation and a Development Dead-End,* an assessment is attempted of the role of EPZs in host countries under the WTO agreement and the Multi-Fiber Agreement on textiles. The study analyses the impacts of these zones on the economy and workers, as well as on wages, and the conclusion is drawn that the experience of various countries highlights the fact that EPZs are generally costly to the host country and only provide short-lasting benefits. It is demonstrated that EPZs have not succeeded as a model for economic development in developing countries.

Kankesu (2003)

In presenting *Benefit-Cost Appraisals of Export Processing Zones: A Survey of the Literature*, Kankesu (2003) reviews the literature on EPZs' performance, demonstrating that the experience of some countries, like Malaysia, South Korea and Sri Lanka, show beneficial effects from the introduction of such zones. Simultaneously, however, negative impacts in other countries such as in the Philippines, are reported.

Nam and Radulescu (2004)

In a study by Nam and Radulescu (2004) entitled *Types of Tax Concessions for Attracting Foreign Direct Investment in Free Economic Zones,* the aim is to measure the net present value of Free Economic Zones (FEZs). The tax incentive effects, with and without inflation, are compared and the impact of incentives offered to foreign investors in the FEZs is analyzed. The conclusion drawn is that it is preferable to implement a lower corporate tax rate in the FEZ. Additionally, the use of free depreciation as a tax concession when inflation is zero is shown to guarantee a higher net present value to the investor rather than the use of an investment tax allowance and accelerated depreciation.

OECD (2007)

The report of the Organisation for Economic Co-operation and Development (OECD) presents an overview of the current use of FEZs, in addition to a case study on China, India and Russia in which the new broad trends and policies are reviewed. Additionally, it contains a cost-benefit analysis of FEZs with a special emphasis on trade. The report shows that FEZs are sub-optimal from an economic viewpoint, because benefits are

few; however, such zones are, nonetheless, the starting point of trade liberalization on a national basis.

El-Dosoky (2008)

In his research entitled The Role of Free Zones in Improving the Performance of the Trade Balance, which focused on making a comparison of the Egyptian performance as seen through the Alexandria area, with that of the Jebel Ali Free Zone in Dubai, El-Dosoky concluded that whilst the Alexandria area performance is better than other areas in Egypt, it does not compare well with Jebel Ali in Dubai, where local investments account for 87.5% of total investments. Jebel Ali Free Zone was shown to be superior both in terms of its ability to attract investors, and in creating jobs.

On the basis of the information reviewed so far in the first two themes, it would be interesting to now look at a third theme, which covers internal investor approaches to establishment of FEZ in terms of employment training, system upgrading, quality management and business methods employed. The following are the few articles dedicated to the analysis of the industries inside the countries promoting FEZ.

Tsui (1993)

The main finding of this study, entitled The Welfare Effects and Optimal Incentive Package of Export Processing Zones, was that benefits to the host country depend on the bargaining power that exists between the government and investors.

Taher (1998)

In An Assessment of Free Economic Zones in Arab Countries: Performance and Main Features, Taher concentrated on the promotion of exports, employment creation and the enhancement of foreign trade. His main finding was that the free zones in Arab countries must compete on the basis of quality for the services offered and the goods produced in these zones.

Jenkins et al (1998)

This study entitled Export Processing Zones in Central America, asserted that developing countries can benefit from opportunities provided by Export Processing Zones (EPZs), to attract technology, upgrade labour and managerial skills, and gain

greater access to foreign markets. Jenkins et al. (1998) presented a set of policy proposals that include: the promotion and diversification of export-oriented industries; the development of stronger backward linkages; and an improvement of export-oriented legislation in Central America.

Mireri (2000)

Focusing on The Impact of Export Processing Zone Development on Employment Creation in Kenya, Mireri (2000) compares the situations of workers both inside and outside the zone. He highlights the negative consequences of the EPZ's establishment, and reveals: a) worker insecurity caused by fluctuations in the number of enterprises operating in the EPZ; b) variations in wages such that zone workers may earn less than those outside the zones; c) the lack of trade union activity within the zones caused by companies actively blocking this; d) the lack of opportunities for training and promotion; e) racial discrimination; and f) risk of industrial accidents and pollution.

Ng and Whalley (2004)

In their 2004 study, Ng and Whalley report on the *Geographical Extension of Free Trade Zones as Trade Liberalization: A Numerical Simulation Approach*, in which they explore the influence of FTZ size on the country's welfare. A comparison is made between the FTZ and the local economy according to their differential tariff rates. The welfare costs of imposing geographical restrictive schemes are shown as being substantially larger than the costs associated with the imposition of national tariffs. It is argued that it is likely that a geographical expansion of FTZs and consequent trade liberalization will have greater welfare impacts than liberalization operated through conventional national tariff reductions.

Nassar (2005)

Nassar's study on foreign investment in Egypt (a comparative study) reported that the factors affecting the attraction of foreign investment in Egypt were: the presence of political stability, a good infrastructure, near markets, economic stability, the inadmissibility of nationalization, high investment climate, favourable tax concessions, and the length of the lease term up to 25 years. The constraints that deter foreign investment were seen as: the precarious administrative climate, multiple legislation governing investment, and the lack of a database on free areas.

Analysing the information contained in the literature covering these three themes broadly, some overlapping each other, there is no trend that can be considered as a rule or an established hypothesis. Hence, it becomes totally relevant to study each of these arguments in terms of development of FEZ in Libya, as there are many factors that are country-specific, thereby influencing the success of FEZ in developing sustainable economic growth. A summary of these themes along with the relevant articles and salient features are tabulated in Table 6A. The thesis carried out cost-benefit analysis based on methods described in Choe (1975), Andic & Cao (1980), Warr (1985), Escapajnctc (1988), Wei Ge (1999), and Knoth (2000). The parameters governing costs, administrative practices, response of foreign investors and their relationship with the host countries in establishing FEZ is based on the literature review by Osborne (1986), Miyagiwa (1986), Warr (1989), Shamlola (1992), McKenney (1993), Ahrens & Meyer-Baudeck (1995), Osreer (1996), Ryal (1997), Fachini & Willmann, Madani (1998), UCIPR (2000), Tekere (2000), Sinclair (2001), Ninh (2001), Cling & Letilly (2001), Sadni-Jallab & Blanco de Armas (2002), Schweinberger (2003), Guangwen (2003), ICFTU (2003), Kankesu (2003), Nam & Radulescu (2004), OECD (2007), and El-Dosoky (2008). The approach of inward investors in the development of FEZ in terms of upgrading of systems, training, business models, methods to provide backward linkages as a support to FEZ was studied in comparison with views expressed by Tsui (1993),Taher (1998), Jenkins et al. (1998), Mireri (2000), Ng and Whalley (2004) and Nassar (2005).

Table 6A: Summary of literature review in relation to needs of the thesis.

Theme	Literature	Relevance to the thesis	Comment
Cost-Benefit Analysis	Choe (1975) Andic & Cao(1980) Warr(1985) Escapajnctc(1988) Wei Ge(1999) Knoth(2000)	Direct relevance	These literatures form the basis of cost-benefit analysis done in this thesis.
FEZ and relationship with host country	Osborne(1986) Miyagiwa(1986) Warr(1989) Shamlola(1992) McKenney(1993) Ahrens & Meyer-Baudeck(1995) Osreer(1996) Ryal(1997) Fachini & Willmann Madani(1998) UCIPR(2000) Tekere(2000) Sinclair(2001) Ninh(2001) Cling & Letilly(2001) Sadni-Jallab & Blanco de Armas(2002) Schweinberger(2003) Guangwen(2003) ICFTU(2003) Kankesu(2003) Nam & adulescu(2004) OECD(2007) El-Dosoky(2008)	Relevance in terms of identifying costs associated, various administrative practices adopted by host countries around the world and response of foreign investors in relation to the establishing and successful operation of FEZ	Relationship with host country defines the sensitivity of parameters in deciding success of FEZ establishment
Inward Investor Approaches	Tsui(1993) Taher(1998) Jenkins et al(1998) Mireri(2000) Ng and Whalley(2004) Nassar(2005)	Relevance in understanding the reasons of success and failures of backward as well as forward linkages	Response of internal investor towards training, quality, systems defines success of backward linkages

Source: literature review

3.4 Trends and Arguments in the Literature

As seen in the previous sections, various feasibility studies have been undertaken in relation to FEZs, some of which have explored the costs and benefits from a theoretical perspective, and found a positive influence upon the host country from the creation of

such zones. Other studies have gathered empirical data to attempt to establish the impacts of FEZs in this respect.

As the pioneer in the theoretical work, Hamada (1974) focused on the welfare of the host country, concluding a negative impact resulting from the establishment of FEZs, and this early work sparked off efforts from a number of other researchers, such as, for example, Rodriguez (1976), and Hamilton and Svensson (1982). Other studies conducted by Warr (1989), Madani (1998), McKenney (1993), Mireri (2000), Tekere (2000), UNCTAD (1973), UNIDO (1980), Jallab and Armas (2002), Sinclair (2001) and the International Confederation of Free Trade Unions (2003) have explored the impacts of FEZs from an empirical standpoint. Despite empirical efforts, however, many scholars have not been able to demonstrate concretely that FEZs are either beneficial or otherwise. Among these researchers are Osborne, (1986), Tsui, (1993), Cling and Letilly, (2001), McKenney, (1993) and Jayanthakumaran, (2003).

Undoubtedly, the literature reports that there is no consensus on FEZ effects on the host country. For example, Hamada (1974), using a standard 2 x 2 Heckscher-Olin (H-O) model, was able to show that FDI in the FEZs and elsewhere in the country, were both welfare-decreasing, caused primarily by the increase in capital in the FEZs, which subsequently attracts labour from the DZ. The Rybczynski theorem decreases the output of labour-intensive goods in the DZ, while increasing the output of capital-intensive goods, thereby precipitating a worsening of the distortion created by the tariffs and reducing the country's welfare. Hamilton and Svensson (1982), basing their analysis on a standard H-O framework, argue with Hamada's (1974) conclusion concerning the relative ranking of FDI in the FEZs and in the DZ. Their conclusions are that if FDI is subject to tariffs in a small-open economy, there will be a resultant decrease in welfare, regardless of where the FEZ is located.

Wong (1987) attempted to resolve these apparently conflicting conclusions drawn by Hamada (1974) and Hamilton and Svensson (1982), suggesting these were the result of varying assumptions about which products were produced in the FEZs, which products were used to repay local, as well as foreign, factors of production, and whether these payments were taxed or not.

And simultaneously, Miyagiwa (1986) formulated a three-factor model incorporating land, labour and capital, and three goods (food and two types of industrial goods). In this analysis, the country begins by producing only food and one industrial good, but the government then creates FEZs for the purpose of diversifying the manufacturing sector, and in doing so it offers subsidies to foreign firms. It is shown by Miyagiwa (1986) that when particular conditions prevail, it is possible for the host country to increase welfare by establishing FEZs and attracting FDI that allows for the diversification of production. It is the general 'theory of second best' that serves as the intuition for this result, promoting the belief that if a previously existing distortion (the tariff) cannot be removed completely, the implementation of a countervailing distortion (the subsidy) might improve national welfare.

Other factors such as unemployment (Young & Miyagiwa, 1987) and capital mobility (Chaudhuri & Adhikari, 1993) have been considered in extensions to earlier studies since all of these have erroneously assumed full employment, which is clearly not a feature of the developing country context. In their study, Young and Miyagiwa (1987) introduced unemployment of the Harris-Todaro type, asserting that the establishment of FEZs might function as a second-best policy to improve national welfare. Chaudhuri and Adhikari (1993) later introduced inter-sector capital mobility and an upward sloping supply function for foreign capital, concluding that the welfare effects of FEZs are ambiguous, even in the presence of the Harris-Todaro unemployment model of unemployment. Another model incorporating domestically-produced intermediate inputs, and directed towards backward linkages between companies in the FEZs and the DZs, was formulated by Din (1994). Din (1994) showed that in a three-sector general equilibrium setting, if the domestic economy produced intermediate goods that were traded internationally, the formation of FEZs would have no effect upon national income. If the intermediate input is non-tradable, the creation of an FEZ will increase national welfare, depending on whether the input is relatively labour- or capital-intensive, compared to the final good produced in the economy.

3.5 The Cost-Benefit Analysis

In this section light will be shed on the theoretical background of certain methods used to analyze benefits and costs. The literature is extensive in this field, and it is important

to be able to apply the various techniques that are available in order to determine the benefits and costs associated with FEZs, and in particular, the Al-Ameria zone in Alexandria. This is especially desirable given the disagreement among researchers regarding the net social effects gained by the host state in return for establishing FEZs.

Undoubtedly, cost-benefit analysis is a useful way of establishing the impact of FEZs, since this allows not only for an identification of the associated benefits and costs, but also for the life cycle of such zones to be understood. In this area, Warr (1983; 1984; 1987a; 1987b; 1989a; 1989b) has been the main contributor to the literature, having analysed the benefits and costs concerned with four FEZs in Indonesia (Jakarta), Korea (Masan), Malaysia (Penang), and the Philippines (Bataan) using ex-ante assessment. A brief summary of Warr's findings is that where countries are in the initial stages of industrialization, a limited contribution to export growth can result from the establishment of FEZs, since they offer a significant amount of employment to both unskilled and semi-skilled workers. Furthermore, the foreign exchange required to pay domestic workers adds to the host countries' foreign exchange earnings, so the FEZs can be considered as direct exporters of labour. However, because FEZ firms are offered tax incentives, they make little contribution towards national tax revenue.

Despite these common effects, however, cost-benefit analyses confirm that there are different outcomes of FEZ presence depending on the country, and sometimes, even on the region within a country. The Bataan Zone in the Philippines, for instance, is seen to have only limited benefits, a fault of the extremely high costs associated with developing the infrastructure to support the isolated site. In this case, the FEZ firms were granted preferential access to low-interest rates by the government, with the result that the country bore a heavy social cost. The Malaysian example, in contrast, confirms that it is quite possible to establish and operate FEZs at much lower cost than was seen in the Philippines. Indeed, both Warr's Malaysian and Korean examples demonstrate that as public investments, FEZs can definitely produce acceptable social rates of return, even when evaluated conservatively. Warr's conclusion is that FEZs are able to offer an efficient and productive vehicle for absorbing surplus labour in the early stages of a country's development. That said, Warr (1989a; 1989b) observes that with the advancement of industry and the greater employment of available labour, interest in FEZs tends to diminish.

3.6 Summary

After presenting the main theoretical and experimental techniques used to evaluate FEZs and their effect on host countries, there is no doubt that there is lack of agreement in opinions in the literature regarding the economic effects of FEZs on host countries, as well as on the investor within these zones. We may see that it is not possible to derive final and reliable conclusions. Theoretical methods are weak in terms of the hypotheses that have been proposed regarding establishment of FEZs, which differ between host countries with respect to the social, political, and cultural aspects, as well as the economic development index, representing one of many areas of weakness. The majority of studies in the area of FEZs were concerned with only one of the beneficiaries from establishment of such zones. Some of these studies were interested in how to attract the investor, and then provide all the facilities and incentives, without considering the harmful effects of such facilities on the host country.

On the other hand, there are studies that have focused on the role of the host country, while neglecting the factors contributing to success in attracting both local and foreign investors to the FEZ, which is the case in the majority of Arab countries; this led to the collapse of such zones, which represented an obstacle to development rather than supporting it.

Some studies have adopted analysis of costs and benefits, which is a useful method in both establishing and evaluating FEZs, but also clarifies the life cycle of these zones and extent of successful continuity for the hosting country and investor.

Therefore, there is a need for research to better examine both the costs and benefits of the FEZ.

This research focuses on Misurata and Alexandria to
   1) Better understand the constituent parts of the FEZ
   2) Identify which sectors work best in the context of a FEZ
   3) Identify key issues for the development of a FEZ in a comparable situation

Initially from the literature the Enclave Model would appear appropriate to examine the development of a FEZ in the context of a city like Misurata. However, it is evident that there are weaknesses in this approach as not all aspects are covered.
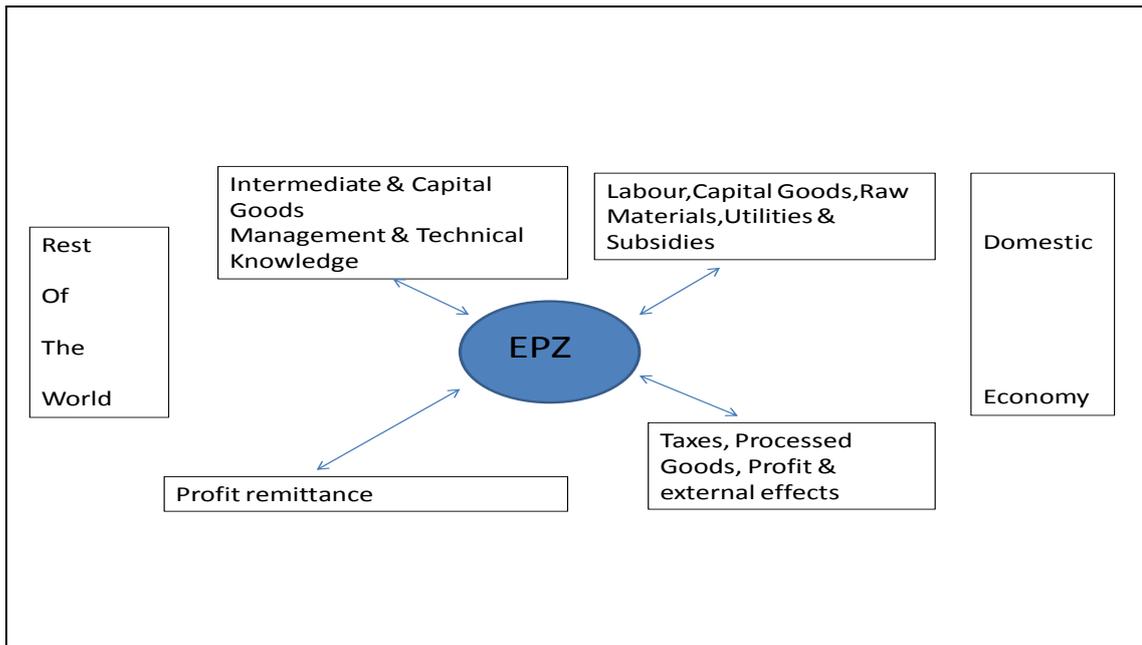
Figure 3: Enclave Model (Warr, 1989)

The next chapter discusses the research methodology necessary to better understand the nature of a FEZ drawing on both quantitative and qualitative approaches within the framework of a cost benefit approach to build on the Enclave approach.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter provides a detailed description of the research methodology adopted to meet the aims and objectives of the study. It considers ontological and epistemological issues before discussing the types of approach available. Case Study methodology is introduced, and the actual research strategy employed is presented together with the method of data collection and analysis. The Enclave Model is then discussed in detail, and a sensitivity analysis conducted, before the chapter finishes with a short summary.

4.2 Scientific Research Paradigm

Social and economic science research involves enquiries related to real-world issues, which raise various different questions related to the assumptions made. A major question is whether social laws and the system that govern individual behaviour can exist independently of human consciousness or whether they are the product of the researcher's mind (Holden, 2006).

As a complex case in question, FEZs and international trading can be viewed from various perspectives, but none of these are perfect for this case, which is why this area of research is frequently considered difficult to study. Social and economic science research can be grouped under one of four main ontological approaches: positivism, post-positivist (realism), critical theory, and empiricism (constructivism) (Guba & Lincoln, 1998).

4.3 Ontology of Research

The ontological position adopted by any research study is an indication of the researcher's assumptions concerning whether s/he believes that reality exists outside people's minds, or whether it is subject to people's desires and understanding. Inevitably, in social research, people must shape reality, and consequently, such real world complexity precludes a researcher from possessing the entire picture of a phenomenon. Additionally, the subjectivity resulting from the researcher's individual characteristics, functions to help mould that reality.

Given that this study aims to achieve a better understanding of the dynamic transitions in the systems of FEZs and international trade, critical theory is one approach which is helpful, since as Kincheloe and McLaren (1998) note, this allows for the researcher to achieve an understanding of a phenomenon as well as to outline the change process. The study, therefore, adopts a constructivist-realist position as opposed to the naïve realism paradigm − positivism − that claims the existence of a single truth. Nevertheless, according to the radical interpretive position, reality does not exist independently, but is rather a matter of accepting that independent reality exists outside our minds and that it can be changed in line with people's aims and objectives (Cupchik, 2001).

4.4 Epistemology of Research

Whilst the ontological stance of a research study is based on the assumptions made by the researcher regarding the nature of reality, the epistemological position centres on the relationship between reality and researcher. It also focuses on the method by which the knowledge of the researcher is generated and the relationship between the shared beliefs and that knowledge is developed. The constructivist-realist research paradigm involves gaining and communicating real knowledge as well as acknowledging the subjective interpretation of the knowledge gathered. Thus, a particular degree of subjectivity can be detected in any research, and in this study also the same holds true since the complex reality of the phenomenon being investigated requires the use of multiple theories to answer the research questions.

This research aims to construct a systemic and dynamic picture of the phenomenon studied, and hence, a progressive iteration between theory and practice, as well as between deductive and inductive inquiry methods, is needed. This will enable the achievement of a degree of in-depth understanding and the ability to form certain constructs that will help the researcher elaborate on the events and patterns established from his observations. With such constructs, the researcher will be able to devise strategies for developing and enhancing FEZ practices such that they have greater sustainability.

Data can be gathered by various means, and according to Yin (2003), these may include questionnaires, interviews, direct observations, participation, documentation,

and audio and video records. None of these means is perfect or has a complete advantage over all the others. The choice can depend on the research philosophy (phenomenological or positivism), the research approach (qualitative or quantitative), the research strategy (experiment, survey, case study), the aims and objectives of the research, and the main research questions which the aims and objectives generate (Hussey & Hussey, 1997; Easterby-Smith et al., 2002). However, the researcher can use these methods regardless of whether the approach is qualitative or quantitative (Yin, 2003). In this study, data was gathered from archival records, a questionnaire survey with companies in the Alexandria FEZ, conducted as part of the case study, and an interview exercise undertaken with decision-makers in the Misurata FEZ.

4.5 Quantitative and Qualitative Approaches

There are two main research approaches, these being quantitative and qualitative. In fact, the vast majority of researchers tend to use the former but that does not detract at all from the value of the qualitative approach and in fact, there is often much merit in adopting both methods in the same study.

A clear difference can be seen between these two approaches. Quantitative research mostly depends on the application of a questionnaire to a random sample and then subjecting the data gathered to empirical and objective measures to analyze complex statistical and social correlations. It considers meanings independently of the world in which they appear, and does so by sub-dividing data into small pieces measurable by objective criteria (Dabbs, 1982). The qualitative approach on the other hand, is usually used to determine the basic characteristics that are prerequisites for social and psychological phenomena, and data are collected via interviews, case studies and observations in order to form a deeper understanding of the issue being investigated (Reichard, 1985).

Undoubtedly, the qualitative approach is more complex than its quantitative counterpart, because it depends on multiple dimensions, perceptions and meanings, which are strongly influenced by the interaction between the environmental context and the self-interaction of people. The aim of the qualitative approach is to discover the meanings of the relationships in the context of social phenomena, and the impact of

these relations on the issue under investigation. Direct observation is the main tool of this approach.

As indicated already, despite their differences, each approach has its advantages, and Al-Jasir (1995) argues that they are in fact, complementary, allowing for social phenomena to be considered from a different angle, and thus, there is a possibility of merging these two approaches in one study. However, the application of both approaches to one particular subject is associated with incongruent findings, and a researcher should be aware that the two sets of findings achieved by using both styles may be only superficially comparable since they may be addressing different facets of a topic. Consequently, it is necessary to consider two such sets of results as indicative of different aspects of the phenomenon in question and to search for hypotheses which would help to explain their inconsistency (Gilbert, 2001).

Regardless of the complexity that the use of two approaches brings, however, a researcher cannot depend purely on just one source of information or one method of data collection when conducting educational research, and therefore, a variety of methods should be employed, depending on the nature of the study, in order to obtain the necessary information and achieve this from different perspectives. Moreover, the selection of data collection methods depends not only upon the type of issues investigated, but also upon the type of subjects being researched (Wiersma, 1995).

In social research, the use of the quantitative approach is often associated with the positivistic paradigm which concerns counts and measures of things. In contrast, a qualitative approach is often linked with the phenomenological paradigm, which is related to the essence of the issue under investigation (Collis & Hussey, 2003). Moreover, quantitative research limits experience because it directs research to the things perceived by the senses, and uses only standardized tools to test hypotheses based on quantifiable data. On the contrary, in qualitative research the researcher is more flexible in exploring phenomena in their natural environment, rather than being restricted to a relatively narrow scope and action (Rudestam & Newton, 2001). Table (7) summarises the main differences between the two mentioned approaches.

Silverman (1997) stresses the fact that qualitative and quantitative methods complement each other in academic research, suggesting that qualitative research plays the role of discovery, while quantitative research plays a confirmatory role. By employing such methods in this study, the qualitative and quantitative procedures will not only complement each other but the qualitative method will assist in explaining and understanding quantitative correlations between the variables being investigated.

Table 5: Differences in Emphasis: Qualitative versus Quantitative Methods

QUALITATIVE RESEARCH	QUANTITATIVE RESEARCH
Emphasis on understanding Focus on understanding from respondent's or information point of view	Emphasis on testing and verification Focus on facts and/or reasons of social events
Interpretation and rational approach	Logical and critical approach
Observations and measurements in natural sittings	Controlled measurements
Process oriented	Result oriented
Holistic perspective	Particularistic and analytical
Generalization by comparison of properties and contexts of individual organism	Generalization by population membership

Source: Ghauri and Gronhaug (2005)

Furthermore, the use of multiple data collection methods enables the researcher to use the most appropriate tool to cover each research question, and hence, all the essential data can be gathered since information which cannot be obtained by one method will be secured by an alternative method.

In this study, both qualitative and quantitative methods of data collection are used. Data gathered by the quantitative method via a questionnaire will be subjected to statistical analysis, whereas qualitative data, which will be obtained from an interview exercise, will be analysed thematically.

Realism and the Qualitative and Quantitative Approaches

Realism dictates that perceptions have certain flexibility and that there are differences between reality and people's perceptions of reality. The realist agrees that our knowledge of reality is a result of social conditions and, thus, cannot be separated from the social factors involved in the process of generating them. Nevertheless, reality itself is a product of the process of generating the knowledge derivation process (Dobson, 2002). As such, the goal of realism is to discover observable and non-observable structures and mechanisms, independent of the events they generate.

Based on the above discussion, the qualitative and quantitative methodologies are seen as appropriate for researching the underlying mechanisms that drive actions and events (Healy & Perry, 2000). Methods such as case studies and unstructured or semi-structured in-depth interviews are acceptable and appropriate within the paradigm, as are statistical analyses, such as those derived from structural equation modelling and other techniques. With realism, the so-called dichotomy between quantitative and qualitative is replaced by an approach that is considered appropriate given the research topic of interest and level of related existing knowledge (Bisman, 2002).

4.6 Case Study Methodology

In principle, case study involves the views of the 'actors' around whom the study revolves. The method is characterised by attention to the holistic nature of investigation, involving observation, reconstruction, and the detailed analysis of as much data as is available concerning the topic in question (Zonabend, 1992). The choice of a case in itself establishes the parameters that are applied throughout the research, and consequently, provided it met the stipulated objective, a single case could be considered acceptable. On the other hand, a researcher may consider several cases. The point to be made is that there is no minimum number of cases that must be studied, nor is it necessary to randomly select cases. In a multiple case study design, there is replication rather than sampling logic. The whole point with case study methodology is that the researcher works with the precise situation that presents itself in each case, and does so by satisfying the three tenets of the qualitative method: describing, understanding, and explaining (Yin, 1994). Case studies can thus be understood as being suitable in attributing causal relationships and also for developing a deeper understanding of both

the context of the research and the process that has been carried out rather than superficial description per se (Saunders et al, 2003).

Case studies aim at securing a holistic understanding of the cultural systems with regard to the action investigated (Feagin et al, 1990), and this implies the need to explore the many potential sets of interrelated activities occupied by the actors in a social situation. That said, they do have boundaries, as previously noted, these being set by the exact phenomenon that becomes the case (Stake, 1995).

4.6.1 Designing Case Studies

Questions to be pursued within the case study context are most likely to be 'how' and 'why' questions and their definition is the first task of the researcher. Such questions are helpful in focusing the case study goals.

In this respect, Yin (1994:64) recommends the use of a case-study protocol as part of a carefully designed research project, and suggests the inclusion of an "overview of the project (project objectives and case study issues); field procedures (credentials and access to sites); questions (specific questions that the investigator must keep in mind during data collection); and guide for the report (outline, format for the narrative)". Stake (1995) refers to the protocols that are used to ensure accuracy and alternative explanations as an overall process of 'triangulation', which satisfies the ethical need to confirm the validity of the processes. In case studies, this is achieved by using multiple sources of data.

Within the protocol, the overview communicates to the reader the general topic of inquiry and the purpose of the case study. The field procedures mostly involve data collection issues and must be properly designed. The investigator does not control the data collection environment as in other research strategies; hence the procedures become crucial. Stake (1995) identified sources of evidence in case studies; such as: documents, archival records, interviews, direct observation, participant-observation and physical artefacts.

It should be mentioned that by documents it is meant the letters, memoranda, agendas, administrative documents, newspaper articles, or any document that is germane to the

investigation. In the interest of triangulation of evidence, the documents support the evidence derived from other sources. Documents are used for making inferences about events, but they can give false leads if they are misinterpreted, and this has been taken as a disadvantage of case studies.

Moreover, case studies depend on archival documents, such as: service records, organizational records, lists of names, survey data, amongst others. The authenticity and correctness of these documents cannot be taken for granted and the researcher must ensure their before using them. Moreover, even where records are quantitative, they might still not be accurate.

Case studies also use interviews as one of the most important sources of case study data collection. There are several forms of interviews that are possible for use in case studies, for example structured, semi-structured, unstructured, or focused. In a structured interview, key respondents are asked to comment on specific events, and may propose solutions or provide insight into events. They may also substantiate evidence obtained from other sources. The researcher must avoid becoming dependent on a single informant, and seek the same data from other sources to verify its authenticity. The focused interview is used in a situation where the respondent is interviewed for a short period of time, usually answering set questions. This technique is often used to validate data obtained elsewhere using a different kind of data collection (Stake 1995).

A case study protocol contains more than the survey instrument, consisting also of the procedures and general rules that should be followed in using the instrument. It should be created prior to the data collection phase, and especially in a multiple-case study, it is of extreme importance since this represents the main component in asserting the reliability of the case study research.

4.6.2 Analyzing Case Study Evidence

Case study is a valuable method of research, with distinctive characteristics that make it ideal for many types of investigations, and it can be a reliable way of arriving at accurate conclusions providing the data collected is properly analyzed. This can be done by selecting the most effective data collection methods and statistical tests for its analysis. In analyzing the data, the researcher must reflect on any literature on the

phenomenon concerned, and particularly the results of previous research on the same or similar subject.

4.7 Research Strategy

When studying a particular phenomenon, the most appropriate research strategy is one that provides the greatest potential for helping the researcher to achieve the aim and objectives of that study (Ghauri and Gronhaug, 2005). In order to answer the research questions outlined in Chapter One, and to guarantee the best sources of data relevant to FEZs in the Arab World, it is clear that an in-depth single case-study strategy is insufficient, and consequently, a multiple case study method is chosen in order to enhance the external validity of the investigation and allow for greater generalization (Ghauri and Gronhaug, 2005). That said, there is special emphasis on the Alexandria FEZ because of its proximity and the similarity of condition with the Misurata FEZ.

4.7.1 Research Instruments and Methods of Data Analysis

The main research instrument in this study is a questionnaire survey, administered to a sample of companies operating in the Alexandria Free Zone. In this survey, this FEZ is considered a benchmark against which the proposed development of Misurata FEZ would be assessed. In order to identify the parameters that were responsible for establishment of FEZ in Alexandria and assess the success of those parameters, a comprehensive set of questions covering type of industry, employment opportunities, backward linkages, etc. was established. Similarly, a set of semi-structured interviews was undertaken with key decision-makers in the Misurata FEZ to understand their expectations from such a FEZ. The multiple case studies are of Egypt's FEZs (with special emphasis on Alexandria FEZ) which are used as a basis from which to conduct the cost-benefit analysis in relation to the Misurata FEZ, and hence decide upon a model that would be appropriate to support Libyan economic development. In respect of the quantitative data secured, statistical tests are conducted (mean, mode, median and frequency tables), and multiple regression using SPSS and E.views is performed to pinpoint the factors that may affect investment in FEZs.

4.7.2 The Survey Questionnaire – The Alexandria FEZ

The survey questionnaire is comprised mainly of multiple-choice questions that can be answered and recorded easily, as recommended by Sekaran (1992). Using this method, data was collected from Alexandria FEZ. Questionnaires used in the past, specifically to establish the net economic benefits of free trade zones in theory and practice as in the case of the Kingston FEZ in Jamaica (Watson, 1988), and the fiscal and economic impact of qualifying industrial zones in Jordan (Al Mdanat, 2006) were considered and certain aspects adapted for the current instrument. As such, some parameters that covers the themes as discussed previously have been used in designing the survey for this study. The questions are objective and unambiguous, and contain the largest group of potential answers that reflect various different circumstances.

Moreover, the survey is designed to acquire specific data and information believed to be useful in accomplishing the goals of the study. It was initially written in English and subsequently translated into Arabic because most of the investors are Arabs and have Arabic as their first language (See Appendix 3). The survey is divided into several sections as follows:

Section A: Personal details, such as: name, job, title, nationality of the investor, name of the zone, establishment year, name of the company, and product type.

Section B: Company details, such as: status of the company (partnership, private ownership, branch of a mother company); the main product of the company (cars, food, chemicals, ready-made clothes, engineering, navigation services, medical equipment, and manufacturing iron and steel); the type of the free economic zone (private, public); how easy is it to establish a project in the FEZs; the amount of investment used in the start-up stage of the company, the main financial resources used at the start-up stage; the main labour forces (local or foreign); the exports and imports of the company from the start up year to 2008; the relative cost of production factors (wages, resident permission, transportation, raw materials, rent); the revenue and expenditure of the company for the last three fiscal years.

Section C: Employment issues, such as understanding the effect of projects on employment in the local economy; new jobs that have been created/retained by the project (local or foreign, employees or unemployed); the difficulty in obtaining local employees; the number of women among the total employment (Local or Foreign); employee working hours; the daily amount of production per employee; transfer of employment from one company to others and why, the monthly wage structure, the number of skilled and unskilled employees, the supporting vocational training for employees and types of vocational training.

Section D: Fiscal and economic impacts on the local economy: questions related to the impacts of the project that have direct and indirect effects on the local economy; motives for investing in the FEZs; asking whether the projects introduce innovative management practices, lead to the development of new products/services, develop new processes, introduce leading-edge technology, apply new production technology for the first time, bring new marketing and distribution strategies); kinds of incentives offered for investors to start their projects (such as: income tax exemptions, customs duty exemptions, property taxes exemptions, sales tax); the main reasons for investing in the FEZs.

Section E: Future scheme of FEZs: general view of the future of FEZs industry: Is production better under FEZ agreement or under other FTA agreement? Is it easy to obtain the value added requirements to export under FEZ agreement? Does the FEZs scheme in Egypt have advantages over other free zones in the region in respect of the labour force, tax exemptions, USA market, EU market, transportation; the disadvantages of the FEZ; the challenge to the projects from opening new FEZs in neighbouring countries; and whether one prefers to work under FEZs or not.

The questions are organized to cover a wide range of potential answers about most aspects related to companies operating in those zones. Some questions have multiple choices, some require a yes or no answer, and others are open in order not to influence participants.

4.7.3 The Interview Protocol – The Misurata FEZ known as the MFZ

The protocol for the interviews with decision-makers in the MFZ was designed such that all questions were objective including all the expected answers in order to reflect all circumstances and thereby enable the researcher to compare the results with those obtained from the questionnaire survey with the Alexandria FEZ companies. As noted by Sekaran (1992), the personal interview has been used for data collection in many free zones. Specifically, the purpose of the interview exercise in this research was to:

- Identify the successful industries in the MFZ.
- Explore the FEZ's needs in terms of manpower, capital and foreign experience in all fields.
- Explore the factors which may support industries suitable for the MFZ.
- Find the linkages between data that shows factors affecting success of FEZ in Alexandria and the factors identified above in MFZ via the questionnaire survey of the companies in the Alexandria FEZ.
- Explore the view of officials responsible for the MFZ regarding the zone's future.

The interviews were conducted in Arabic and the form of the protocol was as follows:

Section A: Personal details - name, job title, name of the company, and period of experience.

Section B: Expectations regarding the kind of products that will succeed in the MFZ: (1) Manufacturing, Iron and Steel, (2) Medical equipment, (3) Navigation services, (4) Engineering, (5) Ready-made clothes, (6) Chemicals, (7) Food. The kinds of partnership created in the MFZ: private companies, subsidiaries of parent companies, joint stock companies, foreign investors, joint investment.

Section C: Labour and staff: The difficulty or otherwise of obtaining qualified Libyan staff to work in the MFZ, the expectations regarding women working in the MFZ, numbers of hours of work daily, ease of entry to and exit from the labour market, vocational training for employees in fields like sales, marketing, management, technical, and others.

Section D: Fiscal and economic impacts on the local economy. The direct and indirect impacts of the projects on the local economy; the nature of the incentives obtained to invest in the MFZ (income tax exemptions, customs duty exemptions, property tax exemptions, sales tax). Does the project introduce innovative management practices, lead to the development of new products/services/processes, introduce leading-edge technology, apply new production technology for the first time, bring new marketing and distribution strategies. The main reasons (ranked) for investing in the MFZ.

Section E: The future of the MFZs. The general view of the FEZ's development in Libya: is it better to produce under a FEZ agreement or FTA agreement? Is it easy to obtain the value added requirements to export under a FEZ agreement? Do the FEZs in Libya have advantages over other free zones and FEZs in the region (in respect of the labour force, tax exemptions, EU market access)? Are there any disadvantages? Would the opening of new FEZs in neighbouring countries pose a challenge to the projects in the MFZ?

4.7.4 Cross-tabulation

A cross-tabulation can be defined as a joint frequency distribution of observations based on two or more categorical variables. Displaying a distribution of observations by their values on two or more variables is known as contingency table analysis. Using cross-tabulation, it is possible to discover some interesting results that can help to gain general idea about the collected data of this study.

4.7.5 Interview Sample – MFZ

Ten subjects were drawn from those individuals responsible for establishing and activating the role of the public free zone in Misurata. The list of these people was provided by the Libyan Embassy in London, as well as Department of Trade in Libya. The primary criteria of selecting these people to participate in the survey is their ability to take decisions required at this level of investment. In addition, their previous experience in establishing and working in a FEZ environment was also considered in choosing the appropriate level of expertise desired to achieve accuracy in extrapolating these results in the Libyan context. There was also an opinion expressed by certain sections of the media to involve general public in this process. However, it is very

difficult to prove that opinions of the general public can forecast economic effects or profits or costs, or are they able to provide accurate information about the issues being explored. Hence, the sample included important personnel in the MFZ, such as the manager of the Department of Investment Projects Execution, an individual with good knowledge of the investment aspects in terms of procedures, profits, costs and successful industries in the Libyan environment. Additionally, the sample included a controller, an accounts manager, a factory manager, a quality controller, a supervisor and an accountant, and the years of experience held by these interviewees varied from 10 to 18 years.

4.8 Evaluation Models

Some previous research studies have evaluated the FEZs by using the Enclave Model, whereas others have conducted a cost-benefit analysis approach.

Watson (1988) evaluated the net economic benefits of FEZs in theory and practice using the Kingston FEZ in Jamaica as his case. Irrespective of the costs and benefits arising from a project, the aim of the evaluation is to identify, measure, and assess them over the life of the projects. In this process, some indirect benefits like positive externalities to industries located close to the project may be less conspicuous. And other benefits are difficult if not impossible to measure despite being readily identifiable. However, the costs, like pollution and other negative externalities, may be less identifiable. With respect to the measurement of the Enclave model, there are costs like the social opportunity cost of labour, which often present tricky measurement problems.

In a related study, Warr (1989) conducted an analysis measuring the net benefit from the presence of a zone as opposed to the gains that could occur if those resources were used elsewhere in the economy. He worked out the benefit and cost stream for several years and discounted this using an estimated social discount rate.

A further study reviewed cost-benefit analyses of 20 EPZs in Asia, and attempted to quantify net benefits derived from zone programmes. The study found that static gains from EPZs were realised through increased inflow of foreign exchange and through the compensation received by factors of production and suppliers (Jayanthakumaran, 2003).

In a more recent study, Al Mdanat (2006) examined the fiscal and economic impact of qualifying industrial zones in Jordan. The zone used as a case study was the first of its type in the world, and was made possible by Jordan's peace treaty with Israel in 1994, which fostered a positive relationship among Jordan, Israel, and the USA.

4.8.1 Enclave Model

The study is guided by the Enclave Model, which displays both the costs and benefits incurred by the FEZ's host country to prepare all exports, as is illustrated in Figure (4). By using the Enclave Model the researcher is able to pinpoint both the benefits and costs associated with FEZs, and these are indicated as follows:

Benefits:

1- Net opportunity differences between domestic labour wages paid and those of international ones (shadow labour wages).
2- Net opportunity difference between payments directed toward municipal facilities and those of the international ones (shadow payments).
3- Taxes that may be paid by companies on behalf of the host country.
4- Net profit that may be directed on behalf of the contributors of domestic share at export-preparatory zones.

Figure 4: The Enclave Model displays both the costs and benefits incurred by the FEZ's host country (Jayanthakumaran and Weiss, 1997:732)

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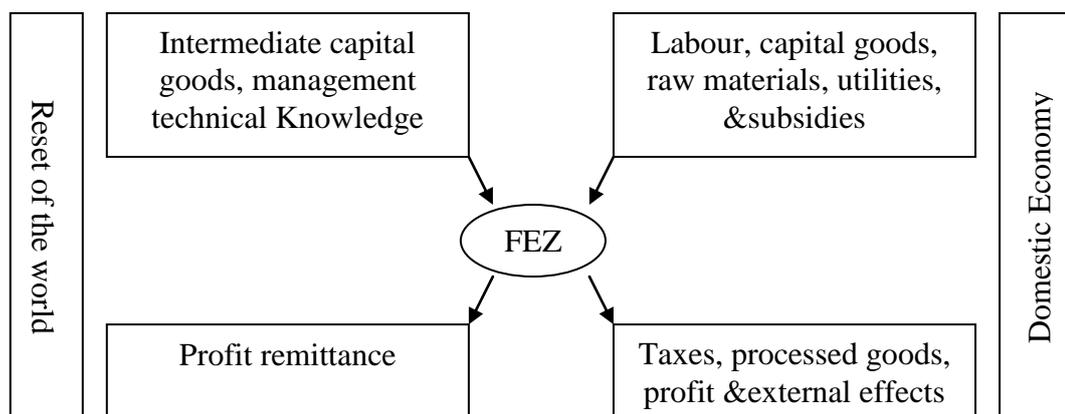
Costs:

1- Infrastructure and capital costs

2- Administration processes costs

However, it would also be possible to express the net costs and returns in any given economic project and any year by using the following formula:

$$NBC\ t = (MWR - SWR)\ t\ L + (DP - MSC)\ t\ Q + Tt + NP\ t - K\ t - A\ t$$

Since,

NBC: is the net benefit and costs

MWR - SWR: is the net difference between domestic wages and international ones (shadow wages), based on domestic prices.

Q,L: is the number of labour units and the number of domestic input units used.

DP - MSC: are the domestic prices of local inputs purchased and alternative costs or international (shadow) prices.

T: is the taxes paid.

NP: is the net profit which may direct towards worthy contributors in the domestic share.

K.A: are the costs associated with the infrastructure, administration process, and alternative opportunity costs.

The costs identified in this model should all be available or if not, readily estimated. There will be ordinary contributions in net benefit if the worker's wages in free zone projects exceed the alternative opportunity (shadow worker's wages). Furthermore, the increased profits believed to be gained by domestic participants in free zone projects will be sunk into the host country, bringing additional benefits. Consequently, the projects in FEZs will enhance the domestic economy serving top end products and play a big part in the development of the host country's foreign currency holding.

Warr (1989) used the Enclave Model to study free zones at the state level rather than the multiple states level. He attempted to measure the net benefits and costs of the FEZs' host countries because private facilities that are outside the FEZs do not register data, and that is the case for most developing countries since there is a lack of transparency between the citizen and the state. This leads to difficulty in obtaining data for

calculating the difference in technological transfer or in the expertise factor. It is also difficult to secure any data that could be used in determining the value of the FEZs' infrastructure, or the state's direct returns such as customs receipts to those zones and other income items such as water, electricity or energy bills, and indeed, many other aspects that have a cost attached to them.

Given the aim of this study, which is to evaluate the industries in the Alexandria FEZ and identify the reasons for that zone's success and hence use this information as the basis for promoting the FEZ in Misurata, attention to the benefits and costs as a method of analysis, is appropriate.

4.8.2 Cost-Benefit Method

Cost-benefit analysis is aimed at outlining and quantifying the social costs and benefits of a project. Such analysis represents a colossal area of research, and consequently, there is a concise discussion, as covered previously, of the underlying assumptions associated with it, together with several critiques. The assumptions involved are related to the estimated social discount rate, which has a great bearing on the results yet does not incorporate the indirect benefits of FEZs. The studies carried out by Warr and Choe separately, that have used cost-benefit analysis provide useful reference points, since the concept of discount rate is incorporated, and finds that the effects of high upfront infrastructure costs are amplified; at the same time, the importance of attracting FDI at an early stage becomes necessary.

The current research understands the implications of these parameters based on the type of industry sector, and hence explores the impact in the questionnaire addressed to research samples. The sample should represent certain industries or activities in order to determine total industry indicators, and to establish feasibility studies and conduct an evaluation of the project under study (cost-benefit analysis) as well. Additionally, research samples are used to determine the financial criteria, which are employed to measure the profitability of a project. Such criteria will indicate the net income, which is obtained. The common criteria adopted for undertaking cost-benefit analysis are mentioned below.

4.8.2.1 Net Present Value

The net present value is the net difference among the current financial inflows believed to be obtained during the project's economic span, and the value of the investment employed at the start date of the project span. The net present value can be computed by deducting the current value of total costs from the current value of returns at a given discount rate, assumed as 0.10, since such price will represent the costs of alternative opportunity employed for investment in society. It is vital to use the deduction price that represents the best opportunity of all alternatives available for investment in society. Such deduction or discount price can be obtained via central banks. Generally, the interest price on loans and deposits in commercial banks is used in cases of financial or commercial evaluation of available alternative opportunity for capital investment in society. Nevertheless, at a given deducted price, the project would be profitable with the increase of net present value; that is to say, the higher the net present value, the more profitable the project is. The net present value can be calculated as follows:

$$PB_T = \sum \frac{B_T}{(1+r)_T}$$

$$PC = \sum \frac{C_T}{(1+r)_T}$$

$$NPV_T = PB_T - PC_T$$

$$NPV_T = \frac{N(B-C)_T}{(1+r)_T}$$

$$Discount\ Rate = \frac{1}{(1+r)^T}$$

$$Sum\ Discount\ Rate = \sum_{i=1}^{T} \frac{1}{(1+r)^T}$$

$$Annual\ Average\ of PB = \frac{PB}{Sum\ Discount\ Rate}$$

$$\text{Annual average of PC} = \frac{PC}{\text{Sum Discount Rate}}$$

$$\text{Annual Average of NPV} = \frac{NPV}{\text{Sum Discount Rate}}$$

Where:

T = Economic project period (The least period in long run = 25 Years as assumption)

r = Discount rate (Interest rate in central bank = 10% annually in Egypt as assumption)

PB = Present Benefits

PC = Present Costs

NPV = Net Present Value

However if:

Net Present Value < 0, the project will be profitable and accepted,

Net Present Value = 0, the project will be naturalized and accepted, and

Net Present Net Value > 0, the project will not be profitable and refused.

4.8.2.2 Cost-Benefit Ratio

The cost-benefit ratio, or deducted profitability indicator, is the total present value of inflows (inputs) of benefits during the economic span of a project/total present cost outflows (outputs), at a given deduction price, ratio. The cost-benefit ratio is measured by the following equation:

$$(B/C)_T \, Ratio = \frac{PB_T}{PC_T}$$

However if:

Benefits/costs < 1, the project will be profitable and thus accepted;

Benefits/costs = 1, the project will be naturalized and then accepted; and

Benefits/costs > 1, the project will not be profitable and thus it is refused.

4.8.2.3 Payback Period of the Capital

The payback period of the capital represents the period required to match net financial inflows with investment costs of the project or the period needed to cover the total investment payments of the project in question. Thus, the payback period of the capital measures payback speed/rate of the capital invested. Thus, the decision made is known to be biased towards the project having the potential of payback of invested capital at a reasonable time.

The payback period criterion is measured provided that the net of annual inflow is fixed in line with the following equation:

$$Payback \ Period = \frac{Investment \ Costs}{Net \ Annual \ Income \ befor \ Deduction \ of \ Consumption}$$

In the instance of unequal annual financial outflow, the net of outflows is aggregated until it is equalized with the total investment costs.

The following equation can be used to compute payback period.

$$Payback \ Period = T + (\frac{CI - X_T}{X_{T+1} - X_T})$$

In the equation,

T: represents the last year displayed net financial outflows less than the value of total investment costs.

CI: net of total investment cost.

X_T: is the aggregated or accumulated financial outflows at the year T.

X_{T+1}: the aggregated or accumulated financial outflows at the year T+1.

Amongst the advantages of the payback period criterion are: it is simple, easily computed, and easily indicates profitability. It gives an indication of liquidity taking the obtained outflows into consideration at the beginning of the project. It is an acceptable

indication of the capability of the project to withstand any risk condition. However, the shorter the payback period, the lower the expected risk is and vice versa.

4.8.2.4 Internal Return Rate

The Internal Return Rate (IRR) is defined as the discount price when the current net value of the benefit equals 'zero'. It is also defined as the return of invested capital throughout the term of the whole project. It is expressed or computed in terms of percentage and profitability of the project or the return on investment, which is computed by the following equation:

$$IRR = r1 + (r2 - r1) * \frac{NPVr1}{\setminus NPVr1 - NPVr2 \setminus}$$

In the equation**,**

IRR: is the internal rate of return

r1: is interest rate when NPV is bigger than zero

r2: is interest rate When NPV is less than zero

$NPV_{r1:}$ is net present value at r1

NPV_{r2}: is net present value at r2

From the above equation, the relationship between the interest rate and net present value is not linear; hence, irregular changes of net present value with the change of interest rate occur. It should be mentioned that to accept or refuse the project depends on this criterion: the internal return rate should be more, equal, or less than the costs of the alternative opportunity of the capital or the costs of the capital.

Additionally, internal return rate is computed based on this equation:

$$IRP = \frac{1}{PayBack\ Period} \times 100$$

Thus, the stated criteria of financial analysis are formulated according to the theoretical assumption that there is the availability of sufficient information pertaining to the prospected changes concomitant with project terms; namely the costs either invested or operating on the one hand and the amounts and prices of the products and project terms on the other hand.

It follows that such assumption is unrealistic owing to uncertainty and the risk which may arise in the future. Thus, it is important to take into the account the expected situation as well as unexpected one. However, the higher the value of the IRR, the higher the capability of the project to persist, or withstand in case of adverse situation and to be profitable in the long run.

4.8.2.5 Sensitivity Analysis

This is the test of the sensitivity of Net Present Value and IRR of surged prices of inputs, reduced prices of outputs, or both at the same time. It is also regarded as a test for sensitivity of the project in case of profits latency. Moreover, the analysis test for sensitivity means putting measures forward to encounter any adverse situation that is likely to face the project in the future. This means determining and predicting both the net of the present value, and the IRR of the project in all conditions.

Consequently, the analysis of sensitivity implies the use of prospected values for profits, costs, and lateness period of project returns. Conversely, the transformed value concept can be used to indicate sensitivity. Thus, transformed or critical values are identified and so are the criteria relating to the financial profitability of the project. These values are set to be standard with regard to related projects (Al Mdanat, 2006).

The analysis of sensitivity affirms the cost-benefits associated with percentages of increase or decrease of inputs and outputs prices. This is based on the findings obtained by the data analysis using the 'Cost Ben Program'. A sample project was discussed with the participants to understand the impact of these parameters have on Net Present Value of the project. Thus, the evaluator identifies the sensitivity of the project towards changes of returns, operating costs, or both of these factors.

4.9 Summary

This research aims to provide deeper understanding of the main factors that encourage the success of FEZs, while taking into consideration the provision of lessons and benefits useful to the FEZ in Misurata, Libya. In order to achieve the aims of the study, the case study methodology was adopted, which will help in choosing the type of FEZ that is appropriate to the country, as well as the type of investment and investor, which facilitates fair and available benefit, through determining the benefits and costs of the FEZ being studied.

Although the majority of previous researches have used the Enclave Model to study FEZs, based on government data, this study explains that there is weakness and lack of clarity in the gathering of data and information specific to industries within the host country, which would be compared with the data from within the FEZ, representing the basis of this model.

It is difficult in developing and Arab countries, including Egypt and Libya, to apply the model in the proper way, due to the lack of transparency existing between citizen and state, and the difficulty in gaining the data that may be used in a pure measurement of costs and benefits, as well as the difficulty in gaining information that may be used in determining the infrastructure of the value of FEZs.

In order to arrive at clear and correct results, many companies and factories within Al-Ameria FEZ in Alexandria, Egypt was analysed. For this purpose, a questionnaire, and a series of interviews were undertaken in the FEZ in Misurata. In addition, primary data was gathered once, and then subjected to a varied set of quantitative tests, including analysis of costs and benefits, guided by the Enclave Model. Secondary data was also gathered from documents and published research.

This data is next analysed in Chapter Five in terms of the Enclave Model (Warr, 1993) in a broad sense.

A critical part of the research is a consideration of the other factors not adequately covered by the Enclave Model.

This is undertaken by a process of triangulation between the literature, the questionnaire data and the views of the company managers in the two Zones.

CHAPTER FIVE

THE EXPLORATORY STATISTICAL RESULTS

5.1 Introduction

Current international trade theory does not enable economists to be conclusive on the issue of whether FEZs confer net welfare augmenting effects on the host country. Hence, an exploratory investigation using cross-tabulation is required to help resolve the issue in each particular case. Important insights resulting from this analysis can lead to important contributions to the literature on cost-benefit analysis. Also, the procedures analysed in this chapter provide invaluable assistance in the evaluation of the Al-Ameria FEZ in Egypt that takes place in chapter six.

5.2 Description of the Research Sample

60 questionnaires were collected from companies operating in the Al-Ameria FEZ. According to these questionnaires, the number of industrial entreprises is 142, distributed as follows: 12 food industrial enterprises, 31 chemical industrial enterprises, 47 textile and ready-made clothes companies, 18 industrial engineering companies, 12 navigation services companies, 12 medical equipment companies, 10 iron and steel manufacturing companies, in addition to 88 storage construction and petroleum companies, and 74 inventory storage companies in the year 2009. 10 questionnaires were excluded because some questions were not filled in, and hence the remaining dataset (for 60 companies) represents 42% of the total industrial enterprises which are the subject of the study (Table 8). Regarding the research samples, the ready-made garments sector represented the highest number of companies, followed by the food and chemical industries (see Figure 5 for more details). We noted from the plot that there were no investments in the storage and petroleum industry.

By studying the nationality of the investor for the sample of the research companies it was determined that 19 companies involved foreign investors which constituted 31.7% of the total number of company samples. As for the Egyptian companies, they reached 41 companies, which constituted 68.3% of the total company samples. The prevailing nationality for the investors in the research sample was Egyptian. They were involved in 8 companies in the food industry, 7 in the chemical industry, 10 in the textile industry, 5 engineering companies, 5 navigation services companies, 5 medical equipment companies, and one in the iron and steel industry. The prevailing nationality of foreign investors was Italian. They were involved in 4 companies in total in the ready-made

clothes industry, and 3 Greek companies operating in the engineering industry, navigation services and medical equipment industry, and 3 German companies operating in the field of chemicals, ready-made garments and in the engineering industry, as shown in Table (8).

It seems that each country has a relative interest in specific fields. Egypt for instance has mainly invested in the field of providing food, chemicals and ready-made garments. Based on percentages, we found that they represent 88.8% in the food industry, 77.7% in the chemical and 58.8% in ready-made garments. Italy has only invested in the field of designing ready-made garments and thus it had a relative advantage in the ready-made garments industry equals to 23.5%. For Greece, it has a relative advantage in navigation services (about 12.5% of the navigation services total) in addition to engineering (about 12.5% of the engineering industry total) and medical equipment (about 16.6% of the medical equipment total) industries.

Figure 5: Distribution of industry types in the free economic zone in Alexandria for the research sample
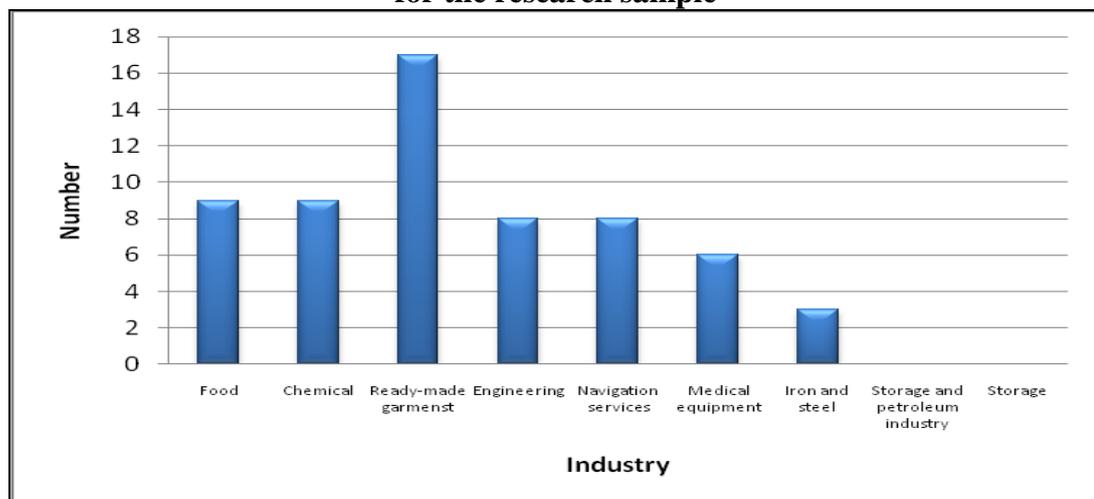
A study of the partnership type of the companies in the research sample showed that among three types of enterprise, 46 are public limited companies, representing 76.7% of the sample total (see Figure 6). Fifteen were in the ready-made clothes industry (about 88.2% of ready-made clothes). Moreover, ten were private partnership firms, representing about 16.7% of the total research sample total, of which three were in the food industry (about 50% of the food industry). Four parent companies have subsidiaries, representing 6.7% of the research sample total, of which two were in the navigation services field (about 25% of this field) and two were in the medical equipment industry (about 33% of this industry) (see Table 9 for more details).

Table 6: The nationality of investors in different industries existing in the free economic zone in Alexandria in the research sample

Product type / Investor's nationality	Food	Chemical	Ready-made garments	Engineering	Navigation services	Medical equipment	Iron and steel	Storage and petroleum industry	Storage	Total
Egyptian	8	7	10	5	5	5	1			41
Australian	1									1
Greek				1	1	1				3
Netherlands		1			1					2
Various nationalities					1					1
German		1	1	1						3
Italian			4							4
Syrian			1	1						2
American			1							1
Italian Egyptian contribution							1			1
Chinese Egyptian contribution							1			1
Foreign investments	1	2	7	3	3	1	2			19
Units of the research sample	9	9	17	8	8	6	3			60
Companies of the free zone in Alexandria	12	31	47	18	12	12	10	88	74	307

Table 7: The type of partnership in the different industries existing in the Alexandria free zone in the research sample

Type of partnership / Type of product	Food	Chemicals	Ready–made clothes	Engineering	Navigation services	Medical equipments	Iron and steel	Total	%
Company	6	8	15	7	5	4	1	46	76.7
Private ownership	3	1	2	1	1		2	10	16.7
Branch of mother company					2	2		4	6.7
Total	9	9	17	8	8	6	3	60	100.0

Figure 6: Type of partnership in the Alexandria free zone in the research sample
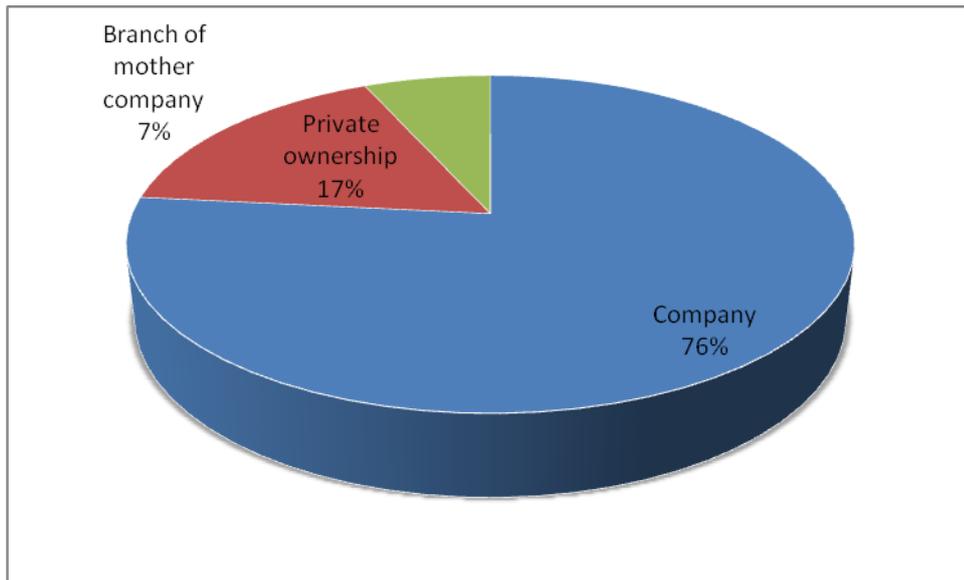
The study also showed that owners of firms operating in the free zone prefer to work in certain fields because of the savings in invested capital in addition to experience. Companies, for instance, were focused in the field of ready-made clothes (about 88.2% of the ready-made clothes total), and then chemicals and engineering and navigation services, whereas private companies were focused in the food industry (about 33.3% of the food industry total), and then ready-made clothes and iron and steel. For the branch of a mother company, it was found out that investments were just focused in the field of medical equipment (about 25% of the medical equipment total) and navigation services (about 33.3% of the navigation services total). Generally, the underlying companies have dominated all sectors of the industry.

By looking at the degree of ease of constructing a new project in the economic free zone in Alexandria, Table 10 shows that 51 establishments (about 85% of the sample total) answered that the degree of ease in constructing companies ranged from 50-75%, whereas just 7 establishments (about 11.6% of the sample total) said that the degree of ease was 25% (see Figure 7 for more details). Generally, the degree of ease was about 75% or more for 46.6% of investors, which seems to be somewhat low. As a result, we may say that the degree of easiness should be increased to encourage investments.

The data in Table (11) shows the capital used in the construction of the project, which gives an indication about the size of the project from one side, and from the other side it

gives a good indication for new investors of the size of the necessary financing at the start point for any of the industries' types subject of the study. It was determined that 47 fell under the second and third categories ($2,500,000 to 1,000,000 and $5,000,000 to 2,500,001), whereas the number of companies in the second category was 23, 5 of which were in the food industry, 5 in the engineering industry, and 6 factories were for ready-made garments. The required capital for construction ranged from 1 million dollars to 2.5 million dollars (see Figure 8). The number of companies in the third category reached 23; 11 of them were in ready-made clothes and 7 were in navigation services, and the required capital for construction ranged from 2.5 million dollars to 5 million dollars. For the 6 companies which invested capital exceeding 5 million dollars, the investments were in the iron and steel industry, medical equipment industry, navigation services, engineering industry and food industry.

Table 8: The degree of easiness of constructing a project in various industries existing in the economic free zone in Alexandria in the research sample

Degree of easiness of constructing a project	Food	chemicals	Ready– made clothes	Engineering	Navigation services	Medical equipment's	Iron and steel	Total
100%	1	1						2
75%	3	3	12	3	3	2		26
50%	3	3	5	5	4	3	2	25
25%	2	2			1	1	1	7
0%								0
Total	9	9	17	8	8	6	3	60

Figure 7: Degree of easiness of constructing a project in the economic free zone in Alexandria in the research sample
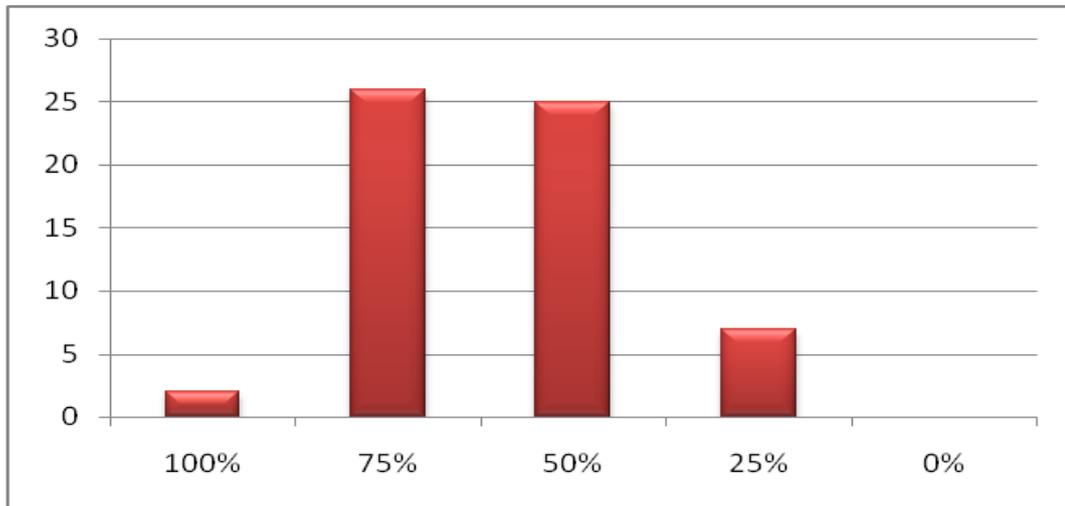
Figure 8: Capital used for the construction of a project
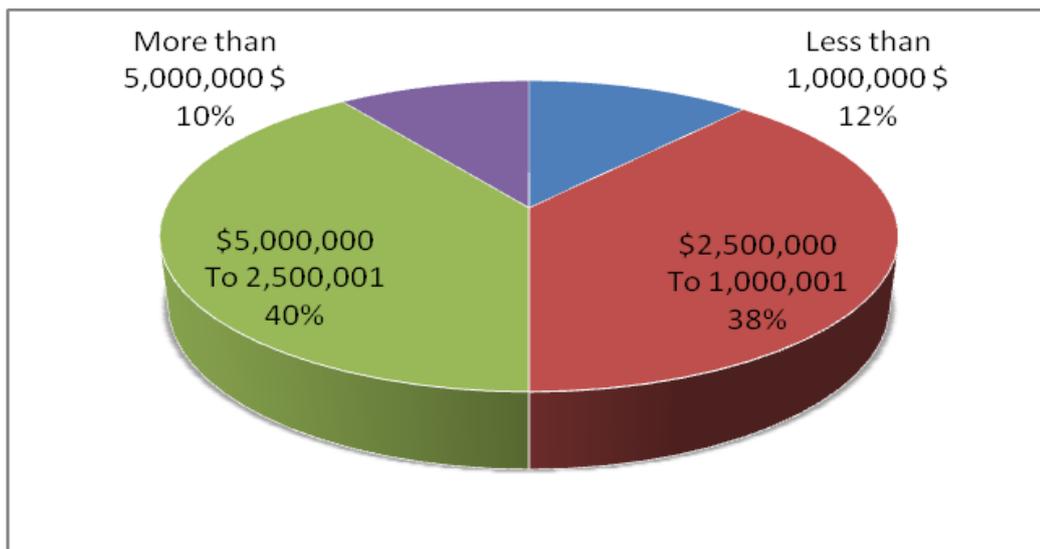
A study of the financial resources of the companies in these industries showed that the prevailing investments sources were partner investors (Figure 9) in 22 companies, which means more than one-third of the sample, and 9 of them were in the ready-made clothes industry. This was followed by self-financing or self-financing with a bank loan, which involved 10 companies, and 4 were in the food industry. There were only 3 companies in the chemical industry and 3 in the iron and steel industry which used self-financing with a bank loan (Table 12). Only 3 companies relied on self-financing.

Table 9: The capital used in the construction of a project in different industries existing in the economic free zone in Alexandria in the research sample

Capital	Food	Chemicals	Ready-made clothes	Engineering	Navigation services	Medical equipments	Iron and steel	Total
Less than $1,000,000	2	4				1		7
$2,500,000 To $1,000,001	5	5	6	5		1	1	23
$5,000,000 To $2,500,001	1		11	2	7	2	1	24
More than $5,000,000	1			1	1	2	1	6
Total	9	9	17	8	8	6	3	60

Figure 9: Finance resources of the capital used in the construction of a project
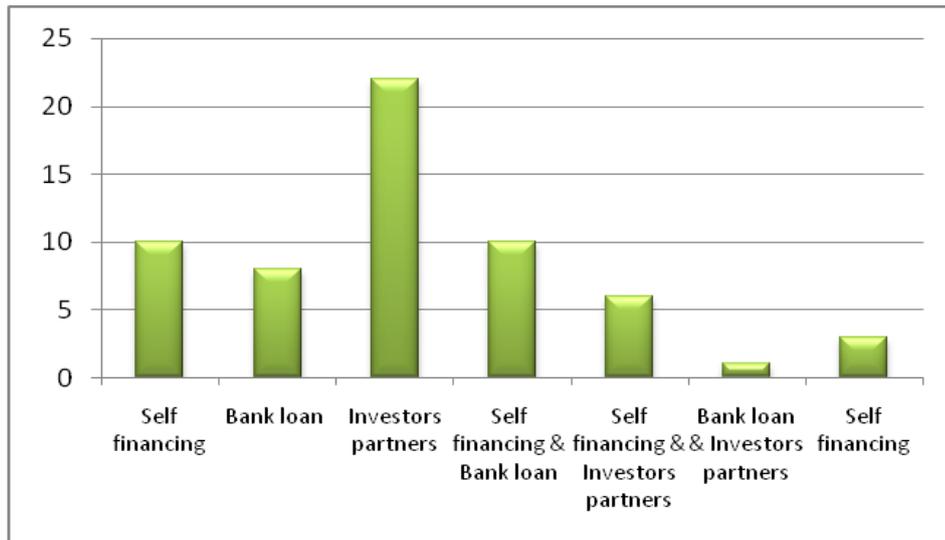
Regarding the necessary labour for the construction of new projects in the Al-Ameria FEZ, table (13) shows that the dominating source for acquiring new labour is local employees. 46 companies gave jobs to local employees: 16 of them operate in the field of ready-made clothes, 7 companies operate in the engineering industry, 6 companies in the field of navigation services, and 6 companies in the food industry. One reason for relying on local employees may be that they are cheaper than foreign labour.

This means that investments require that applicants for new jobs have experience in the field of a particular industry, because investment companies are concerned first and foremost about their own interests. This does not contradict the fact that some establishments gave jobs to the unemployed. 8 companies did this in the research sample: 3 of them in the field of chemicals, 2 in the food industry and 2 in the medical equipments industry. (Figure 10) demonstrates clearly how big the difference between the categories of employees is.

By asking about the degree of difficulty of obtaining local employees to fill new jobs in the construction of projects, we found in Table (14) that the majority of companies, namely 58 companies (96.6%) (See Figure 11), did not find any difficulty in obtaining local employees. From these companies, we noticed that the majority of them, 16 companies (about 27.6%), invested in ready-made clothes, whereas 3 of them, which is the lowest number (about 5.25%), invested in iron and steel. Only 2 companies found

difficulties in getting local employees to fill vacant jobs; one in the field of ready-made garments and the other in the field of navigation services.

Going through the data concerning women's participation in different industries, it was found that the percentage of women's participation exceeded 75% in nine companies (about 15%) in the field of ready-made clothes (see Figure 12). The percentage of women's participation ranged from 50-75% in ten companies (about 17%), where eight of are in the field of ready-made clothes. This demonstrates the importance of the female factor in the ready-made clothes industry, because of their professional skills and artistic sensibilities in that field (Table 15). The percentage of women's participation at less than 25% was observed in 32 companies (about 53%), where none were in the field of ready-made clothes. Hence, the number of females, overall, seems to be much lower than males.

Table 10: Financing sources for the capital used in the construction of a project for different industries in the economic free zone in Alexandria in the research sample

Financing source	Food	Chemicals	Ready-made clothes	Engineering	Navigation services	Medical equipments	Iron and steel	Total
Self-financing	4		2	2	2			10
Bank loan		2	4	2				8
Investors' partners	3	3	9	3	2	2		22
Self-financing + Bank loan		3	2	1	1		3	10
Self-financing+ Investors' partners	1	1			2	2		6
Bank loan+ Investors' partners						1		1
Self-financing	1				1	1		3
Total	9	9	17	8	8	6	3	60

Figure 10: Employee categories involved in project construction
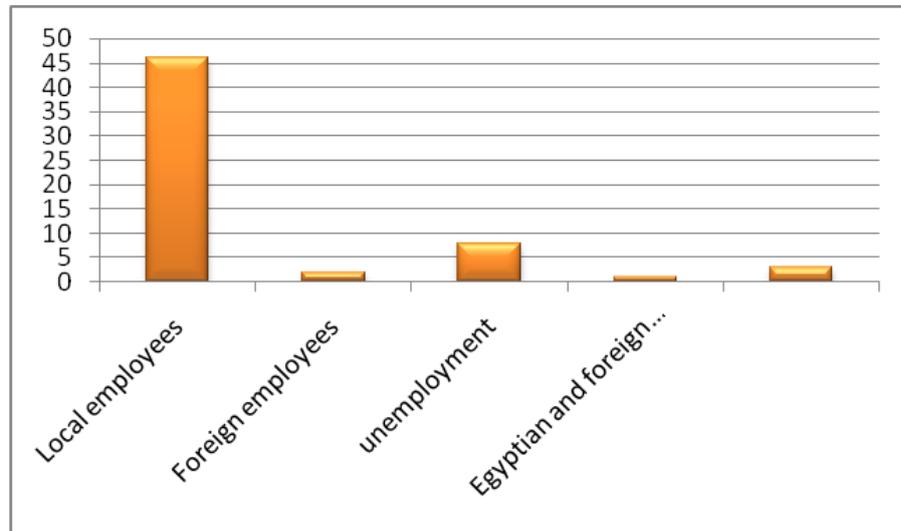
When studying the number of hours of primary work in different industries in the FEZ in Alexandria in the research sample, it was found that the prevailing category was eight hours of work daily. The number of companies working with this system was 53, which equals 88.3% of companies in the research sample (see Figure 13). This seems to indicate that most companies operating in different fields in the economic free zone in Alexandria work one shift daily, from 8:00am 4:00pm. Only 6 companies were an exception to this rule as they worked for 12 hours; two of these companies were in the field of navigation services, as illustrated in Table 16.

Table 11: Acquiring new jobs in the construction of projects in different industries in the economic free zone in Alexandria in the research sample

Who gets new jobs	Food	Chemicals	Ready-made clothes	Engineering	Navigation services	Medical equipments	Iron and steel	Total
Local employees	6	5	16	7	6	4	2	46
Foreign employees					2			2
Unemployed	2	3	1			2		8
Egyptian and foreign employees				1				1
Egyptian employees and unemployed	1	1					1	3
Total	9	9	17	8	8	6	3	60

Table 12: The degree of difficulty of finding local employees for the construction of a project in different industries in the economic free zone in Alexandria in the research sample

The degree of difficulty in finding local employees	Food	chemicals	Ready–made clothes	Engineering	Navigation services	Medical equipments	Iron and steel	Total
There is a difficulty			1		1			2
There is no difficulty	9	9	16	8	7	6	3	58
Total	9	9	17	8	8	6	3	60

Figure 11: The degree of difficulty in finding local employees
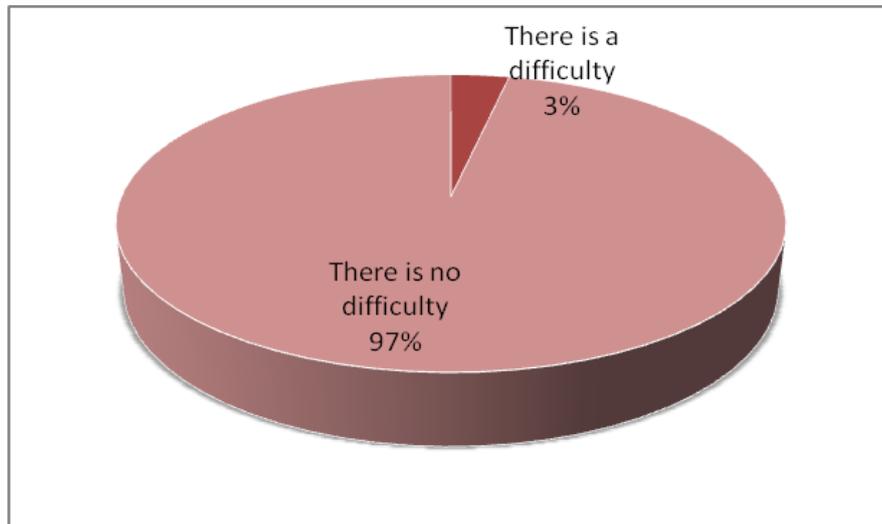
Figure 12: The participation of women in different industrial fields
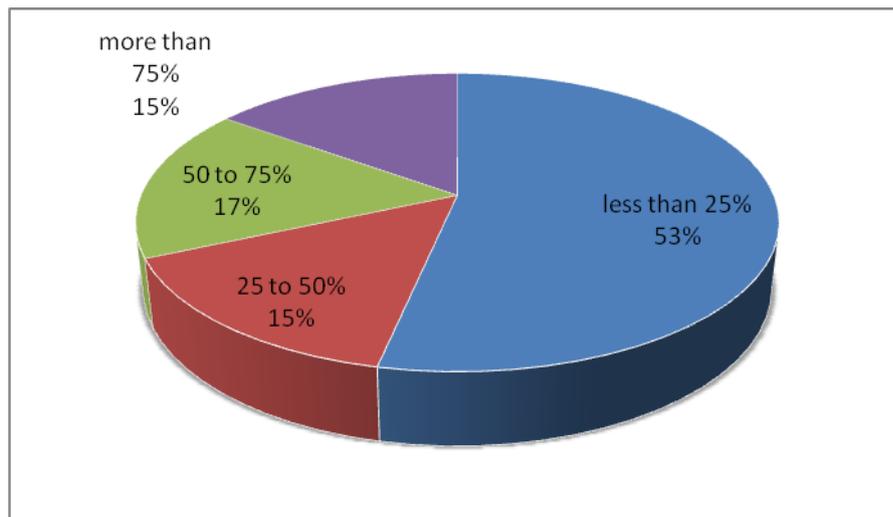
Table 13: The participation of women in different industrial fields in the economic free zone in Alexandria in the research sample

% of women's participation	Food	Chemicals	Ready-made clothes	Engineering	Navigation services	Medical equipments	Iron and steel	Total
Less than 25%	7	7		7	6	3	2	32
25 to 50%	1	2		1	2	2	1	9
50 to 75%	1		8			1		10
More than 75%			9					9
Total	9	9	17	8	8	6	3	60

Table 14: The number of working hours in different industries existing in the free economic zone in Alexandria in the research sample

Number of working hours	Food	Chemical	Ready-made garments	Engineering	Navigation services	Medical equipment	Iron and steel	Total
8	9	7	16	7	6	5	3	53
10		1						1
12		1	1	1	2	1		6
Total	9	9	17	8	8	6	3	60

Figure 13: Number of working hours
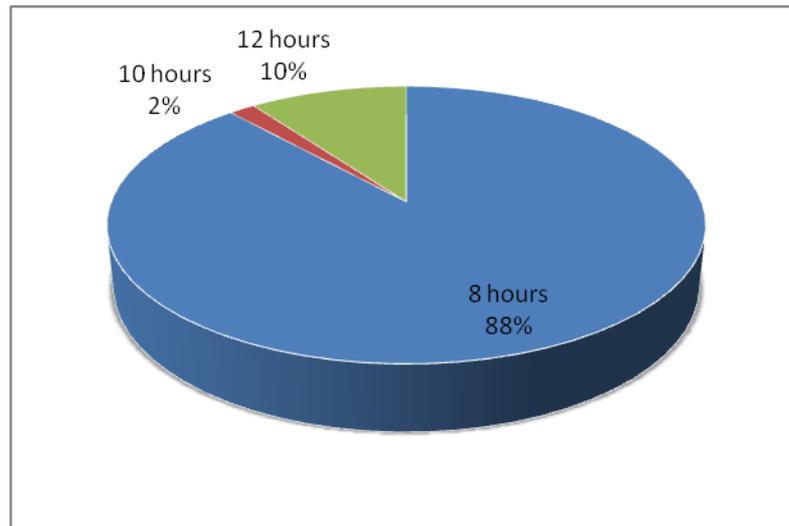
When studying the number of hours of extra work in different industries in the free economic zone in Alexandria in the research sample, it was found from (Figure 14) that the prevailing category was 4 hours of extra work daily. The number of companies needing an extra 4 hours of work was 49 of the total research sample (about 81.65%). From these companies, 16 (about 32.7%) were in the field of ready-made garments, followed by the food industry (about 18.7%) and engineering field (about 14.2%). The rest of the companies were divided between 2 hours of extra work, 8 hours of extra work, and 12 hours of extra work, according to their needs, as illustrated in Table (17).

Table 15: The number of extra working hours in different industries existing in the free economic zone in Alexandria in the research sample

Number of extra working hours	Food	Chemical	Ready-made garments	Engineering	Navigation services	Medical equipment	Iron and steel	Total
2		1	1	1	2			5
4	9	7	16	7	5	2	3	49
8					1	3		4
12		1				1		2
Total	9	9	17	8	8	6	3	60

When studying the preference of conducting training for personnel working in different industries in the Al-Ameria FEZ in the research sample, it was found from (Figure 15) that the prevailing category was companies that prefer to conduct training for their personnel. The number of companies training their personnel was 34 (about 56.65%), and 10 of them (about 29.4%) were in the field of ready-made clothes and 7 (about 20.5%) in the chemical industry, as illustrated in Table (18). According to the table, we noticed that 26 companies (about 43.3%) did not prefer to train. From these companies, those in the ready-made garments industry represented about 26.9% (7 companies), followed by those in the food industry (about 23.1%).

Figure 14 : The number of extra working hours
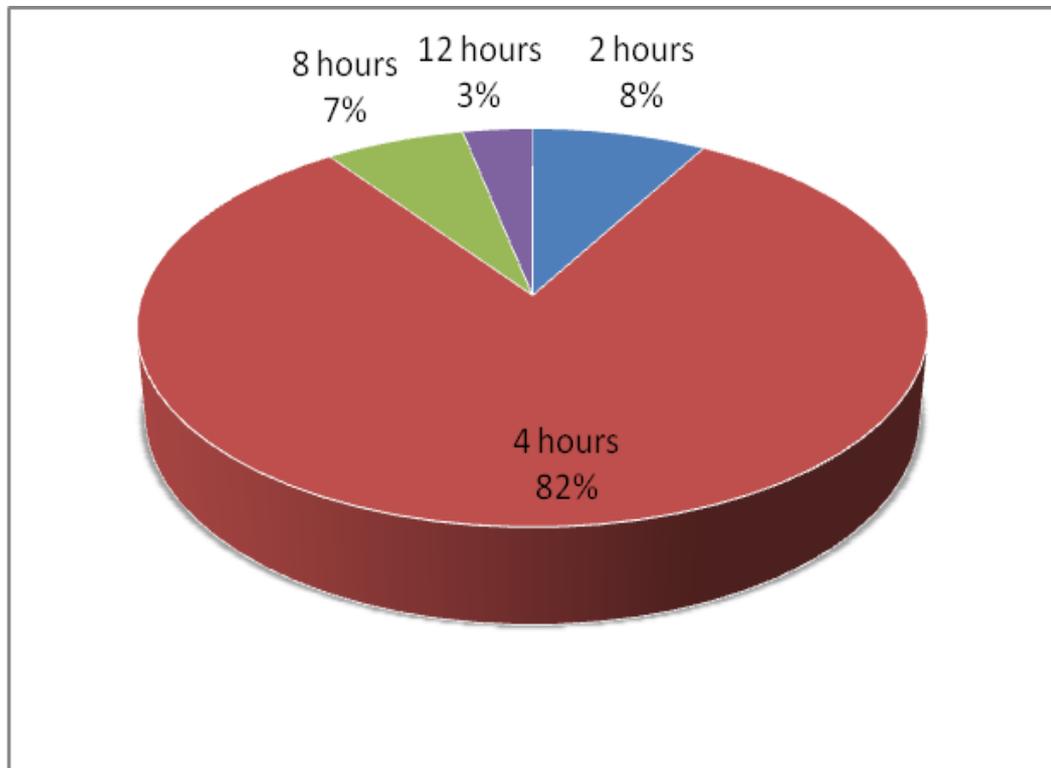
Table 16: The preference of conducting training for personnel in different industries existing in the free economic zone in Alexandria in the research sample

The preference of conducting training for personnel	Food	Chemical	Ready-made garments	Engineering	Navigation services	Medical equipment	Iron and steel	Total
Prefer to	3	7	10	4	4	4	2	34
Do not prefer to	6	2	7	4	4	2	1	26
Total	9	9	17	8	8	6	3	60

Figure 15: The preference of conducting training for personnel
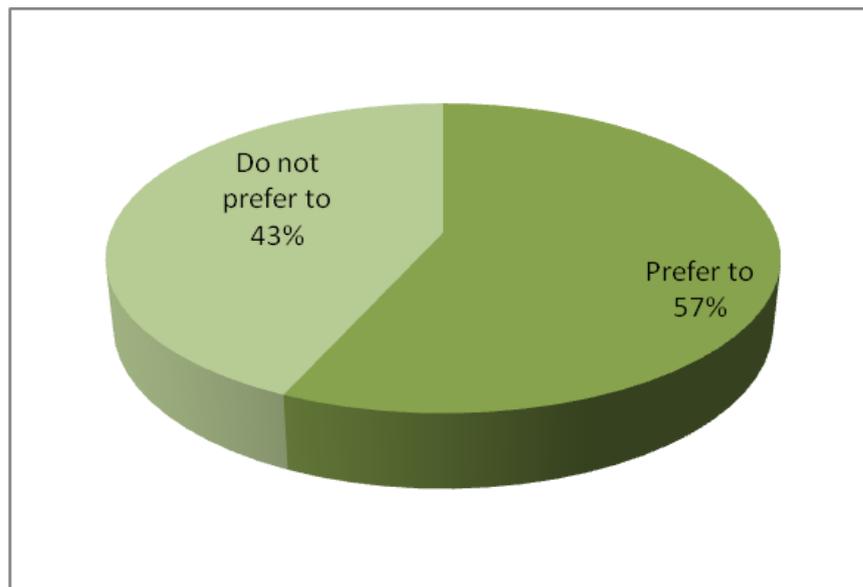
From qualitative point of view, the data collected in the survey provided some insights into the type of industries normally set up in FEZ by investors and the skills of the people they employ. The survey showed that the high skilled jobs usually went to foreign nationals, especially from Europe, Asia and US, whereas low skilled jobs are undertaken by local people. The reasons for such an approach in the industries in FEZ are the lack of availability of local labour with requisite skills to do such high skill jobs, and the costs associated with training local labour as well as lack of government initiative to promote backward linkages. This has also reflected in the type of industries started in Al-Ameria FEZ. Most of the industries are of the nature that involve assembly of units instead of manufacturing from raw materials. These industries usually import parts from elsewhere in the world, and use this base as an assembly unit before sending it to their selling partners in developed countries. Such types of activities require fewer skills and are carried out by locally available semi-skilled labour. Very little effort is put into the transfer of technology, or converting these assembly units into manufacturing units by these industries and concerned government bodies. The primary reason being the lack of global competitiveness.

5.3 Summary

This chapter has explained some interesting features through an exploratory statistical analysis which have economic significance. Using cross-tabulation, it was possible to

examine frequencies of observations that belong to specific categories on two variables. It was observed how the investors' nationality was distributed through the industry type, and it was noted that every country has a relative advantage in a certain field for investment inside the Al-Ameria FEZ.

From the analysis carried out in this chapter, it can be said that Egypt has a relative advantage in the field of providing raw cotton material and thus has a relative advantage in the ready-made garments industry. Italy also has a relative advantage in the field of designing ready-made garments. Germany showed an advantage in the chemical and engineering industries. Greece has a relative advantage in navigation services.

For the type of partnership that owners of enterprises operating inside the free zone prefer to work in the field of ready-made clothes, chemical industries, engineering industries, and navigation services. Sole proprietorship companies are predominantly focused in the food industry and ready-made clothes industry.

Regarding the degree of ease of constructing new projects inside the free economic zone, it was observed that it was between 50% and 75%. The majority of companies did not find any difficulty in finding new local employees to fill their jobs; this indicates the availability of the labour force in the host country and that the free zone creates new job opportunities. This is one of the major benefits of free zones for the host country.

To determine the percentage of female employees and labour, it was found that they represented less than 25% in 32 companies (about 53.3%), whereas it was more than 50% in 19 companies (about 31.7%), all of them in the ready-made clothes industry.

Regarding working hours, most companies operated one shift for 8 hours from 8:00am until 4:00pm. And in terms of training, the chemical industry and ready-made clothes industry are characterized by their wish to conduct training for their personnel.

From the primary data gathered through the survey, the researcher was able to give a description of the status of each industry relating to requirements, relative advantage, and some general benefits.

To gain more accurate results, which could be useful in achieving goals, and answering the questions of the study, the following chapter will present a financial and economic evaluation for each industry in the study to show the most successful and most suitable for investment in the economic free zone in Alexandria. The industries will be classified according to their standards and indicators resulting from the analysis of costs and benefits.

CHAPTER SIX

COST-BENEFIT ANALYSIS OF

THE ALEXANDRIA (AL-AMERIA) FREE ZONE

6.1 Introduction

Cost-benefit analyses can prove to be important because when projects are being considered many of the costs and benefits are inconspicuous, and estimation might, therefore, require the use of sophisticated techniques. For example, project promoters may only consider private costs and benefits in their planning, but a wise and prudent evaluator will account for the full social costs and benefits. It is quite possible that net social benefits may differ significantly from net private benefits.

Given the rapid global growth in the number of FEZs, there is a case for the argument that some countries or individuals in those countries are benefiting from them. The purpose of this chapter is to investigate whether the benefits received by Egypt from the Al-Ameria FEZ in Alexandria actually exceed the associated costs, and it takes as an example, a sample of the existing industries in that FEZ, in order to obtain indicators for investors in respect of the choice of activity appropriate for investment. Such indicators are: (1) average investment costs, (2) average annual operating costs, (3) total annual costs, (4) annual revenue, (5) the present and switching value of total costs during the life period of the project, and (6) total present and switching value of return over the life period of project. Through analysis of data obtained from the research sample, which included most of the industries established in this region, the following were represented: (1) food, (2) chemicals, (3) ready-made clothes, (4) engineering, (5) navigation services, (6) medical equipment, and (7) iron and steel.

6.2 Financial Evaluation of Investment in the Foodstuffs Industry in the Al-Ameria FEZ

Data Description

Nine questionnaires were gathered from foodstuffs enterprises in the Al-America FEZ working in the food industry. Eight of these enterprises were Egyptian and the remaining one was Australian. Regarding the type of enterprise, three of the nine were individually owned, and the other six were large companies. None of the enterprises faced any obstacles in their start-up phase.

Dealing with the data in Table (19) pertaining to the mean values of economic indicators, it was found that the average investment costs of these enterprises amounted to $8,667,000 in the year of establishment, in addition to fixed costs which included rent fees, maintenance and licences, which amounted to $1,767,000 annually during the productive span of the project (which amounted to 25 years). As for current costs (operational costs), which included wages, transportation, annual licences, and raw materials, these amounted to $1,117 million annually. Thus, it is clearly found that the total costs in the first year amounted to $1,984 million, whilst in the following years it amounted to $1,294 million. On the other hand, the annual return of this industry amounted to $1,644 million annually (as an annual mean). In turn, the net return in the first year was minus $3,392,000, while in the following years, the project could add about $3,508,000 until the end of its productive span.

Table 17: Average Investment, Current and Total Costs, Benefit, and Net Benefit of Foodstuffs Industries in the Al-Ameria FEZ (in $1,000)

	First year	**from 2nd annually to 25th year**
Investment Cost	866.7	176.7
Current Costs	1116.9	1116.9
Total Costs	1983.6	1293.6
Benefit	1644.4	1644.4
Net Benefit	-339.2	350.8

Source: Adapted from Questionnaire

Table 20 indicates the present and switching values, revealing the present value of investment cost (total fixed costs) to be $2,232 million, while the switching value amounted to $4,788 million. Furthermore, it was found that the current operational costs during the productive span of the project were $10,138 million. As for switching value, this amounts to $12,695 million; consequently, the present value of the total costs is $12,370 million, whereas the present value of the benefit (return) is $14,926 million. However, from Table (20), the following criteria can be derived for project evaluation:

Cost-Benefit Ratio

This criterion can be derived by dividing the value of the appraisal value of total benefits (current return) by the appraisal value of total costs. If the obtained value (after

dividing) is more than 1, the project could be profitable and acceptable for investment. The value of the cost-benefit ratio was 1.21.

Net Present Value

This criterion can be derived by subtracting the total current costs value from the total value of the benefits (return). If net present value is positive, the project could be profitable and acceptable for investment. In the case of this data relation to the foodstuffs industry in the Al-Ameria FEZ, the net present value was $2,557 million.

Table 18: Appraisal, Switching Values, and Criteria for the Foodstuffs Industry in the Al-Ameria FEZ at a Discount Rate of 10% (in $1,000)

Stream	Appraisal Value	Switching Value	Percentage Change
Investment Cost	2231.6	4788.1	114.56%
Current Costs	10138.1	12694.7	25.22%
Total Benefit	14926.3	12369.7	-17.13%
Total Costs	12369.7	14926.3	20.67%

Benefit / Cost =   1.21

Net Present Value at OCC 10.0% = 2.557 million dollar

Internal Rate of Return = 103.4%

Coupon Equivalent Rate of Return = 12.7%

Payback Period < 2 Years
Source: Adapted from Questionnaire and Calculated by Cost Ben program

Internal Rate of Return (IRR)

This criterion is also called 'profitability of invested dollar', and can be compared with the current interest in a local bank. However, if the internal return price is more than that of the current interest, the project could be profitable and acceptable for investment. The internal rate of return is 103.4%, meaning that for every one dollar invested three cents will be added by the end of the year, and thus the investment is regarded as profitable.

Payback Period

This criterion relates to the Period of Capital Recovery, and provides an indication of the period required to restore the investment costs so that profit could be fully available

by the end of the project span. Accordingly, the investment cost value of the foodstuffs industry projects could be restored after a period of less than one year.

Analysis of Risk and Sensitivity

This analysis is considered as an indicator of the reaction of the given project toward a crisis which may arise. Thus, the analysis supposed increased costs of about 10, 20 and 50%., and a decrease in the return of about 10, 20 and 50%. It was assumed that the increase in costs was simultaneously concomitant with a decrease in return. Furthermore, the analysis supposed that the return would be postponed for one, two or three years, and would impact on the net present value and the IRR.

Viewing the data provided in Table (21), which indicates the analysis of sensitivity and risk of the net present value of the foodstuffs projects in the sample, the investment is shown to be insensitive to increased costs up to 20%, since the net present value is $826,000 and there is a reduction of benefit (return) to 10%, since the net present value becomes $1,064 million. However, it would be sensitive to a 10% increase of the cost with a 10% decrease in return at the same time. In this case, the project would be subject to a loss amounting to $1,730,000. On the other hand, the project would be sensitive to a return delay for two years (lagged), since it would lose about $339,000.

Table 19: Sensitivity and Risk Analysis for the Foodstuffs Industries in the Al-Ameria FEZ - Net Present Value of Net Streams at Different Discount Rates ($1,000)

	Benefits	Down 10%	Down 20%	Down 50%
Costs	2556.60	1063.90	-428.70	-4906.60
Up 10%	1319.60	-173.00	-1665.70	-6143.50
Up 20%	82.60	-1410.00	-2902.60	-7380.50
Up 50%	-3628.30	-5120.90	-6613.50	-11091.40

	Benefits	Lag1	Lag2	Lag3
Costs	2556.60	1199.6	-33.9	-1155.4
Up 10%	1319.60	-37.3	-1270.9	-2392.3
Up 20%	82.60	-1274.3	-2507.9	-3629.3
Up 50%	-3628.30	-4985.2	-6218.8	-7340.2

Source: Calculated by Cost Ben program

With regard to the data set out in Table (22), which indicates the sensitivity and risks associated with the foodstuffs enterprises in the Al-Ameria FEZ, the investment in such an industry is regarded as an incentive for a cost increase up to 20%, since 11.61% was attained, and remained higher than the value of the prevailing bank interest. Additionally, this rate is regarded as an incentive for a 10% reduction in return, since it amounted to 36.98%, which is higher than the prevailing interest rate. However, the project would be sensitive to a 10% increase of costs concomitant with a 10% reduction of return, so that investment in the bank would be more profitable since the IRR of the project was 6.2% which is less than 10%. Furthermore, the project would be sensitive to a delay of return for two years, since the internal return rate was 9.87%, which is less than the prevailing bank interest rate.

Table 20: Sensitivity and Risk Analysis for the Foodstuffs Enterprises in the Al-Ameria FEZ - Internal Rate of Return of Net Streams at Different Discount Rates (in $1,000)

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	103.414	36.975	-1.846	None
Up 10%	41.175	6.195	None	None
Up 20%	11.609	None	None	None
Up 50%	None	None	None	None

	Benefits	Lag1	Lag2	Lag3
Costs	103.414	17.574	9.873	6.842
Up 10%	41.175	9.781	5.524	3.832
Up 20%	11.609	2.899	1.623	1.125
Up 50%	None	-15.386	-8.234	-5.673

Source: Calculated by Cost Ben program

From the previous information it is obvious that the state could encourage and attract investments and advise the willing and experienced investor about the food industries field. An investor with 2 million dollars (0.9 million dollars construction costs + 1.1 million dollars annual operating costs) will receive about 1.6 million dollars in revenue annually, and will, therefore, make an average annual profit of about 350,000 dollars after paying the infrastructure costs. The project would yield a net profit after redeeming the capital in less than two years, and hence, this is a very profitable project

because the IRR is about 103% which is substantially more than the opportunity cost which is the bank interest rate of 10%.

6.3 Financial Evaluation of Investment in the Chemical Industry in the Al-Ameria FEZ

Data Description

Nine questionnaires were gathered from chemical companies in Al-Ameria FEZ. Seven of these were from Egyptian enterprises, one from the Netherlands, and one from Germany. In total there were 31 chemical facilities. In terms of the type of enterprise, eight of these were companies and one was a sole proprietor. None of the respondents indicated encountering any obstacles at the start-up of their projects.

The data in Table (23) provides the mean values of economic indicators relating to the sample, from which it was found that the average investment costs amounted to $6,672 thousand in the year of establishment, in addition to fixed costs amounting to $149.2 thousand annually during the productive span of the project (calculated to be 25 years). As for current costs, these amounted to $947.4 thousand annually. Thus, it is found that the total costs in the first year amounted to $1,615 million, whilst in the following years they amounted to $1,097 million. On the other hand, the annual return of this industry amounted to $1,459 million annually (as an annual mean). In turn, the net return in the first year was minus $155.4 thousand; but in the following years, the project could add about $362.6 thousand per year until the end of the productive span.

Table 21: Investment, Current and Total Costs, Benefit and Net Benefit of Chemical Industries in the Al-Ameria FEZ (in $1,000)

	First year	from 2nd annually to 25th year
Investment Cost	667.20	149.20
Current Costs	947.40	947.40
Total Costs	1614.60	1096.60
Benefit	1459.20	1459.20
Net Benefit	155.40-	362.60

Source: Adapted from Questionnaire

Table (24) indicates the present and switching values, as well as the economic criteria for the chemical enterprises in the sample, from which it is seen that the present value of investment cost (total fixed costs) is $1,825 million, while the switching value is $4,646 million. Furthermore, it was found that the current operational costs during the productive span of the project were $8,600 million. As for switching value, it was $11,420 million; consequently, the present value of the total costs was $10.425 million, whereas the present value of the benefit (return) was $13,245 million. However, from Table (24), the following criteria can be derived for project evaluation:

Cost-Benefit Ratio: this was 1.27.

Net Present Value: this was $2,821 million.

Internal Rate of Return: this was 233.3%.

Payback Period: this is less than one year.

Table 22: Appraisal, Switching Values and Criteria for Chemical Industries in the Al-Ameria FEZ (in $1,000)

Stream	Appraisal Value	Switching Value	Percentage Change
Investment Cost	1825.1	4645.5	154.53%
Current Costs	8599.7	11420.2	32.80%
Total Benefit	13245.2	10424.8	21.29%-
Total Costs	10424.8	13245.2	27.05%

Benefit / Cost = 1.27

Net Present Value at OCC 10.0% = 2820

Internal Rate of Return = 233.3

Coupon Equivalent Rate of Return = 13.5%

Source: Adapted from Questionnaire and Calculated by Cost Ben program

Analysis of Risk and Sensitivity

Considering the data in Table (25), it can be seen that an investment in the chemical industry is insensitive to increased costs up to 20%, since the present net value is $736 thousand, as well as there being a reduction of benefit (return) to 20%, since the present net value becomes $171.4 million. Yet it would be sensitive to a 10% increase of the cost with a 10% decrease in return at the same time. In this case, the project would be subject to a loss amounting to $454 thousand. On the other hand, the project would be sensitive to a return delay for three years (lagged), since the project would lose, in this case, about $473 thousand.

Table 23: Sensitivity and Risk Analysis for Chemical Industries in the Al-Ameria FEZ - Present Value of Net Streams at Various Discount Rates (in S1, 000)

	Benefits	Down 10%	Down 20%	Down 50%
Costs	2820.50	1469.00	171.40	-3802.10
Up 10%	1778.00	453.50	-871.00	-4844.60
Up 20%	735.50	-589.00	-1913.50	-5887.10
Up 50%	-2391.90	-3716.40	-5040.90	-9014.50

	Benefits	Lag1	Lag2	Lag3
Costs	2820.50	1616.40	521.70	-473.40
Up 10%	1778.00	573.90	-520.80	-1515.90
Up 20%	735.50	-468.60	-1563.20	-2558.40
Up 50%	-2391.90	-3596.00	-4690.60	-5685.80

Source: Calculated by Cost Ben program

From Table (26), it can be seen that investment in the chemical industry is regarded as insensitive to cost increases up to 20%, since at this rate the benefit attained $29.9 thousand and remained higher than the value of savings obtained from the prevailing bank interest. This rate is also regarded as insensitive to a 20% reduction in benefit (return), since it amounted to 15.3%, which is higher than the prevailing interest price. However, the project would be sensitive toward 10% increase of costs concomitant with 20% reduction of return, or a 20% increase of costs concomitant with a 10% reduction of return. Hence, the investment in the bank would be better, since the internal return rate of the project was 0%. Furthermore, the project would be sensitive to a delay of return for three years, since the IRR amounted to 8.48%, which is less than the prevailing bank interest rate.

Table 24: Sensitivity and Risk Analysis for Chemical Industries in the Al-Ameria FEZ - Internal Rate of Return of net Streams at Discount Rate of 10%

	Benefits	Down 10%	Down 20%	Down 50%
Costs	233.30	71.91	15.30	None
Up 10%	79.82	22.96	None	None
Up 20%	29.90	None	None	None
Up 50%	None	None	None	None

	Benefits	Lag1	Lag2	Lag3
Costs	233.30	22.41	12.32	8.48
Up 10%	79.82	14.07	7.83	5.40
Up 20%	29.90	6.88	3.83	2.64
Up 50%	None	-11.55	-6.18	-4.25

Source: Calculated by Cost Ben program

It is clear that the state could encourage and attract investments and advise the willing and experienced investor about the chemical industries field. In precise terms, an investment of 1.7 million dollars (0.7 million dollars construction costs + 1 million dollars annual operating costs) would yield about 1.5 million dollar revenues annually, and therefore, the average annual profit would be approximately 363,000 dollars after paying the infrastructure costs. Such a project will produce a net profit after redeeming the capital in less than two years and this project is very profitable because the IRR is about 233 % which is much higher than the opportunity cost which is the bank interest rate of 10%.

6.4 Financial Evaluation of the Investment in Ready-made Clothes Industries in the Al-Ameria FEZ

Data Description

Seventeen questionnaires were gathered from ready-made clothing companies in the Al-Ameria FEZ. In total there are 47 facilities, ten Egyptian, four Italian, one Syrian and another one American and last one German. By property type, there were two private facilities 15 companies, and none of these met any barriers during their set-up stage.

From Table (27), it is apparent that the average investment costs of the ready made-clothes industry amounted to $1.471 million in the year of establishment, in addition to fixed costs which amounted for $206 thousand annually during the 25-year productive span of the project. As for current costs, these amounted to $823.3 thousand annually. Thus, it is clearly seen that the total costs in the first year amounted for $2,294 million, whilst in the following years these were $1,029 million. The annual return from this industry amounted to $1,611 million (as an annual mean). In turn, the net benefit (net of return) in the first year was minus $683.3 thousand, while in the following years, the project can add about $581.3 thousand until the end of the productive span.

Table 25: Investment, Current, Total Costs, Benefit, and Net Benefit of the Ready-made Clothes Industry in the Al-Ameria FEZ (in 1,000$)

	First year	**from 2nd annually to 25th year**
Investment Cost	1470.60	206.00
Current Costs	823.30	823.30
Total Costs	2293.90	1029.30
Benefit	1610.60	1610.60
Net Benefit	683.30-	581.30

Source: Adapted from Questionnaire

Table (28) shows the present and switching values, as well as the economic criteria for evaluating the projects in the ready-made clothes industry. From the data it can be seen that the present value of investment cost (total fixed costs) was $3.02 million, while the switching value amounted to $7,147 million. Furthermore, it was found that the current operational costs during the productive span of the project were $7,473 million. As for switching value, this reached $11.6 million; consequently, the present value of the total costs was $10,493 million, whereas the present value of the benefit (return) was $14.62 million. However, from Table (28) the following criteria can be derived for project evaluation:

Table 26: Appraisal, Switching Values, and Criteria for the Ready-made Clothes Industry in the Al-Ameria FEZ at Discount Rate of 10% (in 1,000$)

Stream	Appraisal Value	Switching Value	Percentage Change
Investment Cost	3019.80	7146.50	136.65%
Current Costs	7473.30	11600.00	55.22%
Total Benefit	14619.80	10493.10	28.23%-
Total Costs	10493.10	14619.80	39.33%

Benefit / Cost=   1.39

Net Present Value at OCC 10.0% = 4126.7

Internal Rate of Return = 85.1%

Coupon Equivalent Rate of Return = 15.

payback Period   > 2 Years

Source: (1) Adapted from Questionnaire
          (2) Calculated by Cost Ben program

Cost-Benefit Ratio: This was 1.39.

Net present Value: this was $4.127 million.

Internal Rate of Return: this was 85.1%, meaning that every one dollar can gains 85 cents by the end of the year, and thus the investment is regarded as profitable.

Payback Period: this is one year and three months.

Analysis of Risk and Sensitivity

From the data provided in Table (29), it is apparent that investment in the ready-made clothes industry is insensitive to increased costs up to 20%, since the present net value was $2,028 million, as well as a reduction of benefit (return) to 20%, since the net present value become $1,203 million. However, it would be sensitive to a 20% increase of the cost with a 20% decrease in return at the same time. That said, the project would be subject to a loss amounting to $896 thousand. On the other hand, the project would be sensitive to a return delay for three years (lagged) with a 10% increase in the cost since the project will make a loss in this case by about $558 thousand.

Over viewing the data appearing in Table (30), investment in this industry is regarded as an incentive for a cost increase up to 20%, since 32.84% was attained, and the rate remained higher than the value of the prevailing bank interest rate. In addition, this rate is regarded as an incentive for a 20% reduction in return, since it amounted to 25.67%,

again higher than the prevailing interest price, yet the project would be sensitive toward a 20% increase in costs concomitant with a 20% reduction of return, so that the investment in the bank would be better, since the IRR was 1.06% which is less than 10%. Furthermore, the project would be insensitive to a delay of return for three years, since the internal return rate amounted to 11.32%, which is higher than the prevailing bank interest rate.

Table 27: Sensitivity and Risk Analysis for the Ready-made Clothes Industry in the Al-Ameria FEZ - Present Value of Net Streams at Discount Rate of 10% (in 1,000$)

	Benefits	Down 10%	Down 20%	Down 50%
Costs	4126.70	2664.70	1202.70	-3183.20
Up 10%	3077.40	1615.40	153.40	-4232.50
Up 20%	2028.10	566.10	-895.90	-5281.80
Up 50%	-1119.90	-2581.80	-4043.80	-8429.80

	Benefits	Lag1	Lag2	Lag3
Costs	4126.70	2797.60	1589.40	491.00
Up 10%	3077.40	1748.30	540.20	-558.30
Up 20%	2028.10	699.00	-509.20	-1607.70
Up 50%	-1119.90	-2448.90	-3657.20	-4755.60

Source: Calculated by Cost Ben program

From the previous information it is obvious that the state could encourage and attract investments and advise willing and experienced investors about the garment (clothing) industry. In this respect an investment of 2.3 million dollars (1.5 million dollars construction costs + 0.8 million dollars annual operating costs) will yield about 1.6 million dollars in revenue annually, and therefore bring an average annual profit of about 581,000 dollars after paying the infrastructure costs. Such a project will generate net profit even if the capital is redeemed in less than three years, thereby showing it to be very profitable. The IRR is about 85 % which is much higher than the opportunity cost which is the bank interest rate of 10%.

Table 28: Sensitivity and Risk Analysis for the Ready-made Clothes Industry in the Al-Ameria FEZ - Internal Rate of Return of net Streams at Discount Rate of 10%

	Benefits	Down 10%	Down 20%	Down 50%
Costs	85.07	49.77	25.67	None
Up 10%	52.41	29.49	11.78	None
Up 20%	32.84	15.98	1.06	None
Up 50%	-1.06	None	None	None

	Benefits	Lag1	Lag2	Lag3
Costs	85.07	25.29	15.62	11.32
Up 10%	52.41	18.82	11.80	8.58
Up 20%	32.84	13.30	8.40	6.11
Up 50%	-1.06	-0.37	-0.22	-0.16

Source: Calculated by Cost Ben program

6.5 Financial Evaluation of the Investment in the Engineering Industry in the Al-Ameria FEZ

Data Description

Eight questionnaires were gathered from engineering companies in the Al-Ameria FEZ working in the engineering industry which are 18 facilities , 5 of them are Egyptian , 1 Greek , 1 Syrian and another 1 German , as for the property type there was 1 individual facility 7 companies .And those facilities never faced any drawbacks when they were starting their projects .

From the data displayed Table (31), it was found that the average investment costs in the engineering industry amounted to $1.188 million in the year of establishment, in addition to fixed costs of $86.7 thousand annually during the 25-year productive span of the project. Current costs amounted to $284 thousand annually. Thus, it is found that the total costs in the first year amounted to $1,471 million, whilst in the following years it amounted to $370.4 thousand. On the other hand, the annual return of this industry amounted to $857 thousand annually (as an annual mean). In turn, the net return in the first year was minus $614 thousand, while in the following years, the project can add about $486.6 thousand until the end of the productive span.

Table 29: Investment, Current, Total Costs, Benefit and Net Benefit of the Engineering Industry in the Al-Ameria FEZ (in 1,000$)

	First year	from 2nd annually to 25th year
Investment Cost	1187.50	86.70
Current Costs	283.70	283.70
Total Costs	1471.20	370.40
Benefit	857.00	857.00
Net Benefit	614.20-	486.60

Source: Adapted from Questionnaire

Table (32) shows the present and switching values, as well as the economic criteria for evaluation the operating projects in the engineering industry in the FEZ, from which it can be understood that the present value of investment cost (total fixed costs) was $1,787 million, while the switching value amounted to $5,203 million. Furthermore, it was found that the current operational costs during the productive span of the project were $2,575 million. As for switching value, it was $5,991 million; consequently, the present value of the total costs was $4,363 million, whereas the present value of the benefit (return) was $7,779 million. Table (32) allows for the following criteria to be derived for the project evaluation:

Table 30: Appraisal, Switching Values and Criteria for the Engineering Industry in the Al-Ameria FEZ - Discount Rate of 10% (in 1,000$)

Stream	Appraisal Value	Switching Value	Percentage Change
Investment Cost	1787.40	5203.30	191.11%
Current Costs	2575.40	5991.40	132.64%
Total Benefit	7778.80	4362.80	43.91%-
Total Costs	4362.80	7778.80	78.30%

Benefit / cost=   1.78

Net present value at OCC 10.0% = 3415.9

Internal rate of return =79.2%

Coupon equivalent rate of return = 19.8%

Pay back Period > 3Years

Source: Adapted from Questionnaire
Calculated by Cost Ben program

Cost-Benefit Ratio: this was 1.78.

Net Present Value: this was $3,416 million.

Internal Rate of Return: this was 79.2%, meaning that every one dollar invested would attract 79.2 cents by the end of the year, and thus the investment is regarded as profitable.

Payback Period: this is one year and four months.

Analysis of Risk and Sensitivity

A review of the data in Table (33) shows the engineering industry is insensitive to increased costs up to 50%, since the present net value was $1,235 thousand, and there is a reduction of benefit (return) to 20%, since the present net value is $1.86 million. However, it would be sensitive to a 50% increase in costs, yielding a 20% decrease in return in that event. The project would be subject to a loss amounting to $321.2 thousand. On the other hand the project would be insensitive towards a return delay for three years (lagged), since the net present value would become $1,482 million, yet it would be sensitive towards a return delay for two years with a 50% increase of the cost. In this case the project would make a loss of about $115.5 thousand.

Table (34) confirms that investment in such industry is regarded as an incentive for a cost increase up to 50%, since 22.15% was attained and maintained higher than the value of the prevailing bank interest. In addition, this rate is regarded as an incentive for a 20% reduction in return, since it amounted to 40.11%, which is higher than the prevailing interest rate. However the project would be sensitive to a 50% increase of costs concomitant with a 20% reduction of return, so that investment in the bank would be better, since the IRR was 6.77% which is less than 10%. Furthermore, the project would be insensitive to a delay of return for three years, since the IRR amounted to 17.07%, which is higher than the prevailing bank interest rate, but it would be sensitive to a delay of return for three years with a 20% increase of costs, since the IRR becomes about 9.47%, which is less than the prevailing bank interest rate.

Table 31: Sensitivity and Risk Analysis for the Engineering Industry in the Al-Ameria FEZ - Present Value of Net Streams at Discount Rate of 10% (in 1,000$)

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	3415.90	2638.10	1860.20	-473.40
Up 10%	2979.70	2201.80	1423.90	-909.70
Up 20%	2543.40	1765.50	987.60	-1346.00
Up 50%	1234.50	456.70	-321.20	-2654.80

	Benefits	Lag1	Lag2	Lag3
Costs	3415.90	2708.80	2065.90	1481.50
Up 10%	2979.70	2272.50	1629.60	1045.20
Up 20%	2543.40	1836.20	1193.30	608.90
Up 50%	1234.50	527.40	-115.50	-699.90

Source: Calculated by Cost Ben program

From the previous information it is clear that the state could encourage and attract investments in the engineering industry, since an investment of 1.5 million dollars (1.2 million dollars construction costs, and 0.3 million dollars annual operating costs) would yield about 857,000 dollars in revenue annually, providing an average annual profit of about 0.5 million dollars after paying the infrastructure costs. The project will make net profit after the capital is redeemed in less than three years. Engineering is very profitable because the IRR is about 79 % which is much higher than the opportunity cost which is the bank interest rate of 10%.

Table 32: Sensitivity and Risk Analysis for the Engineering Industry in the Al-Ameria FEZ - Internal Rate of Return of net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	79.21	57.27	40.11	2.47
Up 10%	59.04	42.95	29.76	-5.96
Up 20%	45.40	32.84	22.14	None
Up 50%	22.14	14.43	6.77	None

	Benefits	Lag1	Lag2	Lag3
Costs	79.21	33.05	22.33	17.07
Up 10%	59.04	27.73	19.10	14.70
Up 20%	45.40	23.27	16.28	12.60
Up 50%	22.14	13.19	9.47	7.38

Source: Calculated by Cost Ben program

6.6 Financial Evaluation of the Investment in Navigation Services in the Al-Ameria FEZ

Data Description

Eight questionnaires were gathered from navigation services companies in the Al-Ameria FEZ, which are 15 facilities, 8 of them are Egyptian, 1 Greek, 1 from the Netherlands and another multinational. In terms of the property type of the eight in the sample, there was one private facility, two subsidiary branches of a parent company, and five companies. None of the respondents indicated meeting any obstacles during their start-up operations.

From Table (35) which shows the mean values of economic indicators of the navigation services companies in the Al-Ameria FEZ, it can be seen that the average investment costs of such industry amounted to $2 million in the year of establishment, in addition to fixed costs which amounted to $116 thousand annually during the productive span of the project (25 years). Current costs amounted to $479 thousand annually. Hence, the total costs in the first year amounted to $2,479 million, whilst in the following years they were $595.3 thousand. The annual return was $1,057 million annually (as an annual mean). In turn, the net return in the first year was minus $1,422 million, while in the following years the project can add about $462 thousand until the end of the productive span.

Table 33: Investment, Current, Total Costs, Benefit and Net Benefit of Navigation Services in the Al-Ameria FEZ (in 1,000$)

	First year	**from 2ⁿᵈ annually to 25ᵗʰ year**
Investment Cost	2000.00	116.00
Current Costs	479.30	479.30
Total Costs	2479.30	595.30
Benefit	1057.30	1057.30
Net Benefit	1422.00-	462.00

Source: Adapted from Questionnaire

Table (36) shows the present and switching values, as well as the economic criteria for evaluating the navigation services projects, revealing that the present value of investment cost (total fixed costs) was $2,765 million, while the switching value amounted to $5,247 million. Furthermore, it was found that the current operational costs during the productive span of the project were $4,351 million. As for switching value, it was $6,832 million; consequently, the present value of the total costs was $7,116 million, whereas the present value of the benefit (return) was $9,597 million. However, from Table (36), the following criteria can be derived for project evaluation:

Cost-Benefit Ratio: this was 1.35.

Table 34: Appraisal, Switching Values and Criteria for Navigation Services in the Al-Ameria FEZ at Discount Rate of 10% (in 1,000$)

Stream	**Appraisal Value**	**Switching Value**	**Percentage Change**
Investment Cost	2765.40	5246.80	89.73%
Current Costs	4350.50	6831.90	57.04%
Total Benefit	9597.30	7115.90	25.86%-
Total Costs	7115.90	9597.30	34.87%

Benefit / cost =   1.35

Net present value at OCC 10.0% = 2481.4

Internal rate of return = 32.5%

Coupon equivalent rate of return = 14.3%

Payback Period > 4 years

Source: Adapted from Questionnaire
*   Calculated by Cost Ben program*

Net Present Value: this was $2,481 million.

Internal Rate of Return: this was 32.5%, meaning that every one dollar accumulates 32.5 cents by the end of the year, and thus the investment is regarded as profitable.

Payback Period: this is one year and three months.

Analysis of Risk and Sensitivity

By considering the data in Table (37), it can be seen that the investment in navigation services is insensitive to increased costs up to 20%, since the present net value was $1,058 million and there is a reduction of benefit (return) to 20%, since the present net value become $561.9 thousand. The project is insensitive toward increased costs up to 20%, with delay of benefit (return) to 10%, since the present net value becomes $98.5 thousand, yet it would be sensitive to a 10% increase in the cost with a 20% decrease of return at the same time. However, the project would be subject to a loss amounting to $149.7 thousand. On the other hand, the project would be insensitive to a return delay for three years (lagged), but would be sensitive to a return delay for three years (lagged) with 10% increase in cost, since the project will make a loss in this case of about $617 thousand.

Table 35: Sensitivity and Risk Analysis for Navigation Services in the Al-Ameria FEZ - Present Value of Net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	2481.40	1521.60	561.90	-2317.30
Up 10%	1769.80	810.10	-149.70	-3028.90
Up 20%	1058.20	98.50	-861.30	-3740.50
Up 50%	-1076.60	-2036.30	-2996.10	-5875.30

	Benefits	Lag1	Lag2	Lag3
Costs	2481.40	1608.90	815.70	94.70
Up 10%	1769.80	897.30	104.10	-616.90
Up 20%	1058.20	185.70	-607.50	-1328.50
Up 50%	-1076.60	-1949.10	-2742.20	-3463.30

Source: Calculated by Cost Ben program

The data in Table (38) shows the investment in navigation services to be insensitive to a cost increase up to 20%, since 17.51% was attained, and maintained higher than the value of the prevailing bank interest. In addition, this rate is regarded as an incentive for a 20% reduction in return, since it amounted to 14.78%, which is higher than the prevailing interest rate. However, the project would be sensitive to a 10% increase in costs concomitant with a 20% reduction of return, so investing with the bank would be better, since the IRR of the project was 8.82% which is less than 10%. Furthermore, the project would be insensitive to a delay of return for three years, since the IRR amounted to 10.3%, which is higher than the prevailing bank interest rate. It would, however, be sensitive to a delay of return for three years with a 10% increase in cost, since the IRR amounted to 8.13%, which is less than the prevailing bank interest rate.

Table 36: Sensitivity and Risk Analysis for Navigation Services in the Al-Ameria FEZ - Internal Rate of Return of Net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	32.46	23.17	14.78	None
Up 10%	23.97	16.27	8.82	None
Up 20%	17.51	10.70	3.42	None
Up 50%	3.42	-4.82	None	None

	Benefits	Lag1	Lag2	Lag3
Costs	32.46	18.43	13.19	10.30
Up 10%	23.97	14.37	10.38	8.13
Up 20%	17.51	10.85	7.88	6.17
Up 50%	3.42	2.07	1.47	1.14

Source: Calculated by Cost Ben program

From the previous information it is clear that the field of navigation services is profitable and that the state could encourage and attract investments in this field. An investor with 2.5 million dollars (2 million dollars construction costs + 0.5 million dollars annual operating costs) will receive approximately 1.1 million dollars in revenue annually, and will therefore; attract an average annual profit of about 462,000 dollars after paying the infrastructure costs. In terms of net profit, the project would make profit after redeeming the capital in less than four years. This project is very profitable

because the IRR is about 32.5 % which is considerably higher than the opportunity cost which is the bank interest rate of 10%.

6.7 Financial Evaluation of the Investment in the Medical Equipment Industry in the Al-Ameria FEZ

Data Description

Six questionnaires were gathered from companies working in the medical requirements industry in the Al-Ameria FEZ, of which there were 12 such facilities in total. In the sample, five were Egyptian and one was Greek, and in terms of their ownership, two were subsidiary branches of a company, and the other four were companies in their own right. None of the facilities had encountered any obstacles during the start-up phase of their business.

The data in Table (39) indicates the mean values of economic indicators of the sample, from which is can be seen that the average investment costs associated with the medical equipment industry amounted to $1.53 million in the year of establishment, in addition to fixed costs of $237 thousand annually during the 25-year productive span of the project ($922 thousand annually). Thus, it is found that the total costs in the first year amounted to $2,452 million, whilst in the following years it amounted to $1,159 million. On the other hand, the annual return of this industry amounted to $581 million annually (as an annual mean). In turn, the net return in the first year was minus $871 thousand, while in the following years, the project can add about $422.3 thousand dollar up to the end of the productive span.

Table 37: Investment, Current, Total Costs, Benefit and Net Benefit of the Medical Equipment Industry in the Al-Ameria FEZ (in 1,000$)

	First year	**from 2nd annually to 25th year**
Investment Cost	1530.00	236.60
Current Costs	922.40	922.40
Total Costs	2452.40	1159.00
Benefit	1581.30	1581.30
Net Benefit	871.10-	422.30

Source: Adapted from Questionnaire

Table (40) shows the present and switching values, as well as the economic criteria for evaluating this industry, and from these it can be understood that the present value of investment cost (total fixed costs) was $3,324 million, while the switching value amounted to $5,981 million. Furthermore, it was found that the current operational costs during the productive span of the project were $8,372 million. As for switching value, it was $11.03 million; consequently, the present value of the total costs was $11.696 million, whereas the present value of the benefit (return) was $14,354 million. However, from Table (40) the following criteria can be derived for project evaluation:

Table 38: Appraisal, Switching Values and Criteria for the Medical Equipment Industry in the Al-Ameria FEZ at Discount Rate of 10%

Stream	Appraisal Value	Switching Value	Percentage Change
Investment Cost	3323.70	5981.40	79.96%
Current Costs	8372.40	11030.10	31.74%
Total Benefit	14353.80	11696.10	-18.52%
Total Costs	11696.10	14353.80	22.72%

Benefit / cost =   1.23

Net present value at occ 10.0% = 2657.7

Internal rate of return = 48.5%

Coupon equivalent rate of return = 12.9

Payback Period = 2 years   : 1 month
Source: Adapted from Questionnaire
          Calculated by Cost Ben program

Cost-Benefit Ratio: this was 1.23

Net Present Value: this was $2,658.

Internal Rate of Return: this was 48.5%, meaning that every one dollar invested would increase by 48.5 cents by the end of the year, and consequently the investment is regarded as profitable.

Payback Period: this is two years and one month.

Analysis of Risk and Sensitivity

The data in Table (41) shows investment in the medical equipment field to be insensitive to increased costs up to 20%, since the present net value was $318.5 thousand, and there is a reduction of benefit (return) to 10%, since the present net value

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become $1,222 million, and it is insensitive to increased costs up to 10% with a 10% decrease in benefit at the same time, since the present net value was $52.7 thousand. However, it would be sensitive to a 20% increase of the cost with a 10% decrease of return at the same time. The project would subject to a loss amounting to $1,117 million. On the other hand, the project would be sensitive to a return delay for three years (lagged), since the project will make a loss - in this case of about $912 thousand.

An analysis of the data in Table (42) reveals the investment in this industry to be insensitive to a cost increase up to 20%, since 13.29% was attained, and the rate was maintained higher than the value of the prevailing bank interest. In addition, this rate is considered to be an incentive for a 10% reduction in return, since it amounted to 25.56%, which is higher than the prevailing interest rate. However, the project would be sensitive to a 20% increase of costs concomitant with a 10% reduction of return, so that the investment in the bank would be better, since the IRR of the project was 4.79% which is less than 10%. Furthermore, the project would be sensitive to a delay of return for three years, since the IRR amounted to 7.64%, which is less than the prevailing rate of bank interest.

Table 39: Sensitivity and Risk Analysis for the Medical Equipment Industry in the Al-Ameria FEZ - Present Value of Net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	2657.70	1222.30	-213.00	-4519.20
Up 10%	1488.10	52.70	-1382.70	-5688.80
Up 20%	318.50	-1116.90	-2552.30	-6858.40
Up 50%	-3190.30	-4625.70	-6061.10	-10367.20

	Benefits	Lag1	Lag2	Lag3
Costs	2657.70	1352.80	166.60	-911.90
Up 10%	1488.10	183.20	-1003.00	-2081.50
Up 20%	318.50	-986.40	-2172.70	-3251.10
Up 50%	-3190.30	-4495.20	-5681.50	-6759.90

Source: Calculated by Cost Ben program

It is clear from this analysis that investments in this industry could be encouraged by the state, since an investor with 2.5 million dollars (1.5 million dollars construction costs + 1 million dollars annual operating costs) would receive approximately 1.6 million dollars revenues annually and consequently make an average annual profit of about 422,000 dollars after paying the infrastructure costs. Net profit would become available after redeeming the capital in less than four years. This industry is very profitable because the IRR is about 48.5% which is much higher than the opportunity cost which is the bank interest rate of 10%.

Table 40: Sensitivity and Risk Analysis for the Medical Equipment Industry in the Al-Ameria FEZ - Internal Rate of Return of Net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	103.414	36.975	-1.846	None
Up 10%	41.175	6.195	None	None
Up 20%	11.609	None	None	None
Up 50%	None	None	None	None

	Benefits	Lag1	Lag2	Lag3
Costs	103.414	17.574	9.873	6.842
Up 10%	41.175	9.781	5.524	3.832
Up 20%	11.609	2.899	1.623	1.125
Up 50%	None	-15.386	-8.234	-5.673

Source: Calculated by Cost Ben program

6.8 Financial Evaluation of the Investment as an Average of all Industries within the Al-Ameria FEZ

Data Description

Having undertaken a cost-benefit analysis for each of the industries individually, the data for the overall financial evaluation comes from the samples already reported. An overall cost-benefit analysis to cover all industries at the same time is of special importance, as it provides a general indicator of the investment feasibility in economic areas for both the investor and the host state. It highlights the financial indicators of

profitability and how they can be used in determining the extent to which benefits outweigh investment costs in the Al-Ameria FEZ in general.

Table (43) shows that the average of investment costs amounted to $1,287 million in the year of establishment, in addition to fixed costs of $162 thousand annually during the 25-year productive span of the projects concerned. Current costs amounted to $762 thousand annually, and hence, the total costs in the first year reached $2,049 million, whilst in the following years they were $924 thousand. The annual return of combined investments amounted to $1,368 million annually (as an annual mean), the net return in the first year was minus $681 thousand, but in the following years the industries can add about $444 thousand until the end of the productive span.

Table (44) reveals that the present value of investment cost (total fixed costs) was $2,493 million, while the switching value amounted to $5,501 million. Furthermore, it indicates the current operational costs during the productive span of the project to be $6,917 million. As for switching value, it was $9,924 million; consequently, the present value of the total costs was $12,417 million, whereas the present value of the benefit (return) was $9,410 million. From Table (44), the following criteria can be derived for project evaluation:

Table 41: Investment, Current, Total Costs, Benefit and Net Benefit as an average of all Industries in the Al-Ameria FEZ (in 1,000$)

	First year	**from 2nd annually to 25th year**
Investment Cost	1287	162
Current Costs	762	762
Total Costs	2049	924
Benefit	1368	1368
Net Benefit	-681	444

Source: Adapted from Questionnaire as an average of all industries.

Cost-Benefit Ratio: this was 1.32.

Net Present Value: this was $3,008.

Table 42: Appraisal, Switching Values and Criteria as an Average of all Industries in the Al-Ameria FEZ at Discount Rate of 10%

Stream	Appraisal Value	Switching Value	Percentage Change
Investment Cost	2493.2	5500.7	120.6
Current Costs	6916.7	9924.2	43.5
Total Benefit	12417.4	9409.9	-24.2
Total Costs	9409.9	12417.4	32

Benefit / Cost =   1.32

Net Present Value at OCC 10.0% = 3.008 million dollar

Internal Rate of Return = 65.2%

Coupon Equivalent Rate of Return = 14.1%

Payback Period = 1 Year 6 months

Source: Adapted from Questionnaire as an average of all industries
          Calculated by: Cost - Ben program

Internal Rate of Return: this was 65.2%, meaning that every one dollar invested will attract 65 cents by the end of the year, and thus any investment is regarded as profitable.

Payback Period: this is one year and six months.

Analysis of Risk and Sensitivity

This analysis is considered as an indicator of the reaction of the overall investment in the Al-Ameria FEZ to a crisis, and it supposes increased costs of 10, 20 and 50% as well as supposed decreases in the return by the same percentages. It assumes an increase of costs with an increase of return simultaneously. Furthermore, it supposes that the return would be postponed for one, two or three years, as well as its impact on the Net Present Value, and the IRR.

The data in Table (45) shows that investment in the Al-Ameria FEZ is insensitive to increased costs up to 20%, since the Net Present Value was $1,255 million, and the reduction of benefit (return) to 20%, since the Net Present Value becomes $524 thousand, yet it would be sensitive to a 20% increase in costs with a 10% decrease in return at the same time. However, the project would be subject to a loss amounting to $116 thousand. On the other hand, the project would be sensitive to a return delay for three years (lagged), since it would make a loss - in this case of about $80.5 thousand.

Table 43: Sensitivity and Risk Analysis as an Average of all Industries in the Al-Ameria FEZ - Present Value of Net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	3007.5	1765.7	524	-3201.2
Up 10%	2066.5	824.7	-417	-4142.2
Up 20%	1125.5	-116.2	-1358	-5003.2
Up 50%	-1697.5	-2939.2	-4181	-7906.2

	Benefits	Lag1	Lag2	Lag3
Costs	3007.5	1878.6	852.4	-80.5
Up 10%	2066.5	937.6	-88.6	-1021.5
Up 20%	1125.5	-3.4	-1029.6	-1962.5
Up 50%	-1697.5	-2826.3	-3852.6	-4785.5

Source: Calculated by Cost Ben program

From the data in Table 6.28, it is apparent that investment in the Al-Ameria FEZ is regarded as an incentive for a cost increase up to 20%, since the rate attained was 23.62% and this was maintained higher than the value of the prevailing bank interest. In addition, this rate is also regarded as an incentive for a 20% reduction in return, since it amounted to 17.48%, which is higher than the prevailing interest rate, yet the project would be sensitive to a 20% increase in costs concomitant with a 10% reduction in return, so that the investment in the bank would be better, since the IRR of the project was 8.59% which is less than 10%. Furthermore, the project would be sensitive to a delay of return for three years, since the IRR amounted to 9.75%, which is less than the prevailing rate bank interest.

Table 44: Sensitivity and Risk Analysis as an Average of all Industries in the Al-America FEZ - Internal Rate of Return of net Streams at Discount Rate of 10%

	Benefits	**Down 10%**	**Down 20%**	**Down 50%**
Costs	65.198	37.546	17.476	none
Up 10%	39.675	20.777	4.249	none
Up 20%	23.616	8.591	none	none
Up 50%	none	none	none	none

	Benefits	Lag1	Lag2	Lag3
Costs	65.198	21.579	13.433	9.752
Up 10%	39.675	15.356	9.664	7.027
Up 20%	23.616	9.982	6.289	4.567
Up 50%	none	-4.03	-2.388	-1.706

Source: Calculated by Cost Ben program

From the previous view of the cost-benefit analysis and resulting profitability it is clear that each industrial area realized good profits. Consequently, this knowledge stands as an indicator for investment in any type of project, and may serve as sound advice for investors and indeed encourage investment. If, for an example, an investor has about 2 million dollars and is willing to invest in any industrial area, s/he will encounter average costs of approximately 1.3 million dollars in addition to the average annual operating costs of approximately 762,000 dollars. Such an investment will yield annual revenues of approximately $1.4 million and hence, average annual revenue of about $444,000 after defraying the infrastructure costs. The project thus being net profit after regaining his capital in less than three years and the profitability is shown by the IRR which is about 65.2% which is substantially higher than the opportunity cost, represented by the bank interest rate of 10%.

Overall the cost-benefit analysis of industries based in Al-Ameria FEZ of Egypt gives some indication of which industries are more prone to success in the environment of FEZ prevalent there. The sensitivity analysis also indicates the parameters that make or break the investment required for these FEZ industries. It is shown in previous sections that benefit to cost ratio is 1.32 for all industries set up in Al-America FEZ whereas internal rate of return value derived is 65% giving a yield of 1 year and six months in relation to the payback period. All these figures are promising and make a case for setting up FEZ in Libya.

6.9 Summary

The previous studies on cost benefit analysis of FEZs were not undertaken at the level of each industry or company within the FEZ, but were analysis of costs and benefits between some FEZs worldwide.

In this respect, it is quite difficult to determine the success or failure of investments and types of industry within FEZs, and their appropriateness to the host country. This research has taken into consideration each individual industry, and hence evaluation of industries in total, in order to determine the extent of success or failure of the FEZ, and the possibility of using this as a guide. According to the results that were presented in this chapter, and through analysis of costs and benefits applied to determine the extent of success and failure of industries within al-Ameria FEZ in Alexandria, it is quite clear that investment many types of industry within this FEZ is a proposal worthy of attention, as was clarified by the financial evaluation, which took into consideration the factor of experience and technology within each project.

However, through analysis of data obtained (see Table 19 to Table 46) it is clear that investment in the following industries represent the most promising as a guide for Misurata : (1) food, (2) chemicals, (3) ready-made clothes, (4) engineering, (5) navigation services, (6) medical equipment, and (7) iron and steel.

The types of incentives for investment provided to companies within the FEZ are greater and more valuable than counterparts lying outside the FEZ, which is good news, naturally, for investors, whether investments are large or small, local or foreign. Therefore, knowledge and understanding of the potential for achieving returns on investment has been gained through analysis of the data that was gathered on Al-Ameria FEZ. This may be used to guide a similar enterprise in Libya, specifically, the FEZ in Misurata. Therefore, Al-Ameria FEZ could serve as a model of success to be used by policymakers and decision-makers in Misurata to determine the available opportunities for economic development, and achieving the same good results for investors, and the economy generally.

CHAPTER SEVEN

THE MISURATA FEZ IN LIBYA

7.**1 Introduction**

This chapter provides a detailed description of the Misurata Free Zone (MFZ), discussing its development and the current plans for expansion. It considers the data obtained from the interviews with decision-makers in the MFZ, and concludes with a short summary that highlights the implications of the opinions given.

7.2 Misurata Free Zone (MFZ)

The first Free Zone in Libya to be managed by the General Authority for Free Zones is the Misurata Free Zone, occupying put the area in hectares adjacent to Misurata port, located 207 km east of Tripoli. Several reasons underpinned the nomination of Misurata as the first such zone, as follows:

- It is strategically located so that it has ready access to international waters;

- It has a renowned history and reputation for various trade exchange activities;

- It covers a large land area which is ideal for investment;

- It has a vast pool of manpower at all levels of skills and in various domains;

- It has a huge fleet of land transport facilities with reasonable costs;

- It has a reliable infrastructure;

- It provides a suitable environment for different fields of investment whether commercial, industrial, services, tourism or others;

- It has an airport 20 Km away from the site of the zone; and

- It has good availability and feasibility of raw material and energy resources: the steel complex is an example.

As the FEZ has developed, it has become divided into zones and areas connected by roads and paths as shown in Table (47).

Table 45: Description of the Misurata Free Zone

No	Zones	Areas m^2
1	Zone 1	900,000
2	Zone 2	500,000
3	Zone 3	700,000
4	Open storage zone A	540,000
5	Open storage zone B	300,000
6	Exhibition area	80,000
7	Administration area	80,000
8	Recreation area	260,000
9	Green area	
10	Accommodation area	200,000
11	Offices / camp area	130,000
12	Roads and railways	390,000
Total		4,300,000

Zone 1

The zone is about 90 ha. It allows for the construction of covered plants and warehouses.

Zone 2

This zone is located in the northern part of the Free Zone behind the administration and exhibition area. The total area of this section is about 50 ha and it is allocated for electronics and light industry. It is connected to zone 1 by a special road.

Zone 3

This coastal zone is suitable for industries which need proximity to the sea. It can be allocated for heavy industry and has a total area of about 70 ha.

Open storage zone A:

This open storage zone is used for container handling, storing and re-distribution activities. In the future it can be used as a loading and unloading area because of its closeness to the railway and port. The total area of this zone is about 54 ha.

Open storage zone B:

This open storage zone is located south of the railway alignment, and has a total area of about 30 ha. A large area of this zone is allocated for car parking and storage of raw materials. It can be used for the loading and unloading of railway cars.

Exhibition and Office Area:

Exhibitions and advertising campaigns are essential elements for the success of activities within the Free Zones. The proposed place for the exhibition centre is located at the northern gate of the Free Zone. There is ample car parking in this area. Office facilities could also be available for use as headquarters of foreign companies and their branches as well as for special offices and high quality accommodation. The total area is about 8 ha. It allows for the construction of over 30,000 m2 of covered spaces.

Administration Area:

The recreation area is located in the centre of the Free Zone and has an area of about 8 ha. Administrative, customs and security buildings are located in this area.

Recreation Area:

The recreation area includes sports facilities, park and green areas. It is located adjacent to the employees' accommodation area and covers about 26 hectares of land. This area can be expanded into the neighbouring area towards the sea in case of necessity for other sports activities.

Green Area:

The green area is located between zones 1 and 2, and improves the overall environment of the Free Zone. The total area is 22 ha.

Accommodation Area:

An area of 20 ha close to the recreation area is allocated for employee accommodation.

Office/Camp Area:

An area close to the accommodation area is allocated for various uses like offices and special camps of companies. The total area is 13 ha.

Roads and Railways:

Roads and railways occupy an area of about 39 ha of the land area.

There are also large areas east of the Steel Complex available to the General Authority for Free Zones for future expansion.

7.3 The Seaport Development and Expansion Plans

The MFZ seaport enjoys many advantages, one being its strategic location which links the African continent with international market forces and maintains relations with other world economies. Since the start of the MFZ activities, the demand on its services has accelerated remarkably, accordingly placing it as the main centre for the transit trade in the Mediterranean area. Consequently, development and expansion plans are now being implemented.

The plans include, but are not restricted to:
- Expanding the current quays length by 600 metres and 16 metres in depth;
- Constructing new quays of 2,400 meters as a first stage and an additional 1,800 metres as a second stage with a depth of 18 metres;
- Adding 60 hectares of supplementary open storage areas; and
- Providing quays with modern equipment, systems and machinery for cargo and container handling.

7.4 The Personal Interview

Ten personal interviews were held as indicated in Chapter Four. The intention was to replicate as far as possible the questionnaire survey conducted in the Al-Ameria FEZ in Alexandria but with the difference that a very much smaller number of participants were involved and that these people were to be asked the questions on a face-to-face basis. It was expected that similarities and/or differences between the Egyptian and the Libyan FEZs would be highlighted by this process. Additionally, because the Libyan sample was comprised of individuals in decision-making positions, it was envisaged that some reasons for the processes and situation in the MFZ would be given. Specific details of the interview objectives and design of the protocol followed appear in Section 4.6.3, and information regarding the sample is given in Section 4.6.4.

7.5 Interview Data

7.5.1 The Relative Importance of Successful Industries in the MFZ

The analysis of the interview data relating to the relative importance of the industries in the MFZ demonstrates that the iron and steel industry occupied the first place in this ranking, shipping services came second, the engineering industry was in third place, the chemical industry in the fourth place, the medical equipment industry in the fifth place, the food industry in the sixth place, and the ready-made clothes industry occupied the last place. The appropriate statistics are presented in Table (48).

7.5.2 Manpower Conditions in the MFZ

The interview data revealed that 70% of interviewees believed new job opportunities would be available but only 30% of the interviewees believed these would be available for Libyans because of the skill levels required. In this respect, 60% of the interviewees did not see this as a problem and believed that it would not be difficult to obtain skilled local employees to work in the MFZ and therefore, the unemployment problem could be easily solved by the expansion of the zone. However, the remaining 40% believed quite the opposite, citing reasons such as: (1) education outputs are not suitable, (2) non-awareness of the type of work undertaken in the MFZ, (3) the need for practical training programmes to prepare individuals for work at the MFZ, and (4) the fact that Libyan employees are not used to dealing with foreigners.

In respect of the ease of entering and leaving the MFZ labour market, it was found that 70% of the interviewees believed this was easy because the free zone is expected to create new job opportunities. It was however, pointed out by 40% of interviewees, that the MFZ is an international zone and that it is very important for the Libyan security authorities to be involved in entry and exit from the employment market and to ensure that employees were provided with the appropriate facilities.

Regarding women's participation in the MFZ labour market, the current position is that Libyan women constitute 12.3% of the market whilst foreign women account for a further 2.2%, meaning that in total women represent 14.5% of the workforce.

Table 46: The Relative Importance of Successful Industries in the MFZ

Order	Importance	Iron and steel	Shipping services	Engineering industries	Chemical industries	Medical Equipment's	Food	Ready-made clothes
1	7	6	3			1		
2	6	4	3	2			1	
3	5		2	4	2	1		
4	4		1	3	4		2	
5	3		1		2	4	2	1
6	2				1	3	5	2
7	1				1	1		7
Mode		1	1.2	3	4	5	6	7
Total degrees		66	56	45	35	31	30	14
Number relative importance		94.29	80.00	62.29	50.00	44.29	42.86	20.00

Source: personal interview from data

In respect of work hours, all interviewees agreed that the norm was for an eight-hour day with permitted overtime of four hours daily, but that if particular operations required it, 24-hour working could be implemented.

On the issue of training, all interviewees believed it was preferable to provide training for all employees and that this should include the development of technical skills and knowledge of marketing processes.

Table 47: Tax Incentives Received by Investors

Type of Investor	Frequency
Libyan investor	7
Industrial Companies	2
Libyan Free Zone Authority	5
Foreign investor	7

Table 48: Incentives Provided at the Project Start-up

Item		Frequencies
Income tax exemptions on	social services	**10**
	profits exemptions	**10**
	wage exemption for non Libyan employees	**10**
Customs duty exemptions on	fixed assets (e.g. equipment, machinery and tools)	**10**
	imported fixed assets for expansions	**10**
	imported raw materials	**10**
Exemptions	property taxes	**10**
	Sales Tax	**10**
	Others exemptions	**4**

Table 49: Ranking of Reasons why Investors are attracted to the MFZ

Reasons	Ranking	Importance %
Political stability	1	81.43%
Economic stability	2	58.57%
Tax exemption	3	48.57%
Investment climate	4	45.71%
Duty and quota free to market	5	42.86%
Cheap labour force	6	22.86%
Geographical position	7	21.43%

Table 50: Advantages of the MFZ over other Free Zones

Item	Frequencies
Labour	3
Force	3
Tax Exemptions	10
USA Market	0
EU Market	10
Transportation	10
Geographical position	4
Prices or energy	4

Table 51: Factors Affecting the Strength of the Enterprise

Factors	Frequencies
Finance	7
Local Labour Market	3
Prices of Imported Raw Materials	6
Competition	4
Marketing	5
Government Regulations	0
Political stability	7

7.5.3 The Effects of the MFZ on the National Economy

The most appropriate mathematical formula to express the relationship between years of experience and the free zone effects on the national economy separately and collectively was found to be the deal logarithmic formula, so called the Power Function:

$$\text{LOG } Y = \text{LOG } C + b_1 \text{ LOG } X_1 + b_2 \text{ LOG } X_2 + b_3 \text{ LOG } X_3 + \ldots + b_n \text{ LOG } X_n$$

And the converting formula is

$$Y = C + X_1{}^{b1} + X_2{}^{b2} + X_3{}^{b3} + \ldots + X_n{}^{bn}$$

By determining the independent variable and dependent variable, it was found that the sole independent variable agreeing with the economic logic as a variable representing the interviewee's years of experience is years of experience which can be substituted

by X, and the dependent variable represented in adopting the newly created administrative practices by the free zone Y1, developing products and services at the free zone Y2, the free zone self-development Y3, acquiring technologies by the free zone Y4, applying new production technology for the first time Y5, using new marketing and distributing strategies Y6, exports increase expectation Y7, preparing new circumstances to attract local and foreign investment Y8, availing job opportunities to unemployed people Y9, national industry support by the free zone Y10, the effect of the free zone on the national economy Y_t.

Simple inclination analysis exploring the relationship between years of experience and the adoption of new business and management practices by the MFZ represented in Y1, proved the relation representing this function:

$$\text{LOG } Y1 = -0.7102 + 2.191 \text{ LOG } X$$

$$(3.085)$$

$$R^2 = 0.543 \quad \overline{R}^2 = 0.486 \quad F = 9.516$$

From this function it is seen that the negative function constant representing the truncated part of the y-axis is less than one, according to the positive inclination coefficient which reached 2.191. It was found that the relationship between years of experience and the adoption of newly created practices by the MFZ is directly proportional, that is to say as years of experience increase one year the degree of adoption increases by 2.19 degrees. This relationship is significant at the probability level 0.01 due to the increase of F percentage which reached 9.516, from the determination coefficient which reached 0.543. From this it is seen that the change in years of experience illustrates 54.3% of the change in the degree of adopting the newly created administrative practice.

Also it was found by analyzing the results of the simple inclination that when exploring the relationship between years of experience and developing products and services by the free zone represented in Y2 that the relationship representing this function is:

$$\text{LOG } Y_2 = 0.3904 + 1.874 \text{ LOG } X$$

$$(2.840)$$

$$R^2 = 0.502 \ \overline{R}^2 = 0.440 \ F = 8.064$$

Using this function it can be seen that the function constant representing the truncated part of the Y- axis is less than one positive inclination coefficient which reached 1.874. Hence, the relationship between years of experience and developing products and services by the free zone is directly proportional, that is to say as years of experience increase one year, services and product development increase by 1.874 degrees, in a relationship that is significant at the probability level 0.01 due to the increase in F percentage which reached 8.064. By determining the coefficient which reached 0.502, it is found that change in years of experience illustrates 50.2%, the change in the degree of developing products and services by the free zone.

Also, analyzing the relationship between years of experience and the free zone self-development represented in Y3 proves that the relationship representing this function is:

$$\text{LOG } Y3 = 0.9123 + 0.823 \text{ LOG } X$$

$$(2.897).$$

$$R^2 = 0.512 \ \ \overline{R}^2 = 0.451 \ F = 8.392$$

Using this function, it is found that the truncated part of the Y axis is between one and 10, and from the positive inclination coefficient which reached 0.823 it is seen that that the relationship between years of experience and the free zone self development is directly proportional - that is to say, as years of experience increase one year, the zone self-development increases 0.82 degrees. This relationship is significant at the probability level 0.01 due to the high percentage of F which reached 8.392. From the determination coefficient which reached 0.512, it is found that change in years of experience illustrates 51.2% of the change in the zone self-development and it was also found when exploring the relationship between years of experience and acquiring technology by the free zone represented in Y4, that the relationship representing this function is:

LOG Y4 = 0.4364 + 1.983 LOG X

$$(3.20).$$

$R^2 = 0.564 \ \overline{R}^2 = 0.509 \ F = 10.347$

Using this function, it can be learned that the negative function constant representing the truncated part of the Y axis is less than one, and from the positive inclination coefficient which reached 1.983 it emerged that the relationship between years of experience and obtaining the best technologies by the zone is directly proportional, that is to say, as years of experience increase one year, the acquisition of new technologies increases by 1.983 degree. This relationship is significant at the probability level 0.01 due to the high percentage of F which reached 10.347. From determining the coefficient which reached 0.564 it was found that change of years of experience illustrates 56.4% of the change in the extent of the acquisition of new technology by the free zones.

Also, when exploring the relationship between years of experience and the adoption of new production technology from the first time represented in Y5, the following relationship was proved:

LOG Y5 = -0.2624 + 1.753 LOG X

$$(2.099)$$

$R^2 = 0.335 \ \overline{R}^2 = 0.274 \ F = 4.405$

From this function, we find that the negative function constant representing the truncated part of the Y – axis is less than one and from the positive inclination coefficient which reached 1.753, we find that the relationship between years of experience and the application of new production technology from the first time is directly proportional, that is to say, as years of experience increase one year, applying new production technology from the first time increases 1.753 degrees. This relationship is significant at the probability level 0.10 due to the decrease of percentage which reached 4.405. From the determination coefficient which reached 0.355, it is found that the change in years of experience illustrates 35.5% of the change in the degree of application of new product technology from the first time.

The relationship between years of experience and using new marketing and distributing strategies represented in Y6 provided that the relation representing this function:

$$\text{LOG } Y6 = -0.2264 + 1.758 \text{ LOGX}$$

$$(3.279)$$

$$R^2 = 0.573 \ \overline{R}^2 = 0.520 \ F = 10.754$$

Using this function it is possible to establish that the negative function constant representing the truncated part of the Y-axis is less than one. From the positive inclination coefficient which reached 1.758 it is revealed that the relationship between years of experience and the use of new marketing and distribution strategies is directly proportional, that is to say as years of experience increase by one year, the use of new marketing and distribution strategies increases by 1.758. This relationship is significant at probability level 0.01 due to the high percentage of F which reached 10.754. From the determination coefficient which reached 0.573, it is found that a change in the years of experience illustrates 57.3% of the change in the extent to which new marketing and distribution strategy is used.

Also when exploring the relationship between years of experience and the expectation of increased exports represented in Y7, it was seen that the relation representing this function is

$$\text{LOG } Y7 = 0.2311 + 1.393 \text{ LOG X}$$

$$(3.008)$$

$$R^2 = 0.531 \ \overline{R}^2 = 0.472 \ F = 9.049$$

Using this function it is found that the positive function constant representing the truncated port of the Y-axis is between 1 and 10. From the positive inclination coefficient which reached 1.393, it can be determined that the relationship between years of experience and the expectation that exports will increase is directly proportional. That is to say, as years of experience increase one year, the expectation of increased exports increases by 1.393 degrees. This relationship is significant at the

probability level 0.01 due to the high percentage which reached 9.049. From the determination coefficient which reached 0.531, it can be seen that change in the years of experience accounts for 53.1% of the change in the degree expectation that exports will increase.

Also, the relationship between years of experience and preparing the circumstances for attracting local and foreign investment represented in Y8, it was proved that the relationship representing this function is:

$$\text{LOG Y8} = 0.3963 + 1.915 \text{ LOG X}$$
$$(3.720)$$
$$R^2 = 0.634 \quad \overline{R}^2 = 0.588 \quad F = 13.837$$

From this relation it is seen that the negative function constant representing the truncated part of the Y- axis is less than one. From the positive inclination coefficient which reached 1.915 it can be determined that the relationship between years of experience and preparing the circumstances for attracting local and foreign investments is directly proportional, that is to say as years of experience increase one year, the circumstance become more suitable for attracting local and foreign investments by 1.915 degrees. This relationship is significant at the probability level 0.01 due the high percentage of F which reached 13.837. From determination coefficient which reached 0.634 it can be understood that a change in the years of experience illustrates 63.4% of change in the degree of preparing the circumstances for attracting local and foreign investment.

The relationship between years of experience and availing job opportunities in the domestic market represented in Y9, proved that the relationship representing this function is:

$$\text{LOG Y9} = 0.6288 + 2.092 \text{ LOG X}$$
$$(3.353)$$
$$R^2 = 0.584 \quad \overline{R}^2 = 0.532 \quad F = 11.242$$

From this function, it can be determined that the negative function constant representing the truncated part of the Y-axis is less than one, and from the positive inclination coefficient which reached 2.092, it is found that the relationship between years of experience and job opportunities for the domestic labour market is directly proportional, that is to say as years of experience increase one year, those job opportunities increase by 2.092 degrees. This relationship is significant at probability level 0.01 due to the high percentage of F 11.242. From the determination coefficient which reached 0.584, it is found that change in years of experience illustrates 58.4% of the change in job opportunities for the domestic labour market.

Simple inclination analyzing of exploring the relationship between years of experience and national industry supported by the free zone represented in Y10 proved that the relationship representing this function is as follows:

$$\text{LOG Y10} = 0.423 + 1.964 \text{ LOG X}$$
$$(3.272)$$
$$R^2 = 0.572 \ \overline{R}^2 \ 0.519 \ F=10.708$$

Using this function, it is found that the negative function constant representing the truncated part of the Y-axis is less than one. From the positive inclination coefficient which reached 1.964, it is established that the relationship between years of experience and national industries supported by the free zone is directly proportional, that is to say as years of experience increase one year, national industry supported by the free zone increases 1.964 degree. This relationship is significant at probability level 0.01due to the high percentage of F which reached 10.708. From the determination coefficient which reached 0.572, it is confirmed that change in years of experience illustrates 57.2% of change in the national industries supported by the free zone. An analysis of the relationship between years of experience and the expected effect of the free zone on the national economy represented in Y_t proved that the relationship representing this function is:

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LOG Y1 = 0.8369 + 1.720 LOG X

$$(3.370)$$

$R^2 = 0.587 \; \overline{R}^2 \; 0.535 \; F=11.354$

From this function, it is found that the positive function constant representing the truncated part of the Y- axis is between 1 and 10. From the positive inclination coefficient which reached 1.720 it is determined that the relationship between years of experience and the expected effects of the free zone on the national economy is directly proportional; that is to say, as years of experience increase by one year, the expected effects of the free zone on the national economy increase 1.720. This relationship is significant at the probability level 0.01 due to the high percentage of F which reached 11.354. From the determination coefficient which reached 0.587 it can be found that change in years of experience illustrates 58.7% of change in all the expected effects of the free zone on the national economy.

Based on the quantitative information collected during personal interviews and the regression analysis carried out on this data as well as the literature review covered in previous chapters along with information received from Al-America FEZ, the researcher concludes that the creation of FEZ will help Libya achieve sustained economic growth.

Libya being an international port and a link between Europe and Asia can leverage the advantage in its favour with the development of FEZs in growth areas as identified in previous sections. This being the first study of its kind in the Arab world covering consequences of FEZ along with cost-benefit analysis and discussion of international competitiveness, provides clear guidelines for decision makers in Libya for a way forward. What an investor is looking for in a geographical location like Libya, which on achieving political stability and cuts down red tape reforming regulations related to labour, setup, plant operation, and contracts, to name a few - would be a destination that today's investor would perhaps consider. In order to encourage backward linkage, the Libyan government should also be looking at creating capabilities in the local labour force through investment in professional education, training, promoting entrepreneurial

skills and building the requisite infrastructure. This would create a Libya that grows on sustainable means with a skilled workforce capable of accepting any challenge posed by a continuously changing global economy.

7.6 Summary

This chapter discussed the FEZ in Misurata, Libya, presenting the geographical location of the site in the city, as well as its internal plan layout. The chapter also presented the results of interviews conducted with ten management personalities working within the general administration of the FEZ. The chapter concluded by explaining and discussing the effects of the Misurata FEZ on the Libyan domestic economy.

The research shows (see table 48) that the best prospects for investment for Misurata are therefore –

- Iron and Steel
- Shipping Services
- Engineering
- Chemical Industries
- Medical Equipment
- Food industry
- Readymade clothing

The following chapter concludes the thesis by drawing an overall conclusion and offering some recommendations for Libyan decision-makers to use as guidelines to encourage FEZs to expand their activities in Libya and outlining key characteristics for a FEZ in North African Mediterranean cities.

CHAPTER EIGHT

CONCLUSION

8.1 Introduction

During the last decade, the world has witnessed a wide and rapid evolution of the international economic system as economic changes have included the removal of many trade barriers between countries. The success of the programmes of economic development depends upon a nation considering its outside trade, and in this respect the balance of trade statistics count as one of its indicators. Economic changes have been reflected in the system of Free Zones, although it is true to say that the concept in this respect is not new, since it has existed since ancient times, and developed alongside human civilization. However, in more recent times, these developments have motivated many countries that previously did not have such trading zones, to start to establish them with the aim of reaping the benefits associated with them. Such advantages derive from their capacity to attract more foreign investment, create new employment opportunities, and improve the performance of different national productive sectors via supporting competition. The outcome is an increase in exports to international markets and an improvement in the performance of the balance of trade.

The experience of many countries has confirmed that FEZs represent a most successful method of securing good balance of trade figures, and consequently, from the Libyan perspective, it is desirable to fully explore the potential for developing the existing FEZ in Misurata. This study aimed to do this by analysing and critically evaluating the Al-Ameria FEZ in Alexandria, Egypt, which was considered to be a suitable for the Misurata FEZ. The assessment took the form of a Cost-Benefit Analysis and both quantitative and qualitative methods were used in gathering and analyzing the data.

8.2 Achieving the Aims and Objectives of the Research

The main research questions were as follows:

1. What are the *costs and benefits* of the free economic zones in Egypt?

2. What are the *key factors contributing to the success* of the free economic zones in Egypt?

3. What *lessons can be learned* from the experiences identified above in relation to Libya?

4. What *form of free economic zone* would be most appropriate to support Libyan economic development?

These questions gave rise to an overall aim which was *" to analyze and critically assess the costs and benefits associated with Egypt's Free Economic Zones (taking the situation of Alexandria as an example), in order to establish best practice and use this information to support Libya's development in this direction".* This aim has been accomplished effectively through the following research objectives, which were also fulfilled.

The first objective was "to explore the costs and benefits of the Alexandria FEZ in Egypt". In order to achieve this objective, it was first necessary to conduct a critical literature review which covered issues relating to FEZs, these being: the concepts and definitions of FEZs, the development of FEZs, the historical context, the motivation for international expansion and the key factors influencing international expansion. Furthermore, the literature review covered the main forms of market entry mode and the principal reasons for the selection of a suitable mode and the potential benefits to be gained by those countries establishing FEZs. From the critical review of the literature, significant theoretical background was obtained, and this helped the researcher in developing the conceptual and methodological aspects of the data gathering process, in particular relating to the formula for determining costs and benefits. Secondly, it was necessary to investigate the Alexandria FEZ in detail, and that was accomplished by the case study approach.

The second objective was "to explore the key factors attributed to the success and to establish the degree of success of the Alexandria FEZ in Egypt", and as just mentioned, a case study was undertaken in which data was gathered from sixty companies in the Al-Ameria FEZ by means of a questionnaire (see Appendix 3). The questions were guided by the research aims/objectives and the relevant literature and the need to learn as much as possible about the operation of the industrial enterprises within the FEZ. The focus was on the economic developments that have taken place in the Al-Ameria FEZ, on the business laws and regulations concerning companies' activities generally, and on industrial companies in particular. It also focused on the incentives and guarantees provided by the government to the enterprises within the FEZ. In other words, a

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comprehensive investigation was undertaken and from the data secured, it was possible to determine the success of the Al-Ameria initiative.

Furthermore, the Enclave Model was tested and developed further through the research and use of cost benefit techniques and case studies to "on the ground" views of the important factors (not only from published sources, which give an incomplete picture for investment decisions).

The third objective was "to understand the lessons learned to derive a way forward from the experience of the Alexandria FEZ in Egypt". The information to enable the achievement of this objective came from an intensive review of the relevant literature, and the data gathered from the case study organizations.

The research successfully established a link between Alexandria and Misurata in terms of key characteristics.

These findings were discussed with managers in the Libyan FEZ and they concurred with the key factors. The analysis, furthermore, was triangulated with the literature on FEZs which also support the proposition of the key factors.

The fourth objective *was "to make recommendations concerning the form of free economic zone that would be appropriate to support Libyan economic development".* To achieve this objective, it was first necessary to examine the extent of Libyan economic development through the existing FEZ in Misurata and this was accomplished through an interview exercise conducted with decision-makers within the MFZ, which revealed how the MFZ was operating. Using the data obtained from the larger quantitative survey performed with different industries in the Al-Ameria FEZ, it was possible to make a comparison of some aspects of strategy and to determine what lessons the MFZ could learn from Alexandria. Having concluded what could be taken from the operational strategy of the Al-Ameria FEZ, it was possible to suggest a range of recommendations for the consideration of Libyan decision-makers.

The key factors are outlined in Figure 16 which is shown in 9.4. Hence, this objective was achieved.

Finally, having achieved the four research objectives, the main research aim was realised, and the four research questions answered.

CHAPTER NINE

RECOMMENDATIONS

9.1 Introduction

This thesis aimed to analyse critical success factors for establishing and operating a FEZ on the basis of cost-benefit analysis with relation to the challenges faced as well as dealing with expectations from such investment on part of the host country and inward investor. It also looked at factors influencing the growth of backward linkages within the host country due to creation of such FEZs, and implications of these cross-linkages on the national economy and employment. Based on the studies carried out during literature review and two case studies, Alexandria FEZ (Egypt) and Misurata FEZ (Libya), the following recommendations can be made to authorities in Libya.

9.2 Recommendations

There are many benefits that Libya may obtain from the involvement of FEZs in the country, such as increased trade in the international market (and thus increased role in international affairs), the creation of more jobs for local people, and training for workers, which all contribute towards the development of human capital, and allows for the provision of high quality services. Hence, the government should concentrate its efforts on encouraging industries to expand their activities into FEZs in Libya. Such encouragement should take the form of satisfying these industry requirements and needs which are discussed and presented clearly in this study. Essentially, the following recommendations are made:

- The Libyan government should invest in promoting the country's business environment internationally and promote an image of the country as one which is beneficial for investors. Specifically, there should be sufficient information given to potential investors regarding the returns they can expect on particular amounts and types of investment as well as cutting red tape by introducing measures like the one window process used widely in successful FEZs discussed in the previous sections of the thesis.

- The various legal statutes and resolutions that the Libyan government has introduced to encourage foreign companies to enter the Misurata Free Zone and

hence, the Libyan market, should be properly implemented because it is apparent that to date this is not happening, and the outcome is that foreign investors do not believe the government is serious in its desire to attract them. Consequently, the regulations that are on the statute book should be widely publicised to ensure awareness and full understanding of these is held by all those concerned with the MFZ and those responsible for implementation of the regulations should be charged with fulfilling their duties.

- The Libyan government should encourage local and foreign investment within the MFZ by providing more fiscal and financial incentives.

- This study has uncovered many new ideas and issues that could be considered for further studies.

- This research makes significant recommendations to the decision-makers, both within the Libyan government and within other countries that would also wish to encourage FEZs. These recommendations could be used as guidelines in formulating the right policies in order to encourage FEZs to expand their activities into new countries and into Libya in particular.

9.3 Limitations of the Research

As with most other research studies, this too has limitations, which are briefly discussed below:

- Due to time and cost limitations, this study has been restricted to one free zone in Egypt and one in Libya, which it was believed shared a number of common characteristics and were, thus, capable of effective comparison. Consequently, the findings may not bear generalisation to FEZs of a quite different character (i.e. type of location). Additionally, the findings are limited to the types of industry participating in the study and again, it may not be possible to extrapolate from these results and make inferences in respect of other types of industrial enterprise.

- The Libyan Free Zone system is relatively young and not surprisingly there were problems in finding appropriate information relating to them. Indeed, there was a lack of literature on FEZs in developing countries in general, and in Egypt and Libya in particular.

- During the data collection period the researcher was only able to make observations over a short time and, therefore, what observations were made were minor.

- Some of the documents were only available for consultation within the case study organisations and it was not possible to make or obtain copies. Hence, since the researcher was only allowed to peruse them on the premises it was difficult to extract and record much information that would have been useful in forming a more detailed picture of the companies.

9.4 Major Contributions to Knowledge

This study presents significant contributions to knowledge at both academic and practical levels. The following are the most important:

From the literature review of previous studies, it was clear that there are no other studies that cover the problems and issues related to establishment of FEZs in Libya, though there are a few studies in other Arab countries, such as Taher (1998), OECD (2003), Nassar (2005), and El-Dosoky (2008). Therefore, this study contributes to determining the main factors that would encourage FEZs to widen their activities in a country, which has a similar economic, geographical, and socio-cultural situation to that of Libya.

This study is considered the first step towards building a theory related to the establishment of FEZs in Libya on the basis of cost-benefit analysis. After reviewing previous studies, especially those related to Arab countries, it became clear that it is difficult to adopt the experiences of others without taking into consideration economic, social, geographical, and cultural factors.

The majority of previous studies aimed to understand the importance of investment in FEZs from the perspective of a single party as mentioned in the literature review chapter, whether studies undertaken by the host country on the feasibility of establishing a FEZ in its territory, or a study commissioned by investors seeking to maximise profit and benefit, regardless of the negative side effects on the host country.

This approach is characterised by Warr (1989) which provided the initial methodology to underpin the initial stages of the research.

This research therefore, brings together both models, in attempting to study and understand the extent to which a FEZ is appropriate to both investors and host countries equally; this is indicated in the research aims. This research identifies key factors from the perspective of investors and balances these against the needs of the host country.

This provides a framework for future researchers and practitioners to assess the benefits of a FEZ as shown in Figure 17.
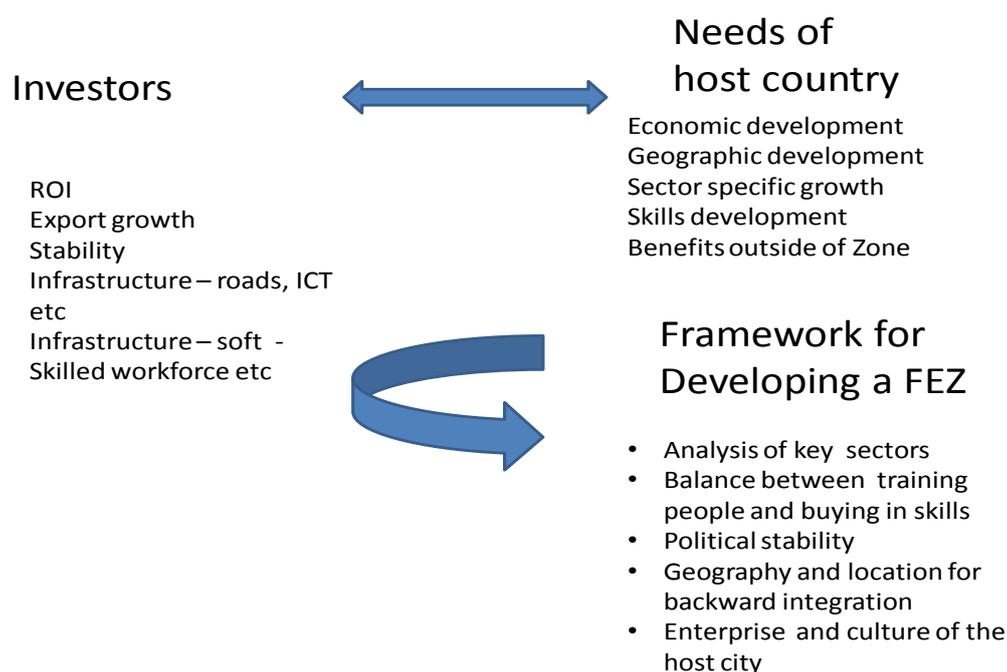
Figure 17, Model of key factors to be considered in the establishment of a FEZ in the Mediterranean coast of North Africa

According to the results from previous studies that depended on the data from the government and which did not give clear results to the kind of the investments and the impact of economic, geographic and socio-cultural factors on the host country and investors in the FEZs. Therefore, to reach the best results this study suggested using mixed methods; questionnaires and interviews, to determine the kind of industry that will be successful inside FEZs. This study takes into consideration the economic, geographic and socio-cultural factors.

This is the first study of its kind in the Arab world that combines both quantitative and qualitative methods through the use of questionnaires and interviews as data gathering

tools. It concluded that Alexandria was the closest experience that could be used as a guide in implementing a FEZ in Musurata, Libya, due to the agreement in economic, social, geographical, and cultural factors.

The advantage of using qualitative and quantitative research methods in this study is to understand the economic, geographic and social-cultural factors, which have an effect on the investment in the FEZs and thus on the investors and the host countries; which has been indicated by this study.

Through the statistical analysis that was followed in this study of the Al-Ameria FEZ in Alexandria, it became clear that relative benefits existed in terms of investment in FEZs that differed from one investor to another. This provided a view or indicator for investors and Libya (the host country) on the benefits of each model or investor.

Through the use of cost benefit analysis, this research was able to evaluate Al-Ameria FEZ (Alexandria) for each individual industry, and also by looking at the actual reality in assessing the economic activities of each to determine those industries that are most successful and appropriate to both investor and host country (Egypt). This made the al-Ameria FEZ a model that could be used to guide the Libyan proposal for a FEZ given the agreement in economic, geographical, and cultural circumstances, which would contribute to the success of this FEZ.

The research shows that the best prospects for investment for Misurata are therefore –
- Iron and Steel
- Shipping Services
- Engineering
- Chemical Industries
- Medical Equipment
- Food industry
- Readymade clothing

The success of the FEZs is to develop which helps create stability of the Zone and develop long- term planning and social development as well as economic.

The majority of previous studies adopted a theoretical perspective, and were remote from the field, which neglects an important aspect in lessons learnt.

9.5 Implications for Academic and Business Communities

From this research, it could be said that many other issues have emerged, which would benefit from further study. As shown in Chapters Six and Seven, the discussions on the quantitative and qualitative data raise a number of questions. Therefore, the researcher can suggest several other research directions that could be followed in the future, such as:

- The empirical research was restricted by the number of FEZs, so it would be preferable to expand the data set for further research. This may be done by including more companies in a study. It might also prove desirable to adapt the sectional dimension that is considered in the analysis.
- Replication of this research with other FEZs could enhance the understanding of how to encourage them to expand their activities in Libya.
- This research could be replicated with similar FEZs in different Arab or North African countries.
- Several phases of decision-making within the FEZs could be investigated separately in order to obtain a more in-depth understanding of their relative importance. For instance, the question of how social and environmental factors impact on such decisions when considering investment. Likewise, political and economic factors could also be studied.
- This study revealed that there is no clear image of Libya within the world in general, and further research is recommended to investigate how to promote the country as a sound business investment internationally.

The business community interested in setting up an industry in FEZ in Libya, could look at the various issues discussed in the thesis, such as government regulations, critical success factors, type of industry and cost-benefit analysis associated with that industry, effect of cost variation on payback period as derived in sensitivity analysis and cross-linkage system involving forward and backward linkages. Those who are keen to

set up an export-oriented industry based on foreign technology or technical know-how and foreign investment could benefit from experiences of industries established already in the Arab world covered in this thesis. These investors could also draw inferences from the cost-benefit analysis carried out in this thesis for various types of industries to choose the right investment mix. Internal investors who are looking for a tie-up with foreign investors could understand the critical success factors that are necessary for such an enterprise from this thesis. In order to make Libya competitive, interested investors can thus form a pressure group to achieve the objectives for successful realisation of FEZ in Libya, and could influence Libyan government policies and administration practices.

This thesis represents an initial exploration of FTZ characteristics and the firms that operate within FEZs. The purpose has been to draw lessons from a successful FEZ such that improvements can be effected for another FEZ in a similar cultural environment. It has attempted to introduce a framework or structure to an unsystematic area of research that is devoid of empirical studies, by adopting an extensive and a systematic two-phase methodology. The study has shown that FEZs are important strategic institutions for both business firms and host countries. It provides a broader, more complete, and more realistic understanding of FEZs. Furthermore, it presents a rich account of the orientation, objectives, working, benefits, and marketing of FEZs, as well as their types, motives, and perceptions. The results from this study should benefit the academic and business community alike. It is hoped that this thesis will help to inspire more business research in this increasingly important area.

This is particularly so given the changed and changing nature of the political situation in North African Mediterranean countries.

As the countries and cities emerge from political and economic crisis, the FEZ will become a key factor in the development of economic and social change.

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APPENDICES

Appendices

Appendix (1): The Cost-Benefit analysis questionnaire for the Alexandria (AL-AMERIA) Free Zone

Appendix (2): The Arabic version of the questionnaire

Appendix (3): The Misurata FEZ interview schedule

Appendix (4): The Arabic version of the interview schedule.

Appendix (1): The Cost-Benefit analysis questionnaire for the Alexandria (AL-AMERIA) Free Zone

UNIVERSITY OF
GLOUCESTERSHIRE

COST-BENEFIT ANALYSIS OF THE ALEXANDRIA (AL-AMERIA) FREE

ZONE

Questionnaire

Thank you for agreeing to talk to me. This questionnaire is one of the requirements for my Ph.D. study. The University of Gloucestershire confirms that any information you divulge in this questionnaire will be held on an anonymous basis and treated in strictest confidence. The purpose of the research is to qualify theoretical prediction of the effect of Free Economic Zones (FEZs) on the Egyptian economy.

Section A: please complete your details.

    1. Name ---
    2. Job title --
    3. Nationality of the investors --
    4. Name of the zone --
    5. Establishment year --- --------------------------------
    6. Name of the company --
    7. Product Type --

Section B: The Company

In this section we would like you to tell us something about the nature of your company and the initial start-up of the project.

    1. What is the status of your company? *(tick if appropriate)*

        Partnership

        Private ownership

        Branch to Mother Company

Other, please specify---

2. Could you please sate the main product of your company?

Food	Chemicals	readymade clothes	engineering	Navigation services	medical equipment	Manufacturing Iron and steel

Other ---

---

3. What is the type of the Free Economic Zone (FEZs) you are working in? (please circle number)

Private FEZ 1

Public FEZ 2

---

4. In your opinion, how easy was it for you to establish your project in the FEZs? *(Please, tick if appropriate)*

Very easy						Very difficult
	100%	75%	50%	25%	0	

5. Can you please specify, the amount of investment used in the start-up stage of the company? *(Please tick if appropriate)*

a) Up to   1,000,000 $
b) 1,000,001 – 2,500,000 $
c) 2,500,001 – 5,000,000 $
d) More than   5,000,000 $

6. What were the main financial resources used at the start-up stage?

	Percent %
Self-finance	
Bank borrowing	
Partners and investors	

Others (specify please) -- -------------------------

7. What were the main labor forces at the start up stage of the firm?

	Percent %
Foreign	
Locals	

8. Please, specify the amount of export of your company from the start up year?

2001	2002	2003	2004	2005	2006	2007	2008

9. Please, specify the amount of import of your firm from the start up year?

2001	2002	2003	2004	2005	2006	2007	2008

10. What is the relative cost of your production factors? <u>Percent %</u>
(Please, tick if appropriate)

  a- Wages
  b- Resident permission
  c- Transportation
  d- Raw materials
  e- Rent

Other, please specify---
----

12. Can you please indicate the amount of revenue and expenditure of the company for the last three fiscal years?

Years	2001	2001	2003	2004	2005	2006	2007	2008
Project								
Turnover								

Section C: Employment issues

This section is to understand the effect of your project on the employment in the local economy.

1. How many new jobs would you say have been created/retained by the project?
(Please specify number)

Retained		Created
Local		
Foreign		

2. Were any of the local employees taking these new jobs previously unemployed?
(Please circle number)

<div align="center">Yes 1
No 2</div>

If yes (please specify the number)

4. Did you find it difficult to obtain local employees for starting your business?
(Please circle number)

<div align="center">Yes 1
No 2</div>

If yes, please specify why---
----

4. Please specify the number of employees (Local and Foreign)
of your firm?

2003		2004		2005		2006		2007		2008	
Local	Foreign	Local	foreign	Local	foreign	local	foreign	local	foreign	local	foreign

5. Roughly, what is the share of women from the total employment, in percent?

	Percent %
Local	
Foreign	

6. on average, how many hours per day the employee works in your company without overtime?

	Daily
Working hours per employee	

7. On average, how many hours per day is the overtime of the employee?

	Daily
Overtime per employee	

8. What is the daily amount of production per employee in your company?

	Daily (pieces)
Production per employee	

9. In your view, is there any transfer of employment from your company to other companies?

Yes   1

No   2

If yes, please specify why? ---

----

10. How can you describe the monthly wage structure in your company for skilled and unskilled employees (in   / Month)?

Money	Skilled	Unskilled
Less than 200		
250-250		
250 – 300		
300 – 350		
350 – 350		
350 – 500		
More than 500		

11. What is the number of skilled and unskilled employees working in you firm?

Employees	Number of employee
Skilled	
Unskilled	

12. Do you support vocational training for your employees? *(Please circle number)*

Yes 1

No 2

13. if yes, please what types of vocational training for your employees?

Sales	Management	Technical	Marketing

Others ---
----

14. Please specify the number of employees and cost of Vocational training per employee.

Number of trainee	
Cost of vocational training per employee (in)	

Section D: The Fiscal and Economic impact for your company.

In this section we would like to ask you about the impacts of the project that have direct and indirect effects on the local economy. In addition we seek to discuss the nature of incentives that you obtained in order to invest in the FEZs.

1. **In your view, what were the most important effects of the project on the country?** *(Please tick if appropriate)*

a. Does the project introduce innovative management practices?

b. Does the project lead to develop new products/services?

c. Does the project develop new process?

d. Introduction of a leading-edge technology

e. Does the project apply new production technology for the first time?

f. Does the project bring new marketing and distribution strategies?

a. Low 1 2 3 4 5 high
b. Low 1 2 3 4 5 high
c. Low 1 2 3 4 5 high
d. Low 1 2 3 4 5 high
e. Low 1 2 3 4 5 high
f. Low 1 2 3 4 5 high

2. What kind of technology has your company introduced?(*please explain*)

 -- --
--- -----
----

3. What level of cooperation is there between your company and local companies outside the FEZ?

a.	Low	1	2	3	4	5	high
b.	Low	1	2	3	4	5	high
c.	Low	1	2	3	4	5	high
d.	Low	1	2	3	4	5	high
e.	Low	1	2	3	4	5	high
f.	Low	1	2	3	4	5	high

4. Please give some example if appropriate.

5. From which of the following did you obtain tax incentives? *(please, Tick if appropriate)*

a. Egypt Investment

b. Industrial Estates Corporation

c Egypt Free Zone Corporation

d.Other, please specify---

----

6. What kinds of incentives offered to you in order to start your project? *(Please, Tick if appropriate)*

a. Income tax exemptions on:

      social services tax

      profits exemptions

      wage exemption for non-Jordanian employees

b. Customs duty exemptions on:

      fixed assets (e.g. equipment, machinery and tools)

      imported fixed assets for expansions

      imported raw materials

c. property taxes exemptions

d. Sales Tax

e. Are there incentives you would like to have which are currently not offered?

If yes, please give examples---

----

7. How much you estimate the amount of exemption offered to your project annually? *(Please tick if appropriate)*

a- up to 50,000 US$

b- 50,001 - 100,000   US$

c- 100,001 - 300,000 US$

d- 300,001 - 500,000 US$

e- More than 500,000 US$

8. Can you please, rank the main reasons for you to invest in the FEZs?

a. Duty and quota free to market   Low   1   2   3   4   5   high

b. Tax exemption   Low   1   2   3   4   5   high

c. Political stability   Low   1   2   3   4   5   high

d. Economic stability   Low   1   2   3   4   5   high

e. Investment climate   Low   1   2   3   4   5   high

f. Cheap labor force   Low   1   2   3   4   5   high

j. Other, please specify -- ----

Section E: The Future Scheme of FEZs

Finally, this section is designed to help us to understand your general view of the future of the FEZ's industry in Egypt.

1. What is better for you to produce under FEZ agreement or Free Trade Area (FTA) agreement? *(Please, Circle number)*

FEZ   1

FTA   2

2. Is it easy for you to obtain the value added requirements to export under FEZ agreement? *(please, circle number)*

  Yes   1

  No   2

If no please explain why ---

----

3. Do you think that the FEZs scheme in Egypt have advantages over other free zones and FEZs in the region in respect to the following: *(Please tick if appropriate)*

   a- Labour Force

   b- Tax Exemptions

   c- USA Market

   d- EU Market

   e- Transportation

4. In your view, are there any disadvantages? *(Please explain)*

5. In your view, is there any challenge to your project from opening new FEZs in neighboring countries? *(please circle number)*

         Yes   1
         No   2

If yes ,please explain why ---

----

6. What do you prefer more working under FEZs status or under Free zone status?

(Please circle number)

       FEZs Status   1

       Free Zones Status   2

Can you explain why, please--

  ----

7. In your view, which of the following can affect the strengthen of the company?

(Please tick if appropriate)

a- Finance

b- Local Labour Market

c- Prices of Imported Raw Materials

d- Competition

e- Marketing

f- Government Regulations

g- Political stability

a. Low   1   2   3   4   5   high

b. Low   1   2   3   4   5   high

c. Low   1   2   3   4   5   high

d. Low   1   2   3   4   5   high

e. Low   1   2   3   4   5   high

f. Low   1   2   3   4   5   high

g.Low   1   2   3   4   5   high

Other (Specify please) --
----

8. Have you any other comments you would wish to make about the future scheme of FEZ's? --
----

That is all. Thank you very much for your time. It has been very useful.

جامعة الأسكندرية
كليـــة التجـــــارة

إستمارة إستبيان

إقتصاديات المنطقة الحرة العامة بالعامرية

جامع البيانات :

التاريـــخ :

1. اسم ----------------------- 2. الوظيفة -----------------
-

3. اسم الشركة ------------------- 4. إنشاء السنة ----------------

5. جنسية المستثمر ---------------- 6. نوع المنتج ---------------
-

مواد غذائية	معدات طبية	خدمات الملاحة	كيماويات	ملابس جاهزة	هندسية	صناعة الحديد والصلب

أخرى --
--

7. نوع الشراكة : شركة الملكية الخاصة فرع للشركة الأم أخرى

8. مدى سهولة إنشاء المشروع في المناطق الاقتصادية الحرة العامة ؟

سهل جدا	100%	75%	50%	25%	0	صعب جدًا

9. كم يحتاج المشروع لرأس مال في البداية (الاستثمار المستخدم) ؟

أ	ما يصل لمليون جنيه مصرى	
ب	من مليون – 5 مليون جنيه مصرى	
ت	من 5 مليون – 15 مليون جنيه مصرى	
ث	من 15 مليون – 25 مليون جنيه مصرى	
ج	أكثر من 25 مليون جنيه مصرى	

10. ما هي أهم الموارد المالية المستخدمة في مرحلة البدء؟

نوع التمويل	تمويل ذاتي	قرض بنكي	شركاء ومستثمرين	أخرى (.............)
الأهمية النسبية %				

(ملحوظة : بيانات هذه الإستمارة سرية ولن تستخدم إلا فى أغراض البحث العلمى)

11. قيمة صادرات الشركة ؟

2008	2007	2006	2005	2004	2003	2002	2001

12. قيمة واردات الشركة ؟

2008	2007	2006	2005	2004	2003	2002	2001

13. تكلفة عوامل الإنتاج للشركة ؟ كنسبة %

الإيجار	المواد الخام	النقل	التصاريح والرسوم	الأجور	البنود
					الأهمية النسبية%

14. إيرادات وتكاليف الشركة على الأقل الثلاث الماضية؟

2008	2007	2006	2005	2004	2003	2002	2001	السنوات
								التكاليف
								الإيرادات

15. العمالة الموظفة فى مشروعك من البداية وخلال السنوات التالية ؟

2008	2007	2006	2005	2004	2003	2002	2001	سنة البداية
								مصريين
								أجانب

16. الوظائف الجديدة من كان يحصل عليها ؟

أ. الموظفين المصريين   ب. موظفين أجانب   ت. غير الموظفين (البطالة)

17. هل تجد صعوبة في الحصول على موظفين مصريين للعمل في الشركة ؟

ا- نعم   ب- لا

إذا كانت الإجابة بنعم ، يرجى ذكر السبب ------------------------------------

----

–

18. نسبة النساء من مجموع العمالة حالياً ؟

نسبة الرجال %	نسبة النساء %	
		مصريين
		أجانب

19. عدد ساعات العمل اليومية في الشركة ؟

الأساسي	الإضافي

20. هل هناك إنتقال للعمالة من شركتكم لشركات أخرى؟

ا. نعم   ب. لا

إذا كانت الإجابة بنعم ، يرجى ذكر السبب؟ ------------------------------
----
--

21. هيكل الأجور الشهرية في الشركة (جنيه مصري/شهر)؟

المبلغ المالي	عدد الموظفين	عدد العمال
أقل من 500		
500 – 1000		
1000 – 1500		
1500 – 2000		
2000 – 2500		
2500 – 3000		
أكثر من 3000		
إجمالي العمالة		

22. هل تفضل عمل تدريب مهني لموظفيك؟

ا- نعم   ب- لا

23. إذا كانت الإجابة بنعم ، يرجى تحديد أنواع التدريب المهني للموظفيك؟

	المبيعات	إدارة	التقنية	التسويق	أخرى ( )
عدد المتدربين					
كلفة التدريب للفرد (بالجنيه)					

24. أنواع الميكنة والآلات والتقنيات المتقدمة التى تستخدمها الشركة؟

ا. --
ب. --
ت. --

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25. أثر المشروع على المقتصد القومي؟

أ. هل يتبنى المشروع الممارسات الإدارية المبتكرة؟ منخفض 1 2 3 4 5 عالية

ب. هل تقوم الشركة بتطوير المنتجات والخدمات بها ؟ منخفض 1 2 3 4 5 عالية

ج. هل يقوم المشروع بعملية تطوير لنفسه؟ منخفض 1 2 3 4 5 عالية

د. هل يقتنى هذا المشروع أحدث التجهيزات التكنولوجية؟ منخفض 1 2 3 4 5 عالية

هـ. هل يتبنى تطبيق تكنولوجيا الإنتاج الجديدة من أول مرة؟ منخفض 1 2 3 4 5 عالية

و . هل يستخدم استراتيجيات التسويق والتوزيع الجديدة ؟ منخفض 1 2 3 4 5 عالية

26. ما هو مستوى التعاون بين شركتك والشركات المحلية من خارج المنطقة الاقتصادية الحرة؟

أمثلة : عن نوع أو اسم الشركة	مستوى التعاون
أ.	منخفض 1 2 3 4 5 عالية
ب.	منخفض 1 2 3 4 5 عالية
ت.	منخفض 1 2 3 4 5 عالية
ث.	منخفض 1 2 3 4 5 عالية
ج.	منخفض 1 2 3 4 5 عالية

27. الحوافز الضريبية من الذي يحصل عليها ؟

أ. الاستثمار المصري ب. الشركات الصناعية

ج. هيئة المنطقة الحرة في مصر د. أخرى ، يرجى تحديد ------------------

28. أنواع الحوافز التي قدمت لكم من أجل أن تبدأ مشروعك؟ ضع علامة √

الإعفاءات من ضريبة الدخل	على الخدمات الاجتماعية	
	على الأرباح	
	على أجور الموظفين غير المصريين	
إعفاءات من الرسوم الجمركية	على الأصول الثابتة (مثل المعدات والآلات)	
	الموجودات الثابتة المستوردة للتوسعات	
	المواد الخام المستوردة	
إعفاءات	الضرائب العقارية	
إعفاءات	ضريبة المبيعات	

29. هل هناك حوافز تريدها حاليا والتي لم يقدم لكم؟

إذا كانت الإجابة بنعم ، يرجى تقديم أمثلة ------------------------------------

30. تقدير المبالغ التي يعفى مشروعك منها سنويا؟

أ	ما يصل 250000 جنيه مصرى	
ب	من 250000 – 500000 مليون جنيه مصرى	
ت	من 500000 – 1.5 مليون جنيه مصرى	
ث	من 1.5 مليون – 2.5 مليون جنيه مصرى	
ج	أكثر من 2.5 مليون جنيه مصرى	

31. برجاء ترتيب الأسباب التي دفعتك للاستثمار في المناطق الاقتصادية الحرة؟

أ. فرض حصص السوق   منخفض 1 2 3 4 5 عالية

ب. الإعفاء ضريبي   منخفض 1 2 3 4 5 عالية

ت. الاستقرار السياسي   منخفض 1 2 3 4 5 عالية

ث. الاستقرار الاقتصادي   منخفض 1 2 3 4 5 عالية

ج. مناخ الاستثمار   منخفض 1 2 3 4 5 عالية

ح. قوة العمل الرخيصة   منخفض 1 2 3 4 5 عالية

خ. **أخرى أذكرها**   منخفض 1 2 3 4 5 عالية

32. هل تفضل العمل في ظل مناطق التجارة الحرة أو أتفاقية التجارة الحرة؟

أ. المنطقة الاقتصادية الحرة   ب. اتفاقية التجارة الحرة

ما السبب --

----

33. هل من السهل الحصول على القيمة المضافة (أرباح) على الصادرات في ظل شروط اتفاق المنطقة الاقتصادية الحرة؟

أ- **نعم**   ب- **لا**

إذا كانت الإجابة بلا أذكر السبب --

34. هل تعتقد أن نظام المناطق الاقتصادية الحرة في مصر تتميز عن غيرها من المناطق الاقتصادية الحرة ومناطق التجارة الحرة في في الدول المجاورة فيما يتعلق بما يلي :

أ. توفر القوى العاملة   ب. نظام الإعفاءات الضريبية

ج. النفاذ إلى سوق الولايات المتحدة الأمريكية   د. السوق والاتحاد الاوروبى

هـ النقل

35. ما هي المعوقات التى تواجهك؟

--‐‐-------

‐‐‐‐‐‐

36. هل هناك منافسة لمشروعك الجديد من فتح مناطق اقتصادية حرة في الدول المجاورة؟

أ- نعم   ب- لا

إذا كانت الإجابة بنعم ، ما السبب --

----

37. العوامل التي يمكن أن تؤثر على تعزيز أعمال الشركة؟

أ.	التمويل	منخفض 1 2 3 4 5 عالية
ب.	سوق العمل المصرية	منخفض 1 2 3 4 5 عالية
ت.	الاسعار والمواد الخام المستوردة	منخفض 1 2 3 4 5 عالية
ث.	المنافسة	منخفض 1 2 3 4 5 عالية
ج.	التسويق	منخفض 1 2 3 4 5 عالية
ح.	النظام الأساسي للحكومة	منخفض 1 2 3 4 5 عالية
خ.	الاستقرار السياسي	منخفض 1 2 3 4 5 عالية

غير ذلك (يرجى تحديد) --

–

38. هل لديكم تعليقات أخرى تساعد على تحسين مستقبل المنطقة الحرة؟

شكرًا جزيلاً.

UNIVERSITY OF GLOUCESTERSHIRE

The Fiscal and Economic Impact of
Free Economic Zones Interview

The University of Gloucestershire confirms that any information you divulge in this interview will be held on an anonymous basis and treated in strictest confidence.

Name -- Job title ------------------------------------

Name of the company ------------------------- Experience time ------------------------

1. Could you please expect what kind of products will succeed in MFZ?

☐ Manufacturing Iron and steel ☐ Medical equipment ☐ Navigation services

☐ Engineering ☐ Ready made clothes ☐ Chemicals ☐ Food

2. What kind of partnership will be created in the free zone ?

☐ A private company ☐ A branch of the parent company

☐ Joint stock company ☐ Foreign investment ☐ Joint investment

3. How easy is create a project in MFZ? Point on the line

Very easy +----------------+----------------+----------------+----------------+ very difficult

%100   %75   %50   %25   %0

4. Who will be able to get the new posts will be made available through MFZ?

☐ Libyan officials ☐ Foreign employees ☐ Ordinary people (unemployment)

5. Will there be difficulty in obtaining qualified Libyan staff to work in MFZ?

Why?   ☐ yes   ☐ No

Please indicate the reason:--

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6. Do you expect to enter the female to work in MFZ? Percentage?

	Staff and skilled workers				ordinary workers	
	Women%	men%			Women%	men%
Locals				Locals		
Foreign				Foreigner		

7. On average, How many daily hours of work expected in MFZ?

Working hours per employee Daily	
Overtime per employee Daily	

8. Do you expect the ease of entry and exit to and from the labor market in MFZ? Why? ☐ yes ☐ No

Please indicate the reason:--

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9. Do you support vocational training for your employees? ☐ Yes ☐ No

What are the fields of vocational training?

☐ Sales ☐ Marketing ☐ Management ☐ Technical ☐ others

10. What are the expected impacts of MFZ on the national economy?

a. introduce innovative management practices   Low-----------+-----------high

b. lead to develop new products/services   Low-----------+-----------high

c. develop new process   Low-----------+-----------high

d. Introduction of a leading-edge technology   Low-----------+----- -------high

e. apply new production technology for the first time   Low-----------+--- ---------high

f. bring new marketing and distribution strategies   Low-----------+------- -----high

g. Increase the quantity of exports   Low-----------+--------- ---high

h. Create a climate to attract local and foreign investments   Low-----------+-----------high

i. Provide job opportunities for Local unemployment   Low-----------+----- -------high

j. Support the national industry   Low-----------+-----------high

11. What is the level of cooperation expected between the MFZ and local firms from outside MFZ?

Very high +----------------+----------------+----------------+----------------+ very low
%100   %75   %50   %25   %0

12. From which of the following did you obtain tax incentives?

☐ Libyan investor ☐ Industrial Companies ☐ Libyan Free Zone Authority ☐ Foreign

investor

13. What are the incentives to be provided at the beginning of projects? √

Income tax exemptions on	social services	
	profits exemptions	
	wage exemption for non Libyan employees	
Customs duty exemptions on	fixed assets (e.g. equipment, machinery and tools)	
	imported fixed assets for expansions	
	imported raw materials	
exemptions	property taxes	
	Sales Tax	
	Others exemptions	

14. Can you please Reasons that may help to attract investment to MFZ

(Reasons)	**(Ranking)**
Duty and quota free to market	
Tax exemption	
Political stability	
Economic stability	
Investment climate	
Cheap labour force	
Others	

15. Do you think that the FEZs scheme in Libya have advantages over other free zones and FEZs in the region in respect to the following:

☐Labour ☐Force ☐Tax Exemptions ☐USA Market ☐EU Market
Transportation

16. In your view, are there any disadvantages? *(Please explain)*

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17. In your view, is there any challenge to your project from opening new FEZs in neighbouring countries? ☐ **Yes** ☐ **No**

If yes, please explain why --

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18. In your view, which of the following can affect the strengthen of the company?
(Please tick if appropriate)

☐ Finance ☐ Local Labor Market ☐ Prices of Imported Raw Materials ☐ Competition

☐ Marketing ☐ Government Regulations ☐ Political stability

That is all. Thank you very much for your time. It has been very useful.

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مقابلة شخصية

اقتصاديات المنطقة الحرة العامة بمصراته

(ملحوظة : بيانات هذه الإستمارة سرية ولن تستخدم إلا فى أغراض البحث العلمى)

الاسم ———————————— الوظيفة ——————————

الجهة التابع لها ———————— سنوات الخبرة ——————

1. ما هو نوع النشاط المتوقع نجاحه في المنطقة الحرة؟

☐ الحديد والصلب ☐ الصناعات الهندسية ☐ الملابس الجاهزة ☐ الصناعات الكيماوية

☐ الخدمات الملاحية ☐ المعدات الطبية ☐ المواد الغذائية

2. ما نوع الشراكة المتوقع قيامها في المنطقة الحرة ؟

☐ شركة خاصة ☐ فرع للشركة الأم ☐ شركة مساهمة ☐ استثمار أجنبي ☐ استثمار مشترك

3. ما مدى سهولة إنشاء مشروع في المنطقة الاقتصادية الحرة العامة بمصراته؟ أشر على الخط

صعب جداً +———————+———————+———————+———————+ سهل جداً

100% 75% 50% 25% 0%

4. من الذي سيتمكن من الحصول على الوظائف الجديدة التي سوف تتاح من خلال قيام المنطقة الحرة ؟

☐ الموظفين الليبيين ☐ الموظفين الأجانب ☐ أشخاص عاديين (من البطالة)

5. هل سيكون هناك صعوبة في الحصول على موظفين ليبيين كفء للعمل في المنطقة؟ ولماذا؟

☐ نعم ☐ لا

يرجى ذكر السبب ———————————————————————————————

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6. هل تتوقع دخول العنصر النسائي لسوق العمل بالمنطقة الحرة؟ وما نسبتهن؟

	العمال العاديين			الموظفين والعمال المهرة	
	نسبة الرجال %	نسبة النساء %		نسبة الرجال %	نسبة النساء %
ليبيين			ليبيين		
أجانب			أجانب		

7. كم هو عدد ساعات العمل اليومية المتوقع في المنطقة ؟

الإضافي	الأساسي

</div>

8. هل تتوقع سهولة الدخول والخروج من وإلى سوق العمل بالمنطقة الحرة؟

نعم ☐   لا ☐

يرجى ذكر السبب؟ ---
-

9. هل تفضل عمل تدريب مهني للموظفين؟

نعم ☐   لا ☐

ما هي مجالات التدريب المهني؟

المبيعات ☐   التسويق ☐   الإدارة ☐   التقنيات ☐   أخرى تذكر ☐

10. ما هي الآثار المتوقعة للمنطقة الحرة على الاقتصاد القومي؟ من ناحية:

أ. تبنى المنطقة الممارسات الإدارية المبتكرة؟   منخفض +----+----+----+----+ عالية

ب. قيام المنطقة بتطوير المنتجات والخدمات بها ؟   منخفض +----+----+----+----+ عالية

ج. قيام المنطقة الحرة بعملية تطوير لنفسها؟   منخفض +----+----+----+----+ عالية

د. اقتناء المنطقة أحدث التجهيزات التكنولوجية؟ منخفض +----+----+----+----+ ---- عالية

هـ. تبنى تطبيق تكنولوجيا الإنتاج الجديدة من أول مرة؟ منخفض +----+----+----+---- عالية

و . استخدام استراتيجيات التسويق والتوزيع الجديدة ؟   منخفض +----+----+----+ عالية

ز . زيادة حجم الصادرات ؟   منخفض +----+----+----+ عالية

ح. تهيئة المناخ لجذب الاستثمارات المحلية و الأجنبية؟ منخفض +----+----+----+ عالية

ط. توفير فرص عمل للبطالة الموجودة داخل الدولة ؟   منخفض +----+----+----+ عالية

ك. دعم الصناعة الوطنية ؟   منخفض +----+----+----+ عالية

11. ما هو مستوى التعاون المتوقع بين المنطقة الحرة والشركات المحلية من خارج المنطقة ؟

منخفض جداً +----------+----------+----------+----------+ مرتفع جداً

12. من سيستفيد من الحوافز الضريبية؟

المستثمر الليبي ☐ الشركات الصناعية ☐ هيئة المنطقة الحرة في ليبيا ☐ المستثمر أجنبي ☐

13. ما هي الحوافز التي ستقدم عند بداية المشاريع في العمل؟   ضع علامة √

الإعفاءات من ضريبة الدخل	على الخدمات الاجتماعية	
	على الأرباح	
	على أجور الموظفين غير الليبين	
إعفاءات من الرسوم الجمركية	على الأصول الثابتة (مثل المعدات والآلات)	
	الموجودات الثابتة المستوردة للتوسعات	
	المواد الخام المستوردة	
إعفاءات	الضرائب العقارية	
	ضريبة المبيعات	
	أخرى تقترحها	

14. برجاء ترتيب الأسباب التي قد تساعد على جذب الاستثمار في المناطق الاقتصادية الحرة؟

(الترتيب)	(الأسباب)
	فرض حصص السوق
	الإعفاء ضريبي
	الاستقرار السياسي
	الاستقرار الاقتصادي
	مناخ الاستثمار
	قوة العمل الرخيصة
	أخرى أذكرها

15. **هل تعتقد أن نظام المناطق الاقتصادية الحرة في مصراته قد يتميز عن غيره من المناطق الاقتصادية الحرة ومناطق التجارة الحرة في في الدول المجاورة فيما يتعلق بما يلي :**

توفر القوى العاملة ☐ نظام الإعفاءات الضريبية ☐ سهولة ورخص وسائل النقل ☐

النفاذ إلى سوق الولايات المتحدة الأمريكية ☐ السوق والاتحاد الاوروبى ☐

16. **ما هي المعوقات التى تواجهك؟**

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17. **هل تتوقع قيام منافسة بين مشروعات منطقة مصراته ومشروعات المناطق الاقتصادية الحرة في الدول المجاورة؟** نعم ☐ لا ☐

ما السبب ---

18. **ما هي العوامل التي يمكن أن تؤثر على تعزيز وتقوية المشروعات؟**

☐ التمويل ☐ سوق العمل الليبية ☐ الأسعار والمواد الخام المستوردة من ليبيا ☐ المنافسة

☐ التسويق ☐ نظام الدولة ☐ الاستقرار الاقتصادي ☐ أخرى تذكر -----------------------

شكرًا جزيلاً.

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