

# 國立交通大學

## 科技管理研究所

### 碩士論文

#### 巴拿馬三大工程的影響和投資機會

Impact and Investment Opportunities of the Three Mega Projects in  
Panama.

研究生：莫潤玲

指導教授：虞孝成 教授

中華民國九十六年六月

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## ABSTRACT

Currently the focus in Panama is to convert itself into an international hub through the completion of many ambitious mega projects. First, this thesis analyzes three of these mega projects. The first of these is the Expansion of the Panama Canal and this will have a major global impact. Consequently, because of this project another project, the Mega Port on the Pacific Ocean, will be needed to satisfy the future level of global transportation. The final mega project is the Panama Hub Energy that will supply energy to five of the countries which comprise Central America. Generally speaking, a mega project involves a huge investment and is a large-scale construction project contract which is usually broken down into many smaller subcontracts. In this context, the role of foreign direct investment is considered an important factor. Next, this paper presents a profile of the business infrastructure in Panama. Then, it analyzes the risks involved. Finally, the current involvement of one country, Taiwan, is examined with respect to foreign direct investment in Panama. In conclusion, after careful consideration of all these factors, it will be possible to suggest the opportunities for foreign direct investment in each mega project.

**Key Word: Mega Project, Panama Canal Expansion, Mega Port, Hub Energy, SIEPAC, Foreign Direct Investment (FDI), Panama.**

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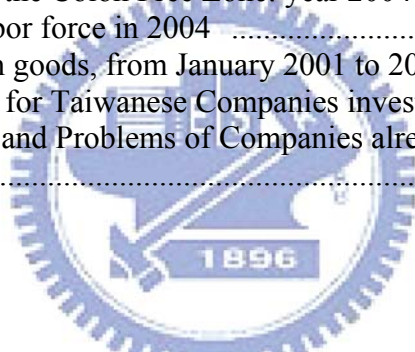
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*Live as if you were to die tomorrow. Learn as if you were to live forever.*

Mahatma Gandhi

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# CHAPTER 1. Introduction

## 1.1 Background

In 2000, the United State returned the Panama Canal to the Panamanians. Since that time, the Panamanian government is conspicuous by the emphasis it has placed on growth and in the intensity with which it faces its economic challenges. Thus, it continues to increase its competition with other countries in order to maintain economic development. This competition means that local governments strive, above all, to make themselves attractive to domestic and international investors. The instruments available to cities in pursuing their growth objectives fall into two broad categories: inducements to foreign and local private investors and direct public investments. The former include zoning concessions, tax abatements, low-interest loans, and the use of eminent domain to assemble and prepare large parcels of land, often overlaid on a general pattern of low taxation and minimal business regulation. With these objectives in place, Panama is promoting various Mega Projects utilizing its strategic geographic position to convert itself into a Central American hub.

Actually Panama has mega projects in the area of infrastructure: highways, airports, ports, energy transmitting and generating stations and rail transit systems. Another area for some of these mega projects includes the Expansion of the Panama Canal, the Mega port on the Pacific and Atlantic coastlines, the International Airport. As a result of these projects, the country is developing a port infrastructure on both the Atlantic and Pacific shores. The construction of the second bridge over the Canal; the future development of Howard Airport and its surrounding areas; the presence of an international banking and financial centre; a well developed maritime service industry; the modernization and expansion of the nations' bunkering storage and distribution facilities; SIEPAC -the Energy hub for Central America ,the construction of a regional refinery project; and the future expansion of the existing port system besides the projected expansion of the Panama Canal among others in combination will give Panama competitive advantages. With all these mega projects the critical element is funding, indeed, all those mega projects have attracted considerable amounts of private, public and foreign investments.

## 1.2 Analytical Framework

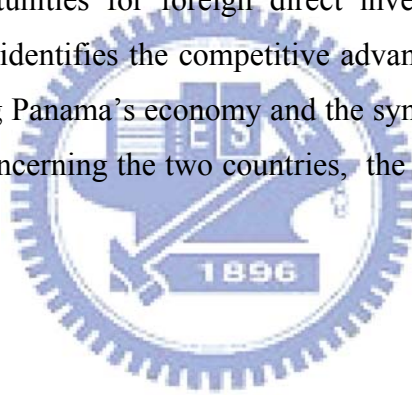
A case study can promote a better understanding of a complex issue or event. This is mainly due to the fact that case studies, by their very nature, emphasize detailed contextual analyses of a limited number of events or conditions and their relationships. Researchers have used the case study research method for many years across a variety of disciplines. Wide use has been made of this qualitative research method to examine contemporary real-life situations. Such research thus provides a basis for the forward application of ideas and the extension of methods. Robert K. Yin, a researcher, defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used (Yin, 1984)(1).

This study will supply a qualitative method in order to achieve its objective. As Catherine Hakim indicates, “Qualitative research is concerned with individual accounts of their attitudes, motivations and behavior. It offers richly descriptive reports of perceptions, attitudes, beliefs, view and feelings, the meanings and interpretations given to events and things, as well as behavior; they displays how these are put together, more or less coherently and consciously, into frameworks which connect attitudes and behavior, as well as the discontinuities or even contradictions which make attitudes and behavior, or how conflicting attitudes and motivations are resolved in particular choices made. Although qualitative research is about people as the central unit of account, it is not about individual patterns per se; reports focus rather on the various patterns, or clusters, of attitudes and related behavior that emerge from the interviews”.(54)

The most common method used is the depth interview, which is unstructured, of very variable length, and may be extended into repeat interviews at later dates. Because the qualitative method has the strength of data obtained: individual interviews in sufficient detail for the result are to be taken as true, correct, complete and believable reports of their views and experiences. This study will present interviews of people connected with these Mega projects, get feedback from their working experiences and points of view in order to provide valuable information about these Mega project in Republic of Panama. This study has interviewed hydraulic civil engineer

Bernado Mendez and engineer Roberto Méndez, a members of Panamanian society of engineers and architects (SPIA) in Panama, about the expansion of the Panama Canal. Concerning the SIEPAC project and the Panama Energy Hub, Engineer Carlos E. Rodríguez, ex-Manager of “Ente Regulador” in Panama , and Jose Vinicio Martinez Ardez ,official of Plan Puebla Panama, were interviewed in May 2007.

This case study is divided into chapters based upon the following steps involved in the analyses of the mega projects. The first step in this case study is to understand three important mega projects, their potential and impact on the current situation in Panama. The next step, the SWOT analysis structure (an acronym for strengths, weaknesses, opportunities and threats), is used to suggest future possible opportunities for foreign direct investment provided by these mega projects. Then, this case study identifies the competitive advantage of Panama and uses Taiwan as a case investor by examining Panama’s economy and the synergies between the two countries. Finally, based on the details concerning the two countries, the Taiwanese interests in Panama as an investor are identified.



### 1.3 Research Objectives

This section will strive to:

- Analyze the three Mega projects and suggest investment opportunities in Panama from the foreign direct investment perspective.
- Highlight the Republic of Panama as an investment alternative, especially for Taiwanese investors.

### 1.4 Scope and Limitations

The major objectives for doing international business are to expand sales, acquire resources, diversify sources and supplier, and finally to minimize competitive risks. This thesis provides alternatives that Taiwanese investors can pursue to achieve their business objectives.

During the investigation of this study, it was noted that limited research and literature exists concerning the three Mega projects. Furthermore, the literature about foreign direct investment in Panama was often not up to date. All these made the entire research process difficult.

### 1.5 Research Approach

The secondary data collection comprises written and electronic materials, books, and articles from newspapers, journals, government and international organization websites. Finally, the interviews were used for primary data. (Figure 1)

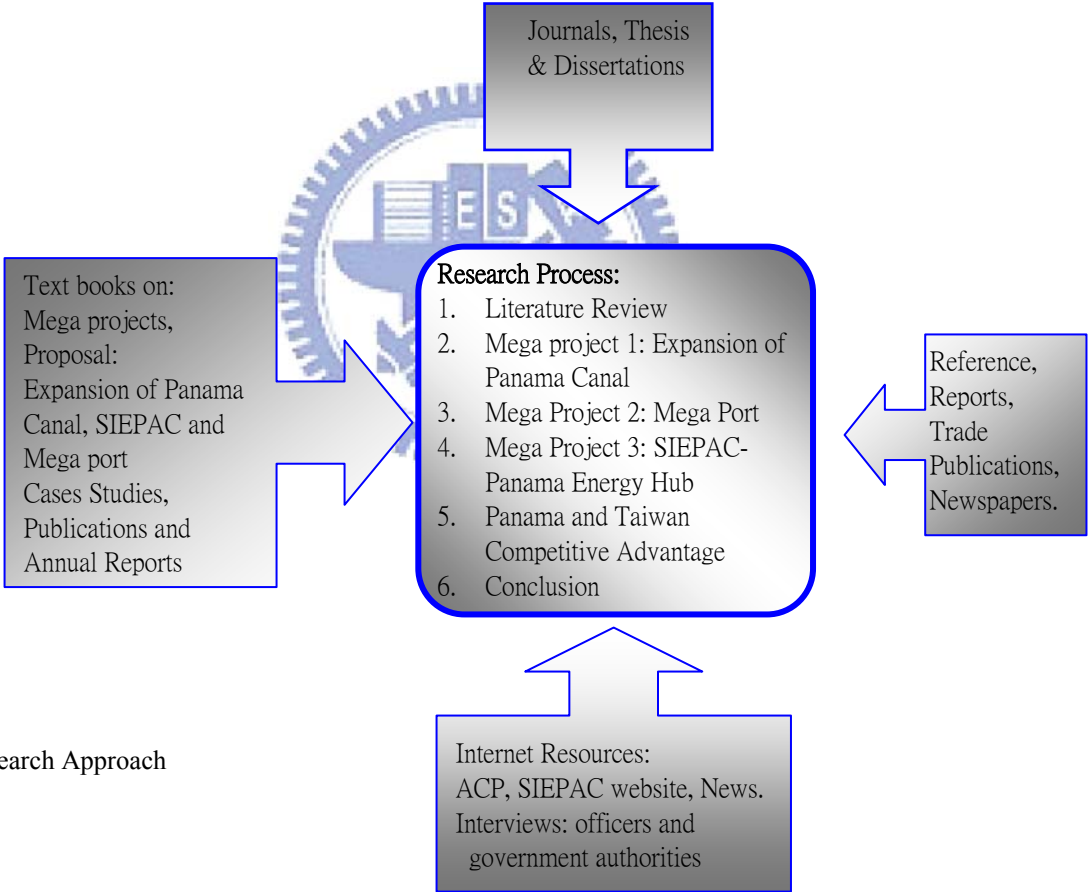


Figure 1 Research Approach

## CHAPER2. Literature Review and Framework

### 2.1 Mega Project Definition

The prefix *mega* to indicate “very large” became common in science and engineering during the late nineteenth century (4). The term *mega-project* itself dates to the late 1970s, when the Canadian government and the Bechtel Corporation more or less simultaneously adopted it, the former to describe massive energy development projects to which it had recently committed, the latter to describe its general portfolio of very large-scale projects. (5) Another definition is *mega-project* as employed initiatives that are physical, very expensive, and public. More specifically, mega-projects involve the creation of structures, equipment, prepared development sites, or some combination them. Finally ,to the above can be added the detail provided by Bent Flyvbjerg : “ A Mega project typically costs in excess of US\$1 billion and attracts high levels of public attention because of substantial impacts on communities, environment, and budgets”(6).

Mega-projects are fundamentally an expression of public authority. Their physical and economic development has been driven overwhelmingly, however, by foreign and private investment. In fact, the major goals for the mega project are supporting the improvement of the country, improving standard of living, increasing efficiency and stabilizing investment with benefit on compensate public investment and increase competitiveness, capital stock and long-term potential growth. In many respects, as a result, local politics has always been an aspect of business in that the two parties are involved in a mutually dependent relationship: the government has the power to attract the investor with mega projects and the investor has the money to realize these new projects for the countries economy(7).

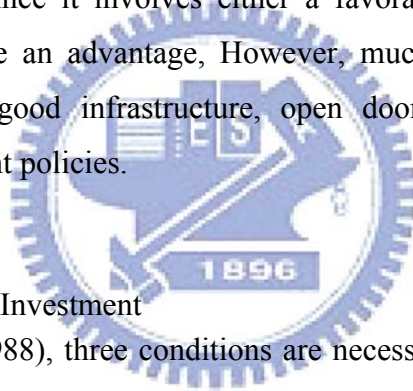
### 2.3. Definition and Nature of Foreign Direct Investment

According to United Nations Conference on Trade and Development, Foreign *Direct Investment (FDI)* is defined as "investment made to acquire lasting interest in enterprises operating outside of the economy of the investor." Additionally, foreign direct investment (FDI) has the potential to generate employment, raise productivity, transfer skills and technology, enhance exports and

contribute to the long-term economic development of the world's developing countries. More than ever, countries at all levels of development seek to leverage FDI for development (9).

Multinational organizations such as the Organization for Economic Co- Operation and Development (OECD), suggest that FDI should reflect the objective of obtaining a lasting interest by a resident entity in one economy (“director investor”) other than that of the investor (“direct investment enterprise”). Therefore, FDI may take many forms, including purchase of existing assets in a foreign country, new investment in property, plant and equipment, and participation in a joint venture with a local partner(10).

Domestic markets must provide a particular attraction to foreign investors and this is not an easy strategy for a host country, since it involves either a favorable location or a skill base and infrastructure than can provide an advantage, However, much is to be gained by improving human capital development, good infrastructure, open door policies to FDI, liberal trade strategies and stable government policies.



#### 2.4. Theories of Foreign Direct Investment

According to J.H. Dunning (1988), three conditions are necessary for FDI to occur. The first is ownership advantage, then location advantage and finally, internalization advantage. The concept of location advantage means that undertaking a business activity must be more profitable in a foreign location than in a domestic one (11).

In addition, Michael. E. Porter (1990) in “The Competitive Advantage of Nations” uses a theory of competitive advantage to explain economic development within nations and national differences in growth and prosperity (12). More specifically, foreign direct investment is included as part of the overall investment stage in the development of a country and company. He identifies a four -stage development process presented in the following table.

Table 1 Drivers and sources of National Competitive Advantage

Driver of Development	Source of Comparative Advantage	Examples
Factor Conditions	Basic factors of production (e.g. Natural resources, geographical location,	Canada, Australia, South Korea before 1980



	unskilled labor)	
Investment	Investment in capital equipment and transfer of technology from overseas; also requires presence of and national consensus in favor of investment over consumption	Japan during 1960ss. South Korea during 1980s
Innovation	All four determinants for national advantage interact to drive the creation of new technology	Japan since late 1970's. Italy since early 1970s: Sweden and Germany during most of the post period
Wealth	Emphasis on managing existing wealth causes the dynamics of the diamond to reverse; competitive advantage erodes as innovation is stifled investment in advanced factors slows, rivalry ebbs, and individual motivation wanes	U.K. during post-war period; U.S.A., Switzerland, Sweden, and Germany since 1980

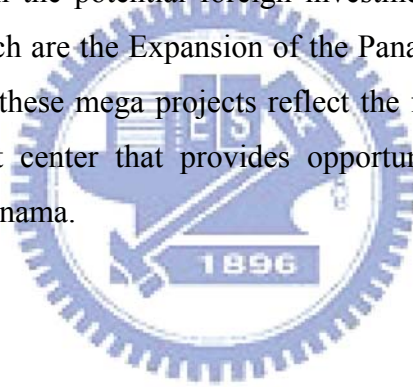
Source: Robert M. Grant (1991), "Porter's Competitive Advantage of Nations': An Assessment", Strategic Management Journal, 12, table 1, pag 540.

The characteristics of the host nation play a central role in firm's international success. The host base shapes the capacity of a company to innovate rapidly in technology and solidifies the competitive advantage created at the host base. To explore the respective competitive advantages of Panama, the diamond Model of Porter will be used, and in doing so, this study will also address significant changes in the competitive global environment.



Moreover, a framework of the risk projections of a country is essential to protect investments and to anticipate changes that may impact on competitive advantage. Managerial responses represent the ability of management to predict the likely impact of risk on the firm as well to adopt alternative policies that might protect or enhance profitability. These policies include choices about mode of entry, lobbying political decision markets, intelligence about unfolding events, low tolerance for corruption, financial instruments balancing shareholder and stake holder interests (12).

As mentioned before, using Porter's theory, this study explores Panama as a host country and Taiwan as a potential foreign investor. Before these countries are analyzed, first the mega projects are described and then the potential foreign investment is determined with respect to these three Mega projects, which are the Expansion of the Panama Canal, the Mega port and the Panama Hub Energy. In fact, these mega projects reflect the fact that Panama has long been a commercial hub and transport center that provides opportunities to many foreign investors seeking to start a business in Panama.



## 2.2. SWOT Analysis

SWOT Analysis, a strategic planning tool to evaluate the Strengths, Weaknesses, Opportunities, and Threats will be used as tool to analyze the Mega projects. It involves specifying the objective of the Mega project and identifying the internal and external factors that are favorable and unfavorable to achieving that objective. The technique was credited by Albert Humphrey, who led a research project at Stanford University in the 1960s and 1970s using data from the Fortune 500 companies. The following are more detailed explanations of the SWOT Analysis components:

### **Strengths**

Strengths are the resources and capabilities that can be used as a basis for developing a competitive advantage. Examples of such strengths include: patents , strong brand names, good reputation among customers, cost advantages from proprietary know-how , exclusive access to high grade natural resources , favorable access to distribution networks .

### **Weaknesses**

The absence of certain strengths may be viewed as a weakness. For example, each of the following may be considered a weakness: lack of patent protection, a weak brand name, poor reputation among customers, high cost structure, lack of access to the best natural resources, lack of access to key distribution channels.

### **Opportunities**

The external environmental analysis may reveal certain new opportunities for profit and growth. Some examples of such opportunities include: an unfulfilled customer need, arrival of new technologies, loosening of regulations, and the removal of international trade barriers.

### **Threats**

Changes in the external environmental may also present threats to the firm. Some examples of threats include: shifts in consumer tastes away from the firm's products, emergence of substitute products, new regulations, and increased trade barriers.

Similar to companies Mega Projects can be analyzed using SWOT analysis. The principal impacts of mega projects are relative to macroeconomic variables such as economic growth, private investment, and national inflation rate. These macroeconomic variables affect the external risks of the mega project and the economic stability of the country. Based on a SWOT analysis, this study suggests some sustainable opportunities for foreign direct investment.



<b>Strengths</b>	<b>Opportunities</b>
<b>Weaknesses</b>	<b>Threats</b>

Figure 2 SWOT analysis framework

## **CHAPTER 3. Expansion of Panama Canal**

### **(ACP in Spanish, PCA in English)**

#### 3.1 Background information

The Panama Canal is a major ship canal that traverses the Isthmus of Panama in Central America, connecting the Atlantic and Pacific Oceans. In 1904, control of the Panama Canal Zone was passed over to the U.S in exchange for assistance for Panama to achieve independence from Colombia. The Panama Canal is a waterway with two lanes of locks which were built by the U.S. in 1914 in order to handle the shipping that passes through it and which accounts for 5% percent of the world's shipping. Ownership of the Canal Zone devolved to Panama at the end of 1999.

Actually, the Panama Canal Authority (ACP) is autonomous from the Government of Panama and is in charge of managing, operating and maintaining the Panama Canal. This involves on average of 12,000 ships with carrying cargo of 4500 TEUs passing annually. Since 1948, it has provided service to 120 maritime routes to over 80 countries. Throughout its history, the Canal has continually transformed its structure and adjusted to trade requirements and international maritime transport technologies. However, the number of post-Panamax ships (the largest ships in the world), whose dimensions prevent them from passing through the Canal, has increased substantially. The Panama Canal Authority (ACP) has embarked upon a US\$250M program to widen its central path (known as the Culebra Cut) which currently accommodates 2 ships to cross the Canal at any given time by 20 percent.

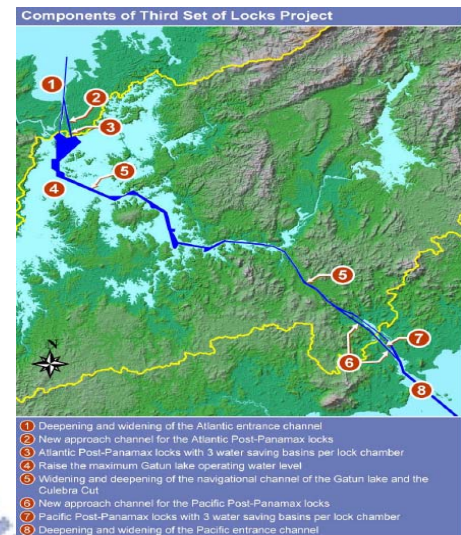
The Panama Canal Authority (ACP) has developed studies as part of its Master Plan (Proposal) for the construction of a third set of locks, larger than those existing now, with a deadline set for the year 2025 for its completion. This proposal was ratified by Panama on October 22, 2006 in a national referendum in which 76.8% of the voters approved to initiate the Expansion of Panama Canal.

### 3.2 Expansion of Panama Canal

The Panama Canal Authority has proposed the project after years of study. According to the Master Plan, this project will create a new lane of traffic along the Canal by constructing a new third set of locks. The main reason for the expansion of the Canal is the need to accommodate larger container ships. Details of the project, can be seen in Figure 3-4 .

As it can be seen, this project will involve the construction of two lock complexes - one on the Atlantic side and another on the Pacific side - each with three chambers, which include three water-saving basins. As a consequence of this expansion, there will be the need to excavate new access channels to the new locks and to widen the existing navigational channels. Finally, the navigation channels will be deepened and the maximum operating level of Gatun Lake will be elevated.

According to the Proposal, the expansion of the Canal will cost US \$ 5,200 million dollars, the project is due to be completed and operating in 2025. That is, the Panama Canal Authority (ACP) cites two reasons for the need to expand and deepen the waterway: “1) Existing locks are too small for post-Panamax ships; 2) The Canal faces stiff competition from the U.S. intermodal system that transports cargo over land and from the Suez Canal. As such, providing the Canal with the capacity to transit larger vessels will make it more efficient by allowing the transit of higher cargo



The expansion program includes the construction of new locks in the Atlantic and Pacific, the excavation of new access channels and the widening of the existing channels. It also includes the deepening of the navigation channels in the Gatun Cut and Gatun Lake and the raising of Gatun Lake's maximum operating level.

Figure 3 Location of ACP expansion. Source: ACP proposal

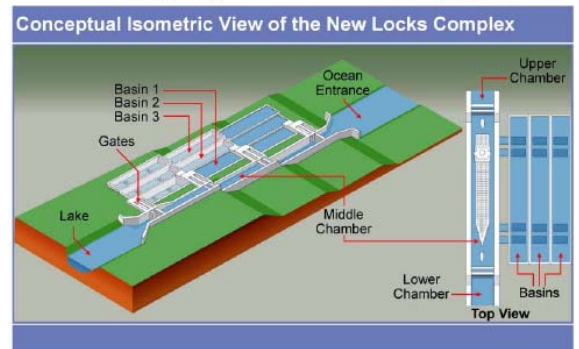
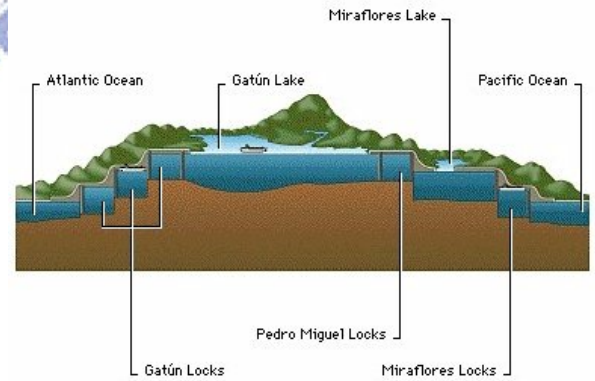


Figure 2 Isometric view of the new lock facility with its gates and water reutilization basins. The image on the side shows a top view of a typical chamber with a vessel.

Figure 4 View and Isometric of lock. Source: ACP proposal.



volumes with relatively fewer transits and less water use” (13).

The Panama Canal Authority anticipates that new locks should be capable of accommodating 12,500 TEU container vessels. At the moment, only 4,500 TEU container ships can transit the waterway. ACP officials report that the dimensions of the new post-panamax locks will be 61m width by 427m length and with 18.3metres of clearance (compared to the existing 33.5m by 305m by 12.5m); however, these dimension might be altered as a result of an investigation of the market demand (Figures 5).

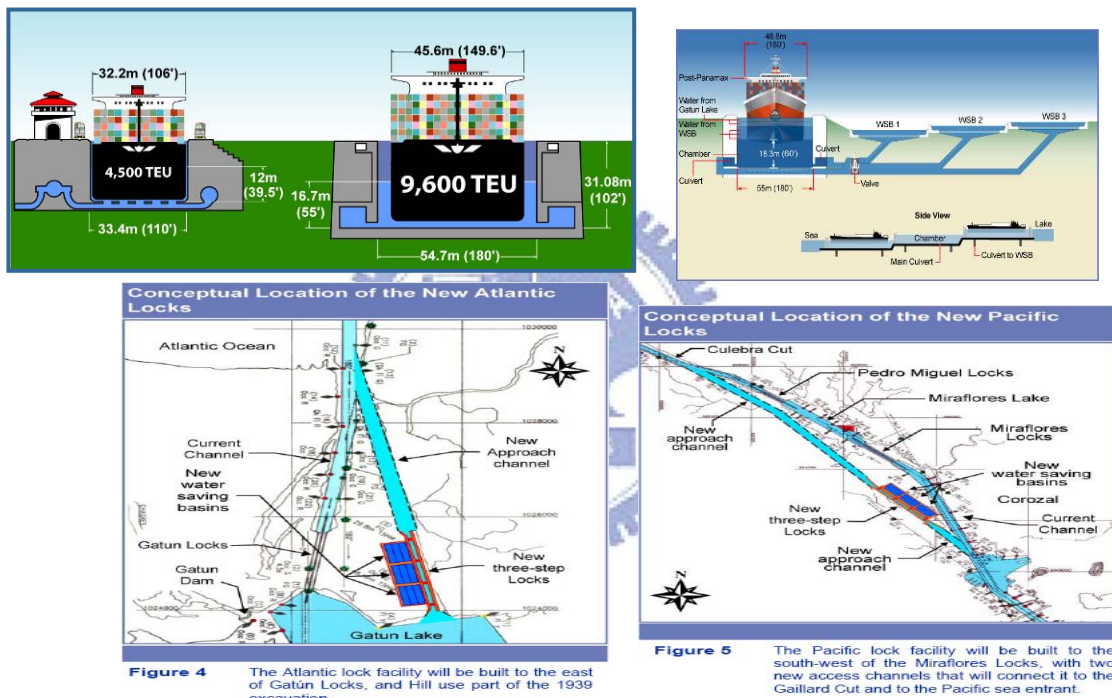


Figure 4 The Atlantic lock facility will be built to the east of Gatun Locks, and Hill use part of the 1939 excavation.

Figure 5 The Pacific lock facility will be built to the south-west of the Miraflores Locks, with two new access channels that will connect it to the Gaillard Cut and to the Pacific sea entrant.

Figure 5 Detail of ACP expansion . Source: ACP Proposal.

3.3 Demand

Based on the projections made by ACP, during the next 20 years, cargo volume transiting the Canal will grow at an average of three percent per year, doubling the tonnage for 2005 by the year 2025. At present, a growing number of container ships have to wait at both ends of the Canal due to congestion: the containership segment constitutes

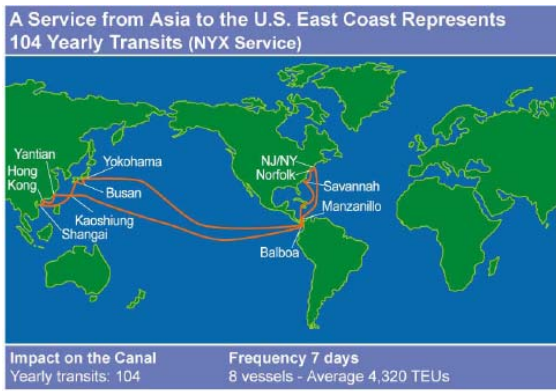


Figure 10 This map illustrates a typical containership service in the Asia to the U.S. East Coast route using the Panama Canal. For each weekly service in this route 8 vessels in rotation are deployed, which results in 104 annual transits and approximately \$15 millions in yearly trap.

Figure 6 Asia- U.S. Rout. Source: ACP proposal.

the main driving force of the Canal

According to the proposal, if the Canal does not expand to meet the demands of the lucrative route between East Asia and the U.S. East Coast, its market share would fall from a current 38 percent to 23 percent in 2025. This route now represents more than 50% of the PCUMS volume of the containerized cargo segment transiting the Canal and is anticipated to become a key Canal growth driver.(13)

According to the Panama Canal Authority, currently China, including Hong Kong S.A.R., is the largest shipper involved in Atlantic-bound canal traffic with 17,769,372 long tons (18,054,515 metric tons) of goods reaching the East Coast of the Americas. Nearly 87 percent of the Atlantic-bound cargo from China is destined for the United States.

A post-Panamax containership of 366 m (1,200') length, 49 m (160') width and maximum 15-m (50') draft (TFW) was used as the reference for establishing the ideal lock chamber sizes. This vessel has been identified as the largest type of carrier vessel most frequently used on these routes (13).

It is also reasonable to assume that post-panamax containerships will continue to expand from one generation to the next, as they have done in the past. One of the central points raised by the critics of the canal expansion proposal has been made by a former canal administrator, Fernando Manfredo:...it is unrealistic to attempt to predict canal usage trends over a generation and it is most improbable to expect that U.S. imports from China will continue to grow as they have the past few years; therefore; it is irresponsible to gamble Panama's financial future on such a projection.

**3.4. Competition**

The two main competitors of the Panama Canal are the U.S. intermodal system and the Suez Canal. The ACP notes that the growing trend in the use of Post-Panamax container ships in transcontinental routes competing with the canal is irreversible. The main ports and merchandise distribution centers on these routes are investing in capacity, location, and maritime and land infrastructures

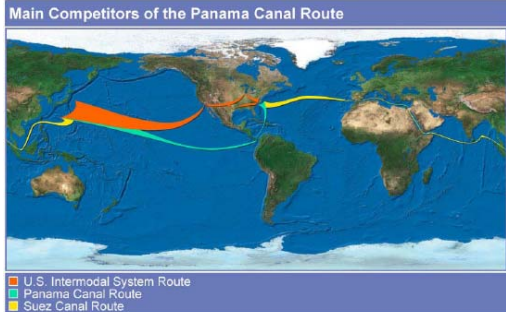
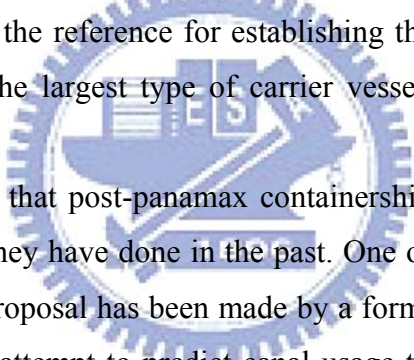


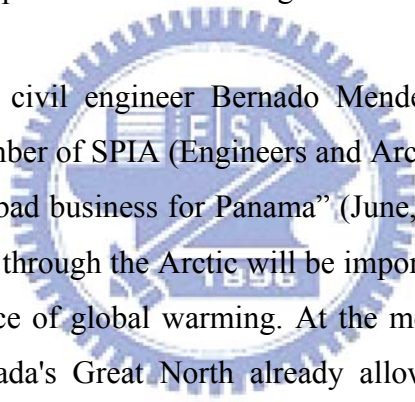
Figure 11 The transpacific maritime route in conjunction with the U.S. rail network constitutes the U.S. Intermodal System, which is the main Canal competitor in the maritime commerce between North East Asia and the U.S. East Coast. The route through the Panama Canal is an "all water" route while the Intermodal route runs partially on land.

Figure 7 ACP's competition rout. Source: ACP proposal.

to serve these vessels and to handle their cargo volumes. If this trend continues, by the year 2011, approximately 37% of the capacity of the world's container ship fleet will consist of vessels that do not fit through the canal, and a great part of this fleet will be placed on routes that compete with Panama, such as the transpacific-intermodal route and the Suez Canal route (13).

The proposal identifies other potential routes for cargo ships between Northeast Asia and the U.S. East Coast as possible intermodal connections between ports on the Pacific Coast of Mexico or Canada and the U.S., and the development of intermodal systems through the Central American Isthmus. There are additional potential routes that do not have much chance of materializing as competitive routes, such as a hypothetical route through the Arctic.

On the other hand, hydraulic civil engineer Bernado Mendez and engineer Roberto Méndez, member of SPIA (Engineers and Architects Association of Panama) in “A bad business for Panama” (June, 2006) says that the hypothetical route through the Arctic will be important in a few years due to the influence of global warming. At the moment, the melting ice caps in Canada's Great North already allow boat traffic in the Northwest Passage. Moreover, based on this global warming trend, it is predicted that by 2035, as the new route between the Atlantic and Pacific through the Arctic will become available, this will reduce the travel time between Europe and Asia by a third. Furthermore, there is the possibility that there might even be two routes through to Europe and U.S (Figure 8). The advantages of these predicted routes is that they are 40% shorter than through the Panama Canal and, moreover, they require no fee (although icebreakers might be necessary)(14).



source: Canadian Geographic Magazine



Figure 8 Rout in the Arctic

### 3.5. Demand opportunity

In an interview with the Financial Times in December 2004, Alberto Alemán Zubieta, the Administrator of the Panama Canal Administration, noted that the Canal is currently working at

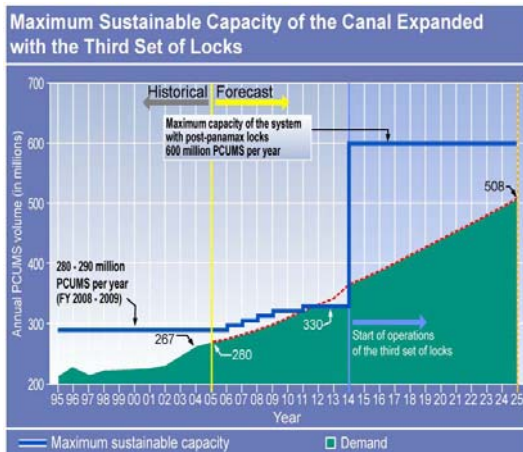


Figure 9 Maximum Sustainable Capacity  
Source: ACP proposal.

around 93% of its capacity and the ACP is making investments to increase its capacity. In 2003, there were more than 13,000 canal transits with approximately 260 million tons of goods. Other than the Mega Project to build new bigger locks, the Panama Canal Administration will increase the current working capacity in the short term by allowing larger vessels to transit outside daylight hours via illuminated lock chambers and deepening some channels. Investments to date with a price tag of \$ 1

billion include widening of the Gaillard Cut, hydraulic lock systems, and satellite and navigational technology and should result in a capacity increase to 42 vessels per day. To date, approximately 38 vessels can transit the Canal in a day and the average ship pays \$32,000 in tolls. The administration plans to increase traffic to 51 vessels per day by 2020 by expanding the waterway (15).

Moreover, the maximum size vessels that can transit the Panama Canal, Panamax vessels, generally reserved for big bulk carriers, such as oil tankers, account for at least one third of the boats crossing the Canal per year. According to the Fairplay Ship Register, an estimated 600 vessels exit which are larger than Panamax requirements, amounting to approximately 10% of the world's active fleet. At the same time, approximately 31% of the 646 new vessel orders in 2003 are Post-Panamax and should be ready for service in 2006.

Based on ACP's projections, the driving forces of containerized cargo growth are: (1) world trade growth; (2) growth of containerized cargo as a percentage of world trade; (3) manufacturing relocation to the northeast Asia, particularly to China; and, (4) regional and intraregional demand growth. Therefore, with a 3.5% annual increase in the Canal's tolls would result in a doubling of present tolls by 2025. In the most probable scenario, Canal containerized cargo will increase at an average annual rate of approximately 5.6%, from 98 million PCUMS tons in 2005 to nearly 296



million in 2025. In the highest growth scenario, containerized cargo volume would grow to reach 345 million PCUMS tons in 2025, and in the lowest growth scenario it would reach 279 million PCUMS tons in 2005 (13).

On the opposition's side, Roberto Méndez, ( June 2006) says that these predictions, such as a Post-Panamax future preference for the Asia –Panama-U.S route, over the Suez route, which offers the advantages of commercial opportunities in India, Arabia, Italy and Singapore, are not reliable. This is reflect in the figure 10 by ACP – RK Johns & Association data about the Panama Rout and Suez Rout (14).

Asia to USEC over Panama		Vessel Type (TEUS)		
		4,000	6,000	8,000
Total operating cost US\$ million		172.8	236.7	288.9
Round Trip Slot cost US\$/TEU	→	829	757	693
Cost for providing 4,000 TEUS US\$ mn.		172.8	157.8	144.5
Savings vs 4,000 TEUS US\$ million		0	15.0	28.3

Asia to USEC over Suez		Vessel Type (TEUS)		
		4,000	6,000	8,000
Total operating cost US\$ million		222.3	309.9	369.4
Round Trip Slot cost US\$/TEU	→	1,069	993	887
Cost for providing 4,000 TEUS US\$ mn.		222.3	206.6	184.7
Savings vs 4,000 TEUS US\$ million		0	15.7	37.6

Fuente: R.K. Johns & Associates Inc

Figure 10 Information of Vessel through Panama and Suez rout. Source: RK, Johns , Association

### 3.5. The capacity challenge.

According to the expansion document, the Canal will reach its maximum sustainable capacity between the years 2009 and 2012. Once it reaches this capacity it will not be able to continue to handle demand growth, resulting in a reduction in the competitiveness of the Panama maritime route. The proposed expansion of the Canal by the construction of a third set of locks will allow it to capture the entire demand projected through 2025 and beyond. Together, the existing and new locks will have approximately double the capacity of the present Canal (see figure). With the third set of locks, the expanded Canal will be able to transit over 600 million PCUMS tons annually. This represents approximately twice the capacity of the current Canal, and it is sufficient to meet demand beyond fiscal year 2025 (13).

Critics such as former legislator Dr. Keith Holder, co-author of the legislation that created the ACP, point out that canal usage is seasonal and that even during the few months when it is most crowded the bottleneck that slows traffic is not the locks but the narrow Culebra Cut, in which there is a limited capacity for large ships to pass one another (16).

Although the Canal is reaching its maximum capacity, the ACP clarifies that this does not mean that ships will be unable to transit the Canal. However, it does mean that the Canal's growth capacity will stagnate and that it will not capture additional cargo volumes

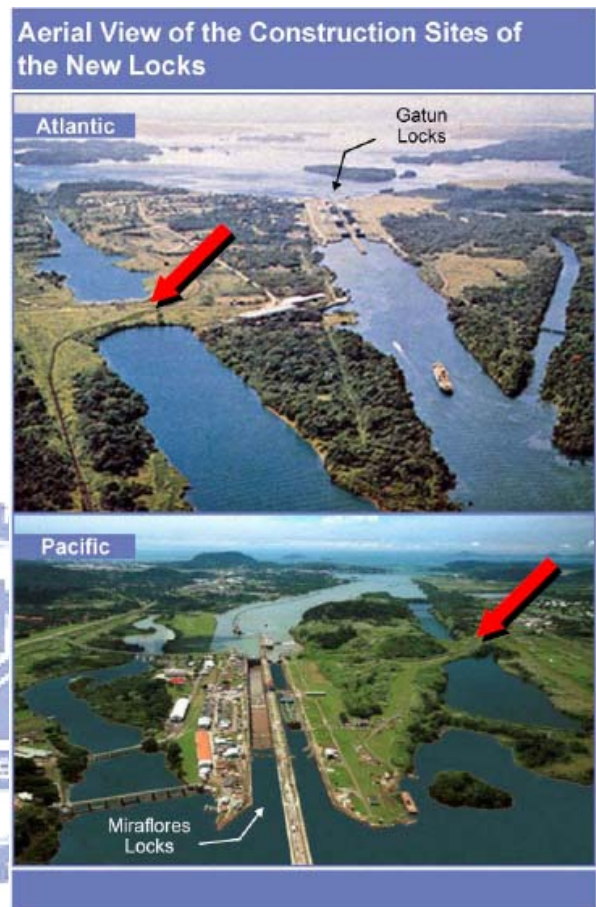
### 3.6. Environmental and social aspects of the third set of locks project

ACP Master Plan made studies in a diverse area: Flora and fauna, water quality, populated areas and infrastructures, paleontological resources, cultural and historical resources, excavated material disposition, water supply in function of the construction the new locks. The results of these ecological and social studies are the water requirement necessary to operate the massive new locks may in the final analysis require the creation of a new artificial lake by damming Atlantic-side rivers west of the Canal. This would result in large areas of farm land being flooded and the transfer of thousands among the estimated 20,000 residents of the Western Watershed as well as deforestation and massive excavation of lands.

For the creation of an Eastern Watershed Area, an estimated 210,000 additional hectares would be required in the province of Cocle, representing

7% of the national surface area. In conclusion, it makes the following blanket statement “It has been found that all possible adverse environmental impacts can be mitigated through existing procedures and technology and no immitigable or permanent adverse impacts on the population or the environment are anticipated”(13).

Those in opposition of the project say that there are a lot of environmental topics to be considered. For example: the link between El Niño (ENSO) and global warming threat to water supplies. The ACP has commissioned a number of studies by a number of consultants about water supply and quality issues. Eric Jackson (editor of the Panama News internet newspaper) contends that ACP's public statements often do not match the findings of their studies. He says that the Delft Hydraulics, WPSI Inc, and DHI studies all say that no matter what is done to mitigate the



**Figure 33** The third set of locks project will be built in the 1939 excavation site inside current Canal operation areas

Figure 11 Location of third set of lock Project  
Source: ACP proposal

problem, the water saving basins feature of the proposed new locks would increase the intrusion of salt water into Gatun Lake, from which about the chosen method to partially mitigate this problem is to "flush" the new locks with fresh water from Gatun Lake — but that tends to defeat the proposed new locks' water saving feature and raises questions about the security of the urban water supply.

### 3.7. Profitability and benefits

According with the proposal, the cost to construct the third set of locks is estimated by the ACP at approximately USD \$5.25 billion. The most relevant program cost is that of constructing the two new lock complexes — one on the Atlantic side and the other on the Pacific side — with estimated costs of approximately USD \$1.110 billion and USD \$1.03 billion each, plus a USD \$590 million provision for possible contingencies during their construction (13).

Moreover, the third set of locks is financially profitable, producing a 12% internal rate of return. The third set of locks project is self-financed and its financing will be separate from the Government's financing. The state will not guarantee or endorse any loans undertaken by the ACP for the project's execution. With tolls increasing at an annual average rate of 3.5% for 20 years, and according to the most probable traffic demand forecast and construction schedule, the external financing required will be mainly temporary and in the order of USD \$2.3 billion to cover peak construction activities between 2009 and 2011. With the cash flows generated by the expanded Canal, investment costs will be recovered in less than 10 years and financing could be repaid in approximately eight years(Figure 12).

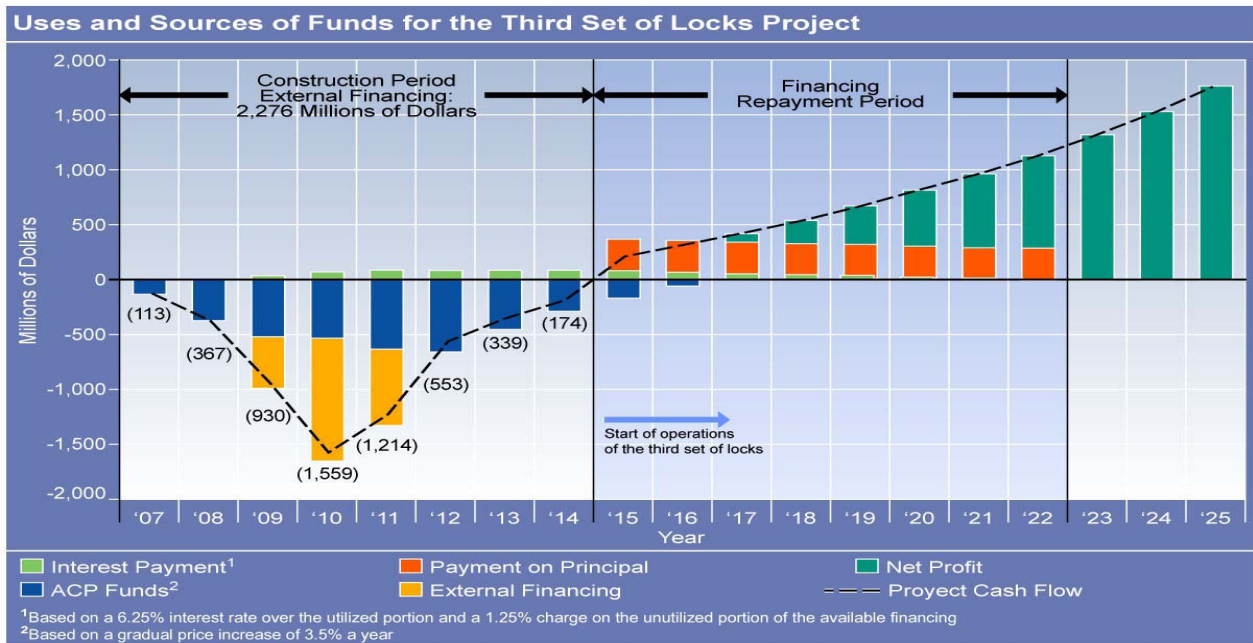
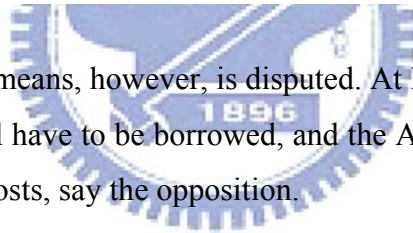


Figure 12 Finance structure of ACP expansion project. Source: ACP proposal, website: www.panacanal.com



What "self-financing" actually means, however, is disputed. At least half of the money needed for the canal expansion project will have to be borrowed, and the ACP does not calculate the interest on that as part of the project's costs, say the opposition.

The ACP's revenue projections are based on suppositions about increase in canal usage and the willingness of shippers to pay higher tolls instead of seeking competing routes, both of which critics question.

The argument by ACP says that the Canal expansion should not be financed in large part with foreign investment because the canal is inalienable property of the Panamanian people should be re-examined. Let us note that the very user nations of the United States and France had financed the dredging and building of the Panama Canal in order to improve the efficiency of their strategic and trading maritime routes. The Panama Canal is property of the Republic of Panama however the facts that it serves the entire world benefiting all countries and that its toll revenues are constantly reinvested in Canal maintenance and improvements make it international in nature (13).



On the other hand, several professionals with high positions in Panama are not confident in the budget of the Panama Canal Authority. They say, the budget the project is based on contains uncertain projections about maritime trade and the world economy. Humberto Reynolds and Tomas Drohan Ruiz, the former head of Engineering and Dredging of the Panama Canal, say that the project will cost much more than currently budgeted for and that it is too risky. Parsons Brinckerhoff is best known for the Boston Big Dig, which ended up costing three times the estimated amount with several structural and safety concerns. Moore Stephens S.A. Published February 16, 2007 – Panama say that “The cost of the project is one of the most controversial issues. The total estimated figure is US\$5,250 million. However, the actual cost of the works as stated in the project is US\$3,690 million, to which an estimated amount of UD\$530 million is added for inflation and another US\$1,030 million for contingencies.”(17)

According to the expansion document, in the year 2017 the Canal may be contributing to the State the amount of US\$2,000 million therefore its value would be US\$50,000 million. But this is not the final value of the Panama Canal. For the year 2025 when the expansion is complete and operating at its maximum capacity, its estimated contributions to the Panamanian State will be US\$4,200 million thus having a value of around US\$105,000 million (13).

As per the Proposal for the Expansion of the Panama Canal that the Panama Canal Authority (PCA) published in April 24, 2006, the need of external financing for the expansion amount to US\$2,276 million.

Experts suggest, financing using facilities with volumes of \$1 billion, possibly more, with maturities not exceeding 15 years. Multilateral institutions that may be asked to underwrite the expansion and bond take-out would be considered at a later stage. International investment firms and banks which may have an interest in funding the expansion follow with interest the possible alternatives for financing.

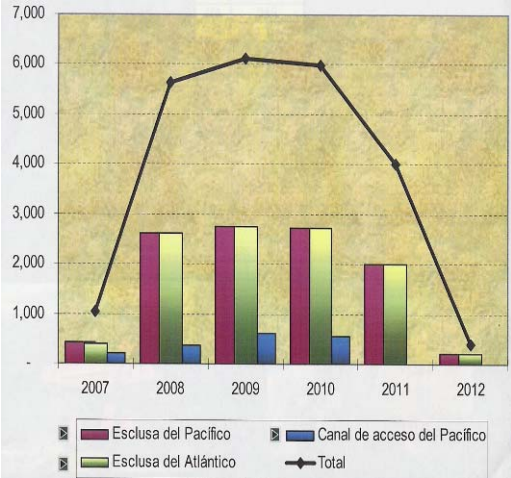


Figure 13 Labor Distribution at time ACP expansion Source: ACP information

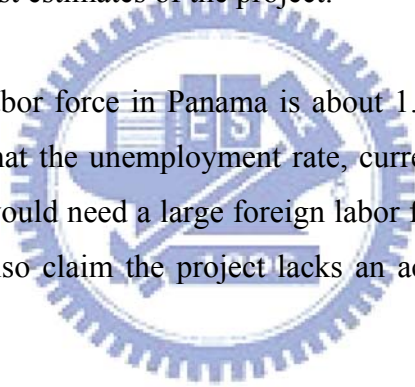
3.8. Employment generation and economic benefit

Master Plan say that during the peak of construction, which will start in 2007 and end in 2014, as many as 7,000 directly-related and 40,000 indirectly-related jobs will be created. And by 2025, as

many as 250,000 jobs will have been created. Critics dismiss this as pure demagoguery, noting that by the ACP's own studies at the peak of construction there will be fewer than 6,000 jobs created and that some of these will be highly skilled posts filled by foreigners because there are no Panamanians who are qualified to fill them.

Moreover, the labor required for construction of the third set of locks will, in its vast majority, be done by Panamanians. To ensure the availability of Panamanian labor necessary for the third set of locks project and its connected activities, the ACP and public and private authorities will work jointly to train the required workforce with sufficient lead time, so that it has the necessary competencies, capabilities and certifications. The amounts necessary to carry out these training programs are included in the cost estimates of the project.

The opposition says, current labor force in Panama is about 1.4 million, out of a population of about 3.2 million. Assuming that the unemployment rate, currently at 8.9 percent, will stay the same or fall slightly, Panama would need a large foreign labor force to fill all the jobs created by the Canal expansion. Critics also claim the project lacks an accompanying social development plan.



### 3.8. Main Findings

#### **3.8.1 Controversies of Panama Canal**

In summary, by a group of Panamanian experts in opposition of expansion of Panama Canal, claims several consequences and problems in the mega project. Some of the reasons that will affect the project are: reduce the contribution from ACP around 20 years; this is going to affect the Panamanian economic on the needs and the resources to development the country. They say, this is going to have a direct effect in different aspects of the country, first, generate very low or negative yield rate, next, become indebted by thousands of million dollars and could aggravate the actual crisis of the National Social Insurance of Panama (CSS), and finally cause serious ecological and social damages. As the result, it will cause delays and interruptions in Canal traffic and cause the Panama route to become more expensive and affect Canal competitiveness(14).

The opposition considerate ACP has a very optimistic prognosis. Because of that, the Chinese economy will decelerate next decade, the two new Arctic routes will absorb part of the transit. It is not sure will coming of post-panamaxes to panama canal, uncertain infrastructure availability for post-panamaxes in America cost in the future and Panama lose competitiveness with Suez route.

The low labor cost in China is ruining industries and generating unemployment in EU, Europe, and Japan. For this reason, the protectionist, (anti-China- OMC) is making growing political pressure. Moreover, the yuan dollars is going up from initiated to half of year 2005, that will increase the price of Chinese exports. It is grow partner-labor conflicts to internal it of China in farmers against industrial contamination, workers by higher wages, middle-class by democratic liberties and against corruption.

Global warming effects the Artic to create two new routes from Asia transit - EU - Europe that will absorb part of the Asia transit during the next few decades. These routes are 40% shorter than the route via Panama, and is free of tolls, although probably it would be necessary to use icebreakers.

After finishing the expansion of Panama Canal, it is not clear if the post-Panamaxes would prefer a route Asia - Panama – EU, there is no market study that demonstrates it because there is no written commitment (from shipping or the governments) that sustains it. Additional there is no infrastructure in the coast of the EU to be ready to receive Post-Panamaxes.

Using Post-panamaxes ships, the route of Suez offers significant commercial opportunities as they can pass via India, Arabia, Italy, Singapore, and other countries. That seems to demonstrate that in the past, panamaxes have not changed their routes even if there is a cheaper Panama Canal route(14).

Finally, they say that for other considerations, use of reserves of CSS to finance the project partially could aggravate crisis of the regime of CSS, generate employment for the project, on

average, less than 6.000 direct temporary users per year, the GDP growth for the country is less than 2 percentage in the year for this project compared with the historical rate for Panama which is 4%. The social issue is the dams; thousands of families in that area, would be affected, as well as the ecology. The issues are the inundation of thousands of hectares of land for the construction and the risk of contamination of the lakes or insufficient water to supply bathtubs for the metropolitan sector.

The opposition claims that the only beneficiaries of the project would be some construction companies, banks, lawyers related to shipping; aside from them, shipping and the North American Navy.

**3.8.2. Investment opportunities of FDI**

The expansion will produce psychological optimism locally and internationally making Panama an important investment target. Under government procurement rules meant to ensure fairness and reliability, the ACP acquires goods and services from providers all over the world. Ports, facilities and land not directly related to the operation of the Canal have been entrusted by the government to the Interoceanic Region Authority (ARI), which seeks international investors interested in running and improving these assets.

According to the ACP proposal, contracts related to the Panama Canal operation are: provisions, equipment, material, construction and consulting. The total value of these contracted reached \$135 million in 2001, not including additional purchases amounting to



Figure 44 The expansion of the Canal through the third set of locks will ensure the continuous development and growth of the dynamic Canal related services cluster giving Panama the opportunity to fully realize the benefits of its geographic

Figure 14 Activities related to ACP activities  
Source: ACP proposal, website: www.panacanal.com.



\$22 million. The provision of concessionary services to the ports: power, water, fuel, material, food, banking services, telecommunications, maintenance and repair, dredging are estimated to be between \$47 and \$60 million annually (13).

By Alvaro Aguilar Alfur in the Article “Expansion of Panama Canal Presents Opportunities for International Businesses”, identifies four principal international opportunities for foreign investment. These areas are finance, infrastructure, telecommunications and tourism, and investment opportunities in Howard.

### ***3.8.2.1. Financing the improvements***

Aguilar claims that the main sources of revenue for the payment of an expansion are canal tolls, which have increased lately. Under a securitization plan, toll payments would be directed to a separate account controlled by lenders. Funds would be released for the repayment of debt and operating costs. Experts suggest securing finance by using facilities with volumes of \$1 billion, possibly more, as collateral, with maturities not exceeding 15 years. Multilateral institutions that may be asked to underwrite the expansion and bond take-out would be considered at a later stage. International investment firms and banks which may have an interest in funding the expansion follow with interest the possible alternatives for financing.

### ***3.8.2.2. Infrastructure in the Canal area***

The Panamanian government has granted 25-year concessions for the operations of several ports and railroad facilities at the Atlantic and Pacific entrances of the Panama Canal (Details concerning the latter are provided in following chapter). Opportunities in intermodal transportation currently exist as a result of the opening of a logistics center in Colon and the civilian use of the Howard airbase.

### **3.8.2.3. Telecommunications and Tourism**

Among the projects under way by private investors Aguilar identifies the following as investment areas: manufacturing, warehousing and distributing merchandise to/from the Americas; call centers for handling customer service and other telephone operations; the development of housing for foreign retirees and local buyers ; tourist centers for fishing, bird-watching, ecotourism and other activities. The fact that the main fiber optic cables connecting several countries in the Americas at the Canal has attracted providers of data warehousing services which serve information technology companies and users worldwide. Most providers are located in the City of Knowledge complex, as part of the Panama Industrial Technology Park. Business projects at the Park are grouped into a biological sciences cluster (biodiversity, environment, marine and forest resources, aquaculture, tropical medicine and pharmacology, and a communications cluster (information technology and multimodal transportation). Businesses in the City of Knowledge which serve clients outside of Panama have 25-year renewable exemptions from income taxes, capital tax and other taxes, as well as exemptions from customs duties on materials and equipment needed for their activities

Thousands of hectares remain available for development in the areas next to the Canal waterway. These were used as military facilities and many remain vacant, available for use by prospective investors. This real estate is managed by ARI, which must approve any feasibility study proposed by investors and agree to any sale or rent of land.

The canal areas, where these bases were located, comprise 233,000 acres of prime real estate and over 7,000 commercial and residential buildings. Although many assets have already been awarded to private companies or groups from all over the world, there still are unique investment opportunities in the tourism, technology, forestry, maritime, real estate, transport and industry sectors.

### **3.8.2.4. Power**

There is a great potential for growth in the Panamanian electric power sector 20% of Panamanians still do not have access to electricity, especially in the rural areas. It is estimated that a billion-dollar investment is needed for the power sector in Panama for the next few years. As Panama's maritime industry grows in importance as a container trans-shipment center,

additional electric power will be required operate cranes and to run the refrigerated containers transporting perishables.

Panama has proven wind, water and solar resources that have not yet been exploited. The current government is promoting alternative energy projects as part of its plan to reduce dependence on expensive imported diesel fuel. The outlook is positive for the construction of additional power plants as energy demand outpaces power. There is a large potential for hydroelectric power and a law has been proposed to promote mini-hydroelectric projects as a way to reduce oil imports required by thermal plants (16).

### **3.8.3. Companies involved in the project**

The scheduled of expansion of Panama Canal construction is to begin in 2007 and should last 8-10 years. The cost of building a third set of locks is expected to run between \$4 and \$8 billion, according to unofficial estimates and depending on the plan approved. The ACP paid US\$3.5 million for studies for the design of the locks conducted by a Belgian-French consortium (Tractebel Development Engineering, Coynet-Bellier, Technum N.V. and Compagnie Nationale du Rhone) under an international tender and the U.S. Army Corps of Engineers (builders of the original 1914 canal). Moreover, Shearman & Sterling joins Mayer, Brown, Rowe & Maw LLP, the law firm selected to advise the ACP in the procurement and contracting aspects for the Expansion Program".

Apr 2007, from the newspaper Prensa Latina, Germany, Great Britain and Northern Ireland Parliamentary Foreign Affairs Secretary to analyze with the national authorities bilateral issues and the extension project of the Panama Canal. The visitors will meet his Panamanian officer to tackle extradition agreements, technical cooperation and promotion and protection of investments with the European Union and Central America. That is the British businessmen are interested in the extension of Panama Canal, in the maritime sector, logistics, transportation and telecommunications, added the text (17).

By Stephen Wingrove in Business News Americas April 23 2007- International competition planning to participate in the bidding rounds for works within the US\$5.2bn Panama Canal expansion project. It is believed that construction companies such as Vinci, Hochtief, Bilfinger, Bouygues, Bechtel, OHL, Dragados, Brazilian consortium Inter-oceânico and Mitsubishi will present bids (18).

Website news: blog.nam, May, reports say more than 600 people from 222 companies hailing from 31 nations attended a March conference in Panama to learn what contracts will be up for bids for this big dig. The Houston Chronicle led half-dozen Houston companies, Houston-based Innovative Hydraulic Designs, Deschamps, Pittsburgh-based LB Foster Co and a Colombian co-worker attended the conference (19).

By Jessica Tasón for La Critica, middle of May 2007 - The expansion of the Panama Canal is starting. Companies interested in participating in the bidding process have until 29 June 2007 to present their proposals to the Panama Canal Authority (ACP) for the first contract for the first of five dry excavation (dumping areas, building an access for electrical lines and to build a new highway, building another new access road of gravel and asphalt, installing grills and drainage culverts, removal excavation of material in the area of Cerro Paraiso) of the new locks in the approach to the Pacific side of the canal. This work will all be accomplished on the West shore, between Paraiso, the Pedro Miguel locks and the Corte Culebra on the Pacific (20).

Currently the top user nations include the United States, China and Japan, industrialized and commercially active nations with ample resources for funding large investment projects. These user nations already invest heavily in large projects in defense and local infrastructure and have shown a great deal of good faith in foreign aid programs for social and infrastructure development. There should be a limited degree of financial participation from the user nations in the form of grants. The expansion projects will already cost the Republic of Panama, a heavily indebted developing nation in various ways. The costs include a significant reduction in its territory due to Watershed expansion, expropriation of an estimated 8,000 farmers from their productive lands, a significant decrease in jungle territory and biodiversity, and a possible

lowering of its sovereign ratings category for increased debt emissions (higher debt service costs). These are all significant negative externalities for the nation and citizenry in general.

Huge opportunities exist for UK companies in the construction, engineering and consultancy sectors connected to expansion plans for the Panama Canal and the local ports. Barclays and HSBC (the largest foreign-owned bank in Panama) have been selected with other international banks to provide the near US\$6 billion required to finance the planned Panama Canal expansion.

### 3.8.4. Suggestions for investment

The following table is providing the SWOT analysis of the Panama Canal Expansion project from the perspective of the investor. The table summarizes the findings provided previously.

Strengths	Opportunities
<ul style="list-style-type: none"> <li>• Geographical location</li> <li>• Stable local weather</li> <li>• Existing demand and container flow</li> <li>• Demand for larger container capacity</li> <li>• Access to harbor, road/rail connections, bridges, and proximity to major markets.</li> <li>• Stable ACP management and no government intervention</li> </ul>	<ul style="list-style-type: none"> <li>• Increased project budget</li> <li>• The increasing number of Post-panamax container ships</li> <li>• Possible integration with other activities (eg. mega projects).</li> <li>• Investment in new sectors; financing, infrastructure, telecommunication, tourism and power involved in the expansion of Panama Canal.</li> </ul>
Weaknesses	Threats
<ul style="list-style-type: none"> <li>• The lack of labor force</li> <li>• Strict control of foreign investment of the project</li> </ul>	<ul style="list-style-type: none"> <li>• Inability to accommodate possible larger container ships after expansion</li> <li>• Suez Route</li> <li>• US Inter-model System.</li> <li>• New two routes in the Arctic due to global warming</li> <li>• Fierce competition from other investors</li> </ul>

Table 2 Arranged by author. SWOT analysis of the Panama Canal Expansion project from the perspective of the investor.

Based on the SWOT analysis it is seen that the Panama Canal has been the subject of much contentious debate, but the opportunities for investment in the expansion of the Panama Canal depend mostly on the objectives of the investors. If their objective is to find one hub point for the Americas, Panama qualifies. Moreover, now is the best time for taking advantage of the opportunities made available by the mega projects in particular, the best suggestions for foreign investment opportunities in the case of the expansion of the Panama Canal are in architecture and engineering, logistics and cargo industries, as well as the areas of telecommunications, banking, insurance and others because at the moment, there provide financial fundament of investment such as security and guarantee come from government, demand, human resource. However, Panama offers many other and better opportunities for foreign investments engage to expansion of Panama Canal, such as: Farfan Multimodal Complex, New Ports, Petroleum Free Zones, Hotels, Resorts and Marinas, Housing Development, Retirement Communities, Hi-Tech Parks, Maritime Services, Ship Repairs, Ship Handling, Ship Chandler and Container Manufacturing & Repairs. In addition, all these opportunities depend on future trade and transport patterns to be defined for medium and long terms investment by the Foreign Direct investor.



## CHAPTER 4 Mega Project 2: Construction of the Mega Port on the Pacific Ocean

### 4.1. Background Mega Port

The Office of the President of Panama in conjunction with the Panama Maritime Authority (AMP) are bidding for the right to develop and manage the ‘mega port’ container terminal at the Pacific entrance to the Panama Canal. A new harbor terminal has been discussed for several years due to the requests of shipping lines who see the need for an alternative harbor terminal on the Pacific. Earlier, the ACP had already prepared a preliminary design, chosen the place and the organisation to management it. The preliminary studies were prepared by the U.S. firm Moffat & Nichol, under the sponsorship of the Panama Canal Authority. Actually, this mega project is completely independent of the Panama Canal expansion project.

This mega project which offers an excellent strategic location ensured that nearly all the companies took up the request for proposals when it was issued in January 2005. At mid-November of the same year, Lloyd's List journals reported that plans for a new mega port saw 10 of the world's leading container terminal operators meet in Panama. In terms of total capacity, Panama is placed at the top of the list of busiest ports in Latin America. Finally, new investments totaling about US\$ 1.15 billion in the next 3-5 years in port facilities will make Panama the largest transshipment centre in the region. Panama is expected to become the region's principal multi-modal logistics center in the coming years (21).

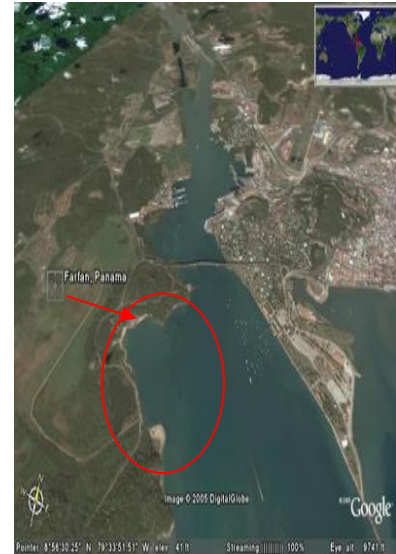


Figure 15 Location of Mega port in Pacific Ocean. Source: Google map

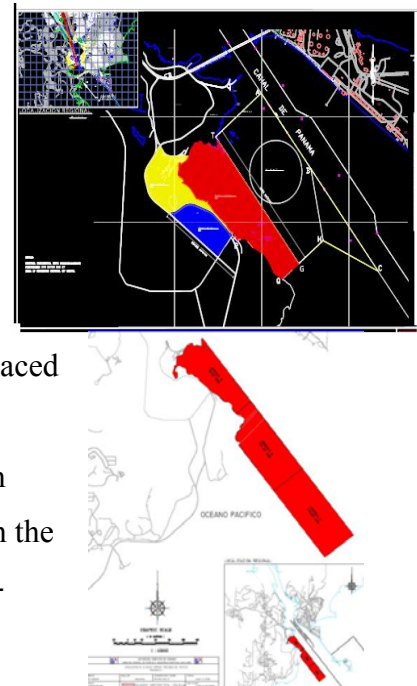


Figure 16 Stage of Mega Port in Pacific. Source: AMP, Panama

## 4.2. Strategic Development Program

According to the Panama Maritime Authority (AMP), the main strategic targets for the mega-port project are to impel the competitiveness and economic - social development of Panama as an international service and multimodal logistic centre in the region. That is, the major goals for the mega project are to supply the necessities to meet the demands of the marine industry, improve the strategic position of Panama, increase harbor capacity for containers, offer the opportunity to shipping companies to rationalize and to maximize the use of its assets, and offer alternative destinations due to the load transfer. At the result, this designated project will aim to create new jobs, integrate the project to the national marine strategy and offer a capacity sufficient to satisfy the projected increased demand (21).

## 4.3. Project Description



Figure 17 Design of Mega Port in Pacific.  
Source: AMP, Panama

The construction of the Mega Port on the Pacific will be located on the west side of the entrance to the Panama Canal (the Palo Seco/Farfán area), 15 minutes from downtown Panama City near the bridge of the Americas. The area comprises 253 hectares in Farfan once part of the former Howard air force base. Actually the preliminary design for a new port (container terminal) calls for an area of around 109 hectares. The unofficial estimate for the construction of this initial stage is \$600 million of an estimated \$1bn total cost. The port will handle 2.4 million TEUs (Twenty-foot Equivalent Units) container ships per year with one 1600 m by 750m berth and a total of 18 host post-Panamax cranes which can each handle two post-Panamax ships simultaneously in the first phase. It is expected to take approximately three years to be built. Port operators have begun and are also planning a new expansion phase covering the next five years, increasing the TEUS capacity by 7.3 million. These developments are expected to provide a total capacity of approximately 11 million TEUS in the trans-shipment ports of Panama City and



Colon. Moreover, 14,000 ships transit through the Panama Canal are expected each year with more than 197 million tons of cargo and 700,000 passengers and crew onboard.

The Panama Maritime Authority (AMP) is expected to assist in terms of building road links and improving access costing about \$50 million, but it does not plan to participate in the project. To build the "mega-port" project in Farfan the local-international companies have been invited to bid. This bidding process to build a US\$600 million mega port container project requires each bidding company to purchase pre-qualification documents. Then, in order to bid, companies need to provide information regarding their financing and technical capabilities. The company that wins the bid will have the right to operate the port for 20 years, extendable.

At the time of writing, the project is in the prequalification stage, with companies submitting packages that will allow them to compete in the full international bidding process, which was planned for the latter part of 2006. Also, according to Don Winner, a reporter for the Panama Guide news, the AMP relaxed the requirements for companies interested in competing to build the mega port in July 2006. At the moment, AMP requires all companies to submit their financial data, banking references, and operational experience with moving 6 million TEU annually. However, there are still lawsuits pending in Panama's Supreme Court against the AMP and the bidding process. The government plans to hold the full bid and the construction is expected to begin in early 2007 (22).

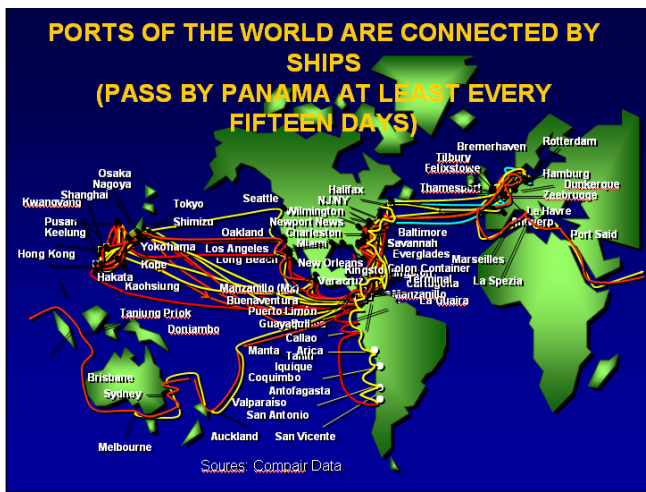
According to the Department of Finances of Panama Maritime Authority (AMP) report, the harbor activities were \$48 million (2005) and \$50 million (2006). The new harbor terminal (mega port) is expected to contribute approximately \$207 million in 2040, just from the movement of containers (21).

Moreover, Farfan / Palo Seco area offers the prospect of further expansions, with the uses dredging, security of ship maneuver, and less impact on the transit of the Canal.



Figure 18 Design of Mega Port in Pacific.  
Source: AMP, Panama

#### 4.4. Market Demand



Currently 4-5% of the world's trade transits through the Panama Canal (Figure 19) and the resulting increased capacity due to the expansion together with a modern and efficient port system are some of the advantages Panama will be able to offer in the future (21).

Figure 19 : Ports of the world are connected by ship pass by Panama. Source: AMP, Panama

The Department of Finances of Panama Maritime Authority (AMP) reports in the Containers Statistics for Panama (1994-2005)

that the total amount in 2005 is 2.8 Million Twenty-foot equivalent units (TEU). More specifically, of this total amount, the port operators, Manzanillo International Terminal (MIT), account for 61% , the Panama Ports Company (PPC) accounts for 21 % and the Colón Container Terminal (CCT) accounts for the remaining 17%.

Also, the major contenders are divided into three principal activities: 6% in local contenders, 12 % come from Colon Free Zone and 82 % is for re-export contenders. The total result over the ten-year period shows an average of 21%+ annual growth (Figure 20).

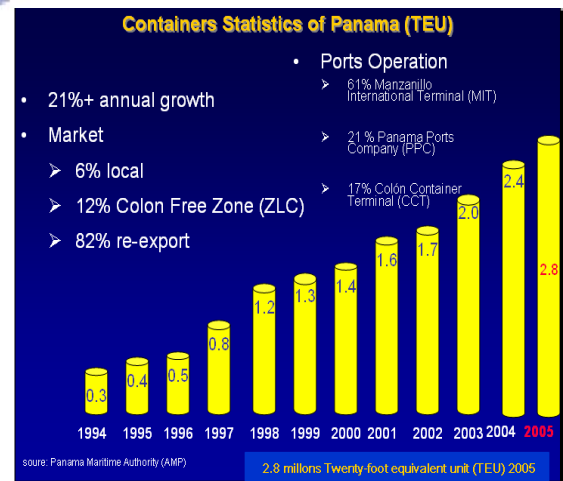


Figure 20 Demand of Contender in Panama (1994-2005),Source: AMP, Panama

According to the 2005 global statistics, the ports of Panama rank 31 in the world, 14 in the world in terms of growth and 2 within the market of Latin America and the Caribbean (21).

The Panamanian ports moved 2.6 millions of TEU (20 foot long container unit) between January and December of 2006, a 6.1% increase for the same period in 2005

By 2010, the Panamanian government studies predict that the country's ports will be handling 10m teu. Only those companies which are already handling more than 6m teu globally are being asked to participate in the project. On the other hand, studies by Panama Canal (ACP) with Drewry Shipping Consultants, Ltd., Ocean Shipping Consultants (OSC), the Japanese International Co-operation Agency (JICA) and Moffat & Nichol indicate that potential traffic to and from the west coast of South America and Central America could rise from 4.5m teu to 9.7m teu by 2015.

#### 4.5. Employment generation and economic benefit

The designated zone will aim to generate sustainable employment, and strengthen and diversify the country's economy through the consolidation of Panama as an International Service and Multimodal Logistic Centre. The Mega port is expected to provide more direct and indirect jobs. The principal labour forces that will be required are professionals with certified technicians, specialists in operating heavy equipment, craftsmen, overseers and workers. Therefore, the benefits of the terminal will come from direct income associated with it and the level of economic activity of all of the conglomerates.

The AMP reports that the major collateral services involved will come from the ports, railroad, shipping agencies, refuelling the ships, activities of Free Zone of Columbus, operations of tourism, the terrestrial transport services, shipyards, airports, merchant marine, legal and financial, security services, telecommunications, services of tugboats, equipping, medical inspection of ships, services of garbage collection, services of feeding, services and others (21).

All the businesses related to the Panamanian marine industry and auxiliary will be required to supply this project on the Pacific coast with food, treatment of remainders, inspection, consolidation of load, logistic, storage, financial services, shipping administration, fuel to the ships, harbor development, shipyards, harbor security, reparation and maintenance of containers, steersman, center of transfer of load, medical services, water supply and service of boats.

## 4.6. Main Findings

### 4.6.1 Companies interested in Prequalification Sheets

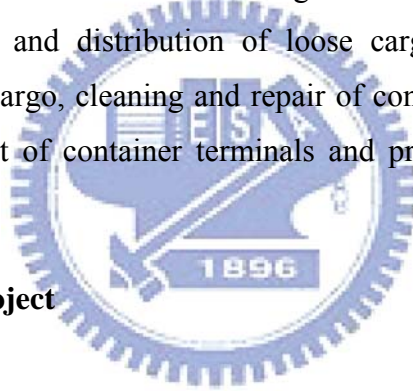
In January 3, 2006, the AMP opened the bidding process for the mega port project on the Pacific coast of Panama. Currently, many companies have purchased the paperwork required to bid for the multi-million dollar project. The following is a list of all the major companies who have purchased the \$1,000 pre-qualification document which gives them the right to bid for this project: PSA International of Singapore, APM Terminals, Stevedoring Services of America (SSA) of the United States, Marine Terminals Corp, China Ocean Shipping Co. (COSCO), Evergreen's legal advisors in Panama, Cordero, Gallindo & Lee, UK's P&O Ports, Harbour Group (NYK Line of Japan), US companies Evergreen, MPC, Dubai's DPA, Hong Kong's Hutchinson Port Holdings (HPH), Spain's Dragados, the Netherlands' APM Terminals, Jan De Nul Group, Cosco Panama Maritime, Marine Terminals Corporation, Barate Panama S.A., M&S Corporation, CMACGM Panama Inc., Tradeco Infrastructure, Bilfinger Berger, Kenneth Parkinson, Marubeni Corporation, Constructora Odebrecht, Saipem S.A., Dredging International, Coastal Inland Marine Service, Intercoastal Marine, the Port Authority of Denmark (APM), International Transportation Services (ITS), Ports North America Inc and Marine Terminal Co. (MTC Holdings) of the United States; Nippon Yusen Kaisha (NHK Line) of Japan and Malaysian port operators

Furthermore, one of the above bidders, Panama Ports Company (PCC) is an international company already established in Panama also plans to invest \$500 million into another new mega port project. PCC will invest a further \$256 million in providing infrastructure to phase one of the Cristobal port. Additionally, PCC is expanding Pier 15 in Balboa with three new post-Panamax cranes and building 12 hectares of container storage space: together these activities will increase their capacity to accommodate the growing demand on the Panama Canal. Finally, these activities will provide opportunities for other international companies, such as the UK companies which are currently the strong contenders, to provide ship support operations, as well as the handling and storage of dangerous cargo.

#### **4.6.2. Investment opportunities**

The ports expansion has created new opportunities for companies involved in the logistics and cargo industries, as well as a requirement for services in the areas of telecommunications, engineering, ship repair and maintenance, banking, insurance and training. A new refurbished railway, coupled with large container ports springing up at each end of the Canal are proof of the tremendous existing business, as well as the potential for generating much more and with the involvement of new international investors. Other opportunities include the construction of new shipyards and new ship repair facilities.

In summary, the Mega port project represents a good option for investment due to its own and collateral advantages that characterize the same: storage and transshipping, facilities to load and unload, consolidation, storage and distribution of loose cargo, lease, repair and storage of containers, insurances for the cargo, cleaning and repair of containers, port, financial and cruise ship management, management of container terminals and processing zones, credit notes and logistics of expected cargo.



#### **4.6.3. Controversies of the project**

The main opposition for the Mega port comes from the Panamanian tourist lobby and the Hutchison Port Holdings Company. Eric Jackson, writer for *The Panama News* with the article “Mega port project runs into new opposition” says that the port would complement the development of Howard into a freight-handling air hub, but would not be practically connectable to the other major canal-area seaports by rail. Connections to that inter-modal system would have to be made by trucking containers across the Bridge of the Americas, which would involve traffic problems and damage to the road surface if it were practiced on any large scale (23).

The port companies that are already established in Panama are also generally unhappy with the prospect of new competition. Especially annoyed is Panama Ports, a local subsidiary of Hong Kong-based Hutchison Whampoa, which for anti-monopolistic reasons has been excluded by the Panama Maritime Authority (AMP) from the bidding process.



Panama's public contracting system, with frequent multiple rounds of bidding and specifications or qualifications sometimes written to exclude all but one bidder, is structured in such a way to invite suspicion of corruption whether or not it in fact exists with respect to a particular bidding process.

Finally, leftist groups and labor unions in Panama have criticized President Torrijos's administration's decision to make the project a private development. This, it is argued, would amount to an improper gift of public property to some private corporation or consortium of companies.

**4.6.4 Investment Suggestions**

The following table provides the SWOT analysis of the Mega Port project from the perspective of the investor. The table summarizes the findings provided previously.

Strengths	Opportunities
<ul style="list-style-type: none"> <li>• Geographically strategic location</li> <li>• Protection from weather</li> <li>• Short distance between the oceans</li> <li>• No ice</li> <li>• Access to harbor and Panama Canal</li> <li>• Road/rail connections, bridges, locks etc.</li> <li>• Proximity to new market</li> <li>• Low tariffs</li> <li>• Security</li> <li>• Land availability</li> <li>• Environment has proximity to residential areas, harbor productivity and ship services</li> <li>• Distribution facilities; warehousing, etc.</li> <li>• Security-risk management of unloading the freight</li> </ul>	<ul style="list-style-type: none"> <li>• Potential expansion of mega projects</li> <li>• Increasing market size</li> <li>• Capacity increase due to Panama Canal Expansion</li> <li>• New potential business opportunities: collateral or direct to mega port.</li> <li>• Expedited service for freight that cannot travel by air.</li> </ul>

<ul style="list-style-type: none"> <li>• Higher efficiencies</li> </ul>	
Weaknesses	Threats
<ul style="list-style-type: none"> <li>• Highly regulated judicial system</li> <li>• Heavy bureaucracy, time-consuming procedures</li> <li>• Lack of skilled labor force</li> <li>• Multiple rounds of bidding</li> </ul>	<ul style="list-style-type: none"> <li>• Possible government corruption</li> <li>• Fierce competition from other investors</li> <li>• Conflict with residential development.</li> </ul>

Table 3 Arranged by author. SWOT analysis of the Mega Port project from the perspective of the investor.

This Mega port will be part of the multimodal and inter-modal center of transport that Panama promotes. As little as 15 years ago the ports in Panama were in disarray, state operated, and failing in every area. Once privatized, things began to change and Panama attracted several world-class operators. The usage of the Panama Canal by more than 14,000 vessels creates a variety of opportunities for investment in the maritime sector. The port sector has maintained a sustainable growth of 21% and is in the process of increasing its capacity and operations. The SWOT analysis makes it clear that the strength and opportunities of the project is more favorable and creates a potential environment for investors. For these reasons, the more stable suggestions for long term investment and close revenue investment are tugboats services, ship security and inspection services, disposal of residues and dump material services, ship handling services, medical services, maritime tourism and services (insurance, maritime agencies, banks and financial institutions): moreover, these investments also justify the expense involved given the expected market growth.

However, with respect to the first stage of the Mega port, the following are the more suitable investments opportunities: cargo movement and container yard; fuel provider; repair, such as ship repair and ship chandlers; security and inspection companies and cleaning services for containers. These activities will increase in the next two stages of the Mega port on the Pacific coast. Furthermore, these services will also be required in the future when the next mega port is constructed on the Atlantic coast. As a result, these investment opportunities will continue expanding in the next few years.

## CHAPTER 5. Mega Project 3: “SIEPAC -Panama-Energy Hub”

### 5.1. Background

The Puebla-Panama Plan (Plan Puebla Panama -PPP) is a mega project which seeks to open up the southern half of Mexico (Campeche, Chiapas, Guerrero, Oaxaca, Puebla, Quintana Roo, Tabasco, Veracruz and Yucatán) and Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and recently Colombia) to private foreign investment and to establish the foundation for the Free Trade Area of the Americas (FTAA). The PPP was formally initiated in 2001 and depends upon multi-lateral development bank support and private investment to create infrastructure projects such as highways, air and sea ports, and electric and telecommunications grids that will attract industry and expand natural resource extraction. Currently, one well-known company, the Electric Integration System for Central America (SIEPAC), formerly a part of the PPP projects, is involved in the construction of an energy line from Mexico to Panama, costing an estimated \$320 to 400 million. One of the goals of the project is to be able to sell electricity generated in the region to the United States (24).

### 5.2. Description SIEPAC



Figure 21 SIEPAC Project. Source: SIEPAC department

Central American countries have been discussing plans to link the region's electricity grids. *Central American Electrical Interconnection System (SIEPAC)* project entails the construction of transmission lines connecting 37 million consumers in Panama, Costa Rica, Honduras, Nicaragua, El Salvador, and Guatemala. The SIEPAC project was formally approved by the participating governments in 1996. In fact, it is at present building a

2,100-km electricity transmission interconnection which can transmit 230-kilovolt (kV) with a capacity of 300 MW and at a cost of around US\$390 million. This project will alleviate periodic power shortages, reduce operating costs, optimize regional use of hydroelectric power, create a competitive market in the region, and attract foreign investment. Also, it will allow countries with severe electricity deficits to purchase power from their neighbors, as well as to enable

countries dependent on thermal power to have access to Central America's abundant hydropower. Interconnecting the country's electricity grids might make possible the introduction of natural gas into the regional fuel mix, capitalizing upon the proximity of neighboring natural gas producers Mexico, Colombia, and Venezuela.

According to the SIEPAC Plan by Puebla-Panama Plan officer, at the moment, the SIEPAC line is still under construction and will be fully operational in April 2009; this will be an important encouragement for other project developments in the region, which are possible due to SIEPAC line facilities. Moreover, the project is compliant with the legislations of these countries concerning environmental issues, permissions or licenses of concession or operation and the line easements (25).

In April 2002, a transmission line between Honduras and El Salvador was opened, marking the complete interconnection of all six SIEPAC countries. Prior to the Honduras-El Salvador link, Guatemala and El Salvador were not connected to the Honduras-Nicaragua-Costa Rica-Panama network of bilateral linkages. Additionally, the actual market which combines the six national markets will be governed by Regional Electric Market (MER) with two new regional institutions, the Regional Electric Interconnection Commission (CRIE) which will regulate the wholesale market, and the Regional Operator Entity (EOR), which acts as the legal authority and administrator of the regional power transactions. Some principal objectives are transparent, non-discriminatory rules and regulations to govern the operation of the regional market, ensuring compliance with the legal framework and market rules, monitoring the operations of the regional market and facilitating its development, regulating regional generation and transmission, promoting competition and preventing anti-competitive practices, resolving conflicts and imposing sanctions to market agents, and approving charges for services provided at regulated rates.

The future projects by SIEPAC are to incorporate three components: electrical, telecommunications, and optical fiber in the SIEPAC line. The electric line is the first step for this mega project. Finally,

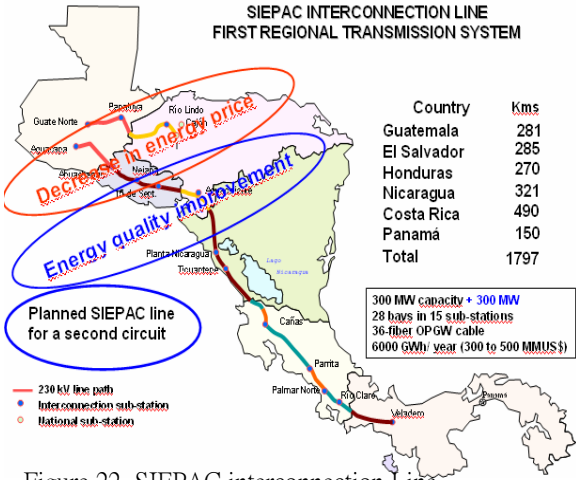
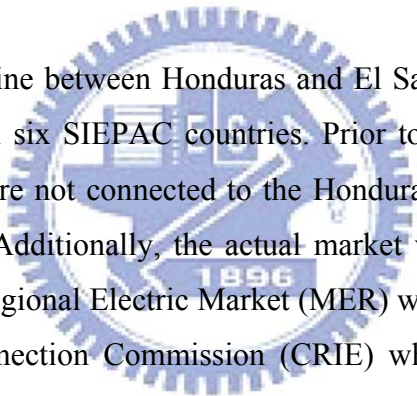


Figure 22 SIEPAC interconnection Line.  
 Source: SIEPAC project

SIEPAC expects to expand all this system throughout South America (25).

5.3. Objective

The consolidation of the six markets or existing national systems, the *Regional Electric Market of Central America* (MER) with the SIEPAC Line in operation, and the legal framework with its regional institutions fortified, will have the following impacts on the region: integrate energy and communications, facilitate the development of the electric industry, contribute to the sustainable development of the region, increase the regional attraction for foreign investors, improve the position of Central America to negotiate with other energy markets( Mexico and Colombia), consolidate the strategic advantages of Central America due to its geographical situation. As a result of the above, the major objectives of interconnecting the nations' electrical transmission grids by SIEPAC will alleviate periodic power shortages in the region to reduce operating costs, optimize shared use of hydroelectric power, create a competitive energy market in the region and attract foreign investment in power generation and transmission systems.



5.4. Environmental Benefits of the SIEPAC Project

**Reduction of CO<sub>2</sub> emissions**

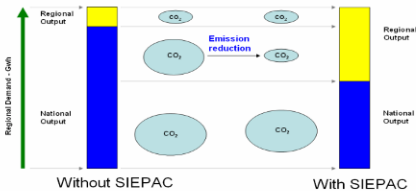


Figure 23 Reduction of CO<sub>2</sub> emissions.  
Source: SEIPAC project

This SIEPAC project will benefit the environment in several ways, some of the advantages are optimizing the regional output of the most efficient plants for energy generation., eliminating the restrictions on the regional transportation of electricity, strengthening regional use of renewable energy resources, reducing energy dependence on exterior sources, and reducing greenhouse-effect gases emissions.(Figure 23).

According to the SIEPAC project, the estimated reduction of emissions in greenhouse gases is expected to be 15 millions tons in 20 years, with an average reduction of 750.000 tons per year. The sale of Emission Reduction Certificates will provide US\$ 7 to 8 million for this project.



## 5.5. Financial structure

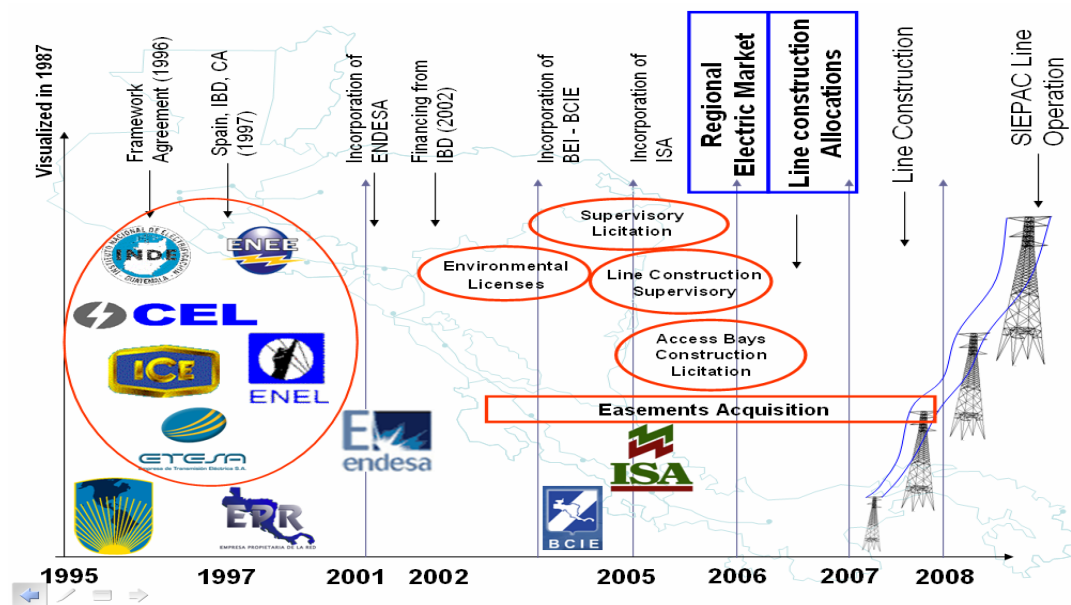


Figure 24 Finance structure schedule of the SIEPAC Project. Source: SIEPAC Project

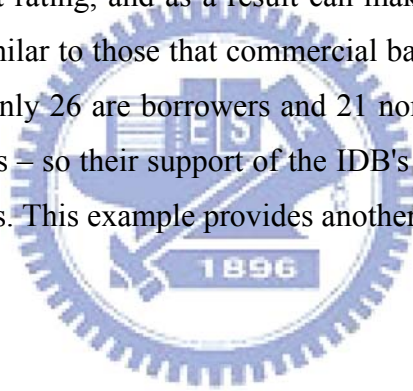
According to the SIEPAC project schedule, its main investors were in the period 1995-2001 (Figure 24). From among these investors, the funding for the project has come mainly from the Inter-American Development Bank (IDB), the Spanish government, and the Central American nations. The following table shows the actual financing structure for SIEPAC:

Investors	(US\$ Millions)
IDB Fifth Century Funds	70
IDB Special Funds	50
IDB Ordinary Capital	120
Central American Bank for Economic Integration (BCIE)	80
BCIE (EPR – “Empresa Proprietaria de la Red”)	10
Patrimony contribution	40
<b>Total</b>	<b>370</b>

Table 4 Investor of the SIEPAC project

Source: SIEPAC department.

IDB, the main single investor, was established in 1959 as a development institution with novel mandates and tools. Its lending and technical cooperation programs for economic and social development projects went far beyond the mere financing of economic projects that was customary at the time. The funds made available by IDB to its borrowing member countries are raised by selling bonds to institutional investors at standard commercial rates of interest. The bonds are backed by (a) the sum of the capital subscriptions actually paid by the bank's 47 member countries, as well as (b) the sum of the callable capital subscriptions pledged by the bank's 21 non-borrowing member countries. The callable capital pledged by the 21 non-borrowing members, which include the world's wealthiest developed countries, therefore functions as a guarantee for the bonds that the IDB sells (24). This arrangement ensures that the IDB maintains a triple-A credit rating, and as a result can make loans to its borrowing member countries at rates of interest similar to those that commercial banks charge their largest corporate borrowers. At the same time, only 26 are borrowers and 21 non-borrowing countries are putting up guarantees – not actual loans – so their support of the IDB's lending operations has a minimal impact on their national budgets. This example provides another option for foreign investors.



## 5.6. Demands for energy in the six countries

### ELECTRICITY GENERATION PARK STRUCTURE Installed electric power capacity, year 2005(MW)

	Hydraulic	Renewable	Oil	Coal	Total
Guatemala	646	216	980	142	1984
Costa Rica	1304	262	396	0	1962
Panama	832	0	724	0	1556
Honduras	477	60	913	0	1450
El Salvador	442	212	544	0	1198
Nicaragua	104	199	439	0	742
Total	3805	949	3996	142	8892

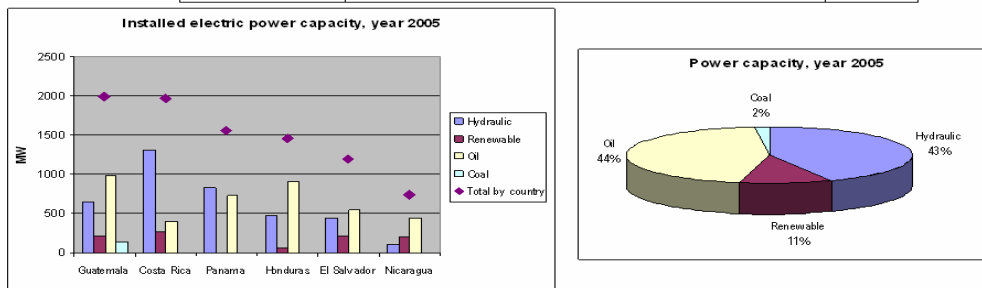


Figure 25 Electricity Generation in Central America

According to the Economic Commission for Latin America and the Caribbean (ECLAC), all six Central American countries rely heavily on imported petroleum and indigenous hydropower to meet domestic energy demands (Figure 25). Imported petroleum comes primarily from Venezuela and Mexico under the terms of the San Jose Pact and the Caracas Energy Accord. This region consumes no natural gas and very little coal. Historically, hydroelectric power has dominated Central America's electricity sector. However, since opening up to foreign investors in the middle to late 1990s, the use of thermal generation has grown rapidly.

According to SIEPAC, the projected demands for these countries is presented in following table.

## GROWTH OF DEMAND (2004 –2019): DOUBLE

AVERAGE SCENARIO				
YEARS	Power (MW)	Energy (GWh)	Yearly Growth	
			Power	Energy
2004	5,851	32,906		
2005	6,133	34,644	4.82	5.28
2006	6,430	36,436	4.84	5.17
2007	6,732	38,228	4.70	4.92
2008	7,030	40,096	4.42	4.89
2009	7,365	42,026	4.77	4.81
2010	7,705	44,018	4.63	4.74
2011	8,057	46,132	4.56	4.80
2012	8,429	48,336	4.62	4.78
2013	8,816	50,636	4.59	4.76
2014	9,219	53,038	4.58	4.74
2015	9,643	55,553	4.60	4.74
2016	10,091	58,236	4.65	4.83
2017	10,565	61,055	4.69	4.84
2018	11,061	64,015	4.70	4.85
2019	11,583	67,130	4.72	4.87
GROWTH RATE				
PERIOD			POWER	ENERGY
2005-2019			4.66	4.87

Source: SIEPAC PROJECT

Figure 26 Projected energy demands in Central America

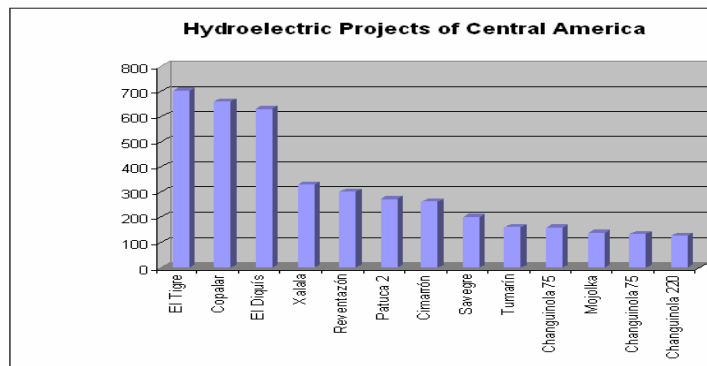
According to this information, an assumed USD\$ 2,000 investment per installed KW for the next 10 years, will require 5000 MW at a cost of USD\$ 10,000 million and this will be mainly thermal energy and some from renewable sources. Nowadays nations generate energy only for their needs. However, with the Regional Electric Market (MER) and SIEPAC line regional plants must be installed. In fact, these will be bigger and more economic. The thermal generation plants will be as big as the country market will allow them to be and additional to its regional transmission capacity. However, the size of the hydraulic generation plants will be the optimal, based on their regional transmission demands. They will be located in countries having resources. Clearly, this infrastructure will need capital to satisfy increasing demand of electricity in Central America (25).

## 5.7. Regional Mega Projects

The regional electricity organizations carry out periodic studies about indicative planning, to identify economic projects and their possible construction order, according to the growth of demand in the region. The relevant information will be open and available to investors and to project development companies in the regional electricity market. Some of this actual information in Central America is in following:

### Central American Big Hydroelectric Power Stations Identified 4070 MW

HYDROELECTRIC PROJECTS OF CENTRAL AMERICA	
	Power MW
El Tigre	704
Copalar	660
El Diquis	631
Xalala	330
Reventazón	300
Patuca 2	270
Cimarrón	261
Savegre	200
Tumarín	160
Changuinola 75	158
Mojolka	138
Changuinola 75	132
Changuinola 220	126



### HYDROELECTRIC POWER ICA : 24,415 MW

	Total capacity		To develop		Installed	
	MW	GWh	MW	GWh	MW	GWh
Central America	27,938	129,142	24,415	112,565	3,523	16,577
Costa Rica	5,802	29,660	4,531	23,163	1,271	6,497
El Salvador	2,165	9,483	1,743	7,633	422	1,850
Guatemala	10,890	47,698	10,332	45,254	558	2,444
Honduras	5,000	26,280	4,534	24,241	466	2,039
Nicaragua	1,740	5,767	1,636	5,403	104	364
Panamá	2,341	10,254	1,639	6,873	702	3,381

### GLOBAL THERMAL ELECTRIC POWER ICA : 2,112 MW

	Total capacity		To develop		Installed	
	MW	GWh	MW	GWh	MW	GWh
Central America	2,528	15,704	2,112	13,027	416	2,677
Costa Rica	235	1,647	90	633	145	1,014
El Salvador	333	2,039	171	1,050	161	988
Guatemala	800	4,906	767	4,703	33	202
Honduras	120	736	120	736	-	-
Nicaragua	1,000	6,132	923	5,660	77	472
Panamá	40	245	40	245	-	-



Figure 27 Capacity of the hydro electric power station in Central America  
Source: SIEPAC project by Puebla-Panama Plan officer, 2007

### 5.8. Why should Panama be the Regional Energy Hub?



At present, for Central America from an energy perspective, Panama is a major transit center for oil shipments via its Canal and a potential choking point. In 2001, approximately 613,000 bbl/d of crude oil and petroleum products passed through the Panama Canal, with around 57% of the total oil shipments moving south from the Atlantic to the Pacific.

While oil products dominated southbound traffic, crude oil accounted for the majority of northbound oil from the Pacific to the Atlantic. In accordance with the Panama Canal Treaty (September 1977), Panama assumed full responsibility for the Canal at noon on December 31, 1999. At that time, the U.S. Panama Canal Commission was replaced by a new Panamanian entity, the Panama Canal Authority. The Treaty guarantees permanent neutrality of the Canal. In 1999, U.S. crude oil imports transiting the Panama Canal averaged 78,670 bbl/d. Moreover, Panama has negligible hydrocarbon energy reserves and imports over 70% of its total energy consumption. Virtually all oil is imported, and the country neither produces nor consumes natural gas. Consequently, Panama is the major petroleum free zone in the region with a large capacity to store petroleum products as well as a strategic location for small refineries to serve regional export markets. It is also the key to plans to connect the electricity and natural gas grids of North and South America (27,25)

As mentioned before, the demand of finished products in the Central American Region is currently 370MMBB. This demand is expected to double by 2020 and only one quarter of this demand is refined locally. Panama alone has a demand growth rate of 6% annually, and an attractive market for bunkering with the Panama Canal. Without any new added capacity, import of products will continue and grow beyond current levels. Panama is working with the Central American region to work on a homogenization of product quality specifications following US standards.

According to Hydroelectric Dams Project in Mesoamerica (Mexico to Panama) by PPP and to investigations of diverse organizations, there are approximately 330 hydroelectric projects in all the Mesoamerican region, which are in their different stages of study, planning or construction. (See list in the Appendix)

This list shows that Panama has major project hydroelectric projects to meet the demands of Central America. The majority of these projects are in the Pacific Area. Currently, electricity generation accounts for most of Panama's domestic energy production, with hydroelectric generation alone accounting for 75% of the country's total energy production. There are eight electricity generators and three distributors operating in Panama. Transmission remains in the hands of the government through the publicly owned Etesa Company. Electricity demand is expected to grow significantly in the coming few years and new projects are planned to help meet this demand. Construction of AES's \$200 million, 132-MW Esti hydroelectric project in Panama's Chiriqui province began in early August 2000. The Esti hydroelectric project is made up of two hydroelectric plants, Guasquitas and Canjilones, on the Chiriqui River. In November 2001, Empresa de Distribucion Electrica Metro-Oeste Chiriqui (Edemet-Edechi) the Panamanian subsidiary of Union Fenosa (Spain) announced plans to invest \$90 million in hydroelectric and wind energy projects over the next 10 years. The project will begin with a new 30-MW wind plant in the Chiriqui province.

According to Jessica Ramesch, Editor, *Panama Insider* (May 28, 2007), there is a new mega project proposal for an \$8 billion oil refinery poised to become a reality after the Memorandum of Understanding (MOU) has been signed between Occidental Petroleum, Qatar Petroleum Company, and Panama's Ministry of Trade and Industry. The refinery will be built on Panama's Pacific coast, in Puerto Armuelles, Chiriqui, provided the location proves to be suitable following feasibility studies. Occidental Petroleum and Qatar Petroleum are expected to spend some \$20 million on engineering studies, and then between \$15 and \$20 million on a second phase of studies, to include plant construction, labor and total construction costs. Preliminary plans are for the second phase to reach completion by mid-2008 and for construction to take three to four years, for completion by 2012. The refinery will churn out some 350,000 barrels of refined petroleum daily (28).

## 5.9. Panama's Energy Demand

**Installed Capacity** → **1,507.2 MW**

- » 845 MW (56%) Hydropower
- » 662 MW (44%) Geothermal

**Power Generation (gross)** → **5,576.6 GWh**

- » 2,823 (50%) Hydropower
- » 2,753 (49%) Geothermal Bunker Diesel Diesel Marino

**Maximum demand of the system (2004)** → **924.96 MW**

**Exports to Central America** → **178.94 GW (3.21%)**

**National Grid is connected to potential site**

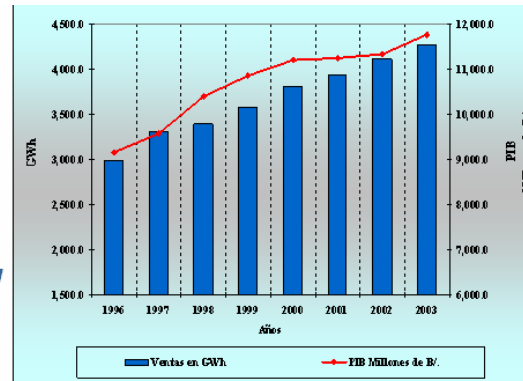


Figure 28 Description of the energy demand in Panama

Source: National promotion investment department, Ministry of Commerce and Industry, Panama

At the moment, according to Figure 28, there is a need for at least 200 MW to satisfy local consumption by 2007. Furthermore, several future mega projects such as the canal expansion, mining projects and port development, will demand additional energy.(29)

Panama has a local demand of 4MMBB in oil products. Also, there is an interesting market in the bunkering sector of almost 30MMBB. Additionally, 6.5 % percentage was the total average annual demand growth for oil products for 2000-2005

## 5.10. Existing Facilities in Panama



Figure 29 Map of old pipeline next to the Canal. Source: ARI, Panama

As shown in Figure 29, at the moment the existing pipeline connecting the Pacific to the Atlantic is 131 km (crooked blue line) and is an old pipeline next to the Canal. There are two existing rights of way. The advantage of Panama is that it will need only 75km of transoceanic pipeline to be built.

The next figure describes other existing facilities that can provide 16.9 MMBB of storage capacity in Panama. However, not all of these facilities are functioning at full capacity at the moment.



Name	Principal Products	Storage Capacity (MMBarrels)	Storage Capacity (MM Galons)
Aeronáutica Civil	Aviation Fuels	0.02	0.7
Autoridad Marítima	Fuels	1.6	66.7
	Marine Fuels	1.8	74.0
Petroterminal de Panamá	Products	2.9	122.3
	Crude	2.9	121.3
Petroport	GLP	0.04	1.9
Refinería Panamá	Crude and Products	4.3	179.0
Atlantic Pacific	Marine Fuels	1.2	50.7
Pimpsa	Fuels and anviation	1.1	47.3
Decal Panama	Marine Fuels	1.1	46.2
<b>Total</b>		<b>16.9</b>	<b>710.1</b>

Figure 30 List and map of existing facilities in Panama  
Source: National promotion investment department, Ministry of Commerce and Industry, Panama

Currently, there continues to exist a labor force that used to work in the Chevron Texaco Refinery. It was a training program being developed through the INADEH (Governmental Professional Training) to prepare the new labor force to work in different areas such as pre-operational activities, technical services, operation and projects, laboratory personnel, IT personnel, maintenance, and security (29).

### 5.11. Hub Energy Opportunity

Through SIEPAC, Panama will have access to Guatemala, Honduras, El Salvador, Costa Rica and Nicaragua. SIEPAC will begin this electric energy integration project in June, 2008 and this

will require the operation of a wholesale power generation market with the possibility to export power to five or more countries using a line of 1830km, with a capacity of up to 300 MW (29).

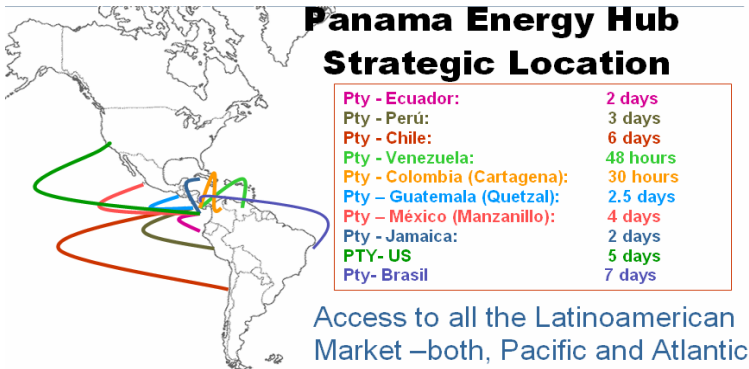


Figure 31 Description of Panama energy Hub  
 Source: National Promotion Investment Department, Ministry of Commerce and Industry (MICI), Panama

By taking advantage of Panama’s geographic position, the following can be accomplished: setting up processing plants for lubricants, a regional refinery and a liquefied natural gas (LNG) plant. To achieve these will require using storage capability on a regional level, the Panama Canal for tankers transporting crude, and the only trans-isthmian pipeline in the region, from Chiriquí to Chiriquí Grande in Bocas del Toro (131 km), and by becoming the Regional Energy Center for redistribution to the Central American region. In August, 2005, the Central American governments initiated the first national energy policy which proposed to promote Panama as a Regional Energy Hub. The objective of this effort is to identify potential sites and to attract investors.

Studies have identified potential areas or regions for development projects of alternative energy resources, such as wind, solar, biomass and natural gas. Twelve hydroelectric projects, between the provinces of Chiriquí & Bocas del Toro (Panama), would represent an investment of US\$680 million over the next few years, with great potential for the development of ethanol made of sugar cane, a mixture 90/10 –(gasoline/ethanol). Biodiesel, for processing palm oil, comprises of 95% diesel and 5% of biodiesel. A lubricant processing plant can be used to recycle used lubricants and convert them into diesel for the local and international market. Another project is a gas maritime pipeline form Cartagena City (Colombia) to Colon City (Panama) for an investment of US\$300 million (30).



Panamanian Law No.8 and Law Decree No.36 (2003) established incentives for refinery projects. With the declaration of Petroleum Free Zone activities such as introduction, storing, refining, processing, transporting, exporting, re-exporting, and selling crude to the domestic market, or any of its products, were permitted. All the crude oil and products that are destined for international markets are granted a tax exemption. Moreover, in August of 2004, Law No. 45 was approved, and established incentives for hydroelectric generation projects and for finding other new sources, renewable and clean, which support the state's policy that seeks to promote producing and using renewable energy as a means of developing a more environmentally friendly economic base (29).

## 5.12. Main Findings

### 5.12.1. Investment opportunities

#### 5.12.1.1 Legal Framework: Oil Free Zones

According to National Promotion Investment, a department of MICI, Panama has successfully implemented an attractive promotional tax regime for the establishment of Oil Free Zones within its territory. Already, companies doing business in seven petroleum-free zones include Exxon/Mobil, Shell, Alireza/Mobil, Chevron/Texaco, Glencore and others. The highlights of the regime include the exemption tax, tariff, contribution, duty or toll caused by the import, export and re-exportation of crude oil and its by-products to or from the free zone.

Currently, Panama is promoting two refinery projects located in Maria Chiquita on the Atlantic Ocean and Puerto Armuelles on the Pacific. (Figure 32).

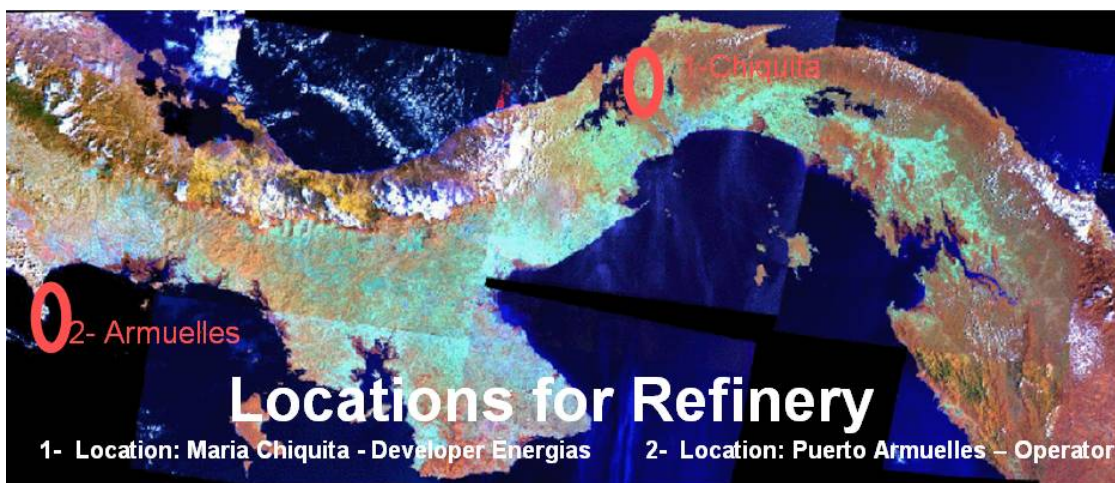


Figure 32 Map of two energy projects in Panama

Source: National Promotion Investment Department, Ministry of Commerce and Industry (MICI), Panama

### 5.12.2. Energy Project in Maria Chiquita on the Atlantic Ocean



Figure 33 Energy project design in Maria Chiquita –Atlantic

Source: National Promotion Investment Department, Ministry of Commerce and Industry (MICI), Panama

This project involves an industrial park which will require the following: marine facilities (port, pipe-lines, buoys), tank farms, site and headquarter offices, warehouse and machine shop, a crude refining capacity of up to 2 mmbpd liquefied natural gas (LNG), a regasification plant of up to 1.2 Bcf/d, a petrochemical & Chemicals (Ethylene/Propylene plant, Polymers, Ammonia), jetties, pipelines and storage, utilities and services.

The design of the industrial park on Maria Chiquita is based on a successful model in Singapore, called Jurong Park, which has many facilities such as a crude refining capacity of 1.3 billion b-d, a distribution center for fuels and chemicals for Asia-Pacific, more than 70 companies investing USD\$22 billion, Shell, Chevron, BASF, Exxon Mobil, Cabot, DuPont. Currently the developers of Jurong Park are partners in the Energy Project in Maria Chiquita on the Atlantic Ocean (29).

### 5.12.3 Energy Project in Puerto Armuelle on the Pacific Ocean

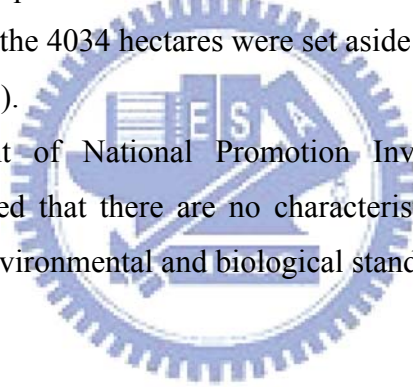


Figure 34 Area of energy project in Puerto Armuelle –Pacific-

Source: National Promotion Investment Department, Ministry of Commerce and Industry (MICI), Panama

The Panamanian government acquired land located in Armuelles, in the Chiriqui district, through Law Decree No.29 (2006) and the 4034 hectares were set aside for the development of a refinery and related activities (Figure 33).

According to the Department of National Promotion Investment of MICI (Panama), a preliminary study has concluded that there are no characteristics that would make the project non-viable based on existing environmental and biological standards.





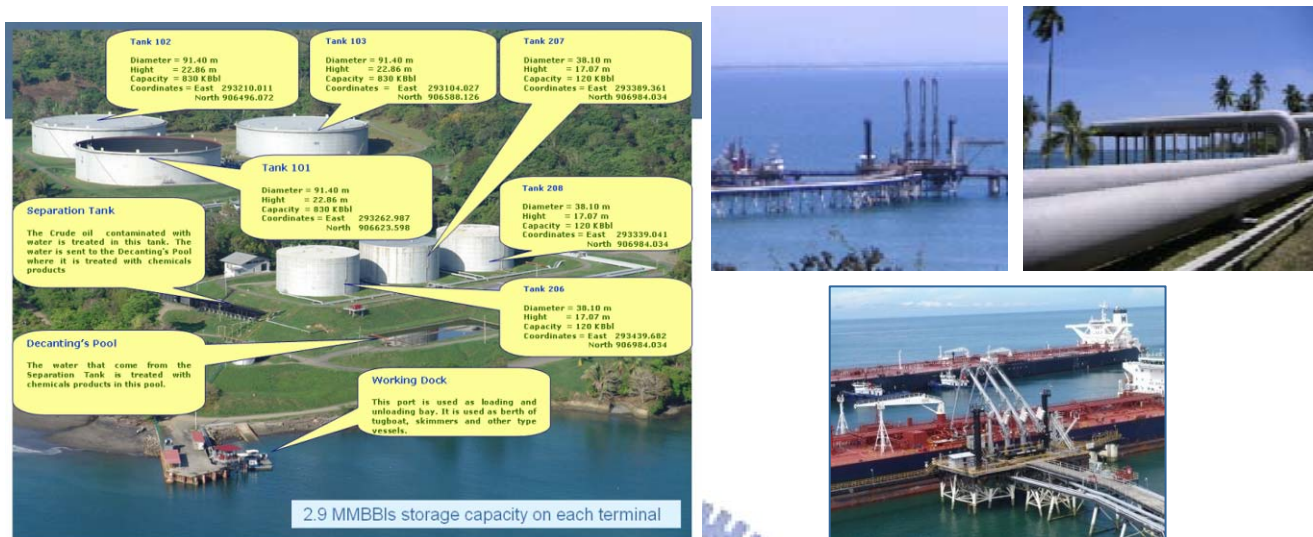


Figure 35 Existing Facilities of energy project in Puerto Armuelle –Pacific-  
 Source: National Promotion Investment Department, Ministry of Commerce and Industry (MICI), Panama

This area has existing facilities such as a PTP Pipeline (the only connecting pipeline in the area with an extension of 131km) which has a throughput capacity of 800MBD, a storage capacity of 2.9MB in each side, and berths with capacity for receiving VLCCs (Figure 33). Furthermore, the existing harbor is naturally sheltered from the prevailing westerly winds and waves by the peninsula on whose eastern shore it is located. Moreover, there are no draft restrictions on access to the jetties and jetty operations have never been interrupted by bad weather.

Mexico has already committed itself to purchase 230 mmbbdd of crude oil from the proposed refinery in Panama.. The company *Fast Track* has applied to obtain permits to operate a refinery (29).

### 5.12.3. Companies involved in the Panama Energy Hub

According to Manuel Luna, a reporter for *La Estrella*, May 17 2007, says that the current partnership of North American and European capital is behind the project which has been programmed to commence either at the end of 2007 or the start of 2008. These foreign companies have signed the agreement with the government of Qatar and the American company Western Petroleum (Oxy) to construct a refinery in Puerto Armuelles in the province of Chiriquí. Furthermore, he notes that the studies for the second phase of this project will cost between \$15

and \$20 million dollars. The new refinery will primarily export oil and gas to the west coast of the United States of America (31).

#### **5.11.4. Current state of affairs and related controversies**

At the moment, the involvement of Colombia in the SIEPAC project is in its initial stages, according to an interview by phone with Carlos E. Rodriguez, ex-Manager of “Ente Regulador” in Panama. In particular, there are several problems with the interconnection between Panama and Colombia because currently there are no infrastructures and suitable facilities connecting the two countries, unlike the situation in Central American countries. Rodriguez also points out that at the moment the governments involved have only given the approval to proceed; now, the actual situation has to be assessed more carefully in order to determine the technical aspects to realize this long-term objective. However, it will be only after this phase that the international bidding process can take place. The high voltage connection between Panama and Colombia required by this project includes 250 kV DC link operation stations with converter substations at the end of each DC links.

According to critics, the true goals of the Plan Puebla Panamá (PPP) include the privatization of land (including farmland), water and public services, and the control of the region by foreign interests. In addition, they argue that Plan Puebla Panamá is destroying fragile rainforests and displacing indigenous peoples who have little voice in the development of the projects. Moreover, much criticism is related to the free trade agreements (FTAs), including NAFTA, CAFTA and the FTAA. Critics argue that the PPP and related projects are providing the physical infrastructure that allows the FTAs to operate and this is seen as not within its authority. Furthermore, they also argue that the FTAs alter the region’s laws and policies for the benefit of transnational corporations and the region’s elites only

#### **5.11.5. Suggestions for investment opportunities**

The following table provides the SWOT analysis of the SEIPAC Panama Energy Hub from the perspective of the investor. The table summarizes the findings provided previously.



Strengths	Opportunities
<ul style="list-style-type: none"> <li>• Geographically strategic location</li> <li>• Protection from harsh weather</li> <li>• Proximity to producing and consuming countries</li> <li>• Access to the harbor and the Panama Canal</li> <li>• Road/rail connections, bridges, locks etc.</li> <li>• Free-zone for oil</li> <li>• Free trade agreements with American countries</li> <li>• Security</li> <li>• Land availability</li> <li>• Close proximity to residential areas, harbor productivity and ship services</li> <li>• Distribution facilities; warehousing, etc.</li> <li>• Choke point for crude oil and petroleum products</li> <li>• Key point to connect electricity and natural gas grids</li> <li>• Existing facilities, such as gas pipeline etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential expansion for new refineries</li> <li>• New potential business opportunities: collateral or direct to the energy projects.</li> <li>• Increasing local and international demand for energy.</li> <li>• Pre-completion orders for energy from Mexico</li> <li>• Potential energy demand from USA</li> </ul>
Weaknesses	Threats
<ul style="list-style-type: none"> <li>• High-regulated judicial system with international and local control on such areas as the environment and pollution</li> <li>• Heavy bureaucracy and time-consuming procedures</li> <li>• Lack of skilled labor force</li> </ul>	<ul style="list-style-type: none"> <li>• Possible government corruption</li> <li>• Fierce competition for investment</li> <li>• Increases in oil price and consequent reduction in oil consumption</li> <li>• The inconsistent existence of infrastructures between new countries</li> </ul>

<ul style="list-style-type: none"> <li>• Environmental protection regulation in each country</li> </ul>	joining the distribution channel
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Table 5 Arranged by author. . SWOT analysis of the SEIPAC Panama Energy Hub from the perspective of the investor.

The Panamanian government fully supports any initiative to establish new refineries in the territory. There are several foreign investment opportunities in these projects and they include the greater opportunities for new future projects to supply future markets in South America. The SWOT analysis shows that the investment for the project is advantageous for the potential investor, since the strength and opportunities are more than weaknesses and threats. At the moment there exist in Panama the possibility of generating related chemical and petrochemical activities, such as LNG re-gasification, and bringing it to Trinidad & Tobago, Qatar, and other places in America. Other related activities are to use power generation for residential uses, hydrogen production, and ethylene / propylene manufacture. On the other hand, local industries require ethylene (polyethylene, PVC, polystyrene, alpha olefins, fatty alcohols, ethyl benzene) and propylene (polypropylene, acrylonitrile, propylene oxide, cumene and phenol) to satisfy local and regional demands for basic raw materials needed for the manufacture of fertilizers, explosives, livestock feed and ammonia-related chemicals.

For investors interested in the Mega Project in order to supply and distribute in Central and South America, a specific procedure needs to be followed (Figure 35). SIEPAC proposes the following steps:

- Study the framework agreement and rules of the MER.
- Analyze the regional indicative planning study.
- Study the national regulations concerning electricity.
- Prepare an investor’s business plan.
- Obtain national government permissions.
- Finalize the contracts for energy sale to buyers, such as distributors or large consumers of the region.
- Comply with the regional regulations established by EOR and CRIE. (25).



Figure 36 Future interconnection of SIEPAC, Sources: SIEPAC department

## **CHAPTER 6. Why Invest In Panama**

### 6.1 Panama's Competitive Advantages and Risks

#### **6.1.1 Overview of Panamanian Economy**

Since 1903, Panama has had an economy that relies heavily on a well-developed service sector that accounts for nearly 80% of its GDP. Services include the Panama Canal, banking, the Colon Free Zone, insurance, container ports, flagship registry and medical and health services. With regards to the legal investment environment it could be said that it is an open and free economy where the law does not put limitations on ownership of companies registered in Panama.

The US dollar has been the currency in Panama since 1904, and as a consequence, fiscal policy is the government's principal macroeconomic policy tool. Because Panama does not have a central bank to print its own currency, government spending and investment is strictly bound by tax and non-tax revenues and the government's ability to borrow. Thus, creditworthiness is linked directly to public finance. The recent growth in GDP is being fueled mostly by exports such as coffee, livestock, watermelons, melons and fishing exports, consumption by foreign visitors, a slight revitalization of the Colon Free Zone, services of the Panama Canal, air transport and port services mainly in the form of greater container movement. Sectors that have resisted a decrease in activity have been agriculture of traditional products, manufacturing and financial intermediation services. Panama's per capita Gross Domestic Product is estimated at 4,318 million US dollars, the annual GDP growth is at 6.4%, the average (5yr) inflation is at 1.1% and the interest rate was 8.3% the end of 2005.(32)

#### **6.1.2. Panama's Industrial and service Clusters**

Looking at the composition of the various sectors, one can identify three major industry clusters: a) wholesale retail b) transport and telecommunications and the c) real estate sector. Wholesale retail activities account for 14.5% of the GDP, transportation and telecommunication 16.1% and real estate sector 16%. Wholesale retail takes place mainly in the Colon Free Zone situated in the Atlantic Coast at one extreme of the Panama Canal. Trade in the Colon Free Zone represented

almost 50% of the total retail activities. The activities of the Colon Free Zone will be discussed in more detail in the next sections. In regard to the transport and telecommunications sector, the Panama Canal has the largest share by far of the GDP of the sector, with important related activities taking place in maritime ports and airports, mainly the movement of cargo.

### **6.1.3 Economic Stability and the International Banking Center (IBC)**

In 1904, the U.S. dollar became the legal tender in Panama. In 1970, a new banking law allowed Panama's monetary system to become integrated with the world financial markets, through the participation of a large number of international banks. Banks were attracted to Panama to do offshore banking but the majority of them also operate in the local economy. Equilibrium in the bank portfolios implies that banks are indifferent, at the margin, between using their resources locally or abroad, and therefore they adjust their portfolios accordingly. This integration has shown remarkable economic stability to handle large capital inflows and to adjust to shocks without major disequilibria, and no distortion in macro prices. It has also shown low interest rates, at levels similar to world market rates, sustained macroeconomic equilibrium, and low operational costs. Panama's inflation has been low and stable; the average rate of consumer inflation for the 1961 to 1997 period has been 3 percent per year, 1.4 percent excluding the years 1973 to 1981, and is less than 2 percent today. (36).

Currently the IBC has had a favorable performance due to the positive trends in the international economic context which have allowed the IBC to recover foreign assets after the last couple of years of adjustment in foreign portfolios. As of December 2004, the IBC has 73 banks registered under the supervision of bank superintendent, which is the regulatory and supervisory entity in Panama.

### **6.1.4. Political Stability and Risk**

Panama has enjoyed a relatively stable political climate since the return to democratic rule in 1990 with a representative democracy with three branches of government, the executive and legislative branches are elected by a vote every five years.

At this point, a comparison between political risk as well as economic policy risk relative to other Latin American Countries can be made. From the table below we can establish that the country

with least political and economic risk is Chile, followed by Costa Rica a neighboring country of Panama, another neighboring country, Colombia, has significant political risk. The large markets of Brazil and Argentina do not have a favorable outlook. Panama, along with Brazil, are the countries with the least political risk after Chile and Costa Rica.

Table 6 Political and Economic Policy Risk (2005)

Country	Political Risk Rating	Economic Policy Risk
Panama	C	B
Costa Rica	B	B
Colombia	D	C
Brazil	C	C
Argentina	D	D
Chile	A	A

Source: Data from Economist Intelligence Unit, 2005, EIU Viewswire, the Economist, London. Key: A is high stability and D is low stability.

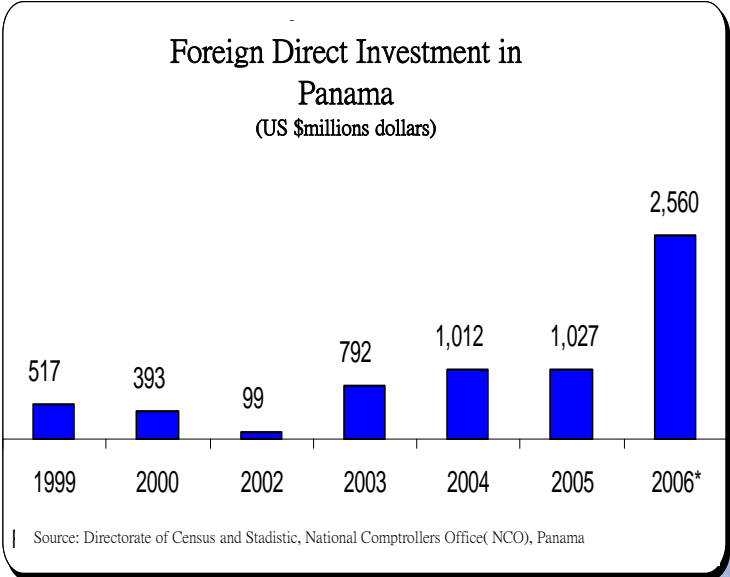
**6.1.5. Investment Policy in Panama**

The Panamanian Constitution outlines the laws that are designed to foster private property, intellectual property, economic freedom and the principle of non- discrimination. The Constitution states that foreigners who are within the National Territory will receive the same treatment as Panamanian nationals. Thus, legally, there exists no discrimination between foreign and domestic investments. Foreign investment does not need prior authorization except for those that fall under investment incentive programs. Likewise the currency Exchange Regime Law establishes that for any financial institution to set up operations in Panama, it must first receive a license provide by the National Banking Commission adjunct of the Ministry of Commerce and Industry. The main institution in charge of the promotion of investments is the Directorate for the Promotion of Production and Investment of the Ministry of Commerce and Industry.

**6.1.6. The Current Situation of FDI in Panama**



As of 2005 the total stock of FDI in Panama totaled **1,027** millions USD. There was a steady increase in the inflow of FDI from 2003 until 2006, since then there has been a minor decrease in the inflow of FDI into the Panamanian economy.



**\*Current forecast indicate that the total FDI in 2006 may reach \$2,560,000**

Figure 37 : FDI inflows to Panama 1999 -2006 (USD millions)  
 Source: Arranged by author data of the directorate of Census and Statistics, National Controllers Office (NCO), Panama. Website: [www.contraloria.gob.pa/dec/](http://www.contraloria.gob.pa/dec/)

We can compare the inflows of FDI into Panama to those of other Latin American countries in the years 2004 and 2005. (See table)

CEPAL			
Foreign Direct Investment (US millions)			
	2004	2005	2006
<b>El Salvador</b>	<b>459</b>	<b>457</b>	
<b>Honduras</b>	<b>293</b>	<b>190</b>	
<b>Nicaragua</b>	<b>186</b>	<b>230</b>	
<b>Guatemala</b>	<b>155</b>	<b>168</b>	
<b>Costa Rica</b>	<b>557</b>	<b>609</b>	

<b>Panamá</b>	<b>1,012</b>	<b>1,027</b>	<b>2,560</b>
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Table 7: FDI Inflows to Main Latin American Countries 2004-2005 (USD Billions)

Source: Data of the directorate of Census and Statistics, National Controllers Office (NCO), Panama.

Here we note that recently Costa Rica and El Salvador have attracted the lion's share of FDI in the Latin American region. As previously mentioned and as shown in Table 3, the FDI has been increasing in Panama over the last three years. This trend suggests that the FDI in Panama alone will be bigger than all the FDI invested in Central America and the Caribbean Region. Panama has positioned itself as the number one destination for foreign direct investment in Central America and it was predicted to double its FDI in 2006. (Figures not available at time of writing)

### **6.1.7 Legal Framework**

There are several relevant laws that give incentives for investment and exports. The following is an outline of the most important laws and their main relevant points (See appendix for the basic requirements regarding foreign investment):

Law No. 54, July 22, 1998. Investment Stability Law

Law No. 2, March 1986. Agricultural Exports

Law No. 16, July 14, 1982. Privatization Law

Regulation 197, December 15, 1993. Requirements for Privatizations

Law 25, November 30, 1992. Export Processing Zones

Aw 8, June 14, 1994. Tourism

Law 7, July 10, 1990. Financial Leasing of Capital Goods.

Law Decree 16, June 30, 1960. Immigration

Law Decree 18, June 17, 1948. Colon Free Zone.

### **6.1.8. Tariff and Non-Tariff Barriers**

Panama joined the World Trade Organization (WTO) in October 1997. WTO accession and implementation was passed under the previous government which liberalized the country's trading regime by setting the average tariff for agricultural goods at 15% and 8.25% overall.

Moreover, since coming into effect, the FTA between Taiwan and Panama in 2004, more than 6,700 custom categories or 71% of all Taiwanese products will have a zero tariff, except for so called sensitive import products for Panama such as poultry, rice, evaporated milk, sugar, pork and potatoes which have high tariffs in both the WTO and Taiwan-Panama FTA.

As far as non- tariff barriers are concerned, there has been in the past, concerns with the government's use of sanitary/phytosanitary (SPS) permits as an arbitrary import licensing system. This is in apparent contradiction of Panama's WTO and FTA commitments. However, recently the situation has improved but the SPS procedures are still subject to arbitrary application. (

#### **6.1.9. Intellectual Property Protection**

Protection of intellectual property rights in Panama has improved significantly over the past several years. However, some international businesses remain concerned about inadequate border measures to combat transshipment of counterfeited goods through Panama and about enforcement deficiencies in the Colon Free Zone. Panama is a member of the World Intellectual Property Organization (WIPO), the Geneva Phonograms Convention, the Brussels Satellite Convention, the Universal Copyright Convention, and the Paris Convention for the protection of Industrial Property.

#### **6.1.10. Special Economic Zones-**

Currently there are seven export processing zones that fall under the special law; however their success has been limited. The main export processing zones were established in former US military bases at a time when they were handed to Panama in accordance with the Torrijos-Carter Treaty which deals with the final withdrawal of US military troops and an end to US administration of the Panama Canal at the beginning of the year 2000 (Figure 37). This left the government of Panama with a large inventory of prime real estate on both sides of the Pacific and Atlantic Oceans next to the main ports and the Panama Canal. Panama received a total of 364,000 acres of such territory in late 1999, including two large military bases, one of which was a major air base (Howard) that could be used as a air cargo hub or aircraft maintenance and repair facility.

The Government is actively looking for investment in the fields of logistic and the multi-modal transportation center sector, tourism sector, service sector, information technology and communications sector and, primary and artisan sector; specifically in the marine services ports, tourism and in bond assembly and manufacturing. After nearly seven years since the U. S. return, investment in these transferred properties has not met expectations. Despite a recent high profile investment by DELL, in a 500 person call center. Below we have a map that outlines the location of the EPZ, the main maritime ports, in relation to the Panama Canal

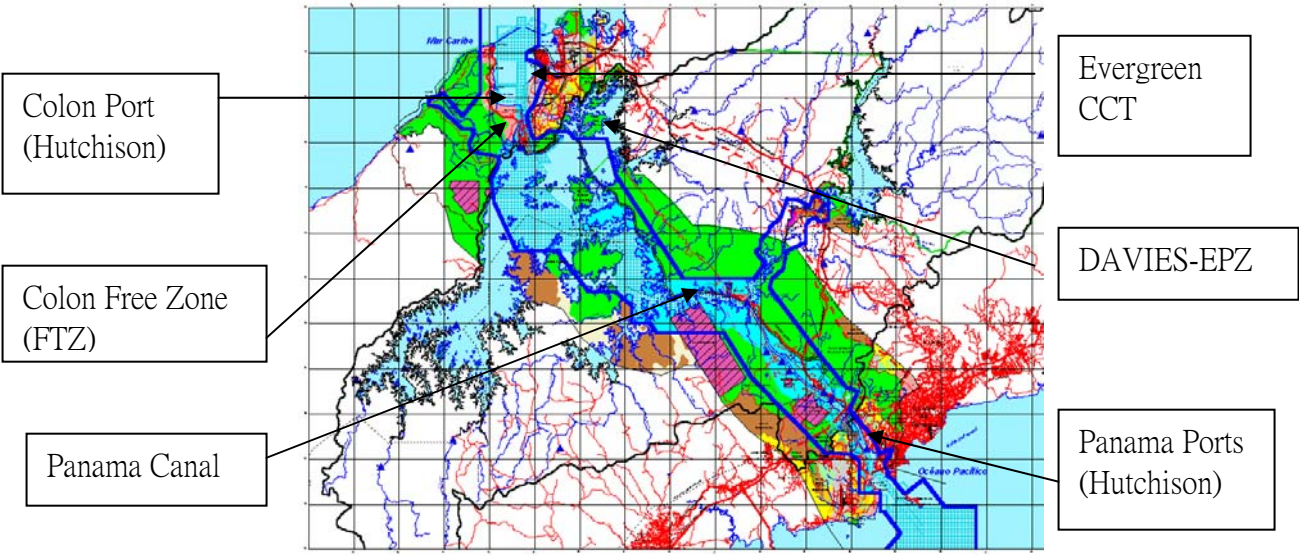


Figure 38: Arranged by author, Map of EPZ, FTZ, Panama Canal and Main Ports. Source: Map from ARI

Originally the export processing zone (DAVIS) was estimated to attract investments to the amount of 90 million US dollars, however only a handful of companies have set up operations in the EPZ ( Figure 38). Some have cited the lack of success to insufficient international promotion, inflexible labor laws and high transport costs. However, there has been a recent impetus to promote the EPZ.



Figure 39 DAVIS-EPZ zone. Source: ARI of Panama

In an enclosed area of 400 hectares, the Colon Free Zone (CFZ) is located in the Province of Colon, located at the entrance to the Panama Canal on the Caribbean side. It is considered the second largest free zone in the world and the first in the Western Hemisphere. Due to its

unequaled geographic position and its access to four important ports in the Caribbean and one in the Pacific, reputed to be the most modern in Latin America, it is what is often called an International Ports Center. The ports in this area are the following: Manzanillo International Terminal, Colon Ports Company (Hutchison Whampoa), Colon Container Terminal (Evergreen), and Panama Ports Company (Hutchinson Whampoa) with the Cristobal terminal in the Caribbean and the port of Balboa in the Pacific.



Figure 40 Colon Free Zone.  
Source: ARI department

Today, the CFZ is more than just a traditional free zone; it is a Global Logistic Center for the world. Its annual commercial transactions generate US\$ 11,000 million in imports and exports. The success of the CFZ is reflected in the more than 400 hectares and 1,800 established companies and 250,000 visitors a year. The existence of the International Banking Center, the efficient maritime infrastructure, the free circulation of the US Dollar as legal tender, a great many fiscal incentives under an exceptional tax free system on sales or manufactures and on imports and re-exportations to foreign countries, tax exemption on income generated abroad, and a sophisticated communication network are some of the factors that contribute to facilitate the operations from the CFZ and which make it an ideal center for international commerce. The CFZ offers investors many advantages: an exceptional tax free system on imports, re-exportations, manufacture and other activities, the dollar as the legal tender currency, low costs for land and store space, Lease Back System or recognition of the investment, protection and guardianship of intellectual property rights, and automated future commercial operations.

It is also important to note that in assessing the relative importance of location determinants for a distribution or logistics center, firms take into account the following factors in order of importance: 1. Geo-location, transport linkage and market accessibility, 2. Market size and growth of potential catchment regions, 3. Port, airport and inter-modal transport facilities. 4. Political Stability, 5. Skilled labor force, and 6. Modern logistic services and cost factors.(27)



#### **6.1.11. Free Trade Agreements**

As of the writing this paper, Panama has signed several Free Trade Agreements (FTA) (see details in appendix), one with the Republic of El Salvador and the other with Republic of China (Taiwan). Also, currently there is the last stage of negotiation to concluded sign a FTA with the United States of America. The FTA with El Salvador came into effect on April 11, 2003. El Salvador has a population of an approximately 6.6 million people with an area 21,476 sq. Km which is roughly a third of the size of Panama and two thirds the size of Taiwan. It is an importer of raw materials, consumer goods, capital goods, fuels, foodstuffs, oil, and electricity. In 2003 exports from Panama to El Salvador totaled 9,403 thousand of US dollars (FOB) compared to 7,675 thousand US dollars in 2002 and is currently the 13th most important destination for Panamanian Exports. (29)

#### **6.1.12. Trade Patterns of Panama's External Sector**

Due to the fact most of the trade that goes through Panama is what it could be called intraport trade it is necessary to differentiate trade figures between those whose main target market is the local Panamanian market and those who are routed through the Colon Free Zone where they are then redistributed to other countries. This distinction is also made in government statistic and is also useful to delineate the potential opportunities for long term manufacture or assemble operations in Panama with the objectives of reaching the wider North, Central and South American markets.

#### **6.1.13. Main Exports- Imports by Country**

By far the major parent of Panama is the United States of America and also the major destination of exports, followed by the European countries of Sweden, Spain and The Netherlands. It is important to note that almost 70% of Panama's exports have destinations other than American countries mainly in Central America such as Guatemala, El Salvador, and Costa Rica. Then approximately 23% of exports go to the above mentioned European Countries while the remaining 3% are traded with Asian countries such as Mainland China, Hong Kong and Taiwan. Moreover, the percentage by country to export goods in 2005 are United States 43.52%, Spain 8.88%, Sweden 5.64%, Holland 4.88%, Costa Rica 4.02%, Belgium 2.58%, Guatemala 2.22%, Nicaragua 2.22%, Taiwan 2.08%, United Kingdom 1.91%, Mexico 1.78%, Dominican Republic

1.71%, Honduras 1.62%, Colombia 1.60%, Italy 1.57%, Puerto Rico 1.36%, Colon Free Zone 1.36%, Portugal 1.31%, Republic of China 1.06%, Rest of the World 8.67% (see figure) (29)

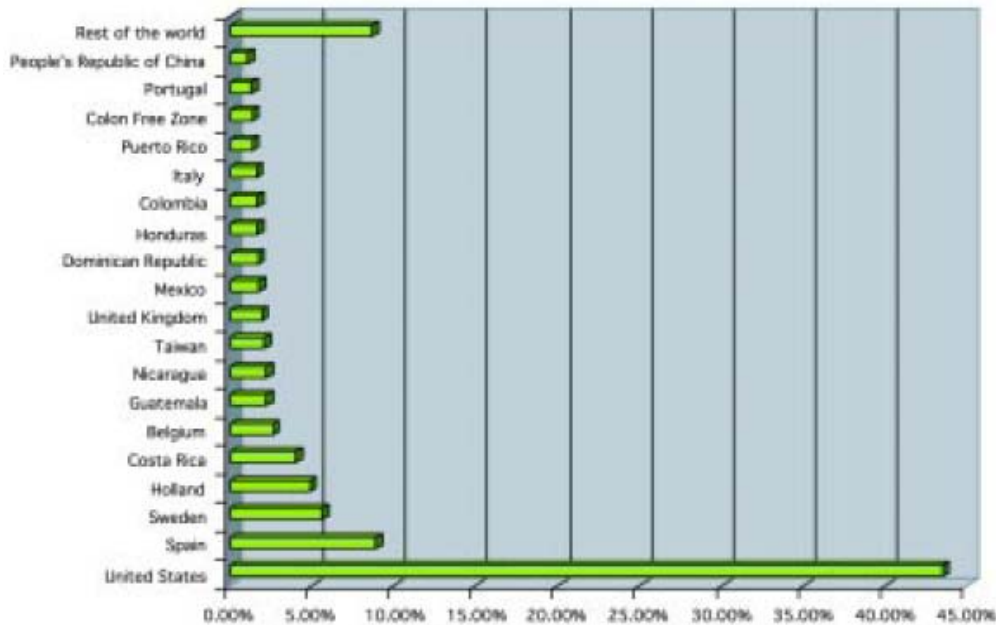


Figure 41 Main Exports by Country  
 Source: Directorate of Census and Statistics, National Comptrollers Office (NCO), Panama

The primary export products are mainly agricultural products such as melon, watermelon, pineapple, fish, shrimps, lobsters, tuna, beef, coffee, sugar and other services. Hence, it is evident that there is not an important manufacturing component to the export production.

Also, by examining the next table, we see that the main source of import comes from the United States of America, followed by those that come indirectly from the Colon Free Zone. A major amount of the imports come from American countries and Japan and Korea being the main Asian importers into Panama. Additionally, the percentage by country to import goods in 2005 are from United States 27.21%, Colon Free Zone 12.18%, Curacao 11.44%, Costa Rica 4.68%, Japan 4.53%, Petroleum Free Zone 3.95%, Mexico 3.71%, Colombia 3.46%, Brazil 3.06%, South Korea 2.48%, Republic of China 2.38%, Guatemala 2.01%, Spain 1.52%, El Salvador 1.35%, Germany 1.27%, Venezuela 1.08%, Trinidad and Tobago 1.05%, Argentina 1.00%, Rest of the World 11.65%. With the major products for import to Panama are petroleum and its derivative products, automobiles, heavy equipment, electric and telecommunication devices, medicines,

plastic and its manufacture, paper, cardboard and its manufactures, food, clothing, chemical products, shoes, furniture. Please refer to figure

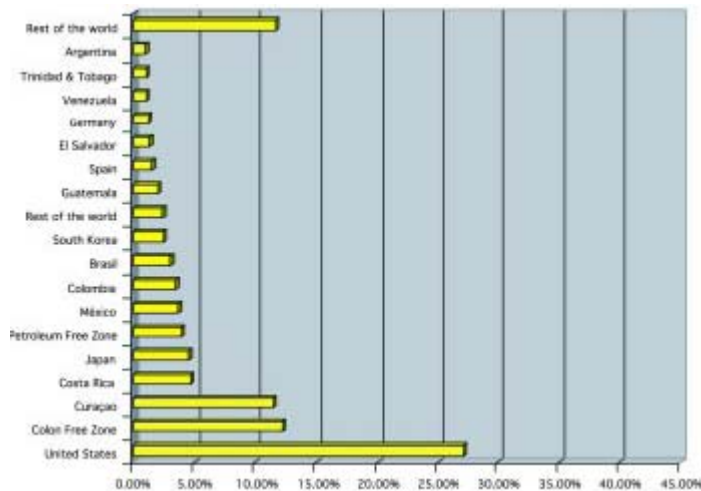


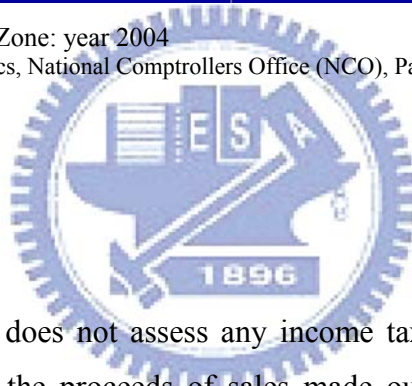
Figure 42 Main Imports by Country  
 Source: Directorate of Census and Statistics, National Comptrollers Office (NCO), Panama.

Having briefly touched upon the major trading characteristics in terms of the international market, we will then proceed to examine the import and re-export activities of the Colon Free Zone. Most Free Zone merchandise is transshipped from Panama to other parts of the Western Hemisphere and Europe. Imports into the CFZ come mainly from the Far East. The largest individual supplier of the CFZ in 2004 was Hong Kong, Mainland China followed by Taiwan, European Union, United States, Japan and South Korea (Table 5). These five countries supplied nearly 70 percent of all CFZ imports in 2005. Colombia is the largest buyer of merchandise, buying nearly 25 percent of all CFZ exports. Other principal buyers are Ecuador, Panama (domestic market), Venezuela, Mexico, Brazil, the United States, Chile and Guatemala. These countries buy approximately 60% of all exports from the CFZ.

RANK	COUNTRY	IMPORT VALUE (millions US\$)
1	Hong Kong	1,218.6
2	Mainland China	817.2
3	Taiwan	748.8
4	European Union	621.1
5	United States	483.1
6	Japan	256.1
7	South Korea	155.5
8	Mexico	123.4
9	<i>Southern Common Market</i> "MERCOSUR"	98.3
12	Chile	13.4

Table 8 Imports from the Colon Free Zone: year 2004

Source: Directorate of Census and Statistics, National Comptrollers Office (NCO), Panama website: [www.contraloria.gob.pa/dec/](http://www.contraloria.gob.pa/dec/)



#### 6.1.14. Taxes and Labor

##### 6.1.14.1 Taxes

As mentioned earlier, Panama does not assess any income tax income produced from sources outside the country, including the proceeds of sales made outside of Panama. This territorial method of taxation was only one of the many advantages of incorporated in Panama that has attracted the incorporation of over 35,000 companies. Income earned within Panama, including the proceeds of sales made within the country is subject to Panamanian tax.

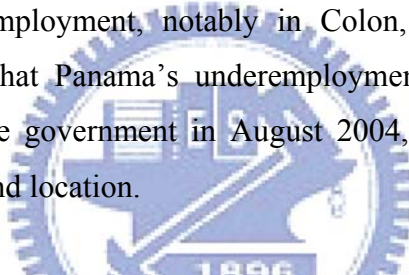
The normal corporate tax starts at 30% on incomes up to \$100,000 U.S. dollars and graduates to 42% on incomes over 500,000. Corporate dividends and earnings of branches of foreign corporations are subject to a 10% withholding tax. Interest paid or credited to the account of a foreign lender is subject to a 6 % withholding tax. Interest on bonds, notes and other registered securities is taxed at a flat rate of 5% withholding tax unless trade is on a registered exchange in Panama. Royalties paid to a foreign movie or television production company or distributor are also subject to a 6% withholding tax. Companies also must withhold a 10.75% social security tax on employee's salaries.

The tax rate begins at \$3,000 dollars, and individual income is taxable at 52% between \$3,000 and \$3,250 or tax of \$130, then falls to 4% between \$3,250 and \$4,000, rising to 33% between \$50,000 and \$200,000, and then dropping back to 30% over \$200,000, at which the tax amount payable is \$59,905. the first \$3,000 of income are not taxable. Employees also must pay a 7.25% social security tax on wage and salaries withheld by the employer.

**6.1.14.2 Labor**

According to the ministry of Labor Figures, Panama’s labor force in 2004 was approximately 1.1 million, with 83% employed in the private sector and 17% in the public sector. Unemployment in 2004 officially crept up to 14.3% from 14.0%.

Pockets of chronic high unemployment, notably in Colon, Panama’s second city abound. Various economists estimate that Panama’s underemployment could be as high as 20-25%. Minimum wages, raised by the government in August 2004, range from \$0.89/hr to 1.68/hr, depending on the job’s sector and location.



<b>Economic Activity</b>	<b>Wage per hour (USD)</b>
Agriculture, small enterprise	0.89
Fisheries	1.17
Manufacturing, Small enterprise	1.18
Manufacturing, large enterprise	1.24
Construction	1.33 to 1.68
Finance intermediation	1.34
Cooperativas de Ahorro y Crédito	1.34
Activity real state	1.34

Table 9 Panama’s labor force in 2004 Source: Arranged by author, data from Ministry of Labor, Panama website: [http://www.mitradel.gob.pa/html/Salario/Salario\\_minimo.htm](http://www.mitradel.gob.pa/html/Salario/Salario_minimo.htm)

Labor unions hold some political influence in Panamanian society and often protest in order to further objectives. While the Government of Panama has periodically revised its labor code,



including a modest revision in 1995, it remains highly restrictive. Several sectors are exempt from all or part of the labor code, including the Panama Canal Authority, the Colon Free Zone, Public sector employees, and export processing zone. Employers outside of areas have called for greater flexibility easier termination of workers, and the elimination of many constraints on productivity-based pay. (33)

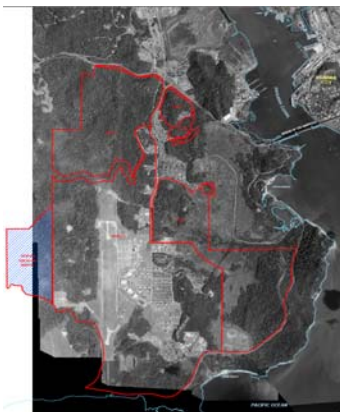
### **6.1.15. Information Technology Infrastructure**

Panama is trying to position itself as the “Connectivity Hub” of The Americas, by improving on its 58-eighth position overall in the Network Readiness Index (NRI) issued by the World Economic Forum in 2004. The NRI is defined as a nation’s or community’s degree of preparation to participate in and benefit from information and communication technology developments. Panama’s potential could be achieved thanks to several fiber-optic backbones passing alongside the Panama Canal.

Hence access to first-mile broadband is widely available. Also an e-commerce law was signed in July 2001 that granted electronic documents and signatures the same validity passage some call a data center operation. As well as web-hosting and e-commerce firms have been launched. However, we can see the comparison with other American countries it is still behind other neighboring countries such as Chile (ranked 32nd), Mexico (ranked 44th), and Costa Rica (ranked 49th).

### **6.1.16. Other sector for investment opportunities in Panama**

According to the *Foreign Direct Investment* in its June 2007 edition located Panama as the country with best economic potential, naming the steady growth of 6%, inward investment, FDI per capita, FDI deals, central office space, cost of employing middle management, universities, and promotion strategy. Panama has been ranked first in the region for low cost of living, operational cost and index of labor by the Economic Commission for Latin America and the Caribbean (ECLAC) and the Organization of American States (OAS). For instance, following are some currently opportunities offer to FDI by Panama Government.



#### **6.1.16.1. Investment Opportunities in Howard**

The Government of Panama with the advisory of the World Bank's international Finance Corporation (IFC) was designed Howard air force into a special economic area. This Project will have a high impact due to the Free Trade Agreement with the United States, the approval of a program for multimillion expansion of the Canal to increase its traffic capacity, measures to increase the competitiveness of the private sector and the construction of a mega container port in the entrance of the Panama Canal.

Howard offers an enormous variety of opportunities for investment, raising the competitiveness and positioning as a business area of world class: Industrial and commercial properties, 726 housing units and 25 buildings, Sport and entertainment structures, Transportation assets: category 7 airport accommodating for large aircrafts and 4 hangars, Air cargo terminal and deposits ready to be used, Telecommunications logistics infrastructure with NOC access point, Basic services, System for the supply of fuel, Hospital complex, Educational centers and others

The Howard Special Economic Area was conceived to turn into a Business Center of the America. Offers benefits to develop commercial and service activities: Tax, immigration and labor incentives, Simplification of installment, operation processes, the best connectivity of the continent, excellent lifestyle, availability of qualified workforce, training for personnel, special customs regime



Figure 44 Banking Area. Source: ARI department, Panama

Thousands of hectares remain available for development in the areas next to the Canal waterway. These were used as military facilities and many remain vacant, available for prospective investors. Some of the projects already underway include manufacturing, warehousing, real estate and tourist centers.

**6.1.16.2. Banking and Financial Services**

Panama is the most developed country in the region in terms of Financial Services. Panama's banking sector is one the most dynamic areas of the economy. A new banking law enacted in March 1998, modernized the banking system and increased government supervision. Under the

new law, the system meets Basle Accord standards. Foreign and Panamanian banks, just over 80 in total, compete on equal terms. In 2004, these banks had total assets for US\$27 billion dollars.

Banks are licensed and regulated by the Banking Superintendence. Counter-measures to neutralize illegal activities in the sector will require goods and services from countries with experience in this sphere, such as the UK. Specialized financial software too is also required for counter-measure operations.

#### ***6.1.16.3. Telecommunications***

The telecommunication sector in Panama was privatized in 1998. Panama is becoming a hub for communications in the Latin American Region. With a few exceptions, the market became fully opened recently. The main operator is Cable & Wireless from the UK. Privatization has increased competition and offer interesting market opportunities for UK companies.

The main fiber optic cables connecting the Americas interest at the Canal has attracted providers of data warehousing services, which serve information technology companies and users worldwide. Main opportunities include internet access, internet kiosks, value added mobile services, public network infrastructure equipment, VPN/Intranet, network security and call centre equipment.

#### ***6.1.16.4. Tourism***

The tourism industry in Panama has substantial growth potential and the Government ranks tourism as a priority sector. Foreign investment in the tourist industry has been the stimulant for sector growth, demonstrating strong confidence in the potential for these activities.

Panama passed Law No. 8 of June 14, 1994. Law 8 offers incentives such as 20-year exemptions from import duties, fees for construction materials and equipment, income, real estate and other taxes.

Panama has potential for the expansion of Eco-tourism and Eco-tourism adventures. Other tourism related opportunities include: know-how in development of tourism and infrastructure, supply of hotel kitchen equipment, tableware, decoration (carpets, furniture) and leisure items.(34)

## CHAPTER 7. Taiwanese Investments in Panama

### 7.1. Taiwan's Economic Basis

According to the study of Taiwan's Competitive advantages done by Wong Maher, Wang and Long (2001), Taiwan has relied on the fields of Original Equipment Manufacturing (OEM) and Original Design Manufacturing (ODM) in the production and export of products in the high tech area for the past two decades. The result has made is the world's third largest supplier of information products. Taiwan accounts for production of a third of the world laptop computers. The computer industry in Taiwan is surpassed only by brand name giants such as Dell, HP and IBM. A number of variables have been suggested to explain Taiwan's success; however we will elucidate them using the components of Porter's Diamond model of National Competitive Advantage. (35)

With regard to the Factor Conditions Element, Wong, they argue that Confucianism has given Taiwan a culture that epitomizes diligence, thrift, harmony, loyalty, education and respect for authority. Investing heavily in education, as an integral component of its economic plan, Taiwan is also one of the most cash-rich countries in the world. Although it was the recipient of foreign aid in the 1960's, It recognized the important of self-help and quickly embarked upon a course of economic independence. Its personal saving rate of 30% to 40% of the income became one of the highest in the world. With dynamic and fluid capital markets, Taiwan has been able to make funds available to small and medium sized firms, and its export-led national policy has made it one of the largest holders of foreign exchange reserves. As for its soft infrastructure, it has transformed itself from an agricultural economy to an industrial economy. It provides a stable and democratic political environment that people and businesses can pursue their economic objectives. This environment also attracts foreign investors.

The Demand Conditions of Taiwan is characterized by a domestic market that accounts for only a very small portion of its total production. Foreign demand for Low- Cost Manufacturing objectives accounts for most its production, its rapid economic growth, and its rising per capita income with its high level of consumer sophistication.

The intertwining of Taiwan's industries has contributed greatly to its success. Intertwining has resulted in a system of production, transportation and distribution processes that has given

Taiwan a competitive advantage that other countries cannot easily duplicate. For example, its production of personal computers now includes a full line of computer hardware products, such as mice, scanners and cables. Furthermore, Taiwan's success in chemical manufacturing has made it a world leader in certain plastic products, such as plastic pipes (PVC), (35).

Firm strategy, structure and rivalry component are symbolized by the small and medium-size enterprises (SMEs) that are the backbone of Taiwan's economic success.

They account for ninety-five percent of all companies registered in Taiwan and employ eighty percent of its workforce (36). Their total production accounts for half of Taiwan's exports. Because of their size, Taiwan's SMEs have the advantages of flexibility and quick response. They also have the ability to accommodate change in specifications without serious production line consequences. Because of their size and the competition they face, they regard every order as important to their survival. This promotes manufacturing processes that are streamlined for both complex and simple orders. In the area of financial management, Taiwan's companies follow a traditional, conservative Chinese approach and are financed mostly by equity rather than debt (37).



## 7.2. Taiwanese Overseas Foreign Investment

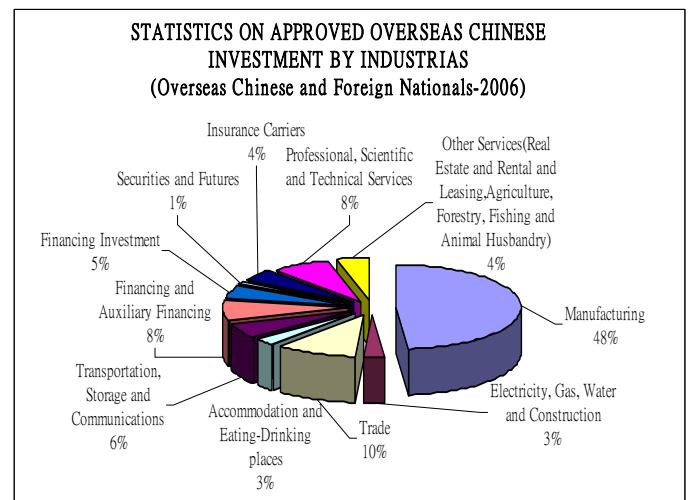
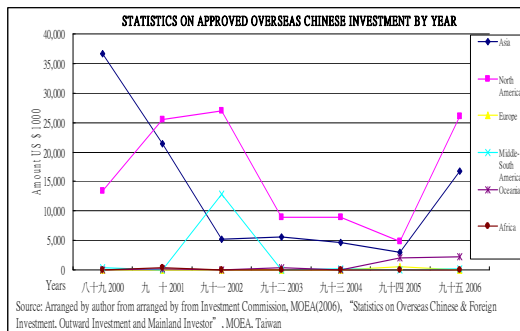
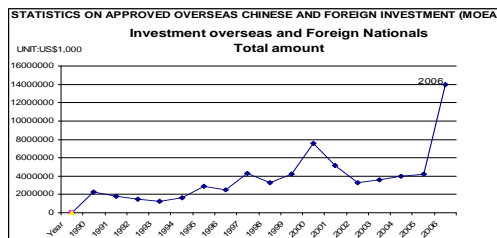


Figure 45 Arranged by author from investment Commission, MOEA (2006).



Source:“Statistics on Overseas Chinese & Foreign Investment, Outward Investment and Mainland Investment”, MOEA

Taking the last ten years as a reference, one can readily see a clear trend in Taiwanese FDI, namely, the domination of Mainland China as the main recipient of Taiwanese FDI. After Asia, North America stands as the second most important recipient of FDI followed by the Middle-South Americas. Figure 44 provides us with the total investment amount divided into 6 geographic regions. As seen in the figure, in the last five years up until the end of 2006 there has been an upward trend in the North and South Americas. The bulk of Taiwanese FDI is concentrated around manufacturing activities. For example, during 2006, the increasing amount of FDI and the electronics and electrical appliance manufacturing accounted for 48.8 % of the total commission (Figure 44). Moreover, the FDI in trade, service(professional and scientific), financial activity, transportation-communications, insurance, electronic parts-components manufacturing and chemical production have also been strong worldwide in recent years in alignment with a strong trend, which shows a shift in the world FDI mix with an increasing share of FDI in the service sector. (38)

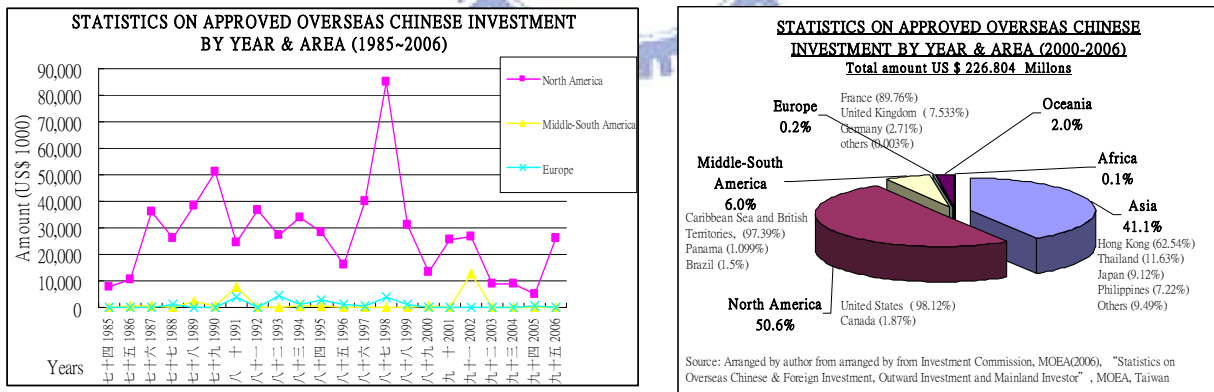


Figure 46: Arranged by author from investment Commission, MOEA (1985~2006).

Source: “Statistics on Overseas Chinese & Foreign Investment, Outward Investment and Mainland Investment-2006-”, MOEA

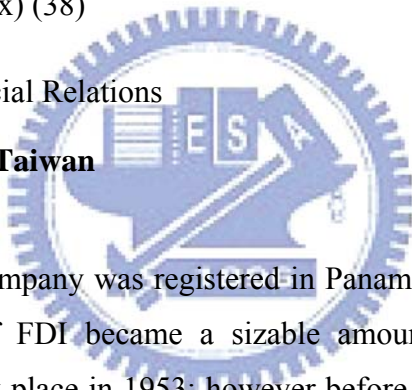
Looking more closely at the distribution of Taiwanese FDI in the Americas, it can be seen that in the last twenty years the United States has been the major recipient of Taiwanese FDI, followed by Canada, the Caribbean and British Territories, Panama and Brazil. Looking at the amount in the Figure 45 it can be seen that the amount of Taiwanese FDI in countries of Central and South

America is negligible in comparison to the amount invested in North America mentioned above. Hence, it can be seen that there is still a large potential to engage these countries.

Taking the years 2000-2006 pie-chart as a reference, the cases of North and Mid-South Americas account for the major portion of Taiwanese FDI. In this sector, the United States is the major recipient of Taiwanese FDI across nearly all the industries. While Canada attracts investments in textile product manufacturing and precision, optical, medical equipment, watches and clocks manufacturing. Similar to the US, the Caribbean and British Territories are involved in almost all the industries. Finally, in Panama it is rubber product manufacturing, leather, fur and allied product manufacturing and transportation, storage and communications which are the main investment sector ( See appendix) (38)

7.3. Panama –Taiwan Commercial Relations

7.3.1 Direct Investment from Taiwan



In 1953, the first Taiwanese company was registered in Panama; however, it was not until 1993 onwards when the amount of FDI became a sizable amount. Indeed, the first instance of Taiwanese FDI in Panama took place in 1953; however before 1993 there were only eight cases of approved FDI to Panama. From 1952 to the end of 2006 there were fifty-four approved cases of FDI (Figure 46). The major investment activities have been in transportation, accounting for more than half of the approved FDI to the isthmus. Since then there has been a breakdown in industry, cases and amount of initial investments.

The following is also the figure of Taiwanese-approved outward investments by industries in Panama to the end of 2006:

STATISTICS OF APPROVED FOREIGN INVESTMENT BY AREA & INDUSTRY (MOEA)		
Panama		Unit : US\$1,000
-----		1952~2006
Case	Amount	Industries
25	295,111	Manufacturing
2	8,587	Food, Beverage and Tobacco Manufacturing
2	1,496	Textile Product Manufacturing

0	96,220	Leather, Fur and Allied Product Manufacturing
8	66,427	Chemicals
5	50,750	Rubber Products Manufacturing
1	827	Non-metallic Mineral Products Manufacturing
3	50,848	Basic Metal Industries and Fabricated Metal Products Manufacturing
1	3,538	Machinery and Equipment Manufacturing and Repairing
1	206	Electronic Parts and Components Manufacturing
2	16,212	Electrical Machinery, Supplies and Equipment Manufacturing and Repairing
<b>1</b>	<b>45</b>	<b>Electricity, Gas, Water and Construction</b>
<b>9</b>	<b>66,424</b>	<b>Trade</b>
<b>2</b>	<b>15,552</b>	<b>Accommodation and Eating-Drinking places</b>
<b>8</b>	<b>329,551</b>	<b>Transportation, Storage and Communications</b>
<b>5</b>	<b>35,113</b>	<b>Financing and Auxiliary Financing</b>
<b>1</b>	<b>179</b>	<b>Financing Investment</b>
<b>4</b>	<b>25,496</b>	<b>Professional, Scientific and Technical Services</b>
<b>54</b>	<b>767,470</b>	<b>Total</b>

Figure 47: Approved Taiwanese FDI to Panama 2006 by Industry sector total  
 Source: Arranged by author from investment Commission, MOEA (1952~2006), "Statistics on Overseas Chinese & Foreign Investment, Outward Investment and Mainland Investment", MOEA

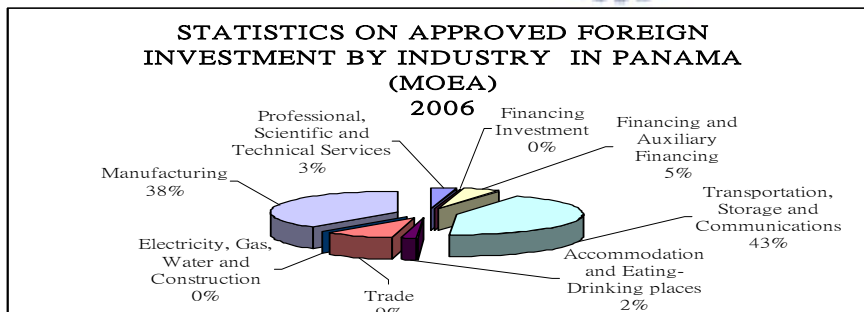


Figure 48 : Taiwan's Approved FDI to Panama 2006 by Industry sector total

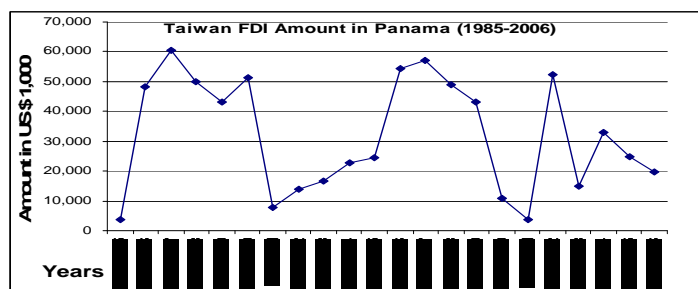


Figure 49: Taiwan's Approved FDI to Panama from 1985~2006 by years  
Source: Arranged by author from arranged by from Investment Commission, MOEA (2006), "Statistics on Overseas Chinese & Foreign Investment, Outward Investment and Mainland Investor", MOEA, Taiwan

The predominance of transport sector investments is due the predominate role of the Evergreen Corporation, which has seen an increase in its transport and logistics operations following the privatization of Panama's container ports. From the appendix provided, it can be seen that the most important main cases are Evergreen Marine Corp (Taiwan), Taiwanese Financial Institutions, Taiwanese Companies in the Colon Free Zone and Davies EPZ.

#### 7.4 Current Situation of Taiwan-Panama FTA

The FTA between Taiwan and Panama was signed on August of 2003 and entered into effect on December 4, 2003. In the first eleven months of its implementation, the total trade between Panama and Taiwan doubled each year from 2003 to 2006 (Table 7), with the bilateral trade balance tilting strongly in favor of Taiwan. (40)

The FTS is a comprehensive agreement, which includes provision not only for trade in goods but also for the investment and services. In total the text of the agreement comprises seven parts: Part I: General Aspect, Part II: Trade in Goods, Part III: Technical Barriers to Trade, Part IV: Investment Services and Related Matters, Part V: Competition Policy, Part VI: Intellectual Property Right, and Part VII: Administrative and Institutional Provisions.

With regards to investment provisions, Panama may not impose any performance requirements on Taiwanese companies such as percentage quotas for export or to achieve any percentage on domestic content, or to relate in any way to the amount of investment based on imports and exports. Also, no conditions on the part of Panama exist on the nationality of senior management or the board of directors. The agreement also stipulates that each country shall permit all transfers relating to an investment of an investor of the other party in the territory of the party to be made freely and without delay. Such transfers include: (a). profits, dividends, interest, capital, gains, royalty, payments, management fees, technical assistance and others, returns in kind and

other amounts derived from the investment; (b). proceeds from the sale of all or any part the investment or from the partial or complete liquidation of the investment; (c). payments made under a contract entered into by the investor, or its investment, including payments made following a loan agreement.

With respect to the risk of nationalization and/or expropriation, no party (Panama or Taiwan) may directly or indirectly nationalize or expropriate an investment of an investor of the other party in its territory, or taking a measure tantamount to nationalization or exportation of such an investment, except for a public purpose, or public order and social interest, on a non-discriminatory investment in accordance with the agreement. Compensation shall be equivalent to the fair market value of the expropriated investment immediately before the exportation took place (“date of expropriation”), and shall not reflect any change in value occurring because the intended expropriation had become known earlier. Valuation criteria shall include the going concern value, asset value including declared tax value of tangible property, and other criteria, as appropriate, to determine the fair market value.

Years	Total Bilateral valor (Millions US.)	Export to Taiwan	Import from Taiwan	Balance
2001	36.16	11.72	24.44	12.72
2002	23.66	4.8	18.85	14.05
2003	26.33	6.85	19.48	12.62
2004	33.02	11.38	21.63	10.24
2005	46.76	20.04	26.72	6.676
2006(1-6)	22.5	11.26	11.32	0.06
Total	2,862.19	573.99	2,288.20	

Table 10 The trade in goods, from January 2001 to 2006, the trade in goods, from January 2001 to 2006 reflect in the table the export-import the amount for the bilateral agreement between Taiwan and Panama.

Source: Data of the directorate of Census and Statistics, National Controllers Office (NCO),

Panama

## 7.5. Motivations of Taiwanese companies already invested in the Americas



In order to have an idea of the motivations of Taiwanese companies investing in Panama, it is useful to take a closer look at the aggregate data for the whole American continent. According to a survey carried out by the Investment Commission of MOEA in 2003, of those Taiwanese companies already investing in the U. S. a large percentage of them cite the wish to increase sales competitiveness as their main motivation for investing. In contrast, Companies in Central and South America are eager to take advantage of the low labor and land cost, and to increase their overseas sales competitiveness, not to mention the advantages offered by tax and other incentives. Kou and Li (2003) found that the motivation of utilizing local labor, expanding markets, and following major clients are important factors influencing the FDI decisions of Taiwanese small and medium sized enterprises. Then at least as far as SMEs are concerned, the motivation of strategic considerations is not critical in influencing their behavior when investing abroad. The motivations of expanding markets is a major factor driving FDI, this may be due to the fact that Taiwan is a small country with market of modest size. Because companies have little room for expanding in Taiwan, they may employ FDI as means of expanding theoretical markets. Internationalization theory had already suggested such a trend, the work of Buckley and Casson (1976), Dunning (1997) and others points out that market imperfections make it less costly for firms to undertake imperfections that result in internationalization are generally related to cost or benefits associated with uncertainties in external market and costs, imperfections in markets for knowledge and information, the size firm and government policies. (41,42, 43)

In short, investment in the U.S. by Taiwanese firms is mostly driven by internal factors such as R&D intensities, firm size, export ratio and capital intensities. Large companies with high export ratios are more likely to invest abroad, but the higher the capital intensity the less the likelihood they will invest abroad. According to the factor endowment theory, the lower the degree of capital intensity, the more harm a firm will suffer when wages rise, the more a firm suffers when wages rise, the greater its likelihood to undergo FDI.

**7.5.1 Table for Motivations for Taiwanese Companies Investing in American Countries**

	U.S.A.	Middle - South	Mexico	Canada
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		America		
Number of the cases	68 cases	12 cases	1 cases	1 cases
Low cost labor	2.94%	50%		
Low land cost	1.47%	16.67%		
Use of local natural resource	1.47%	8.33%		
Increases sales in local market	42.65%		100.00%	100%
Access new technologies	32.35%			
International Cooperation	30.88%			
Increase overseas Sales Competitiveness	39.71%	41.67%		
Tax advantages and other incentives	4.41%	41.67%		
Better support for local customers	2.94%	16.67%		
Others	10.29%	33.33%		

Table 11 Motivations for Taiwanese Companies investing in America Countries.

Source: Data from Investment Commission, MOEA (2003), "Survey of Situation of Overseas Enterprises" Investment commission, MOEA, Taiwan.

In conclusion, external factors seem to drive Taiwanese firms investment in Central and South America such as low cost labor, tax advantages, increase overseas sales competitiveness and others.

#### 7.6. Problems encountered by Taiwanese Companies in Panama

Liu Ban-Tian (1997) outlined the basic advantages faced by Taiwanese companies in Panama. Indeed some of these problems and advantages have remained the same, however, it should be pointed out that at present the advantages related to Panama can be summarized as follows: reasonable wages and operational costs, a modern worldwide telecommunication system, a bilingual labor pool, and finally a good living environment and geographic location (46). Although labor unions are considered influential they are mostly strong in the construction sector.

<b>Advantages</b>	<b>Problems</b>
Good geographic location	Labor unions
Good transportation infrastructure	Language barrier
Closeness to North and South American Markets	High wages
Abundant labor	Political and legal instability
The establishment of EPZ (Davies)	Problems with supply of electricity

Table 12 Advantages and Problems of Companies already investing in Panama (1997)

Source: Lieu, P.T, (1997), "Analysis of trade and investment between Taiwan and Central America". Taipei Bank Monthly Journal, 27, No. 10, 29-52.

Website:<http://www.moea.gov.tw/~ecobook/season/saa26.htm>

With respect to work wages, it can be derived that they are not very high as seen on the previous chart, however, they are relatively high compared to those of nearby Central American and South American neighbors. As for the legal environment, since the accession of Panama to the WTO and recent overhaul of regulatory laws, a more fluid regulatory climate has been in place. The more serious disadvantages have to do with the fact that there is a lack of manufacturing base, with no "down-stream" industries, therefore manufacturing operations have to take care of the whole production process".

## CHAPTER 8. Main Findings and Conclusion

### 8.1. Summary of Main Findings

This thesis aims to identify the potential advantages for Panama as a host country for foreign direct investment firms in the light of the three Mega Projects, in addition it overviews, in particular, the case of Taiwanese investment performance in Panama in Chapters 6 and 7. These chapters also describe the characteristics of the Panamanian economy, the FDI pattern of Taiwanese firms, and the present experiences of firms in Panama in order to identify their features.

Through the following SWOT analysis of Panama for potential investors that is constructed by the information provided before, it is seen that Panama provides good conditions for foreign direct investment.

Strengths	Opportunities
<ul style="list-style-type: none"> <li>• Geographic Location</li> <li>• Strong banking sector</li> <li>• Low inflation rate</li> <li>• US dollar as national currency</li> <li>• Low cost of labor</li> <li>• Political stability</li> <li>• Strong diplomatic relationships</li> <li>• Government incentives</li> <li>• Free trade agreements</li> <li>• Safe environment</li> <li>• Tax free policy</li> <li>• Quota free</li> <li>• Land availability (rent, infrastructure policy, etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Investment opportunities in different industries</li> <li>• Expanding businesses</li> <li>• Potential for economic development</li> <li>• Access into other markets</li> <li>• Forthcoming free trade agreement with USA</li> <li>• New product horizons</li> <li>• Future collateral projects.</li> </ul>

Weaknesses	Threats
<ul style="list-style-type: none"> <li>• Highly-regulated judicial system and large bureaucracy</li> <li>• Possible government corruption</li> <li>• Bureaucracy mainly monolingual (Spanish)</li> <li>• Cultural differences</li> <li>• Low population- consumer demand</li> </ul>	<ul style="list-style-type: none"> <li>• Possible incompleteness of the free trade agreement with USA</li> <li>• Possible delay to the completion of the different Mega Projects.</li> <li>• Competitors for each Mega project</li> </ul>

Currently, investors are taking advantage of existing conditions in some sectors in Panama. However, since the commencement of the three Mega Projects, new investment opportunities are emerging. These Mega Projects require different industries to work together; hence, a broad sector of investors can take advantage of the Mega Projects. The SWOT analysis shows that the strengths and opportunities provide a favorable environment for investors in Panama.

For Taiwanese investors in Panama to conduct their business through FTAs is a smart method to get a stronghold on the world market, but not one without limitations. On the positive side to conducting business in Panama are its stable currency based on the US Dollar, access to capital, international finance system, transportation infrastructure (Panama Canal, Colon Free Trade Zone), lack of earthquakes volcanic activity and hurricanes, tax-free concessions for foreign investors, comparable US living conditions and lower cost of living. On the other hand, there are negative aspects: competition (especially from China), the uncompleted expansion of the Panama Canal (large tankers Panamax are notable to go through the existing Canal), the perils of money laundry and government corruption.

Foreign investors pay attention to at least four attributes of a country's investment opportunities: its competitive advantages, its domestic economic and political stability, property rights protection and foreign trade zones.

- The competitive advantages of Panama lie in factors such as geographic position, sufficient bi-lingual labor force and good basic air and maritime infrastructure..



- Panama is a small country with a small population with limited sophisticated tastes, but closeness to other markets can offset this weak point.
- The supporting industries are also lacking except for the maritime and financial sectors which are very advanced.
- Domestic rivalry is intense in the banking sector; however, the other industries have rivalries which occur on a global scale due to the open economy of Panama.
- There is also great economic stability because of the use of the US dollar as the local currency; therefore there is little risk of macroeconomic shock such as occurs at the global level when oil crises happen.
- Panama has enjoyed a relatively stable democratic form of government for the past 15 years and is second only to Chile and Costa Rica in the whole of Latin America in terms of political stability.
- In terms of security for FDI there is little pressure made to indigenize ownership and the risk of nationalization is also very low.
- Political, economic, operational and financial risks are identified in this study which have relevance to short, medium and long term risk management for investors.
  - Short-term investment risk Although the political situation is stable, an overburdened bureaucracy creates opportunities for corruption and thus companies can encounter inefficiencies that affect the start of operations. The adequate response will be to have a firm policy toward corruption as well informed decision making, and contact with government actors is essential.
  - Medium-term investment risk (from start of operations to 5 years): Economic uncertainties in the region may cause volatility in market demand, especially in South America. A mode of entry that consists of partnerships with local companies can be used to diminish this risk.
  - Long-term investment risk (5 years or more): Panama changes its leadership every 5 years and this may lead to inconsistent government policies and rule of law. In this context, the appropriate risk response will be to obtain up to date intelligence and to lobby government and law makers.
- Taiwanese companies have diverse motivations for FDI, some pursue seek to acquire technology transfer in order to remain competitive, others to increase their participation in a

particular market, and still others are driven to seek out more favorable conditions for investments. Since the ease of restrictions on cross-strait economic ties in the early 1990's, China has become an increasingly important investment location for Taiwanese enterprises. As a result of this move, the Taiwanese manufacturing sector's share of GDP has fallen from one-half in the mid-1980s to around one quarter with the service sector now accounting for more than one third of the GDP. Since the late 1990's high technology firms have joined the more traditional companies in shifting production capacity to mainland China.

- The driving forces for Taiwanese investment in Central and South America are low cost labor, tax advantages, increased overseas sales competitiveness and others.

## 8.2 Conclusion

The issues discussed in this study are specialized and are provided for those with a special interest in each specific Mega project. Mega-projects have become increasingly important as instruments of urban development policy in Panama and will become even more so in the near future. Today, foreign investment is becoming more crucial to national economies and Panama has to provide the competitive advantages in order to attract such investment. Consequently, the effects of foreign investment create the dynamics of local-foreign and business-government collaboration with each agreement. In other words, the Panamanian political leaders need foreign businesses to support them if they are to accomplish any economic development. In order to do this; they offer favorable land use, tax, and infrastructure decisions to foreign investors.

Foreign business groups tend also to have much clearer views than most national governments about developmental strategies and tactics. It is scarcely surprising, therefore, that public-private governing coalitions (regimes) tend to concentrate on the furtherance of business objectives. This paper also provides a foundation approach to understanding the relationship of foreign direct investment using a SWOT analysis of Panama.

In the coming years, Foreign Direct Investment in Panama will change rapidly, and the opportunities for companies to benefit from these Mega projects will be larger than ever before. The primary purpose of this study is to provide actual information about what the relevant parties

are contributing to unlock the constraints on commercialization and investment in Panama. Moreover, this study offers suggested opportunities for increased commercialization and investment in these three Mega Projects. After a review of previous studies dealing with the constraints on commercialization and investment in Panama, this study presents the key areas within the Panamanian political-economic framework. These areas are identified as infrastructure, economy, politics and society, and they are used to explain the persistence and to assess the effects of foreign short- and long- investment on the mega projects.

This growing emphasis on economic development in Panama will make it one of the most prominent world-wide key links for the coming decades. Panama has many competitive advantages for foreign direct investment (FDI) which make it especially unique in a maritime community: one of these advantages is that currently 4-5% of the world's trade transits through the Panama Canal, which has recently decided on an expansion project to meet present and future demands of maritime trade. The resulting increased capacity of this expansion together with a modern and efficient port system (Mega Port) and other Mega projects are some of the further advantages Panama has to offer. Moreover, in addition to the three mega projects in this study, currently the country has several collateral projects to further increase its competitive advantages. It is clear, therefore, that Panama in a few years, after the completion of some of the mega projects, can offer a logistic platform to all the Americas. Clearly, now is the time for foreigners to invest in the opportunities that Panama has to offer. Taiwanese's FDI in Panama was at limited and growing slowly, but now Panama is a key part of Taiwan's foreign investment network strategy. Currently, Taiwanese investments in the U.S comprise over 50% of its total foreign investment capital. Next in size are its investments in Asia followed by its investments in Middle and South America (including the Caribbean). Based on the analyses presented in this study, it can be seen that there are many opportunities in Panama for Taiwanese investors due, in part, to the political relationship between both countries. However, as a kind of negation of this positive relationship, the influence of China has emerged. As a result, the future of this relationship between Panama and Taiwan is one of uncertainty. This does not diminish, however, the desirability for Taiwan to establish a stronger investment relationship with Panama in the future in order to maintain and develop its existing principal markets.

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# Appendix

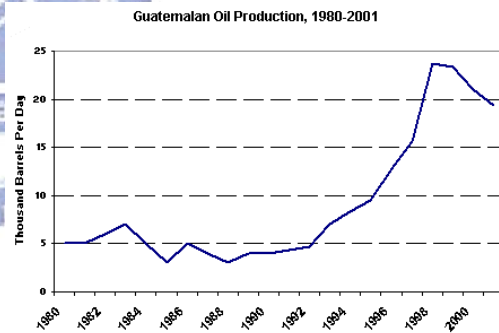
## Mega Project: SIEPAC-Panama Energy Hub

### Demand in energy

According to the Energy Information Administration, <http://www.eia.doe.gov>, all seven Central American countries rely heavily on imported petroleum and indigenous hydropower to meet domestic energy demand. Imported petroleum comes primarily from Venezuela and Mexico under the terms of the San Jose Pact and the Caracas Energy Accord. This region consumes no natural gas and very little coal. Historically, hydroelectric power has dominated Central America's electricity sector. However, since opening up to foreign investors in the middle to late 1990s, the use thermal generation has grown rapidly.

### Oil Production

Central America produces small volumes of crude oil, most of which is either sent to the United States for refining or consumed domestically. Guatemala, Central America's largest oil producer with 526 million barrels (19 thousand barrels per day (bbl/d) , proven oil reserves in 2001. Panama, the region's only other producer, produced 1,000 bbl/d in 2001.



### Oil Consumption

Oil is supplied primarily by Mexico and Venezuela under the auspices of the San Jose Pact and the Caracas Energy Accord. The San Jose Pact, originally implemented in 1980 and renewed annually, commits Venezuela and Mexico to provide all seven Central American countries and four Caribbean countries with a total of 160,000 bbl/d of crude oil and petroleum products under preferential terms. Under the Caracas Energy Accord, agreed to in October of 2000, Venezuela agreed to supply additional oil to Central American and Caribbean countries at preferential prices

and terms for the next 15 years. In 2000, petroleum consumption accounted for approximately 70% of total energy consumption in Central America.

### **Natural Gas**

Currently, Central America consumes no natural gas. In December 1999, however, Guatemala and Mexico signed a protocol agreeing to construct a natural gas pipeline from Ciudad Pemex, in southern Mexico, to the southern Guatemalan city of Escuintla. The 347-mile, \$450 million line would follow the path of an existing oil pipeline in Guatemala's Peten jungle region, and the gas would be used both for industry and electricity generation. Initial demand is estimated at about 40 million cubic feet per day (MMcf/d). The pipeline, which is expected to be completed by 2004, could eventually be extended to the Honduran and Salvadoran borders, and possibly Nicaragua and Costa Rica as well, as part of a wider Central America gas pipeline network.

### **Electricity**

Electricity generation in Central America has historically been dominated by hydropower. The privatization of energy markets, and the entry of foreign investors beginning in the late 1990s, however, has allowed for the development of numerous new thermal (mainly oil) generation plants. As a result, the role of thermal generation is growing rapidly at the expense of hydropower. As a share of regional electricity consumption, hydropower has fallen from 80% in 1980, to approximately 60% in 2000.

According to the Hydroelectric Dams Project in Mesoamerican region (Mexico to Panama) by PPP, by investigations of diverse organizations, there are approximately 330 hydroelectric projects in the whole Mesoamerican region, which are in their different stages from study, to planning or construction:

Mexico:

Guerrero: La Parota, San Juan Tetelzinco.

Oaxaca: Benito Juárez.

Chiapas: Izantún, Quetzali, Huixtán I, Huixtán II, y Caballo Blanco.

Mexico - Guatemala (binational projects):

Usumacinta river: Boca del Cerro, La Línea, El Porvenir, Isla El Cayo, Yaxchilán

Guatemala:

Hondo river, Zunil, Cahabón river, Ocos and Chixoy (already constructed)

Panama:

Project Usable Resource, Company Capacidad (kW)

Canjilones Estelí river, Chiriquí AES Panamá SA 120,000

Cocle, North Río Cocle river del Norte ,ACP 150,000

Indio I Río Indio, ACP25,000

Indio II Río Indio, ACP25,000

Río Piedra Piedra river, Hidroelectric Río Pedra SA 10,500

Bonyic Quebrada Bonyic ,Hidro Ecologic of Teribe SA 30,000

Algarrobos Casita de Piedra river, Hidroelectric Chiriquí SA 11,200

Paso Ancho Chiriquí Viejo Paso Ancho river, Hydro Power Corp. 12,400

Bajo de Mina Río Chiriquí Viejo ,La Mina Hydro Power Corp. 25,000

Santa María Santa María Cons. river, Hidroelectric Santa María 24,000

Tabasará II Tabasará Cons. river, Hidroelectric Tabasará SA 46,000

Tabasará I Tabasará Cons. River, Hidroelectric Tabasará SA 46,000

La Yeguada San Juan Emp. River, De Distribución Electric7,000

Metro Oeste SA

Monte Lirio Chiriquí Viejo river, Electrón Investment SA 51,600

Pando Chiriquí Viejo river, Electrón Investment SA 32,600

Los Añiles Estelí river, Generadora Electrica of Panama 35,000

Chiriquí - El Corro Estelí and Papayal river, Generadora Electric of Panama 56,000

Candela ,Candela river, Compañía de Inversiones1,200

Agro-Técnicas SA

Quebro Quebro river, Hidroelectric del Sur SA8,590

Gualaca Estelí river, Bontex SA 28,000

El Síndigo Los Valles river, Los Naranjos Overseas SA8,000

Baitún Chiriquí Viejo river, Complejo Hidroeléctrico Progreso 70,000

Macano Piedra river, Bonilla and Istmus Hydro Power Corp.5,800

Quebrada Paraíso



Cuchilla Macho river in Monte Atlantic Generating Project Inc. 9,650  
 San Carlos Teta and Mata river, Ahogado Hidroeléctrica San Carlos SA 1,500  
 Antón II ,Aguas turbinadas de Hidro Panamá SA 1,400  
 Antón I  
 Burica Chiquirí Viejo river, Hidro Burica SA 60,000  
 Alto Chiquirí Viejo River Hydro Caisán SA 45,000  
 San Andrés, Cateo and Gariché river, Fuerza Hidráulica del Caribe SA 5,300  
 Ojo de Agua, Grande and Zapillo river, Estrella del Sur SA 7,897  
 Los Estrechos , Cobre river, Los Estrechos Hidroelectric SA 9,500  
 Bajos del Totuma , Colorado river, Bajos del Totuma Hidroelectric SA3,360  
 Concepción, Piedra river, Istmus Hydro Power Corp.8,700  
 Cochea, Cochea and Quebrada river, Hidromáquinas de Panamá SA 6,000  
 CHAN-220, Changuinola river, Hydro Teribe SA126,000  
 El Fraile, Grande river, Hidroibérica SA 3,930



Honduras:

- El Cajón: already constructed
- Cangrejal River: 50 MW, Cost of construction: US\$80 Millions , affect to Ceiba.
- Babilonia: natural reserve, affect to San Esteban, Tatacamas, etc, and will be moved 5000 families
- Patuca River: it threatens to the Biosphere River of the Silver and several populations
- Gualcarque Dam between the municipality of San Francisco de Opalaca and the municipality of La Esperanza
- Dam of San Juan in the municipality of San Marcos de la Sierra
- Río Negro Dam in the municipality of Concepción

(0): - The Tiger: El Salvador: - Complex Hydroelectric Torola (Chaparral and

Honduras - El Salvador (bi-national project):

- El Tigre: bi-national project that will affect communities of Honduras and El Salvador

El Salvador:

- Complex Hidroeléctric Torola (Chaparral y La Honda)

- San Marcos
- Paso del Oso
- Zapotillo
- Cimarrón

Costa Rica:

45 constructed dams

135 dams in study:

- Boroí
- Tanari
- Atirro
- Pacuare



**TABLE**  
**STATISTICS ON APPROVED FOREIGN INVESTMENT BY YEAR & AREA (Cont'D 3)**  
**(1952~2006)**

**unit : US\$1,000**

**Area Middle-South America**

	巴拿馬	
	Panama	
	=====	
年度	件數	金額
Year	Case	Amount
1952 ~ 1965	5	1,241
五十五 1966	0	0
五十六 1967	0	0
五十七 1968	1	729
五十八 1969	0	0
五十九 1970	0	0
六 十 1971	2	400
六十一 1972	0	6,429
六十二 1973	1	1,035
六十三 1974	0	2,859
六十四 1975	0	860
六十五 1976	1	5,805
六十六 1977	0	-979
六十七 1978	0	1,544
六十八 1979	1	4,751
六十九 1980	1	4,493
七 十 1981	4	19,137
七十一 1982	2	9,264
七十二 1983	0	261
七十三 1984	1	4,533
七十四 1985	1	3,765
七十五 1986	1	48,416
七十六 1987	6	60,468
七十七 1988	3	49,804
七十八 1989	3	43,145
七十九 1990	2	51,154
八 十 1991	0	7,873
八十一 1992	0	13,821
八十二 1993	0	16,749
八十三 1994	0	22,772
八十四 1995	0	24,317
八十五 1996	1	54,455

八十六 1997	2	57,162
八十七 1998	2	49,062
八十八 1999	2	43,197
八十九 2000	2	10,963
九 十 2001	2	3,604
九十一 2002	2	52,286
九十二 2003	1	14,901
九十三 2004	1	32,849
九十四 2005	2	24,651
九十五 2006	2	19,541
合計 TOTAL	54	767,316

核准華僑投資分年分區統計表														
STATISTICS ON APPROVED OVERSEAS CHINESE INVESTMENT BY YEAR & AREA														
民國84年至95年(1995-2006)														
金額單位 (unit) : 美金千元 (US\$1,000)														
地區														
Area														
Asia		North America		Europe		Middle-South		Oceania		Africa		合計		
Sub-total		Sub-total		Sub-total		Sub-total		Sub-total		Sub-total		Total		
年度	件數	金額	件數	金額	件數	金額	件數	金額	件數	金額	件數	金額	件數	金額
Years	Case	Amount	Case	Amount	Case	Amount	Case	Amount	Case	Amount	Case	Amount	Case	Amount
七十四 1985	54	33,780	12	7,911	1	66	0	0	0	0	0	0	67	41,757
七十五 1986	66	53,462	13	10,591	0	0	1	503	0	125	0	125	80	64,806
七十六 1987	92	159,375	23	35,890	1	11	1	451	0	0	0	0	117	195,727
七十七 1988	59	93,715	27	26,374	1	978	1	75	1	235	0	0	89	121,377
七十八 1989	46	136,542	21	38,146	1	155	1	2,240	1	190	0	0	70	177,273
七十九 1990	63	168,239	17	51,303	0	0	4	403	1	170	0	0	85	220,115
八 十 1991	51	147,566	8	24,589	1	4,078	4	7,962	0	0	1	35,267	65	219,462
八十一 1992	57	275,316	14	36,530	0	0	1	105	1	195	0	0	73	312,146
八十二 1993	43	91,628	17	27,326	1	4,528	0	0	1	19	0	0	62	123,501
八十三 1994	40	71,220	14	33,802	3	1,272	0	496	0	0	0	0	57	106,790
八十四 1995	30	136,796	10	28,470	1	2,862	1	322	1	104	0	0	43	168,554
八十五 1996	44	152,903	6	16,245	1	1,103	1	200	0	0	0	0	52	170,451
八十六 1997	35	346,405	7	40,089	0	712	0	117	1	19	1	121	44	387,463
八十七 1998	25	95,525	51	84,842	1	4,065	1	7	3	282	0	0	81	184,721
八十八 1999	16	99,401	14	31,003	2	1,333	1	25	3	618	0	0	36	132,380
八十九 2000	29	36,707	10	13,319	0	4	1	324	0	29	0	0	40	50,383
九 十 2001	19	21,307	12	25,503	0	0	0	0	1	119	1	295	33	47,223
九十一 2002	17	5,145	8	26,923	0	14	0	12,876	0	0	0	0	25	44,958
九十二 2003	13	5,657	8	8,900	0	0	0	64	1	296	0	0	22	14,917
九十三 2004	14	4,613	5	8,986	0	0	0	140	0	0	0	0	19	13,739
九十四 2005	4	2,947	7	4,909	1	472	0	0	0	1,991	0	0	12	10,318
九十五 2006	16	16,758	11	26,114	2	36	1	149	0	2,208	0	0	30	45,265
合計 TOTAL	833	2,155,006	315	607,766	17	21,689	19	26,458	15	6,600	3	35,808	1,202	2,853,327
%	69.3	75,526,102%	26.2	21,300,24%	1.44	0,760,13	1.581	0,927,73	1.2	0,23,13	0.25	1,25,494	100	100

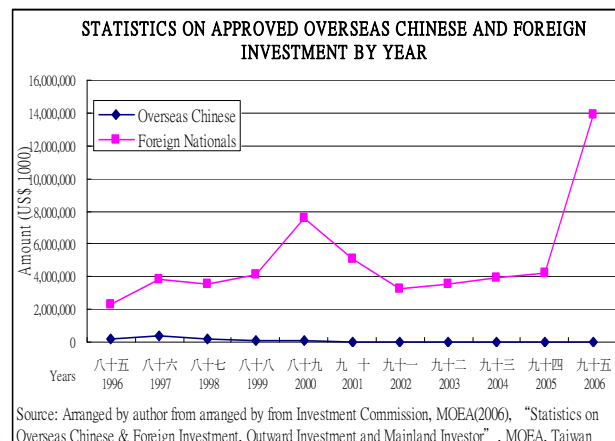
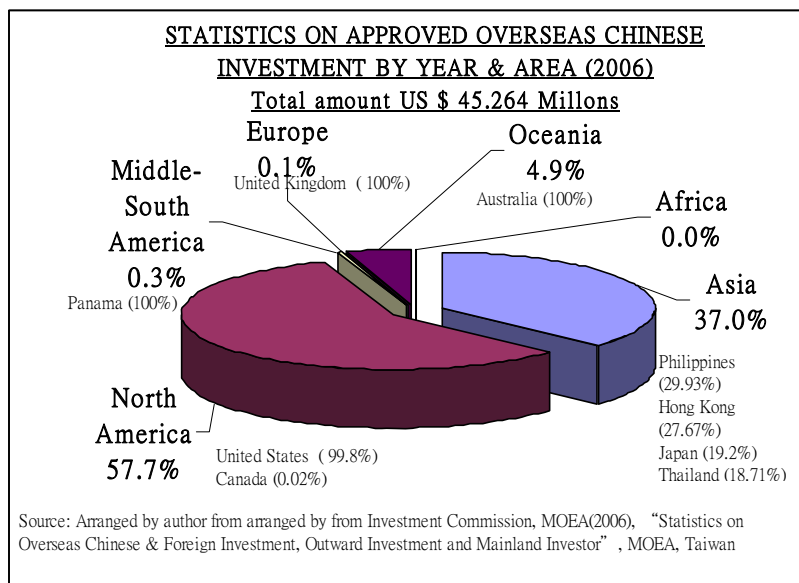


TABLE (9)

STATISTICS ON APPROVED FOREIGN INVESTMENT BY AREA & INDUSTRY (Cont'D 2)

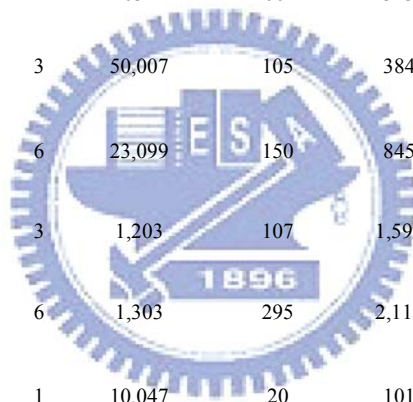
金額單位  
(unit) : 美金千元  
(US\$1,000)

民國 41 年至 94 年  
(1952~2005)

業別 Industries	North America						業別 Industries
	小計 Sub-total		加拿大 Canada		美國 United States of America		
	件數 Case	金額 Amount	件數 Case	金額 Amount	件數 Case	金額 Amount	
農林漁牧業	13	17,432	0	0	13	17,432	Agriculture, Forestry, Fishing and Animal Husbandry
礦業及土石採取業	0	0	0	0	0	0	Mining and Quarrying
製造業	1,170	7,672,603	48	207,568	1,122	7,465,036	Manufacturing
食品、飲料及菸草製造業	57	300,149	7	56,432	50	243,717	Food, Beverage and Tobacco Manufacturing
紡織類製品製造業	8	63,209	2	37,693	6	25,515	Textile Product Manufacturing
皮革、毛皮及其製品製造業	30	8,078	2	144	28	7,934	Leather, Fur and Allied Product Manufacturing



木竹製品製造業	9	1,674	0	0	9	1,674	Wood and Bamboo Products Manufacturing
家具及裝設品製造業	1	2,116	0	0	1	2,116	Furniture and Fixtures Manufacturing
紙類製品、印刷及其輔助業	12	47,343	0	0	12	47,343	
化學材料及化學製品製造業	152	1,509,089	4	2,557	148	1,506,532	
石油及煤製品製造業	0	9,778	0	0	0	9,778	Petroleum and Coal Products Manufacturing
橡膠製品製造業	37	31,577	4	393	33	31,184	Rubber Products Manufacturing
塑膠製品製造業	9	22,340	0	0	9	22,340	Plastic Products Manufacturing
非金屬礦物製品製造業	22	142,180	1	101	21	142,079	Non-metallic Mineral Products Manufacturing
金屬基本工業及金屬製品製造業	103	344,544	4	634	99	343,911	Basic Metal Industries and Fabricated Metal Products Manufacturing
機械設備製造修配業	108	434,595	3	50,007	105	384,588	Machinery and Equipment Manufacturing and Repairing
電腦、通信及視聽電子產品製造業	156	868,357	6	23,099	150	845,259	Computer, Communications, and Audio and Video Electronic Products Manufacturing
電子零組件製造業	110	1,592,116	3	1,203	107	1,590,912	Electronic Parts and Components Manufacturing
電力機械器材及設備製造修配業	301	2,114,352	6	1,303	295	2,113,049	Electrical Machinery, Supplies and Equipment Manufacturing and Repairing
運輸工具製造修配業	21	111,896	1	10,047	20	101,849	Transport Equipment Manufacturing and Repairing
精密、光學、醫療器材及鐘錶製造業	28	54,593	3	23,706	25	30,888	Precision, Optical, Medical Equipment, Watches and Clocks Manufacturing
其他工業製品製造業	6	14,616	2	248	4	14,368	Other Industrial Products Manufacturing
營造及水電燃氣供應業	94	184,720	10	1,790	84	182,930	Electricity, Gas, Water and Construction
批發及零售業	633	1,380,567	69	78,268	564	1,302,299	Trade
住宿及餐飲業	127	246,147	10	3,637	117	242,511	Accommodation and Eating-Drinking places
運輸、倉儲及通信業	55	798,772	7	8,037	48	790,735	Transportation, Storage and Communications
金融及其輔助業	101	888,456	4	26,611	97	861,845	Financing and Auxiliary Financing
金融投資業	79	144,104	11	5,208	68	138,895	Financing Investment
證券及期貨業	18	319,555	1	1,818	17	317,737	Securities and Futures
保險業	17	1,142,500	0	37,564	17	1,104,936	Insurance Carriers
不動產及租賃業	34	104,124	2	352	32	103,772	Real Estate and Rental and Leasing
專業、科學及技術服	388	582,589	20	15,993	368	566,597	Professional, Scientific and Technical



務業							Services
其他服務業	107	292,189	12	5,900	95	286,289	Other Services
合計	2,836	13,773,759	194	392,745	2,642	13,381,015	Total

TABLE (9) STATISTICS ON APPROVED FOREIGN INVESTMENT BY AREA & INDUSTRY (Cont'D 4)

民國 41 年至 94 年  
(1952~2005)

中南美洲

金額單位

(unit) : 美金千

元 (US\$1,000

地區

Area

業別	小計		百慕達		加勒比海英國屬地		巴拿馬		巴西		業別
	件數	金額	件數	金額	件數	金額	件數	金額	件數	金額	
Industries	Case	Amount	Case	Amount	Case	Amount	Case	Amount	Case	Amount	Industries
農林漁牧業	4	20,077	0	0	3	19,783	0	0	0	0	Agriculture, Forestry, Fishing and Animal Husbandry
礦業及土石採取業	2	5,448	0	0	2	5,448	0	0	0	0	Mining and Quarrying
製造業	853	5,145,005	24	501,862	751	4,236,400	25	291,931	5	3,960	Manufacturing
食品、飲料及菸草製造業	29	151,096	3	25,450	21	110,100	2	8,587	0	0	Food, Beverage and Tobacco Manufacturing
紡織類製品製造業	32	165,497	1	36,344	27	127,139	2	1,496	0	0	Textile Product Manufacturing
皮革、毛皮及其製品製造業	16	191,798	1	609	15	97,482	0	93,707	0	0	Leather, Fur and Allied Product Manufacturing
木竹製品製造業	2	9,146	0	0	2	9,146	0	0	0	0	Wood and Bamboo Products Manufacturing
家具及裝設品製造業	2	1,287	0	0	2	1,287	0	0	0	0	Furniture and Fixtures Manufacturing
紙類製品、印刷及其輔助業	8	19,694	0	1,616	8	18,078	0	0	0	0	

化學材料及化學製品製造業	55	392,822	2	7,254	44	314,126	8	65,760	0	0	
石油及煤製品製造業	1	5,199	0	0	1	5,199	0	0	0	0	Petroleum and Coal Products
橡膠製品製造業	8	67,380	0	0	2	16,580	5	50,750	0	0	Rubber Products Manufacturing
塑膠製品製造業	18	68,742	0	0	16	64,853	0	0	0	0	Plastic Products Manufacturing
非金屬礦物製品製造業	11	46,411	0	0	8	40,217	1	827	0	0	Non-metallic Mineral Products Manufacturing
金屬基本工業及金屬製品製造業	34	263,717	1	2,474	27	203,238	3	50,848	0	0	Basic Metal Industries and Fabricated Metal Products Manufacturing
機械設備製造修配業	80	336,605	4	50,016	67	271,398	1	3,538	3	2,341	Machinery and Equipment Manufacturing and Repairing
電腦、通信及視聽電子產品製造業	228	1,505,486	7	237,489	212	1,243,777	0	0	0	0	Computer, Communications, and Audio and Video Electronic Products Manufacturing
電子零組件製造業	181	1,095,358	1	6,031	171	1,052,863	1	206	0	0	Electronic Parts and Components Manufacturing
電力機械器材及設備製造修配業	78	461,329	4	134,388	67	305,053	2	16,212	0	0	Electrical Machinery, Supplies and Equipment Manufacturing and Repairing
運輸工具製造修配業	30	115,303	0	190	23	110,515	0	0	2	1,619	Transport Equipment Manufacturing and Repairing
精密、光學、醫療器材及鐘錶製造業	36	224,444	0	0	34	221,657	0	0	0	0	Precision, Optical, Medical Equipment, Watches and Clocks Manufacturing
其他工業製品製造業	4	23,691	0	0	4	23,691	0	0	0	0	Other Industrial Products Manufacturing
營造及水電燃氣供應業	71	437,557	5	22,165	64	414,751	1	45	0	0	Electricity, Gas, Water and Construction
批發及零售業	501	1,491,885	13	146,804	451	1,230,826	7	58,761	3	1,249	Trade
住宿及餐飲業	36	107,083	7	6,762	23	70,500	2	15,552	0	0	Accommodation and Eating-Drinking places
運輸、倉儲及通信業	59	1,312,899	2	328,004	46	648,848	7	327,979	1	2,571	Transportation, Storage and Communications
金融及其輔助業	145	1,401,393	7	157,340	125	1,177,989	5	27,831	1	1,102	Financing and Auxiliary Financing

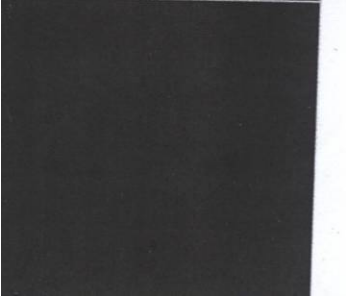
金融投資業	323	1,758,105	4	48,408	306	1,596,764	1	179	0	0	Financing Investment
證券及期貨業	23	144,335	4	42,728	18	101,288	0	0	0	0	Securities and Futures
保險業	4	9,485	1	6,661	2	2,714	0	0	1	110	Insurance Carriers
不動產及租賃業	32	124,876	1	0	28	118,564	0	0	1	374	Real Estate and Rental and Leasing
專業、科學及技術服務業	357	1,172,483	14	85,897	322	1,051,494	4	25,496	0	0	Professional, Scientific and Technical Services
其他服務業	106	532,494	4	31,414	97	493,275	0	0	2	159	Other Services
合計	2,516	13,663,124	86	1,378,044	2,238	11,168,645	52	747,775	14	9,525	Total



## Appendix 1

### Taiwanese Companies Investing in Panama as of March 2005

Name of Company	Name of Parent Company in Taiwan	Industry
Asatex, S. A.		Trading
Asiatec, S. A.		Trading
Autorel Internacional, S. A.		Trading
Calinda Internacional, S. A.		Trading
Casa Formosa, S. A.		Trading
Casa Vegetariana, S. A.		Restaurant
Central Trust of China	中央信託局	Int. Trade Support
Champion Zona Libre, S. A.		Trading
Charley Internacional, S. A.		Trading
Chenson, S. A.		Trading
Colón Container Terminal	長榮集團	Container Port
Electrónica Internacional, S. A.		Electronic Parts
Emburg Forest, S. A.	英堡國際開發	Forestry
Panaverde International Group		Forestry
Estación Shell La Confianza		Gas station
Eva Internacional, S. A.		Trading
Everconcord, S. A.	長榮集團	Real State
Excel Cargo		Transport Services
Ferretería Buena Vista		
Formosa Imp. & Exp., S. A.		Trading
Game Universe, S. A.		
Gilontas Ocean Co.		Fisheries
H.L. International, S. A.		Trading



# Incentives and steps for establishing a Business in Panama

## STEPS FOR ESTABLISHING A BUSINESS

Panama has one of the most modern and flexible corporate laws in Latin America. Among advantages offered by Panamanian corporate law we have:

1. Two or more persons of any nationality, even though not domiciled in Panama, may organize a corporation for any lawful purpose. The articles of incorporation may be executed anywhere, even outside of Panama, and in any language.
2. There are no requirements regarding the amount paid in capital.
3. Ownership of a Panamanian corporation may reside in a single individual or corporation and no part of the capital needs to be held by a Panamanian.
4. There are no nationality or residence requirements for shareholders.
5. Neither the directors nor the officers are required to be shareholders.
6. The Board of Directors must be composed at least for three directors, but none of them may hold more than one position.
7. Meetings of shareholders or directors may be held outside of Panama. Proxies may be used by shareholders/directors.

## IN ORDER TO FORM A BUSINESS IN PANAMA, THE INVESTOR MUST SUBMIT THE FOLLOWING INFORMATION:

1. The name of the corporation. It may be in any language, but it must terminate in a word or abbreviation indicating that it is a corporation.
2. The objectives and purposes of the corporation.
3. The amount of authorized capital. Usually the authorized capital will consist of US\$ 10,000 divided into 100 shares of US\$ 100 each.
4. Shares may be nominative or bearer shares.
5. Duration of the corporation, usually perpetual.
6. The full names and addresses of three or more directors and / or officers.
7. The domicile of the corporation.

In order to engage in commercial or industrial activities, all corporations, partnerships or individuals must obtain proper authorization from the Ministry of Commerce and Industry.





**THERE ARE THREE BASIC TYPES OF LICENSES INVOLVED:**

**a) Commercial License Class A** is required for wholesale operations, commercial and mortgage banks, financial entities, international financial brokers, insurance and reinsurance companies, international transportation companies, mutual funds, public services, high-tech companies, and others.

**b) Commercial License Class B** is required for retail businesses, including representation agencies, service companies, bars, restaurants, drugstores, gas stations, local transportation, distributors and others. This license is only granted to Panamanians or corporations owned solely by Panamanians.

**c) An Industrial License** is required for extractive and manufacturing industries, as well as construction companies.

Exemptions for business license requirements are granted to persons or legal entities engaged exclusively in agriculture, cattle, bee, or poultry raising, or in the manufacturing and sale of handicrafts.

Licenses must be kept all time in a visible and accessible place. An annual tax is levied based on the net worth of the company, as stated in the Income tax return.

**INMIGRATION REQUIREMENTS**

**VISA AS AN INVESTOR**

**Requirements:**

1. Power and petition by an attorney.
2. Certified check for an amount of U\$100.00 on behalf of the National Treasury.
3. Certified check for an amount of U\$500.00 on behalf of the Ministry of Government and Justice.
4. Certificate of Good Health.
5. H.I.V. Test. (AIDS)
6. Police record certificate from the country of origin.
7. Copy of passport.
8. Two photos.
9. Original passport.
10. Certificate issued by the Public Registry, indicating the corporation's existence.
11. Certification of the Corporation's Secretary or Treasurer and Certified Public Accountant, accrediting the ownership and payment of shares issued on behalf of the interested person.
12. The corporation's sworn income statement.
13. Copy of the Corporation's Social Security payroll.
14. Paid-up Tax Certificate issued by the Social Security Entity.
15. Sworn notarized statement.
16. Evidence of investment, which may be accredited through the following documents:
  - Purchase-sell contract.
  - Commercial invoices.
  - Customs liquidations.
  - Leasing contract.
  - Any other document demonstrating the company's invested capital.